FOCUS ON ADOLESCENT SUBSTANCE USE AND RISK BEHAVIOURS IN EGYPT, LEBANON, MOROCCO AND TUNISIA

Fifth MedSPAD regional report

Elisa Benedetti, Rodolfo Cotichini, Corrado Fizzarotti, Benedetta Ferrante, Sabrina Molinaro and the MedSPAD Group

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MedNET is the Pompidou Group's Mediterranean network for co-operation on drugs and addictions set up in 2006.

The precious and unique expertise of the European School Survey Project on Alcohol and Other Drugs (ESPAD) Co-ordinator and ESPAD Project Manager and the team of the Institute of Clinical Physiology, National Research Council of Italy contributed significantly to the project.

Contents

Tables and figures

Preface

The Council of Europe is the continent's leading human rights organisation. It comprises 46 member states, 27 of which are members of the European Union. All Council of Europe member states have signed up to the European Convention on Human Rights, a treaty designed to protect human rights, democracy and the rule of law.

The Pompidou Group provides a multidisciplinary forum at the wider European level for policy makers, professionals and researchers to exchange experiences and information on drug use and drug trafficking. Formed at the suggestion of French President Georges Pompidou in 1971, it became a Council of Europe enlarged partial agreement in 1980 open to countries outside the Council of Europe.

On 16 June 2021, the Committee of Ministers of the Council of Europe adopted the revised Pompidou Group statute, which extends its mandate to include addictive behaviours related to licit substances (such as alcohol or tobacco) and new forms of addictions (such as internet gambling and gaming). The new mandate focuses on human rights while reaffirming the need for a multidisciplinary approach to address the drug challenge, which can be tackled effectively only if policy, practice and science are linked.

To better reflect both its identity as a Council of Europe entity and its broadened mandate, the Pompidou Group changed its official name from the Co-operation Group to Combat Drug Abuse and Illicit Trafficking in Drugs to the Council of Europe International Co-operation Group on Drugs and Addictions. As of 2022, it comprises 41 member states, 38 of which are members of the Council of Europe, plus Israel, Mexico and Morocco. The European Commission, the European Union Drugs Agency (EUDA), the United Nations Office on Drugs and Crime (UNODC), the World Health Organization (WHO) and the Inter-American Drug Abuse Control Commission (CICAD) of the Organization of American States (OAS) also participate in its work as permanent observers.

MedNET is the Mediterranean network for co-operation on drugs and addictions of the Pompidou Group. It consists of 18 countries from the northern and southern rims of the Mediterranean. MedSPAD is the Mediterranean School Survey Project on Alcohol and Other Drugs.

This is the fifth regional report from MedSPAD, offering insights into substance use, risk behaviours among young people and the socio-economic and policy context in the south Mediterranean region. It builds on the findings presented in the 2022 report, *Adolescent substance use and risk behaviours in the Mediterranean region*, which covered 11 countries.

The current report focuses on four countries – Egypt, Lebanon, Morocco and Tunisia. Three of these countries were included in the fourth regional report, while it is the first time the results from the 2022 MedSPAD survey conducted in Lebanon are being published.

The findings presented in this report offer valuable insights that can help shape evidence-based substance-use prevention and policy strategies in the region. By providing reliable data on substance use trends among young people, as well as risk and protective factors, MedSPAD continues to serve as a vital resource for policy makers, researchers and practitioners. Its role in fostering multisectoral collaboration and guiding national prevention efforts underscores its importance in addressing the challenges of substance use in young people.

The insights in this report are intended to support informed decision making and to contribute to the development of effective targeted interventions across the region.

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Chapter 1

Substance use among adolescents

1.1. Tobacco and alternative smoking products

Highlights

- Lifetime cigarette use is reported by 15.2% of young people, past-12-month use by 10.3% and past-30-day use by 7.8%.
- Tobacco use was generally higher among male students, with rates being two to four times as high as those among female students across most products and measures.
- Among MedSPAD students, 13.2% report having used e-cigarettes at least once in their lifetime, 9.2% in the past year and 6.4% in the past month. Lebanon shows the highest prevalence (37.2%, 25.8% and 20.4% respectively). Morocco has the lowest rates of past-month use (3.3%).
- Among MedSPAD students, 12.9% have tried water pipes, with 8.7% having used them in the past year and 6.5% in the past month. Lebanon shows the highest prevalence, while Morocco reports the lowest. Male students report significantly[1] higher use than female students, their last-year and last-month rates being about three times higher.
- Early initiation (by age 13 or younger) into the use of cigarettes is reported by 7.6%, of e-cigarettes by 4.0% and of water pipes by 5.3%.
- Overall 3.1% of young people report having started daily cigarette smoking by age 13, with the highest prevalence in Egypt (4.9%) and the lowest in Tunisia (0.8%).
- Male students were more likely than female students to start using nicotine-based products at a younger age.
- One in five students (20.8%) report having easy access to cigarettes, with the highest availability in Lebanon (42.5%), followed by Morocco (30.5%), Tunisia (23.9%) and Egypt (15.1%).
- Over half of MedSPAD students (52.4%) report having at least one family member who smokes cigarettes, with the highest rate in Tunisia (64.4%) and the lowest in Morocco (43.0%). The prevalence is lower for e-cigarette use (18.4%).
- About two in five students (38.2%) report having a friend who smokes, with Tunisia again showing the highest percentage (57.1%) and Egypt the lowest (28.7%). A smaller proportion (25.9%) of MedSPAD students report having at least one friend who uses e-cigarettes.
- On average, 45.6% of MedSPAD students believed that regular cigarette smoking (one or more packs of cigarettes per day) carries little to no risk.
- About the same percentage (50.9%) of students believed that regular water-pipe use is not risky. A higher percentage (62.6%) believed that about e-cigarette use.

1. The term "significant" is used in the text to refer to statistical significance, even when not explicitly stated. In cases where statistical significance is not present, synonyms have been used to express a concept worthy of attention or importance.

Policy framework

According to the World Health Organization, tobacco use is an epidemic. With over 8 million tobacco-related deaths a year, tobacco use continues to be one of the biggest public health threats and tobacco control remains a global health priority (WHO 2023).

The negative public health effects of tobacco use have motivated many governments in recent decades to introduce tobacco control policies to discourage smoking. The primary deterrent to smoking is the implementation of high taxes on tobacco products so that they become more expensive to buy (Palali and van Ours 2019). A range of non-price tobacco-control policies can also be applied, such as restrictions or bans on tobacco advertising, regulations requiring health warnings on packaging, anti-smoking campaigns and laws that ban tobacco use in specific locations.

The arrival of electronic nicotine delivery systems (ENDS) or electronic non-nicotine delivery systems (ENNDS) products on the market has prompted governments to implement new regulations for their sale, taxation, advertising and use. In recent years, high-income countries have introduced regulations and tobacco-monitoring programmes that also address ENDS/ENNDS products. Middle- and low-income countries are also moving in the same direction (WHO 2016).

