Chapter 1

Understanding the Gateway Hypothesis: Discusses the Concept of the Gateway Hypothesis and its Relevance to High School Students in Northern Cyprus

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Abstract

This quantitative survey was conducted by the Anti-Drug Commission under the Prime Ministry of the Northern Cyprus. The objective of this study was to investigate the frequency of alcohol, cigarettes, and addictive substances among high school students in the Northern Cyprus. The data was collected from a sample of 763 students through the utilization of the European School Survey Project Alcohol and Other Drugs (ESPAD Survey). The findings of study stated that, positive relationship between the decrease in the legal age for smoking and the increase in the use of e-cigarettes. Additionally, it was established that there exists a positive relationship among smoking and e-cigarette usage between high school students in the Northern Cyprus. Other additionally, the study demonstrated that as the age of initiation for cigarette or e-cigarette usage decreases, the age at which students engage in daily substance use also decreases. Furthermore, it was observed that early exposure to these substances is linked to becoming a daily user. In terms of the results of regression analysis of the study, the use of legally defined tobacco products (cigarettes, e-cigarettes, hookah) in Northern Cyprus is not effective in predicting the use of illicit substances such as bonzai. However, frequency of cannabis use predicts bonzai use among high school students.

Keywords: Cannabis use, bonzai use, substance use, smoke use, Northern Cyprus

1.1. Introduction

Use of tobacco and smoke products, e-cigarettes among high school students have reached a level of concern due to changing social norms and technological developments now a days. Despite substantial efforts to prevent the negative effects of smoking and the development of innovative nicotine delivery methods, the temptation of these substances remains strong and permeates the very fabric of our educational institutions (Christophi et al., 2008; Singh et al., 2016). Youth use of tobacco-related products is on the rise, and this is a worrying development in the high school setting (Emekdar et al., 2017). Through clever digital adaptation of ever-changing cigarette marketing strategies, these products are now able to reach new target audiences, especially young minds (Dunlop et al., 2016). Therefore, of considerable importance to identify the underlying causes of this problem, in order to risks it poses to the health and well-being of minors.

The influence of peer groups is strong. Young individuals are often influenced by their classmates and make efforts to fit in and be accepted in society (Noland et al., 2016). Some students tend to start smoking or vaping because they think it is fashionable or popular in their social groups (Phua, 2011). While smoking or vaping can function as a coping mechanism for individuals to cope with various pressures, including academic, social or personal stressors (Long, 2003), it can also be seen as a form of curiosity, lack of taste or smell awareness, or a form of defiance against social norms (Kaleta et al., 2017; Nodora et al., 2014).

Tobacco and e-cigarette manufacturers promote their products through sophisticated marketing strategies. These products are made to attractive due to appealing brands, colourful packaging, various flavour options, and advertising that appeals to young people (Carpenter, 2005; Escobedo et al., 2018). Disinformation or misleading marketing advertisements may cause young people to perceive and be attracted to these products as less dangerous than they are. Moreover, easy accessibility and lack of control mechanisms over restrictive factors have a great influence on first trials or increased use (Prokhorov et al., 2006).

The family and environment exert significant influences on young individuals, serving as role models. This is especially evident when adolescents face limited alternative activities, as they may be more inclined to engage in smoking or vaping due to a dearth of other options for leisure or recreational pursuits (McGee et al., 2015).

Findings of recent studies, use of cigarettes, e-cigarettes and tobacco products has a significant effect on the consumption of cannabis and bonzai, a synthetic cannabinoid. The act of smoking cigarettes or other tobacco products may heighten the likelihood of an individual experimenting with other substances, such as marijuana, thereby inducing what is commonly known as the gateway effect (Nkyi, 2015). Additionally, it is quite prevalent for individuals to engage in simultaneous usage, whereby both cigarettes and marijuana are smoked concurrently, either through the blending of the two substances or by alternating between them (Mete et al., 2020). In addition to cigarettes, a substantial number of individuals amalgamate tobacco and cannabis in order to create "spliffs" or "blunts". E-cigarettes, also recognized as vapes, particularly among the younger population, may serve as an entry point to the consumption of other drugs, including cannabis and bonzai (Etter, 2018). Smoking, e-cigarettes, and tobacco use in general can act as a gateway to cannabis and bonzai use.

