Chapter 3

Comparative Analysis of Substance Abuse in Students: Northern Cyprus vs. European Union and Southern Cyprus Findings

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Abstract

This chapter evaluates findings of self-reported substance use in 15- and 16-year-old students in Northern Cyprus and compares results with those of similarly aged high school students in Europe and Southern Cyprus obtained via the European School Survey Project on Alcohol and Other Drugs (ESPAD). Specifically, the study evaluated recent and lifetime use of cigarettes/e-cigarettes and alcohol; illicit drugs, including amphetamines, cannabis, cocaine/crack, ecstasy, methamphetamines, heroin, and LSD/hallucinogens; and misused therapeutic drugs and chemicals including inhalants, tranquilizers/sedatives, painkillers, and anabolic steroids. Experience with gaming also was compared for the regions, and prevalence of gambling was assessed for the Northern Cyprus cohort. Frequency data were evaluated qualitatively, as individualized data sets were not available. European data included the average results for 37 participating countries. Northern Cyprus students participated in nearly all risky behaviors with considerably less frequency than Southern Cyprus and European students; the only exception was lifetime use of cigarettes. Lifetime use of alcohol was prevalent in Northern Cyprus at 24.7%; however, use in the past year decreased to only 8.6%. The most frequently used drug class by North Cyprus students were painkillers at 2.8%; frequency of use of all other drugs was ≤ 2%. Gambling in Northern Cyprus was infrequent at 6.5%, while students regularly engaged in digital gaming (71.1%). Even with generally low rates of risky behaviors in Northern Cypriot youth, there can be serious consequences for those involved in these activities and steps should be taken at all levels (familial, community, and national policy) to educate and support adolescents to limit these risky behaviors.

Keywords: ESPAD, student substance use, Northern Cyprus, Southern Cyprus

3.1. Introduction

As Cyprus has two distinct regions, the Turkish Republic of Northern Cyprus (Northern Cyprus) and the larger southern Republic of Cyprus (Southern Cyprus), each has its own governing body and legal statutes (Congressional Research Service, 2019). The regions have differing economies, with South Cypriots heavily reliant on and employed by the services sector, primarily tourism, while the Northern Cyprus economy is dependent upon not just services such as tourism but also education, smaller trades, agriculture, and light manufacturing. As of 2019, the per capita gross domestic product (GDP) was estimated at $14,100 and $30,000 per capita in Northern and Southern Cyprus, respectively; Southern Cyprus is estimated to have a population more than twice that of Northern Cyprus, resulting in a substantially higher GDP for the southern region. Religion also varies between the two regions. Southern Cypriots are primarily members of the Greek Orthodox Church. This religion is also observed in Northern Cyprus, although secular Islam is predominant.

As the two regions operate independently, each has their own unique political, cultural, and socioeconomic factors that influence teen drug use, gambling, and digital gaming. These factors differ exponentially when you expand the population to include the many countries of Europe. Each country has their own independent legislation regarding the legality of drugs and gambling and their associated penalties; views on the criminalization of drugs vs drug treatment may not be the same. The cultural norms of each region, including religion and educational programs, will help set the standards to which drug use, gambling, and digital gaming are acceptable. Access to these activities, particularly drugs, will vary between regions. It is not uncommon for rural and urban areas to differ in their drug use patterns. High tourism areas and proximity to drug shipment routes may increase the ability to obtain drugs. Economics of the various regions will impact the funds available to participate in these risky behaviors. Beyond regional factors, there are also individual variables that will impact the potential for risky behaviors. For

example, the risk for opioid use disorder was found also to be impacted by factors such as age, race, sex, occupation, and psychiatric co-morbidities (Taçoy, 2022). Examples of other factors mentioned in various studies that may affect the likelihood for drug use include genetics, family history of drug use, prenatal exposure, temperament, drug use by friends, access to drugs, and age at first use. Overall, the propensity towards risky behaviors is a complex issue rooted in both societal and individual factors.

The aim of this research was to address the following:

i. With what frequency are 15- and 16-year-old students in Northern Cyprus participating in risky behaviors?
ii. How do these responses compare to those of similarly aged teens in Southern Cyprus and Europe as a whole?
iii. What actions and/or interventions may help mitigate any identified risky behaviors?