National policies, action plans and monitoring system

All countries can adopt and implement comprehensive tobacco-control policies to reduce or eliminate the health burden that results from tobacco use and exposure to second-hand smoke. Today over one quarter of the world's population is covered by comprehensive smoke-free laws (WHO 2023).

These policies typically follow international frameworks such as the WHO Framework Convention on Tobacco Control (FCTC) and include both legislative measures and public health initiatives to reduce tobacco-related harms.

The MedSPAD countries in the present report have a national policy for tobacco control in place. This has been approved or revised in recent years, reflecting the countries' attentiveness to this topic.

Egypt, Lebanon, Morocco and Tunisia have national policies that regulate tobacco products, reduce tobacco consumption, protect non-smokers from second-hand smoke, promote global collaboration and encourage co-operation in combating illicit tobacco trade, and share best practices. Each of these countries has ratified the FCTC. The following account provides details on the measures adopted in each country, as well as additional studies conducted beyond MedSPAD to monitor tobacco use in the youth population.

While Egypt became a party to the FCTC in 2005, the country's first tobacco-related legislation was Law No. 52 in 1981. The most recent regulation is a ministerial decree issued in 2007. Egypt's tobacco legislation includes restrictions on tobacco advertising, prohibitions on smoking in certain public places, bans on tobacco sales to individuals under 18 and regulations relating to product packaging and marketing. As a participant in the Global Tobacco Surveillance System, Egypt has monitored patterns and trends in tobacco use and exposure, by conducting the Global Adult Tobacco Survey (GATS) in 2009 and four rounds of the Global Youth Tobacco Survey (GYTS), with the most recent conducted in 2014. Egypt has also added a set of questions on tobacco use to other national surveys, such as the WHO STEPwise survey for noncommunicable disease risk factors (last conducted in 2017) and the national Household Income and Expenditure survey, last conducted in 2017-18.

Lebanon ratified the FCTC in 2005 and issued a new tobacco-control act (Law No. 174) in 2011, which serves as the main legal framework. The legislation includes smoking bans in public places, restrictions on tobacco advertising and promotion, health warnings on tobacco packaging and a ban on sales to individuals under 18. Since 2001, Lebanon has monitored tobacco use in the student population through WHO surveys, including the GYTS in 2001, 2005 and 2011; the Global School-Based Student Health Survey (GSHS), most recently carried out in 2017; and the STEPwise survey, the last edition of which was 2016-17.

Morocco signed the WHO Framework Convention on Tobacco Control (FCTC) in 2004 but has not yet ratified it. Prior to this, the country introduced tobacco control regulations in 1996, which were subsequently updated in 2008. Morocco's tobacco legislation includes a ban on smoking in certain public places, restrictions on advertising and sponsorship, the prohibition of tobacco sales to individuals under the age of 18 and health warnings on packaging. Since 2001, Morocco has collected data through the GYTS every five or six years, with the last data collection in 2016.

Tunisia ratified the FCTC in 2010 and last updated its national regulation in 2023. The first legal framework for tobacco control in Tunisia was Law No. 98-17 of 1998 on the prevention of the harmful effects of smoking, which was strengthened by Decree No. 2611, approved in 2009. Tunisia's tobacco legislation includes smoke-free public spaces, a ban on tobacco advertising, health warnings of tobacco risks and a prohibition on sales to those under 18. Tobacco use in Tunisia is monitored by the WHO STEPwise approach to surveillance (STEPS), with the last data collection conducted in 2016.

Pricing and taxation

Tobacco taxes, which are passed on to consumers through higher cigarette prices, have been recognised as one of the most effective population-based strategies for decreasing smoking and its adverse health consequences (Jha and Chaloupka 2000; WHO 2008). Indirect taxes have the greatest impact on the price of tobacco products. Excise taxes applied exclusively to tobacco are the most important indirect taxes because they contribute most to increasing the price of tobacco products with the aim of reducing consumption. Other taxes that can impact the retail price of tobacco products are import duties and value-added and sales taxes. It is estimated that in Morocco taxes constitute 76.1% of the retail price, in Tunisia 69.4%, in Egypt 74.9% and in Lebanon 9.9% (WHO 2023).

Physical availability

The WHO global strategy recommends establishing a national legal minimum age for the purchase and consumption of tobacco products. Egypt, Lebanon and Tunisia have banned the sale of tobacco products to individuals under 18 years of age and Morocco has banned the sale to individuals under the age of 16. In all participating countries legislation regulating the use and accessibility of tobacco products has defined public places such as transport, universities, government buildings and hospitals by not allowing smoking, with the aim of reducing both the practice and non-smokers' exposure to second-hand smoke.

Marketing and advertising

Longitudinal studies have repeatedly found that young people who are exposed to tobacco marketing for both traditional tobacco products and e-cigarettes are more likely to start smoking (Lovato, Watts and Stead 2011; Chen-Sankey et al. 2019). All four MedSPAD countries have enacted national regulations prohibiting many forms of promotion and sponsorship by tobacco companies, aiming to limit the exposure of their youth population to tobacco marketing. These countries have also banned tobacco advertising on national television, radio, and in print media, and have imposed restrictions on several other forms of direct and indirect advertising. However, the World Health Organization (WHO 2023) notes that no appropriate national anti-tobacco campaigns have been conducted through mass media in Egypt. In contrast, the campaigns implemented in Lebanon and Tunisia demonstrated several appropriate characteristics, while Morocco recorded the highest number of such features.

In addition, the WHO (2023) reports that health warnings on tobacco packaging in Egypt are considered appropriately designed and clearly visible. By contrast, warnings in Tunisia and Lebanon lack some or many key characteristics, while in Morocco they are either absent or too small to be deemed sufficient.

E-cigarettes legislation

Nicotine-based electronic products are currently in widespread use, even though they have been on the market for only a decade. Their massive diffusion has forced countries to reflect on and to create regulations to protect their populations, especially the young, from the harms caused by their use (WHO 2016). Some countries have decided to develop policy frameworks that include bans on the use of electronic nicotine-delivery systems in public indoor spaces and on their advertising, promotion and sponsorship; health warnings on packaging; age restrictions on the sale of ENDS; and flavour bans or restrictions. Only Tunisia has a monitoring system for ENDS use among its student population but without regulation. Egypt and Lebanon have national legislation to regulate these products. In 2020 Egypt introduced taxes on e-cigarette liquids, regardless of whether they contain nicotine. A decree issued in 2021 also requires packaging for e-cigarette liquid to feature a health warning. Lebanon has banned the import of and trading in all types of e-cigarettes and ordered all e-cigarettes to be withdrawn from its market (WHO 2023).