1.2. Literature Review

In this section, the gateway hypothesis is explained, and substance use in Northern Cyprus is discussed.

1.2.1. Gateway Hypothesis

The Gateway Hypothesis espouses a linear progression of substance utilization, suggesting that the utilization of a less perilous or socially acceptable substance functions as a steppingstone to the utilization of more potent or prohibited substances. This concept has aroused curiosity in the field of substance use and addiction and has enabled academics and practitioners

to examine its accuracy, mechanisms and consequences (Kandel, 2002; Kandel & Kandel, 2015). The Gateway Hypothesis was formulated in the 1970s as a conceptual framework to elucidate the shift from lawful substances such as tobacco and alcohol to illicit substances such as marijuana and more potent narcotics. Preliminary research on juvenile drug use, such as Kandel and Yamaguchi's (1993) study, provided support for the notion of a linear pattern. Nevertheless, subsequent research has yielded inconsistent findings, fostering discourse regarding the validity of the hypothesis.

Several longitudinal studies have identified associations between early initiation of legal substances and subsequent use of illicit drugs. As highlighted by Nkansah-Amankra and Minelli (2016) and Barry et al. (2016) in their research, the widespread consumption of legal substances among young individuals in any country escalates the likelihood of future engagement in illicit drug consumption. The research findings (Nestler & Malenka, 2004; National Institute on Drug Abuse [NIDA], 2024) suggest that exposure to a particular substance could potentially alter brain chemistry or facilitate the establishment of social networks that facilitate access to other substances. The Gateway Hypothesis presents various factors to elucidate the progression from legal to illegal substances. One possible mechanism is that early substance use might sensitize the brain's reward pathways, rendering individuals more susceptible to seeking more potent forms of reinforcement. Social and environmental factors such as peer influence and substance availability also pave the way for gateways (Mayet et al., 2016; Millar et al., 2021; Nkansah-Amankra, 2020).

1.2.2. Substance Use in Northern Cyprus

While substance abuse is a global concern, the geographical region of Northern Cyprus is not exempt. As in many other regions, alcohol and tobacco consumption is widespread in Northern Cyprus. In addition, the use of illicit drugs, including substances such as cannabis, MDMA (Ecstasy), cocaine and synthetic compounds, has duly become chronic. The legal categorization of these substances varies. While tobacco and alcohol are legal and regulated in

Northern Cyprus, the possession, distribution, or use of illegal substances, including cannabis and other is prohibited here. Engaging in drug-related criminal activities can have serious consequences, such as imprisonment (Northern Cyprus Anti-Drug Commission, 2021). Many factors, including social, economic, and cultural considerations, potentially contribute to substance use within the borders of Northern Cyprus. Peer pressure, the availability of substances, anxiety and inadequate understanding of the dangers associated with substance use can all have an impact. Substance abuse negatively affects human health and the dynamics of society. These repercussions encompass various physical health problems, the development of addiction, the emergence of mental health disorders, the strain on interpersonal relationships, the onset of financial hardships, and the involvement in legal entanglements. Substance addiction reduces the productivity of the person and negatively affects the general welfare level (Çakıcı et al., 2019; Çakıcı Eş et al., 2020).

Efforts aimed at combating substance abuse in Northern Cyprus are anticipated to encompass a combination of preventive measures, educational initiatives, as well as treatment programs. Within this framework, endeavours to enhance public awareness through campaigns, provision of school-based instruction, rendering of counselling services, establishment of support groups, and provision of medical care for individuals grappling with addiction may be incorporated. In the region of Northern Cyprus, individuals seeking assistance for concerns related to drug abuse may avail themselves of a diverse array of supportive resources, comprising mental health professionals, addiction treatment centres, and support groups (Tecel Hatipoğlu & Ögel, 2022).