3.2. Methodology

3.2.1. European School Survey Project on Alcohol and Other Drugs (ESPAD)

Specific methodology for the ESPAD can be found at www.espad.org. The 2024 study surveyed 113,882 15- and 16-year-old students in 37 European countries. Southern Cyprus, as a member of the European Union, was included as one of the participating countries.

3.2.2. Northern Cyprus

Northern Cyprus conducted a similar survey to enable a comparison of responses with students in Southern Cyprus and Europe. The study was conducted across the entire northern region of Cyprus, targeting secondary school students aged 15–16 years. A total of 3901 students participated.

Formal approval to conduct the research was obtained from the Ministry of Education of Northern Cyprus. All necessary permissions were

documented in writing and duly signed. Following the ministry's authorization, schools were informed of the study's implementation. Parental consent forms were distributed throughout the schools. Only students whose parents submitted signed consent forms were eligible to participate. On the day of data collection, students were further asked if they were willing to voluntarily participate. Only those who assented were included in the study.

Data collection was conducted by a trained research team under the supervision of Dr. Zafer Bekiroğulları, who provided specific training on administering the ESPAD questionnaire. The team visited each school and facilitated the data collection in a controlled environment, ensuring consistency across sites. To ensure anonymity and confidentiality, no personal identifiers such as names were collected. Students were brought together in a designated location within their schools and completed the questionnaire simultaneously. Participants were assured that their responses were anonymous and inaccessible to school personnel or parents. The data collection process commenced in October 2024 and was completed by December 2024.

This procedure adhered strictly to the ethical guidelines and methodology established by ESPAD.

3.2.3. Comparison of Data

Responses to various questions on students' risky behaviors involving drugs and alcohol, gambling, and gaming were compared, as applicable, between Northern Cyprus, Southern Cyprus, and the European averages. Southern Cyprus data are included in the European average. As the individualized data sets of the ESPAD studies were not available, comparisons were made qualitatively, using the reported average response for the European ESPAD results, without formal evaluation of statistical significance.

3.2.4. Ethical Consideration

The study was conducted in accordance with the Declaration of Helsinki and approved by the ethics committee of the Northern Cyprus Prime Minister's Anti-Drug Commission (No. 2024-09-30), which comprises members who are experts in their respective fields. 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.

3.3. Findings

Table 3.1. Comparison between the percentages of 15-16-year-old adolescents in Northern Cyprus, Southern Cyprus and Europe endorsing different risky behaviors

Risky Behavior	2024		
	N. Cyprus (%)	ESPAD S Cyprus (%)	ESPAD Europe (%)
Cigarette Use (lifetime)	29,1	23,65	32,2
Cigarette Use (last 30 days)	13,5	15,54	18,2
E-cigarette Use (last 30 days)	14,5	-	44
Heavy Episodic Drinking (30-day binge)	21,5	36,8	31,1
Drunkenness/Intoxication (lifetime)	24,7	27,9	33,3
Drunkenness/Intoxication (last 12 months)	18,3	24,8	27,2
Drunkenness/Intoxication (last 30 days)	8,6	8,9	13,3
Cannabis Use (lifetime)	2	8,2	11,3
Cannabis Use (last 12 months)	1,4	6,1	9
Cannabis Use (last 30 days)	0,7	5,4	4,7
Ecstasy (lifetime)	0,9	4,7	2,1
Ecstasy (last 12 months)	0,5	2,7	1,6
Amphetamines (lifetime)	0,6	2,7	1,8
Amphetamines (last 12 months)	0,5	2	1,4
Methamphetamines (lifetime)	0,7	2,7	1,4
Methamphetamines (last 12 months)	0,7	1,4	1,1