Cigarettes

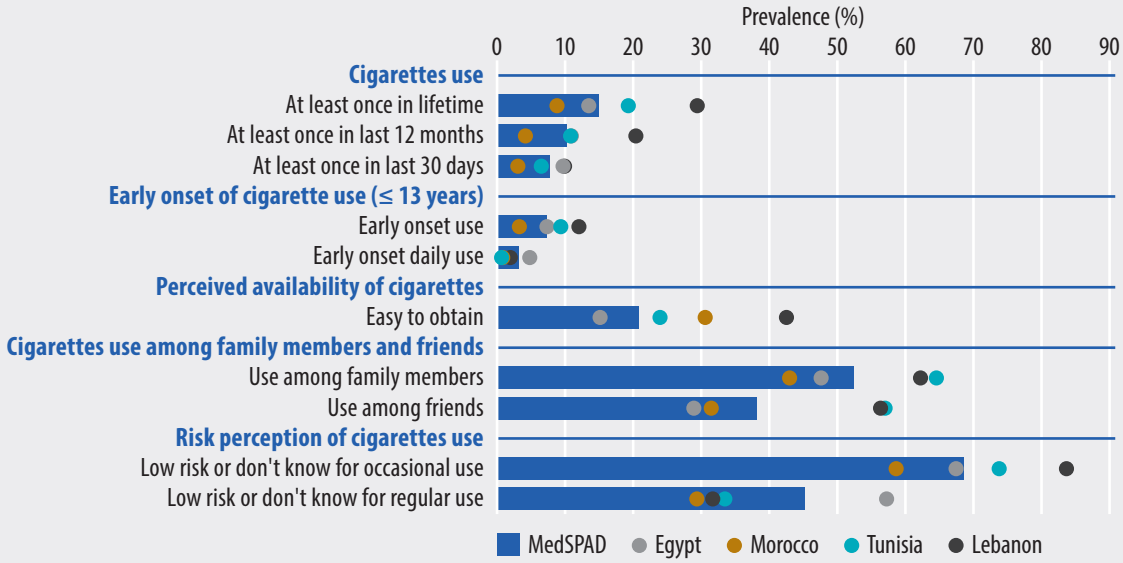
Prevalence of use and related indicators

Overall, 15.2% of students report having smoked cigarettes in their lifetime, 10.3% in the last 12 months and 7.8% in the last 30 days. Prevalence varied across countries, with Lebanon reporting the highest rates (29.4% for lifetime use, 20.4% for the last 12 months and 10.1% for the last 30 days) and Morocco the lowest (8.9% for lifetime use, 4.1% for the last 12 months and 3.0% for the last 30 days).

In each southern MedSPAD country, the prevalence rates of tobacco use were higher among male than female students across all time frames. For lifetime cigarette use, male students report a 12.8% higher rate than female students, while in the previous 12 months the difference was 9.9%. The gap narrowed slightly for recent use, with male students still showing an 8.9% higher prevalence of cigarette use in the past 30 days than female students.

The gender gap was most pronounced in Egypt, where all measures of cigarette smoking among male students were more than four times as high as among female students. In Tunisia, lifetime cigarette use was 30.3% for male students and 12.5% for female students. The gender disparity is statistically significant also for recent use, with 11.2% of male students and 3.4% of female students reporting having smoked in the last 30 days.

1.1 **Cigarettes: prevalence of use and related indicators (%)**



In relation to smoking initiation, 7.6% of young people report smoking their first cigarette at the age of 13 or younger. The highest rate was found in Lebanon (11.9%) and the lowest in Morocco (3.4%). The data on early onset of cigarette use also reveal gender differences, with male students being more likely to start smoking at a younger age: 11% of male students have started smoking by the age of 13, compared to just 3.9% of female students. The biggest gender disparity was detected in Tunisia, where the rate of early onset among male students (16.8%) was higher than among female students (4.5%). The prevalence of early onset of daily smoking followed a similar pattern, with 3.1% of young people reporting smoking daily by age 13. Lebanon stood out as the country with the highest rate of early initiation into cigarette use (11.9%). However, with reference to the onset of daily smoking, the gap between Lebanon and the other countries narrows. Egypt recorded the highest rate of early daily smoking (4.9%), while Tunisia, Morocco and Lebanon show lower and closer prevalence rates (0.8%, 1.1% and 1.8%, respectively).

In contrast to the onset of cigarette use, the gap widens in terms of gender disparity: male students are over five times as likely as their female peers to start smoking on a daily basis by the age of 13. The biggest gender difference was observed in Tunisia, with 2.0% of male students reporting early daily smoking compared to 0.1% of female students, while no discernible gender differences were observed in Lebanon. Overall, one in five students (20.8%) report that they found it easy to obtain cigarettes. Notable variations were observed across countries, with the highest perceived availability observed in Lebanon (42.5%),

followed by Morocco (30.5%), Tunisia (23.9%) and Egypt (15.1%). In all countries, male students were more likely than female students to report easy access to cigarettes. The biggest gender gap was observed in Egypt, where 19.9% of male students report easy access to cigarettes compared to just 7.2% of female students.

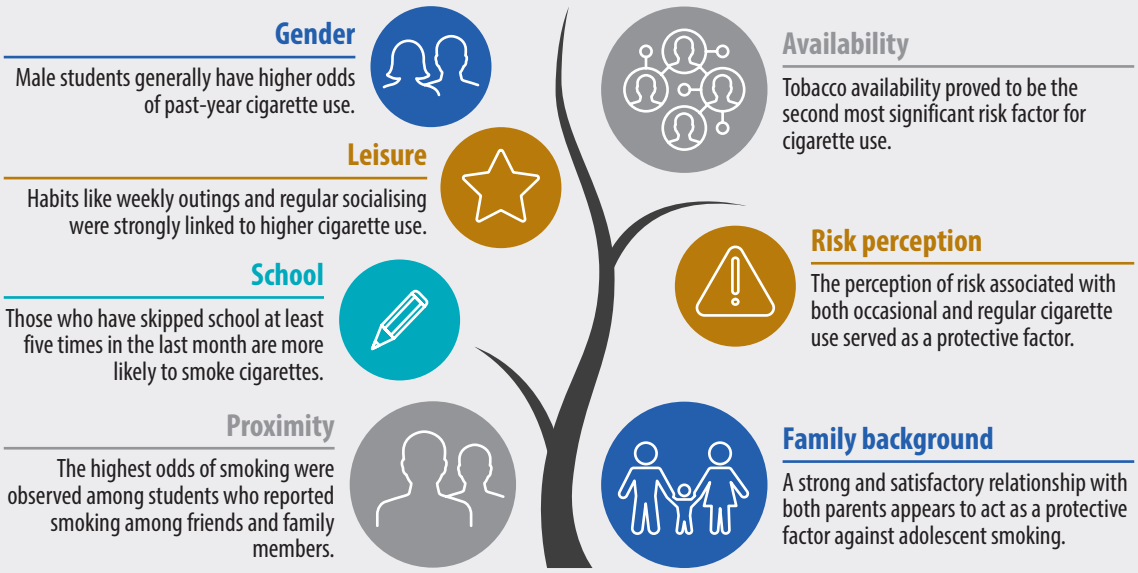
In terms of social environment, over half of the students (52.4%) report that at least one family member smokes. The highest rate was found in Tunisia, where 64.4% of students report having at least one smoker in their family. Additionally, 38.2% of students across the general sample indicated having a friend who smokes, with the highest percentage observed again in Tunisia (57.1%) and the lowest in Egypt (28.7%).