In her study titled "An assessment of addiction research on students in Northern Cyprus," Tremeşeli (2022) compiled the research on substance abuse in Northern Cyprus. The findings of this study indicate that periodic prevalence studies on substance misuse among young individuals in Northern Cyprus, which define the preferred substances, reveal changes in patterns of substance use rates and highlight the areas that require attention in preventive

programs. In most of the research conducted, the data obtained in determining the prevalence of substance use and risky behaviours are analysed by means of descriptive statistics and about substance use the related characteristics are summarized. However, a limitation of these studies is their inadequate consideration of preventive and therapeutic factors (Tremeşeli, 2022).

1.3. Methodology

1.3.1. Research Aim and Questions

This article aims to answer the following questions about the gateway effect in Northern Cyprus:

i. Is there a relationship between cigarette, e-cigarette, hookah, cannabis and bonzai use among high school students in Northern Cyprus?

ii. Is there a relationship between the ages of high school students starting smoking, using e-cigarettes, and consuming cannabis?

iii. Does the frequency of cigarette, e-cigarette, hookah, tobacco products and cannabis use affect the tendency to consume bonzai?

1.3.2. Research Design and Data Collection Tool

This study is a quantitative survey study on the Use of Alcohol, Cigarettes and Other Addictive Substances in Northern Cyprus High Schools students. The study is based on the data of the research project conducted by the Northern Cyprus Anti-Drug Commission.

The study employed the European school survey project on Alcohol and other drugs (ESPAD). ESPAD research focuses on various substances and behaviours such as alcohol, cigarettes, marijuana, illegal drugs, health drugs, gambling, online gambling, social media, and gaming addiction. The survey gathers data from 15-16-year-old students (Source: http://espad.org/purpose-methodology).

The survey was conducted in over 40 countries between 1995 and 2019. The number of participants varied each year. In 1995, 59406 students participated. In 1999, there were 64843 students from 23 countries. In 2003, 97759 students from 36 countries participated. In 2007, there were 128021 students from 43 countries and 111973 students from 40 countries. In 2011, 96905 students from 36 countries participated. In 2015, 102484 students from 35 countries participated. The data can be compared on the ESPAD data portal (https://data.espad.org/).

1.3.3. Research Sample and Data Collection Procedure

In the present investigation, information was gathered from 763 secondary school scholars in 6 regions within the northern region of Cyprus by means of the European School Research Project Alcohol and Other Drugs (ESPAD Survey) Survey Data were collected using stratified sampling technique with the support of psychological and guidance counselling services of secondary schools in Northern Cyprus.

While 47.18% (n=360) of the students participating in the research sample were male and 49.02% (n=374) were female, 3.8% (n=29) of the students refrained from specifying their gender. When the distribution of the students participating in the study according to the districts of Northern Cyprus is examined, 25.95% (n=198) are studying in high schools in Kyrenia, 24.12% in Nicosia, 19.79% in Famagusta (n=151), 14.68% in Iskele, 9.57% in Güzelyurt (n=73) and 5.9% (n=45) in Lefke. The students participating in the study, 26.4% were born in 2007 (age 16), 25.3% were born in 2006 (age 17), 22.8% were born in 2005 (age 18), 21.9% were born in 2008 (age 15), 2.6% were born in 2004 (age 19), and 1% were between the ages of 20-22.

1.3.4. Analysis of Data

Data were analysed using SPSS 24 software. Pearson correlation analysis was used to determine the relationships between factors related to cigarette, e-cigarette, hookah, cannabis and bonzai use. In addition, Pearson

correlation analysis was used to determine the relationships between the age of starting smoking, e-cigarettes and cannabis. Linear regression analysis was used to determine the extent to which the frequency of cigarette, e-cigarette and other tobacco products and cannabis use predicted bonzai use.

1.3.5. Ethical Consideration

The study has been approved by the ethics committee of the Northern Cyprus Prime Minister's Anti-Drug Commission, which comprises members who are experts in their respective fields. The committee ensures that the study adheres to the highest ethical standards, in alignment with the Helsinki Declaration on human subjects testing. All participants and their legal guardians were thoroughly informed about the study's purpose and procedures, and written consent was obtained from the guardians prior to participation. The data collected for the study were anonymized and processed to safeguard the privacy of participants and prevent the inclusion of any personal information.