Cocaine (lifetime)	0,9	6,2	2,3
Cocaine (last 12 months)	0,7	4,1	1,7
Crack (lifetime)	0,6	4,1	1,2
Crack (last 12 months)	0,8	2,1	0,9
Heroin (lifetime)	1	4,1	1,1
LSD or other Hallucinogens (lifetime)	0,8	6,8	1,7
GHB (lifetime)	0,5	3,4	0,9
Anabolic Steroids (lifetime)	0,7	4,2	1,5
Use of Inhalants (lifetime)	1,2	7,6	6,4
Use of Inhalants (last 12 months)	1,2	6,3	3,6
Use of Inhalants (last 30 days)	0,9	4,2	2
Tranquilizers or Sedatives without a Doctor's Prescription (lifetime)	1,3	9,3	8,4
Alcohol with Pills/Medications to get High (lifetime)	1,2	-	,
Painkillers to get High (lifetime)	2,8	18,4	9,8
Frequency of Gaming (last 7 days)	71,1	-	-
Gambling for Money (last 12 months)	6,5	26	22,6

3.3.1. Cigarettes/E-Cigarettes

Tobacco products can be purchased by those 18 years of age and older in Cyprus. Some countries in Europe have a lower minimum age of 16 years.

Lifetime cigarette use was the only risky behavior for which Northern Cyprus students indicated a higher frequency of use than Southern Cyprus students, at 29.1% and 23.7%, respectively. Use by Northern Cyprus students was comparable to that of European students, where approximately one third of students had smoked cigarettes in their lifetime (32%). When the timeframe was limited to the past 30 days, results from Northern Cyprus (13.5%) and Southern Cyprus (15.5%) were similar, while the average frequency of use in Europe was higher at 18.2% (see table 3.1.).

When questioned about the use of e-cigarettes in the past 30 days, 14.5% of Northern Cyprus students responded affirmatively. Use was much more prevalent on average in Europe, with 44% of students indicating they had used e-cigarettes recently. No data were available for the Southern Cyprus cohort.

3.3.2. Alcohol

The legal drinking age in Cyprus is 18; in some European countries, 16-year-olds have access to beer and wine only.

Students were asked to report their drunkenness/intoxication frequency, as well as their binge drinking habits. Alcohol use appears generally to be less of a problem in Cyprus than Europe. Northern Cyprus students binge drinking frequency decreased as the timeframe of use shortened. Lifetime use was reported at 24.7%, past year use at 18.3%, and use in the past 30 days at just 8.6%. This is comparable to use in Southern Cyprus for both lifetime (27.9%) and past 30-day use (8.9%); however, Southern Cyprus students indicated a noticeably higher frequency of past year use (24.8%). European students on average had a higher frequency of use in all categories: lifetime (33.3%), past year (27.2%), and past 30 days (13.3%).

Students also were asked about binge drinking (having ≥ 5 drinks on one occasion) in the last 30 days. Northern Cyprus students reported binge drinking less frequently (21.5%) than those in Southern Cyprus (36.8%) and Europe (31.1%).

In Northern Cyprus only, students were surveyed regarding the use of alcohol in combination with pills or medications to get high. Respondents indicated that this was not a widely used combination, with a lifetime occurrence of only 1.2%.

3.3.3. Drug Use

3.3.3.1.Cannabis

Although approved for medical use, recreational use of cannabis remains illegal in Cyprus. Legal statutes vary across Europe; however, no country legalized recreational use for individuals less than 18 years of age.

Like alcohol, frequency of cannabis use by Northern Cyprus respondents declined from lifetime use (2.0%) to past year use (1.4%) to past 30-day use (0.7%). This decrease was mirrored in Southern Cyprus and

European data, although teenagers in these areas reported lifetime use of 8.2 and 11.3%, respectively, demonstrating greater frequencies in all timeframes. Cannabis was the most prevalent illicit drug for all three cohorts. In looking at lifetime drug use, cannabis use by Northern Cyprus students (2.0%) was second in frequency only to the use of painkillers to get high (2.8%).

3.3.3.2. Stimulants (Ecstasy, Methamphetamine/ Amphetamines, and Cocaine/Crack)

For each of these illicit drugs, students were asked about their lifetime use and use in the past 12 months. In Northern Cyprus, frequency of use was less than 1% for all drugs over the past year and across the students' lifetimes. Use over the past year was the same or less than lifetime use for all drugs except crack (the freebase form of cocaine), where past year use was slightly higher than lifetime use at 0.8 and 0.6%, respectively. Note that the higher past year use may be due to a different number of respondents for each question, misunderstanding of "lifetime use", more accurate memory of recent use, and/or a desire to conceal more distant use; overall, the difference does not affect the overall trend, and use can be considered equivalent.