On average, 68.7% of MedSPAD students believed that occasional cigarette smoking carries little to no risk. This figure decreased to 45.6% when students were asked about the risks of regular smoking (one or more packs of cigarettes per day). There were notable country-level differences, with the highest rate of students who perceived occasional smoking to be low-risk observed in Lebanon (83.5%). In contrast, Morocco shows the highest awareness of the potential dangers of both occasional and regular smoking, with 58.8% of students believing that occasional smoking is not risky and only 29.5% of students believing that smoking regularly carries no risk.

In terms of gender differences, the perception of risk for occasional smoking was largely consistent between male and female students, with no disparities except in Morocco (63.9% among male students and 54.8% among female students). However, when asked about regular smoking, female students demonstrated a heightened risk awareness in all countries except Egypt, where the prevalence was about 57% among both male and female students.

Identifying common risk factors across countries

1.2 Cigarettes: environmental and individual factors associated with use in the last 12 months



Youth smoking poses serious long-term health risks and increases the likelihood of continued smoking into adulthood. To support targeted prevention and intervention, it is therefore important to identify risk factors that are common to all countries.

Male students generally have higher odds of past-year cigarette use compared to their female peers, a pattern that is consistent in all countries except Lebanon. Among leisure activities, habits such as going out in the evening at least once a week and regularly meeting up with friends were strongly associated with an increased likelihood of cigarette use across countries, particularly in Morocco. Missing five or more days of school per month was also identified as a common risk factor for cigarette use, except in Lebanon. Egypt shows the lowest correlation on this score, which suggests possible cultural differences in the link between school attendance and smoking behaviour.

Within the family environment, a strong and satisfactory relationship with both parents appears to act as a protective factor against youth smoking in all countries. However, the role of family smoking habits was particularly influential, with the presence of a smoker in the family significantly increasing the likelihood of student cigarette use across all countries. The highest odds of smoking were observed among students who report smoking among friends, particularly in Morocco and Lebanon, confirming the relevance of peer social networks in influencing the likelihood of cigarette uptake.

Tobacco availability proved to be the second most important risk factor for cigarette use, with easy access to cigarettes posing a high risk across all countries. This was particularly pronounced in Tunisia and Egypt, where students with easy access to cigarettes were much more likely to report having smoked within the past year.

Finally, the perception of risk associated with both occasional and regular cigarette use served as a protective factor, significantly reducing the likelihood of youth smoking across all MedSPAD countries.

E-cigarettes

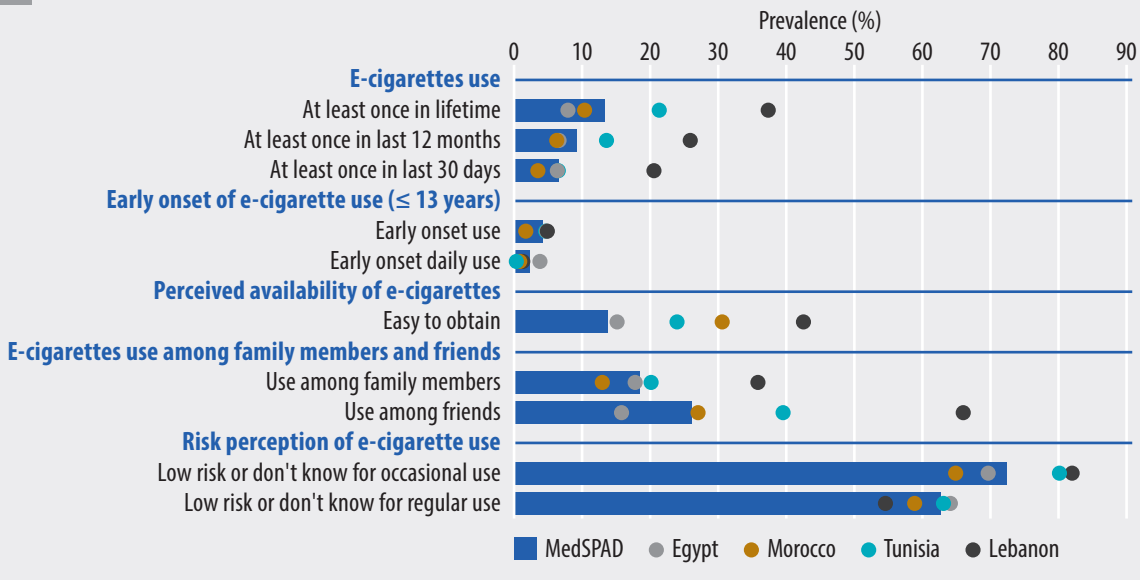
Prevalence of use and related indicators

Among MedSPAD students, 13.2% report having used e-cigarettes at least once in their lifetime, 9.2% in the past year and 6.4% in the past month. However, there were clear differences between participating countries. Lebanon shows the highest prevalence, with 37.2% of young people reporting lifetime e-cigarette use, with 25.8% having used e-cigarettes in the last 12 months and 20.4% in the last 30 days. At the other end of the spectrum, Morocco has the lowest rates of past-month use (3.3%).

As with traditional cigarettes, e-cigarette use was more common among male students in all countries except Lebanon, with male students' use two to six times as high as that of female students. The most evident gender disparity in recent use was found in Morocco, where 6.0% of male students and 1.1% of female students report e-cigarette use in the past month.

Overall, 4.0% of young people report having used their first e-cigarette at the age of 13 or younger. The prevalence of early daily use was slightly lower, with 2.2% of young people reporting having started e-cigarette use every day by the same age.

1.3 **E-cigarettes: prevalence of use and related indicators (%)**



Egypt, Lebanon and Tunisia have similar prevalence rates of early e-cigarette use, while Morocco reports a lower rate, with 1.6% having had their first e-cigarette at age 13 or younger. The highest prevalence of early daily use was found in Egypt (3.6%) and the lowest in Tunisia (0.2%).

No statistically significant gender differences were found in Lebanon for both early onset of use and early onset of daily use, or in Tunisia for early onset of daily use. Gender differences were found in the other

countries. For example, in Morocco male students were much more likely to have started e-cigarette use and daily use early, with a prevalence of 2.7% and 1.8% compared to 0.6% and 0.2% of female students respectively.

On average, 13.6% of young people report that e-cigarettes were easily accessible to them. However, perceived availability varied markedly between countries. The highest prevalence was found in Lebanon, where 45.6% of young people indicated that it would be easy for them to obtain e-cigarettes, followed by Morocco (21.2%) and Tunisia (16.9%). Egypt has the lowest prevalence, with only 7.6% of young people stating that e-cigarettes were easily available to them. Male students report higher rates than female students in all countries, with particularly pronounced differences in Morocco and Egypt.

With reference to family and friends, the MedSPAD data indicate that 25.9% of young people report having at least one friend who uses e-cigarettes. Lebanon has the highest report rates, with almost two in three young people (65.9%) who report having friends, and 35.7% a family member, who smoke e-cigarettes. In Tunisia 39.4% of young people indicated that at least one friend uses e-cigarettes and 20.0% a family member.