1.4. Findings

Table 1.1. The relationships between cigarette, e-cigarette, hookah, cannabis and bonzai use among high school students in Northern Cyprus

Observed	Variables	r
Hookah Use	Lifetime smoking use- Hookah usage	.457***
	Last a month smoking use- Hookah use	.383***
	Lifetime E-Smoking use- Hookah usage	.466***
	Last a month E-Smoking use- Hookah use	.389***
	Use of heated (non-burn) tobacco-use of hookah	.394***
	Moist snuff use - Hookah use	.152***
E-Cigarette Usage	Lifetime Cigarette Use - Lifetime E-Cigarette Use	.540***
	Cigarette Use in the Last 1 Month - E-Cigarette Use in the Last 1 Month	.619***
	Lifetime E-Cigarette Use - Use of heated (non-burn) tobacco	.567***

	Last a month E-Cigarette Use - Use of heated (non-burn tobacco	.433***
Cannabis Usage	Lifetime smoke usage - lifetime cannabis use	.224***
	Smoking in the last 1 month - cannabis use in the last 1 month	.234***
	Lifetime use of E-Cigarettes - Lifetime Cannabis use	.107**
	E-cigarette use in the last 1 month - Cannabis use in the last 1 month	.235***
	Cannabis use in the last 1 year - Using cannabis with tobacco	.819***
	Cannabis - hookah use	.129***
	Heating (non-burn) tobacco - Cannabis use	.251***
	Moist snuff usage - cannabis usage	.201***
Bonzai Usage	Cigarette usage throughout life - Bonzai Use	.115***
	Smoking in the last 1 month - Bonzai use	.149***
	E-Cigarette use during lifetime - Bonzai Use	.055
	E-Cigarette use in the last 1 month - Bonzai Use	.162***
	Hookah use -Bonzai use	.101**
	Use of heated (non-burn) tobacco - use of Bonzai	.130***
	Moist snuff use - Bonzai use	.274***
	Lifetime cannabis use - Bonzai use	.607***
	Cannabis use in the last 1 year - Bonzai use	.566***
	Cannabis use in the last 1 month - Bonzai use	.533***

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.20$

When analysing the study conducted in Northern Cyprus's high schools (see table 1.1.), it was found that there existed a positive and slightly significant relationship among the frequency of hookah use and cigarette smoking ($r=.457$, $p<0.05$). Finding of slightly relationship between students' hookah and cigarette use in the previous month ($r=.383$, $p<0.05$). The lifetime use of e-cigarettes and hookahs by students showed a slightly significant positive relationship ($r=.466$, $p<0.05$). The findings show, slightly positive relationship was found between students' hookah and e-cigarette use

in the last month (r=.389, p<0.05). The use of hookahs and heated tobacco by students had a weakly significant positive correlation (r=.394, p<0.05). Finding of very slightly positive significant relationship between moist snuff and hookah use (r=.152, p<0.05).

Found of moderately positive correlation was discovered between the students' lifetime smoking frequency and the frequency of e-cigarette utilization (r=.540, p<0.05). Found of also important findings of highly positive relationship was observed among the escalation in the frequency of cigarette usage in the previous month and the escalation in the frequency of e-cigarette usage in a previous month (r=.619, p<0.05). Found of moderate positive relationship was identified among lifetime e-cigarette use and heated (non-combustible) tobacco use (r=.567, p<0.05). Also, similarly, a moderate positive relationship was observed among the increase in e-cigarette usage in a previous month and the utilization of heated (non-combustible) tobacco (r=.433, p<0.05). In this context, it can be observed that the augmentation in the frequency of cigarette usage among the learners elevates the level of e-cigarette and heated tobacco utilization.