For past year use and lifetime use, frequency of stimulant use in Northern Cyprus students was less than the European student frequency and both were less than the average frequency of Southern Cyprus student frequency of stimulant use. Past year and lifetime use are compared amongst the three cohorts in Figures 3.1. and 3.2.

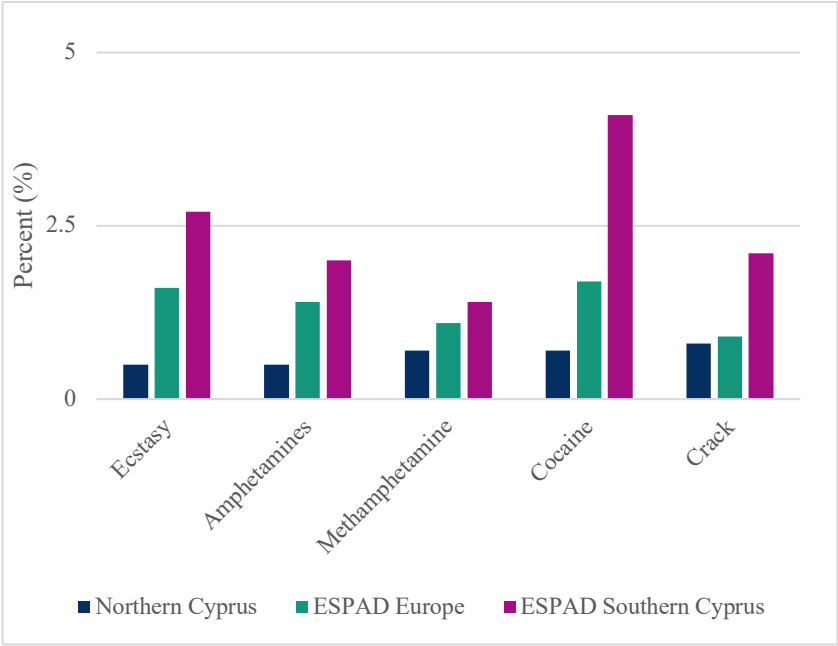

Figure 3.1. Past Year Use of Select Illicit Drugs

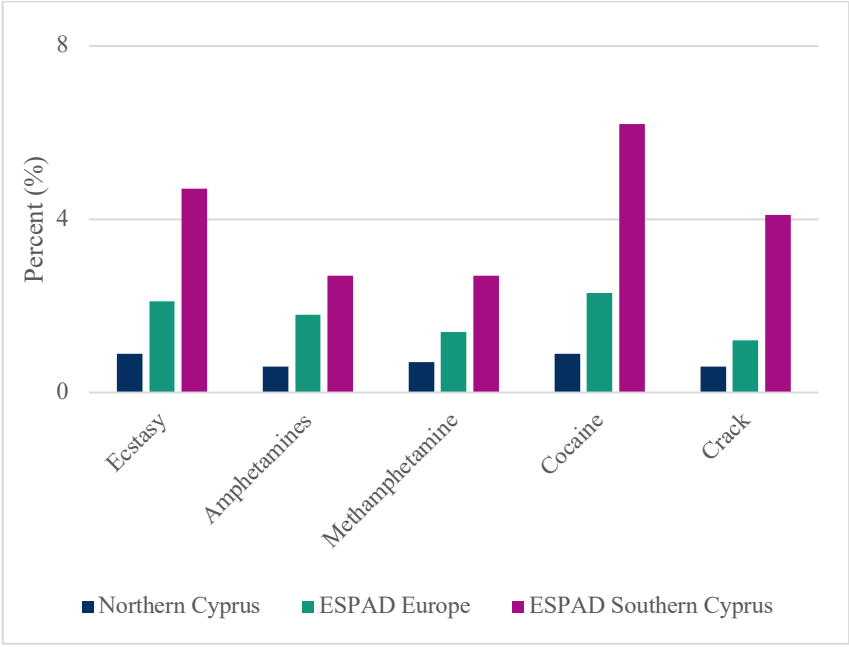

Figure 3.2. Lifetime Use of Select Illicit Drugs

3.3.3.3.Heroin, LSD, GHB, and Anabolic Steroids

For this subset of illicit drugs, data were available regarding students' lifetime use only. Within this category, heroin was the most widely used drug in Northern Cyprus (1%) and was comparable to use by European students (1.1%); usage was four times higher in Southern Cyprus (4.1%). Anabolic steroid closely mirrored heroin use at rates of 0.7%, 4.2%, and 1.5% for Northern Cyprus, Southern Cyprus, and Europe, respectively. LSD or other hallucinogens was the most widely used drug category in Southern Cyprus (6.8%) and Europe (1.7%), while only 0.8% of Northern Cyprus students responded affirmatively regarding use. GHB was the least popular drug in all regions: Northern Cyprus, 0.5%; Southern Cyprus, 3.4% and Europe 0.9%.

3.3.3.4.Inhalants

The use of inhalants was surveyed for use over the past month and year, as well as lifetime use. In Northern Cyprus, lifetime and past year use were the same (1.2%), declining to 0.7% for past month use. In Southern Cyprus and Europe, usage rates was higher; rates decreased as more recent use was evaluated. Lifetime use was 7.6% in Southern Cyprus and decreased to 4.2% in the past 30 days. In Europe, lifetime use was 6.4% and decreased to 2.0% in the past month.

3.3.3.5.Tranquilizers, Sedatives, and Painkillers

Students were queried about misuse of prescription drugs in their lifetime. Again, rates in Northern Cyprus were considerably lower than those of the other two cohorts. Painkillers were misused more frequently than tranquilizers or sedatives by Northern and Southern Cyprus students. In Northern Cyprus, the rate of use was 2.8% for painkillers (the highest rate of use across all drug categories) and 1.3% for tranquilizers or sedatives, while in Southern Cyprus these rates were 18.4 and 9.3%, respectively. Use was more consistent between the two drug categories in Europe, at 8.4% (tranquilizers or sedatives) and 9.8% (painkillers).

3.3.4. Gaming and Gambling