Once again Egypt shows one of the lowest figures, with 15.6% of young people reporting e-cigarette use among friends. Morocco also displayed a moderate level of exposure, with 26.9% of young people reporting at least one friend who uses e-cigarettes.

Young people's perceptions of the risks associated with smoking e-cigarettes differ noticeably depending on their frequency of use. Among MedSPAD young people, 72.3% viewed occasional e-cigarette use as low-risk, while a smaller percentage (62.6%) perceived regular use to carry little to no risk.

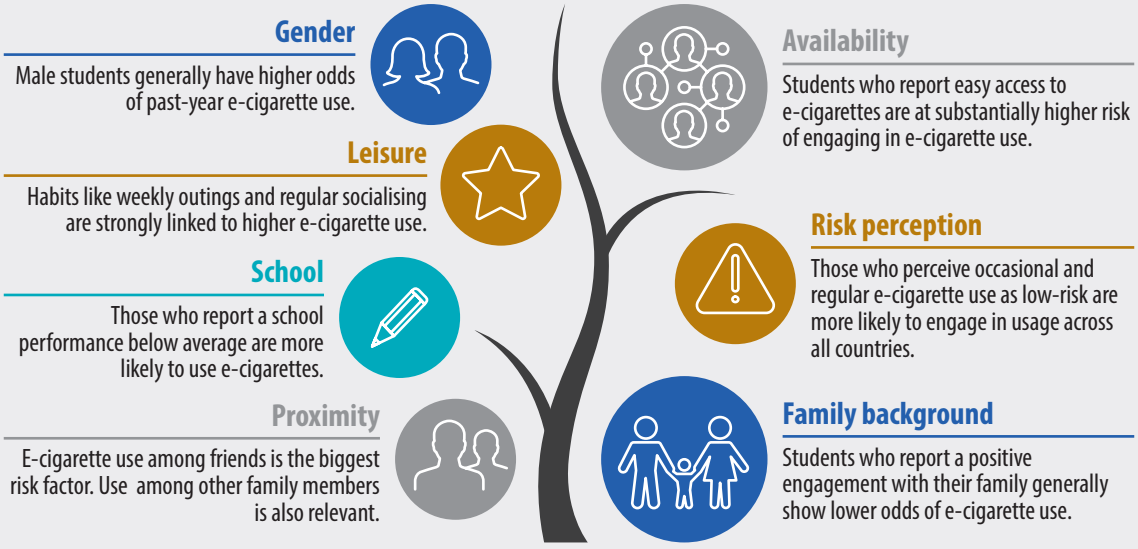
Lebanon has the highest rates of low-risk perception among the countries, with 81.9% of young people believing that occasional e-cigarette use poses little to no risk and 54.4% holding that regular smoking poses little to no risk. In contrast, Morocco has the lowest perception of e-cigarettes as being low-risk, with 64.8% of young people considering occasional use to be low-risk and 58.7% perceiving regular use to be low-risk. Overall, gender differences in risk perception were less pronounced than in other contexts.

Identifying common risk factors across countries

As for cigarette use, although with lower odds, male students exhibit higher likelihood of e-cigarette use in the past year compared to their female peers, a pattern that is consistent in all countries except Lebanon.

Alongside below-average school performance, social behaviours – particularly frequent social outings such as meeting up with friends (except in Lebanon) and going out in the evening at least once a week – are associated with a significantly increased risk of e-cigarette use.

1.4 **E-cigarettes: environmental and individual factors associated with use in the last 12 months**



The role of family relationships in e-cigarette use is more pronounced than some social factors. Students who have a satisfactory relationship with their parents generally show lower odds of e-cigarette use. In contrast, having a mother in full-time or part-time employment appears to be a significant risk factor in all countries except Lebanon.

E-cigarette use among friends is the biggest risk factor in every country. E-cigarette use among family members, while less strong than peer influence, also correlates positively with students' e-cigarette use.

E-cigarette availability is the second biggest predictor of use: students who report easy access to e-cigarettes have substantially higher odds of engaging in e-cigarette use. For instance, across the surveyed countries, the odds of e-cigarette use among students with easy access is about eight times higher than among those without.

Students' perception of the risks associated with both occasional and regular e-cigarette use also plays a significant protective role. Across all countries, those who perceive occasional e-cigarette use to be low-risk are more likely to use them. Tunisia and Lebanon show the strongest associations between low-risk perception and e-cigarette use.

Water pipe

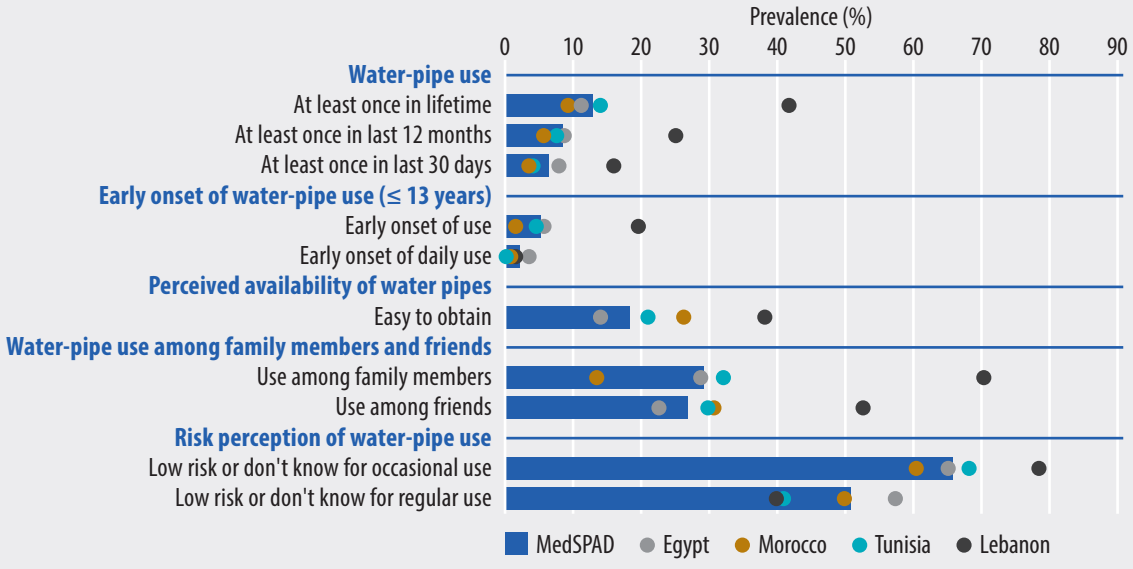
Prevalence of use and related indicators

Overall, 12.9% of young people report having used water pipes at least once in their lifetime, 8.7% within the past 12 months and 6.5% in the past 30 days. The data reveal substantial variation between countries, with Lebanon displaying the highest prevalence by far and Morocco the lowest levels across all indicators of use. Gender differences in water-pipe use are prominent, with male students generally exhibiting higher prevalence rates than female students. At an aggregate level, male students report using water pipes much more frequently than female students, particularly with reference to last-year and last-month use, where rates are approximately three times higher. In relation to last-month use, the gender gap is most pronounced in Tunisia, where current (in the past 30 days) use stands at 8.3% among male students compared to just 1.4% among female students. In Lebanon, however, there are no statistically significant gender differences across lifetime, past-year or past-month measures.