There found a positive but a slightly relationship among the frequency of cigarette usage and the usage of cannabis (r=.224, p<0.05). Also, relationship of slightly positive significance was observed among of the frequency about cigarette usage within a previous month and the usage of cannabis (r=234, p<0.05). The feeblest positive relationship was observed among the frequency of e-cigarette usage and the frequency of cannabis usage (r=.107, p<0.05). Also, in spite of the feeble nature of the frequency of e-cigarette usage within a previous month and the frequency of cannabis usage within the la previous month, a more robust relationship was observed for these parameters compared to lifetime (r=.235, p<0.05). There found a high positive relationship was observed among the usage of cannabis within a previous year and the usage of cannabis in conjunction with tobacco (r=.819, p<0.05). In terms of this context, it can be posited that cannabis and tobacco are used in conjunction with each other to a highly extent. A very slightly positive relationship was observed among hookah use and cannabis usage

(r=.129, p<0.05). A slightly positive relationship was observed among the frequency of cannabis usage and heating tobacco (r=.251, p<0.05). Moist snuff usage was also slightly relationship with cannabis usage (r=.201, p<0.05). After all these relationships are considered, it is seen that although there is a relationship below the moderate level among smoking and cannabis usage, the relationship among tobacco uses and cannabis use is highly.

Observed a very slightly positive relationship among the frequency of cigarette usage and bonzai usage (r=.149, p<0.05). Also, the same level of a very slightly positive relationship was observed among the frequency of cigarette usage a previous and bonzai usage (r=.149, p<0.05). Found no relationship among of e-cigarette usage and frequency of bonzai usage (p>0.05). Observed very slightly positive relationship was observed among the increase in the frequency of e-cigarette usage in a previous month and bonzai usage (r=162, p<0.05). Like the frequency of cigarette usage, a very slightly positive relationship a found among hookah and bonzai usage, and among heated (non-combustible) tobacco and bonzai usage (p<0.05). Although the relationship among cigarette and its derivatives and bonzai usage is slightly or very slightly, stronger than relationships are observed in cannabis and bonzai use. Observed of high positive relationship among the frequency of cannabis usage and the frequency of bonzai usage (r=.607, p<0.05). Significant relationships above the moderate level were observed among the frequency of cannabis usage in a previous year and similarly in a previous month and Bonzai usage (p<0.05).

Table 1.2. The relationship between the age of initiation of smoking, the age of initiation of e-cigarettes and the age of initiation of cannabis among high school students in Northern Cyprus

Variables	**r**
Age at first cigarette – Age at smoking every day	.526***
Age at first cigarette – Age at first e-cigarette	.492***
Age at smoking cigarettes every day – Age at smoking e-cigarettes every day	.333***

First cigarette age – First cannabis age	.120***
Every day smoking age – first cannabis age	.143***
First E-cigarette age – first cannabis age	.114***
Every day E-cigarette age – First cannabis age	.079**

Note: *** p < 0.01, ** p < 0.05, * p < 0.20

There existed a moderately noteworthy positive association among the initiation age of smoking and the commencement age of smoking daily ($r=.526$, $p<0.05$). Within this context, as the age of initial smoking increases, so does the age of daily smoking (see table 1.2.).

However, the decrease in the age at among high school students started smoking, their first cigarette leads to a decrease in the age at which they start daily smoking. In terms of correlation analysis result, below moderate positive relationship was observed among the age at which individuals started smoking and the age at which they first experiences e-cigarettes ($r=.492$, $p<0.05$). Despite, a weak positive relationship below the moderate level was also found among the age at which individuals started smoking and the age at which they first experiences e-cigarette smoking ($r=.333$, $p<0.05$). Observed in terms of findings weak positive relationship among age at first cigarette experience and age at first e-cigarette smoking and age at first cannabis experience ($p<0.05$).

Considering these findings, as the age of first cigarette experience decreases, the age of transition to e-cigarettes also decreases. Similarly, findings show that as the age of first smoking experience and e-cigarette smoking decreases, the age of daily use of cigarettes and e-cigarettes also decreases. Students' early introduction to cigarettes increases the likelihood of being introduced to other tobacco products at a younger age. In addition, being introduced to cigarettes and e-cigarettes at an early age and making this behaviour a daily routine at an early age decreases the age of cannabis use, albeit weakly.