The surveys also evaluated frequency of gambling for money, online or in person, over the past year. Northern Cyprus students reported a frequency of 6.5%, with rates approximately four times higher in Europe (22.6%) and Southern Cyprus (26.0%).

In Northern Cyprus only, students were surveyed regarding their frequency of digital gaming in the past seven days. Over two-thirds of students (71.1%) indicated they had played a digital game in the past week.

3.4. Discussion

Use of cigarettes, e-cigarettes, alcohol, and drugs was lower, frequently substantially so, in Northern Cyprus teens as compared to their counterparts in Southern Cyprus and Europe. Overall, substance use was low across most categories for Northern Cyprus teens.

The sole risky behavior for which Northern Cyprus students responded with a higher frequency of use than Southern Cyprus students was lifetime cigarette use. However, rates decreased by about half when recent use was evaluated, with responses comparable between the two regions; average use in Europe was slightly higher than both Northern and Southern Cyprus. The negative health effects of tobacco are widely known, and tobacco use is a top cause of preventable morbidity and mortality throughout the world (Asut et al., 2024). Tobacco use by adults and teens in Europe is known to be among the highest of those regions within the World Health Organization (WHO) (Bafunno et al., 2019). It is estimated that nearly 30% of Southern Cypriots (ages 15+) are smokers (Global State of Tobacco Harm Reduction, 2025). The government offers smoking cessation programs to help citizens stop smoking and nicotine replacement therapies are available over the counter in pharmacies. In 2010, Southern Cyprus banned smoking in all public places including bars and restaurants; government buildings; public transportation; and private vehicles with passenger(s) under 16 years of age (Christophi et

al., 2013). Furthermore, it is illegal to advertise tobacco use in mass media, e.g. television, radio, and movies. Cigarettes and waterpipe tobacco are required to have warnings, including pictures, on the top 65% of the front and back of packaging (Asut & Abuduxike, 2024). Northern Cyprus also bans indoor smoking in most public and private places. Northern Cyprus requires warnings on packaging, although a pictorial warning is not required Although this anti-smoking legislation exists, implementation has been said to be weakly enacted; this has been attributed to a lack of community action and ineffective interventions.