Overall, 5.3% of young people indicated that they first experimented with water pipes at the age of 13 or younger, with the highest prevalence found in Lebanon (19.5%) and the lowest in Morocco (1.5%). The average prevalence is higher in male students (7.4%, compared to 3.0% in female students).

The regular use of water pipes at such a young age is less common, with an overall prevalence of 2.1% and less pronounced differences between countries, although the gender disparity persists. Male students report a higher rate of daily water-pipe use by age 13 (3.4%) compared to female students (0.8%), with Morocco and Egypt showing the biggest gender difference.

1.5 **Water pipe: prevalence of use and related indicators (%)**



Across MedSPAD countries 18.6% of young people report having easy access to water pipes, with availability notably higher among male students (23.4%) than among female students (13.4%). The gender gap in accessibility is particularly pronounced in Egypt, where the rate of male students reporting easy access to water pipes was 18.9%, compared to 6.0% for female students.

The gender gap in accessibility is not statistically significant in Lebanon. Perceived peer use of water pipes also seems rather high (27.0%), particularly in Lebanon, where more than half (52.6%) of MedSPAD students indicated that at least one friend smokes water pipe.

An even higher percentage of young people report water-pipe use in the family (29.3%), with the highest value by far recorded in Lebanon (70.5%). While there is no significant gender difference in reporting family water-pipe use at the aggregate level, Egypt shows a significantly higher prevalence rate among male students (30.7%, compared to 25.6% among female students), while Tunisia is the only country where more female students (33.9%) than male students (29.4%) report having a family member who smokes a water pipe.

Across the region, risk perception associated with water-pipe use indicates that more than half of young people consider both occasional (65.9%) and regular (50.9%) use to be low-risk.

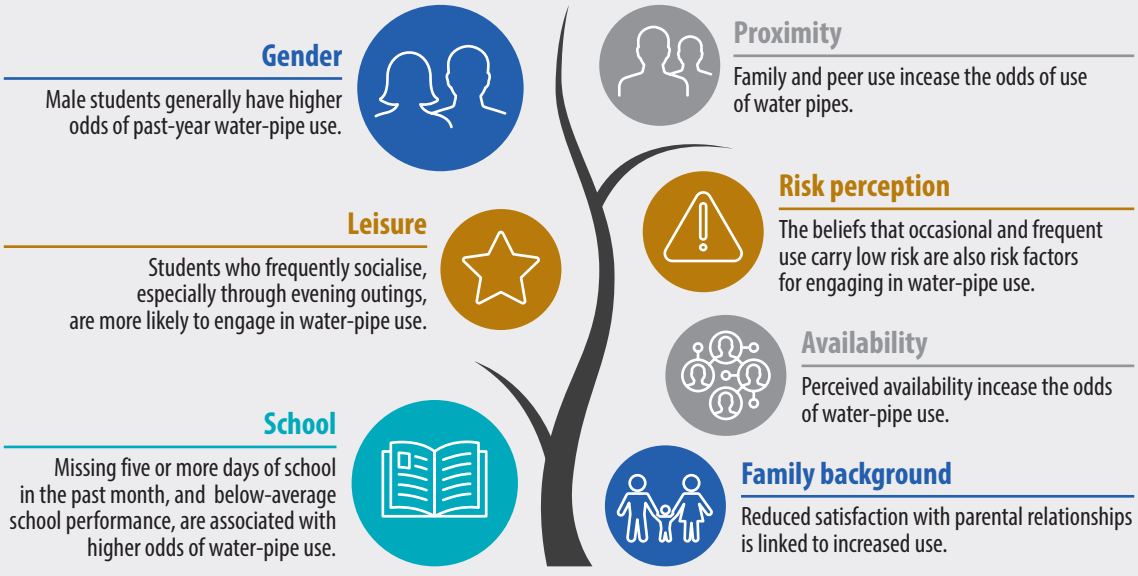
In Morocco, 50% of young people view regular water-pipe use as low-risk, matching the MedSPAD average, while perceptions of low risk for occasional use are slightly below the average (60.4%). In contrast, Lebanon shows a higher perception of low risk for occasional use (78.4%), though only 39.8% consider regular use to be low-risk. Gender analysis shows statistically significant differences in self-perceived risk only in Morocco, with male students associating low-risk with regular use more frequently than their female peers (54.1% versus 46.7%).

Identifying common risk factors across countries

Analysis of common risk factors associated with water-pipe use in the past 12 months confirms that male students have higher odds of engagement, and highlights its association with social behaviours among users.

As was observed for other types of consumption, male and female students who socialise through evening outings and gathering with friends are more likely to engage in water-pipe use. Additionally, low school connectedness, as reflected by missing five or more school days in the past month, together with below-average academic performance, is associated with higher odds of water-pipe use. A lack of satisfactory relationships with parents is also linked to an increased likelihood of use. Family and peer use, perceived availability and the belief that both occasional and frequent use carry low risk are also significant risk factors for water-pipe use.

1.6 **Water pipe: environmental and individual factors associated with use in the last 12 months**



Discussion, implications for prevention and policy conclusions

The landscape of tobacco and alternative smoking products consumption in the southern Mediterranean region seems to reflect a complex interplay of cultural, social and regulatory factors. As data from the MedSPAD study illustrate, there are notable variations in use patterns across countries according to product type, demographics and social dynamics.

Recent studies highlight the prevalence of tobacco use among young people in the Middle East and North Africa, with cultural factors, peer influence and parental habits being crucial factors determining use. Akel et al. (2022) report that both cigarette and water pipe smoking are common in Lebanon, influenced by social norms that downplay the risks of the latter. In Morocco, Moutawakkil et al. (2024) show peer environment and socio-economic status to be key factors in adolescent tobacco initiation. Fakhfakh (2019) outlines the challenges of implementing effective tobacco control measures in Tunisia and Morocco despite existing public health policies. Veeranki et al. (2016) find a strong correlation between parental smoking and adolescent tobacco use, which underscores the need for targeted interventions to address such influences.

In this multilayered context, traditional cigarettes remain the most used nicotine-based product, with Tunisia and Lebanon reporting the highest lifetime rates (19.4% and 29.4%, respectively), and Morocco the lowest (8.9%). This geographic variation extends to the prevalence of e-cigarette and water-pipe use, with Lebanon leading in both cases (37.2% and 41.8%) of lifetime use. Gender differences are significant across all nicotine-based products, where male students consistently report higher use rates than female students.

Social factors, including peer influence and family tobacco use, play a critical role in young people's initiation into tobacco use. In countries such as Tunisia and Lebanon, three in five students report having at least one family member who smokes, correlating with higher smoking rates among young people. The influence of the behaviour of friends emerges as the strongest predictor of use for all nicotine-based products in all countries.

Risk perception is also a relevant factor. It varies greatly between countries and, together with social factors, may contribute to explain the big differences in consumption rates observed. For example, in Lebanon, where more than 80% of young people view occasional smoking as low-risk, 20% of them have smoked cigarettes in the past year, in contrast to Morocco, where a higher awareness of health risk may explain the lower overall prevalence of use (about 4%).