Table 1.3. The predictive level of cigarette, e-cigarette, hookah, tobacco products and cannabis use frequency for bonzai use

	B	$Sh_{\bar{x}}$	**β**	**t**
(Constant)	-.001	.004		-.314
Frequency of smoking (lifetime)	-.001	.002	-.013	-.245
Age at first smoking	.000	.001	-.017	-.339
Frequency of e-cigarette use (lifetime)	.000	.002	-.008	-.135
Age at first use of e-cigarettes	.002	.005	.020	.328
Hookah Use	.004	.003	.053	1.325
Use of heated (non-combustible) tobacco	-.002	.004	-.022	-.502
Frequency of cannabis use (lifetime)	.075***	.012	.298	6.040
Age of first cannabis use	.018***	.006	.142	2.881
	R= .413***	**R^2**= .170	**F**= 18.316	

Note: *** p < 0.01, ** p < 0.05, * p < 0.20

The findings of multiple linear regression analysis (see table 1.3.) determined that the prevalence of bonzai wasn't predicted directly by lifetime smoking frequency of students, age at first smoking experience, frequency of e-cigarette use, frequency of a hookah usage, or the frequency of smoking heated non-combust tobacco products ($p>0.05$). However, it shows a significant relationship ($p<0.05$) among the increase in students' cannabis using frequency on their use of bonzai. Additionally, bonzai usage is also predicted by the age at which cannabis was first used ($p<0.05$). The findings show that students who use cannabis and come into proximity to it at a young age are more inclined to use bonzai than students who smoked cigarettes or use other kinds of tobacco products.

1.5. Discussion

The results of the study show that, there is a moderate relationship between hookah use and cigarette and e-cigarette use. Hookah smoking entails inhaling tobacco smoke that has passed through water before being

breathed. The relationship among hookah usage and other substance usage, such as cigarettes, e-cigarettes, bonzai (synthetic cannabinoids), and cannabis, varies and is influenced by several factors. Hookah and cigarette use are highly correlated, particularly among young adults. Many people who smoke hookah also smoke cigarettes. Some people use both types of smoking interchangeably, while others combine the two. Hookah and cigarette use together can increase overall exposure to hazardous chemicals contained in tobacco smoke (Doran et al., 2015). Many of hookah users might utilize e-cigarettes. The combination these, may be caused by the increasing popularity of flavored e-liquids and the belief that vaping is less harmful than smoking (Barnett et al., 2015)

In terms of findings about the smoking age decreases, so does the age at which people switch to e-cigarettes. Similarly, findings, as the age of first cigarette and e-cigarette smoking falls, so does the age of daily usage of cigarettes and e-cigarettes. Students who are introduced to smoking at an early age are more likely to grow up engaged to other tobacco-related products in their later years. Early years smoking is related with an increased likelihood of nicotine addiction, dependency, and lifetime tobacco use (Kandel et al., 2007).

Also, the age when e-cigarette use begins is also a significant factor. The stage of life when the use of e-cigarettes starts is also a significant factor. Early e-cigarettes use exposes people to the hazards of breathing harmful chemicals and nicotine, that can lead to an addiction to nicotine. Furthermore, early vaping may lead to later tobacco cigarette smoking (Chapman et al., 2019).

This study found that starting to be exposed to cigarettes and e-cigarettes, in addition to making smoking a daily habit at a young age, lowers the age of cannabis use, albeit at a low level. The literature (Agrawal et al., 2004; Kokkevi et al., 2006) underlines that early cannabis intake is associated with a range of harmful effects. Therefore, cannabis use, increases of risks that may impair brain development and cognitive functioning, also increase memory problems, and would increase adolescents harm their mental health.

Additionally, there is a relationship among early cannabis usage and a greater risk of cannabis use mental disorder and dependency. It is crucial to remember that using cannabis can be harmful to varying degrees depending on several of factors, including product potency, individual sensitivity, and frequency of use.

The study's findings state that, consistent with previous research and show the complicated and connected nature of the relationship among the age at which people begin smoking, using e-cigarettes, and using cannabis (Butler et al., 2022; Weinberger et al., 2021). The gateway hypothesis states that experimenting with one substance earlier in life may increase the probability of trying additional substances (Kandel & Kandel, 2015). People who start using nicotine or e-cigarettes at an early age may also be more likely to try with cannabis (Ren & Lotfipour, 2019). Additionally, the age at which these substances are initially taken is determined both social and legal factors. The age at which people are exposed to cigarettes, e-cigarettes, and cannabis varies depending on the legal age in each jurisdiction (Dave et al., 2019; Pesko et al., 2016). In conclusion, there may be ramifications for someone's overall health, wellness, addiction, and well-being from the complicated relationship among the age at when a person begins smoking, using e-cigarettes, and using cannabis. Postponing substance use, especially in adolescence, is associated with better results and fewer risks.