Although traditional smoking may be on the decline, e-cigarette use has become popular with teenagers over the last decade. A 2012-2019 worldwide survey of youths aged 12-16 across sixty-eight countries and territories found prevalence rates of 1.9-33.2% over the past 30 days (Sun et al., 2022). The 2019 ESPAD report listed a European average of 14% in the 15- and 16-year-olds surveyed (ESPAD Group, 2020); rates are higher in recent years, as the average rose to 44% in the 2024 report (ESPAD Group, 2025). It is well known that e-cigarette manufacturers target teens employing colorful and fun packaging and attractive flavors such as fruits or desserts, the involvement of celebrities or influencers in campaigns, and messaging that tout e-cigarettes as a healthier alternative to cigarette smoking (Smith & Hilton, 2023). However, e-cigarette use has known health risks as the products still contains nicotine, cancer causing chemicals, and other additives which can result in lung damage or disease (Centers for Disease Control and Prevention [CDC], 2025). In the European Union, including Southern Cyprus, the Tobacco Products Directive requires health warnings and a list of ingredients, including nicotine content, on packaging (European Commission, n.d.). There is a maximum permissible nicotine concentration and volume, and ingredients are required to be of high purity and consistent concentration, so reliable dosing is achieved when using the product. There are restrictions on where vaping is allowed and regulations surrounding advertising. Regulations surrounding e-cigarette sales, production and use in the Republic of Cyprus are also included

in the Protection of Health (Control of Smoking) Law of 2017 (Republic of Cyprus, 2017).

Action at many levels is needed to curb adolescent smoking and vaping. Parental smoking increases susceptibility of teen nicotine use. Educating youths on the short- and long-term negative effects of nicotine and smoking at age-appropriate levels is recommended (Harvey & Chadi, 2016); also, of importance is to start education early, ideally before a child first tries smoking (Bafunno et al., 2019). This can include addressing not only severe health risks such as lung cancer and heart disease, but also topics including cosmetic implications (e.g., bad breath, yellow teeth, wrinkles), the high cost of cigarettes and e-cigarettes, loss of endurance affecting athletic performance, health risks to those around smokers, and the illegality of smoking at a young age. Governments can follow strategies including taxing products prohibitively high to prevent use; enacting laws prohibiting sales to minors, regulating advertising and packaging, and penalizing establishments that do not follow regulations; and funding smoking cessation programs.

Although alcohol use was relatively low in Northern Cyprus compared particularly to the European average, drinking remains illegal until the age of 18 and the frequency of use is not insignificant. Particularly concerning is that 1 in 5 students reported binge drinking in the last month. Past 30-day drunkenness/intoxication was reported by 8.6% of respondents; however, results may be influenced by date of data collection (e.g., would students binge drink more outside of the school year?). Teenagers can be more prone in general to risk taking behavior than adults (Winters & Arria, 2011). Binge drinking in youths has been associated with other risky behaviors (e.g., riding with an intoxicated driver, drug use), as well as other acute harms including alcohol poisoning and blackouts, problems at school or work, increased risk of sexually transmitted infections, increased occurrence of alcohol related sexual or physical assault, and a higher likelihood of involvement in vehicle crashes or fatalities (Chung et al., 2018). It is important to engage in strategies to educate youths about the impacts of alcohol. Efforts to need to start by late

childhood and should be executed at the family, community and national policy level.