Perceived accessibility also strongly influences usage rates. Nearly half of Lebanese students report easy access to cigarettes and e-cigarettes, a figure that far exceeds the region's average. This points to regulation enforcement as an important factor in reducing adolescent uptake. At the same time, protective factors such as strong family ties mitigate tobacco use, underscoring the importance of family involvement in prevention programmes.

The policy landscape in southern Mediterranean countries reflects an ongoing commitment to combat tobacco use, in conjunction with international frameworks such as the WHO Framework Convention on Tobacco Control. To curb tobacco's social acceptability and accessibility, Tunisia's 2023 policy update features smoke-free public places, health warnings and strict measures against underage sales. These could help in reducing smoking and e-cigarette use, the latter of which currently involves about 10% of adolescent students (past-year prevalence). Alongside policy, further public health education targeting perceptions of risk may be essential to counteract social and peer influences that encourage tobacco use.

In Morocco, which has the lowest prevalence of cigarette and e-cigarette use among young people, the comparatively low rates may be linked to a more widespread awareness of tobacco risks. About 60% and 30% of young people perceive occasional and regular smoking, respectively, to be low-risk, indicating a higher baseline awareness of the dangers associated with tobacco use. Egypt, a long-standing FCTC member with a history of regulatory updates, has the lowest rates of perceived availability for both cigarettes and e-cigarettes. With its comprehensive monitoring approach using surveys such as the GYTS and the STEPwise system, Egypt uses these robust data on adolescent behaviour to inform targeted interventions and policy development. However, gaps in enforcement persist: young people in Egypt report a relatively high rate of past-month smoking (about 10%, like Lebanon), and risk perception remains low among both female and male students, who show the highest rate of early initiation into daily smoking of all countries.

In summary, while tobacco control policies across these countries share core elements – advertising bans, age restrictions and health warnings – their effectiveness varies widely. Stronger enforcement and youth-focused awareness campaigns, particularly addressing risk perception, may enhance the impact of these policies. These MedSPAD findings highlight the many hurdles that must be overcome to reduce the level

of nicotine use among teenagers in the southern Mediterranean region, which remains considerably lower than in the northern region. A holistic approach is required to effectively address these difficulties, one that combines the successful implementation of policies, involves the community and focuses on prevention. Continuing efforts are crucial to encourage healthy behaviours, lessen the damage caused by tobacco in the region and face the current challenge of the rapidly growing variety and availability of nicotine-based alternative smoking products.

1.2. Alcohol

Highlights

- Lifetime alcohol use is reported by 6.5%, past 12-month use by 5.1% and past 30-day use by just 3.6% of 16-year-olds.
- Prevalence was generally higher among male students, with rates being more than two times as high as among female students at both the aggregate and country levels.
- Lebanon recorded the highest rates of alcohol use, while Tunisia shows the lowest prevalence across all measures of use.
- One in 30 16-year-olds have experienced alcohol intoxication at least once in their lifetime, and one in 50 have experienced it in the past 30 days.
- Almost 6% of young people report heavy episodic drinking occasions in the past 30 days, with significant gender differences in almost all countries.
- Among MedSPAD students 3.2% report having consumed alcohol for the first time at age 13 or younger, while 2.2% report experiencing alcohol intoxication for the first time at the same age.
- Overall, 17.5% of 16-year-olds report easy access to alcoholic beverages, with notable variations between countries, ranging from 45.6% in Lebanon to 10.1% in Egypt.
- Nearly one in six students report that at least one family member drinks alcohol, with a similar proportion indicating that their friends do as well.
- About half of MedSPAD students believed that alcohol use – whether occasional, regular or heavy episodic – carries little to no risk.

Policy framework

Several key factors influence the levels and patterns of alcohol consumption among young people.

In addition to individual-level factors, social norms and the policy environment, which encompass the set of implemented alcohol control measures, play a pertinent role.

To promote and support local, regional and global efforts to prevent and reduce the harmful use of alcohol, the World Health Organization endorsed its global strategy to reduce the harmful use of alcohol in 2010. This was followed by the WHO Global Alcohol Action Plan 2022-2030.

Within the framework of global action, various policy options and measures have been identified for implementation and adjustment as appropriate at the national level.

National policies, action plans and monitoring systems

A written national policy on alcohol is a written organised set of values, principles and objectives for reducing the burden attributable to alcohol in a population. Since the creation of the WHO's global strategy, the number of countries with a written national alcohol policy has steadily increased and many countries have revised their existing alcohol policies.

In Tunisia, the legal framework on alcohol dates back to 1959. In 2022 a national law on industrial product security and market surveillance resulted in changes to the price of alcohol products. Since 1956 Egypt has had a law in force, last revised in 1976, as well as a national action plan. Morocco has several laws to regulate alcohol consumption, sale and taxation, the most recent being a law approved in 2007 that regulates the marketing of spirits and similar products. In 2016 Lebanon revised its legislation on alcohol with the

implementation of an action plan up to 2021, aimed at enhancing prevention, treatment, rehabilitation and harm reduction efforts around the use of substances, including alcohol.

The mandate for monitoring and surveillance on alcohol and health at the national level usually originates in national strategies and action plans as well as international commitments. National monitoring systems most commonly collect data on alcohol consumption and related health consequences, and less commonly monitor social consequences and alcohol policy responses. Tunisia has a national monitoring system in place, but Egypt, Morocco and Lebanon do not.

Pricing and taxation

Pricing policies, which cover the greatest proportion of the population, are among the most effective alcohol policy components, with excise taxes the most common policy measure. Egypt, Lebanon, Morocco and Tunisia all apply taxes on the production and sale of beer, wine and spirits.

Physical availability

The WHO Global Strategy recommends establishing a national legal minimum age for the purchase and consumption of alcohol. Because alcohol carries greater risk for youth, a common goal of alcohol policies is to prevent and delay youth initiation. Minimum legal purchase age policies have been deemed one of the most effective means for achieving this goal. Egypt set it at 21 years, Morocco 16 years and Lebanon and Tunisia 18 years, which is by far the most common worldwide minimum age for the legal purchase of spirits both on premise and off premises. Regulating the hours and days of sale, and the geographic density of alcohol outlets, is another method for restricting the physical availability of alcohol at the population level. While no country regulates outlet density, all MedSPAD countries have national regulations for on-premises and off-premises outlet hours, days and places of sale.

Marketing and advertising

Longitudinal studies have repeatedly found that young people who are exposed to alcohol marketing are more likely to start drinking at an early age and to engage in risky drinking habits (Anderson et al. 2009; Jernigan et al. 2017).

Tunisia is the only country that has instituted a total ban on alcohol marketing that prohibits alcohol advertising, product placement, sponsorship and sales promotion of these products. Egypt has a legally binding regulation on alcohol advertising, placement and sponsorship that does not cover sales promotion; Morocco also has a legally binding regulation on sales promotion; but Lebanon has no active regulation against alcohol marketing and advertising. Egypt, Morocco and Tunisia do not legally require health warning labels to be included in alcohol advertisements or on alcohol containers, while Lebanon legally requires such warnings in relation to pregnancy and underage drinking but not with reference to cancer or drink-driving (WHO 2024).