When the study's regression findings are examined, it becomes clear that bonzai use wasn't predicted by students' lifetime smoking frequency, age at when they began smoking, frequency of e-cigarette use, age at which they initially tried a hookah, or usage of heated non-combustible tobacco products. On the other hand, a higher frequency of cannabis usage among students is a strong indicator of bonzai consumption. In terms of Çoban (2014)'s report, the high number of deaths related to bonzai use suggests that more research needs to be done on the use of this substance and that it should be prioritized as the primary reason for worry on the public's agenda. Karaaziz and Keskindağ (2016) also emphasize that bonzai, a substance particularly abused by young individuals and capable of generating addiction at a rapid pace, carries a

significant degree of risk due to the presence of various chemicals. The notion that bonzaies yields effects akin to those of cannabis is widely prevalent among the general population. The regression findings have rendered valuable insights into the factors predicting the consumption of bonzai among students. The heightened likelihood of bonzai intake associated with increased utilization of cannabis underscores the urgent need for a comprehensive approach towards preventing and intervening in drug use. Subsequent investigations may examine deeper the specific mechanisms and underlying factors that account for the association between cannabis and bonzai intake, potentially yielding more efficacious strategies for managing substance use among adolescents.

1.6. Conclusion

The findings of the research emphasize the importance of addressing alcohol, cigarettes, and addictive substances among high school students in the Northern Cyprus.

The findings of study stated that, positive relationship between the decrease in the legal age for smoking and the increase in the use of e-cigarettes. The study's conclusions showed a positive correlation between the rise in e-cigarette use and the decline in the smoking age. Furthermore, it was found that among Northern Cyprus' high school pupils, using e-cigarettes and smoking are positively correlated.

Moreover, the study demonstrated that as the age of initiation for cigarette or e-cigarette usage decreases, the age at which students engage in daily substance use also decreases. It has also been noted that early exposure to these substances is associated with the development of a daily user behaviour. According to the study's regression analysis results, using legally classified tobacco products (hookahs, e-cigarettes, and cigarettes) in Northern Cyprus does not accurately predict using illegal substances like bonzai. Nonetheless, among high school students, the frequency of cannabis use predicts the use of bonzai.

1.7. Challenges and Limitations of the Study

Additionally, tobacco and e-cigarette companies employ sophisticated marketing strategies that incorporate health-related claims, branding, colorful packaging, and flavors. These marketing tactics are continuously evolving, making it difficult to evaluate them accurately and consistently over time. The messages on marketing materials that may lead individuals to believe that tobacco and e-cigarette products contain fewer harmful compounds than they actually do, as well as the additional risk associated with developmental exposure, further complicate the assessment of what constitutes an actual puff and obscure the actual risks associated with tobacco and e-cigarettes.

On the other hand, accessibility emerges as the most significant challenge. Tobacco and e-cigarette products are easily obtainable, with fewer controls in place to ensure that minors do not have easy access to them, making it difficult to regulate their usage and experimentation. Additionally, this study identifies a range of individual behavioural and psychological factors, such as coping, curiosity, and rebellion against social norms, that are believed to enhance youth vulnerability to smoking and vaping. However, these factors are interconnected and complex, making it exceptionally difficult to isolate and study them individually, particularly with regard to their contribution to smoking and vaping behavior. This study also aims to identify the underlying causes of youth tobacco and e-cigarette use in order to address the risks to health and well-being. However, understanding and addressing these underlying causes is challenging due to the multifaceted nature of the influences involved. The findings of the study may be limited in their generalizability due to variations in social norms, technological developments, and marketing strategies across different regions and populations. This limitation affects the broader applicability of the study's conclusions. By tackling these challenges and limitations, the study aims to provide a comprehensive understanding of the factors influencing youth tobacco and e-cigarette use and to inform effective prevention and intervention strategies.

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