Drug use by Northern Cyprus students was low across all categories. Painkillers were the most frequently misused drug (2.8%), which supports easier drug access playing a role in the frequency of use. Prescription medications can be widely available in homes. A survey on how teens obtain prescription medications indicated that over half had access to the drug from a family member or relative (Drug Enforcement Agency [DEA], 2023). Cannabis was the second most misused drug, with a lifetime frequency of use of 2%; this declined to just 0.7% in the past 30 days. Although illegal in Cyprus, medical use is approved for adults aged 18 or older. This may allow for easier access to the drug. Also, contributory may be the perception that cannabis use is not as harmful as other drug use. Use of other drugs/drug categories was reported at ≤1.3%. Adolescent drug use has been associated with poor mental health, increased risk of suicide, violence, and risky sexual behaviors (Centers for Disease Control and Prevention [CDC], 2022). Prevention not only decreases these risks but also lessens the risk for later use of drugs. School based prevention programs that are interactive, focus on social resistance and competence enhancement skills training, and are continued over multiple years have been shown to be effective (Griffin & Botvin, 2010). Flexibility to address changing trends is also key.

Gambling does not appear to be a pervasive problem in Northern Cyprus. Research has indicated that gambling behavior is impacted by individual, relationship, community, and societal level risk and protective factors (Livazović & Bojčić, 2019). However, studies have shown that if given the option to gamble, most adolescents will participate, having the perception that gambling is normal and acceptable (Wilber & Potenza, 2006). Adolescents often view gambling to socialize as opposed to gambling for the potential financial gains. Gambling can also be viewed as a stress reliever. However, adolescent gambling has been reported to be associated with a higher frequency of other risky behaviors including substance use, violence, seatbelt non-use, and driving under the influence. Education must work to overcome

the perception that gambling is a harmless form of entertainment. Signs of problem gambling may not be overt, so parents and other concerned adults need to remain vigilant. Research into the development and strengthening of gambling regulations in adolescents should also be considered.

Gaming is a popular form of entertainment for adolescents worldwide, with an estimated 618 billion players under the age of 18 (Duarte, 2025). It has been reported that the average 13- to 17-year-old spends nearly 2 hours gaming each day (Alanko, 2023). Teens have self-reported that they believe playing digital games generally has a positive impact on their life, strengthening their problem-solving skills, solidifying friendships, promoting teamwork, and improving their mental health (Pew Research Center, 2024). A downside noted by the teens was the negative impact on their sleep. There is some evidence that digital gaming may be associated with weight gain and a tendency for overeating; however, "exergames", digital games involving physical activity, may increase healthier behaviors (Alanko, 2023). Research substantiates that screen time use near bedtime can affect quality and amount of sleep. The impact of digital gaming on an adolescent's mental health is affected by a variety of factors, such as the reason(s) they are gaming, amount of time spent gaming, and gaming setting and type; effects may be positive and/or negative. There are mixed results surrounding violent video games and aggression; however, no studies have directly linked gaming to actual violence. As with social media, cyberbullying can be a concern in online multiplayer games. Digital gaming may be addictive, and gaming disorder was first included in the WHO publication, the International Classification of Disease, in the 11th revision, effective January 1, 2022. Parental involvement with and oversight of their child's gaming activities is important in keeping adolescents safe and healthy. This involves taking an active role by making informed decisions about the digital games children are playing, when and where they are playing games, and who they are playing with, as well as providing education about online safety. Parents are encouraged to play digital games with their children, as sharing this activity can strengthen family

connections, increase game safety, and improve developmental benefits of gaming.

There is evidence that adolescents are more prone to risk taking and novelty seeking as the brain is still in development (Winters & Arria, 2011). This may be an evolutionary trait to aid in survival. However, today, this propensity leaves teens susceptible to risky behaviors with potentially negative consequences. It is important that evidence-based prevention programs be implemented early and that there is active parental and community involvement in educating adolescents on the harmful effects, both short and long term, of these risky behaviors.

3.5. Conclusion

Although there is some engagement in risky behaviors of particular concern in Northern Cyprus students (e.g., binge drinking, e-cigarette use), their participation in these activities is generally low overall and typically substantially lower than that of Southern Cyprus and European students. This may be due to culture, political, legal, and/or socioeconomic factors, as well as education addressing risks associated with these activities. Northern Cyprus took an important step in capturing these data for the first time. Regular surveying of students and additional parsing of data (gender, family income, etc.) can provide additional information to allow evaluation of trends, perhaps providing more insight into the reason(s) behind these results. Generally, starting effective and flexible prevention programs early and ensuring parental and community support are key factors in limiting risky behaviors in youth.

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