Prevalence of use and related indicators

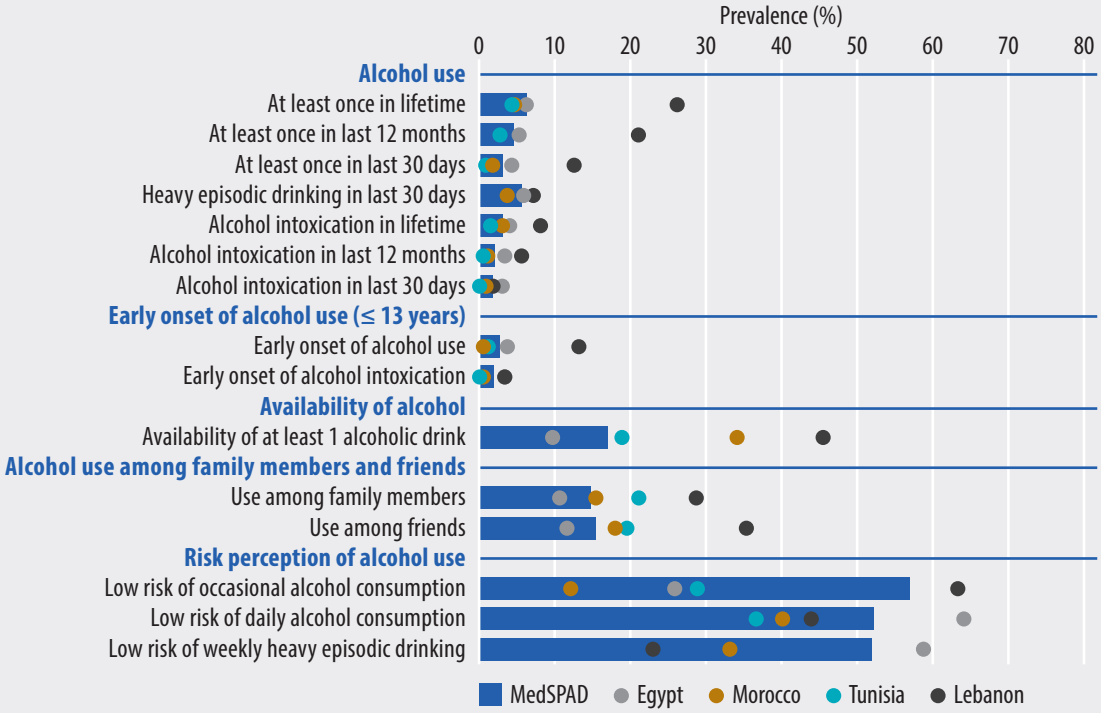
Overall, 6.5% of young people report having drunk alcohol in their lifetime, 5.1% in the last 12 months and 3.6% in the last 30 days. Alcohol use varies greatly across countries. Lebanon reports by far the highest rates, with 26.5% of young people having consumed alcohol in their lifetime, 21.4% in the past 12 months and 12.7% in the last 30 days, while Tunisia shows the lowest prevalence for each measure of alcohol use.

Prevalence rates were generally higher for male students than for female students, both at the aggregate and country levels. The biggest gender gap was found in Tunisia, where alcohol use within the last 30 days was 2.3% among male students and 0.4% among female students. The only exception is Lebanon, where no statistically significant differences were found for lifetime, last-year or last-month use.

Overall, 3.6% of young people have been intoxicated by alcohol at least once in their lifetime, 2.6% in the last year and 2.1% in the last 30 days. Lebanon recorded the highest lifetime prevalence (8.3%), followed by Egypt (4.2%), Morocco (3.4%) and Tunisia (1.8%). Overall, rates of excessive alcohol use were more than double among male than among female students. Two exceptions were found at the country level: Morocco shows no statistically significant differences for alcohol intoxication in the past year and past month, and Lebanon no significant differences for any of the measures investigated.

On average, one in 30 MedSPAD students (3.2%) report having consumed alcohol for the first time at the age of 13 or younger. At the country level, the highest rate is reported in Lebanon (13.3%), followed by Egypt (3.9%), and the lowest in Morocco (0.9%). Overall, the prevalence among male students (4.6%) was higher than that among female students (1.7%). The biggest gender gap was observed in Tunisia (2.7% for male students versus 0.7% for female students), while no significant gender differences emerged in Morocco and Lebanon.

1.7 Alcohol: prevalence of use and related indicators (%)



In relation to alcohol intoxication, 2.2% of MedSPAD students report having had their first experience at age 13 or younger, with proportions ranging from 0.3% in Tunisia to 3.5% in Egypt and Lebanon. The likelihood of early onset is also significantly higher among male students, with a prevalence more than two times greater than that of female students. Overall, only 17.5% of students report that they would find it easy to obtain alcoholic beverages. This rate is lower than the 83.8% recorded in MedSPAD countries along the northern Mediterranean (Benedetti et al. 2022), highlighting pronounced social and cultural differences between the two regions. Notable variations are also observed between countries on the southern rim, led by Lebanon, where nearly half of the students (45.6%) report easy access to alcohol, followed by Morocco (34.5%), Tunisia (19.3%) and Egypt (10.1%). In all countries apart from Lebanon, male students were more likely than female students to think that they could get hold of alcohol easily. In relation to parental and peer alcohol use, 15.2% of all students report that at least one of their family members drinks alcohol, and a similar proportion (15.9%) indicated that their friends do as well. The highest prevalence for both indicators was recorded in Lebanon (29.1% and 35.6%, respectively) and the lowest in Egypt (10.8% and 11.8%, respectively).

Interestingly, while on average male students were more likely to report alcohol use among their peers (except in Lebanon), there were no gender differences in reporting alcohol use within families. Female students were more likely to report family alcohol use in Lebanon and Tunisia, whereas no gender difference was found in Morocco. In contrast, male students in Egypt were more likely to report alcohol use in the family context.

On average, more than half (57.3%) of MedSPAD students believed that occasional alcohol use carries little to no risk. This percentage dropped to 52.5% when students were asked about their regular drinking (consuming one or more alcoholic drinks nearly every day). A similar proportion of students believed that heavy episodic drinking (consuming five or more drinks on a single occasion) carries low risk. At the country level, the lowest awareness of the risks associated with both regular and heavy episodic drinking

was observed in Egypt, where 64.5% and 59.1% of students, respectively, believed that these behaviours carry no or low risk. In contrast, the highest awareness of risk in relation to regular drinking was found in Tunisia and in relation to heavy episodic drinking in Lebanon.

No significant gender disparities were observed in the perceived risk of occasional alcohol consumption. However, female students tended to have a higher perception of risk in relation to both regular drinking and heavy episodic drinking. At the country level, while no significant gender differences emerged in Egypt and Lebanon, female students in Morocco and Tunisia exhibited a higher risk perception.

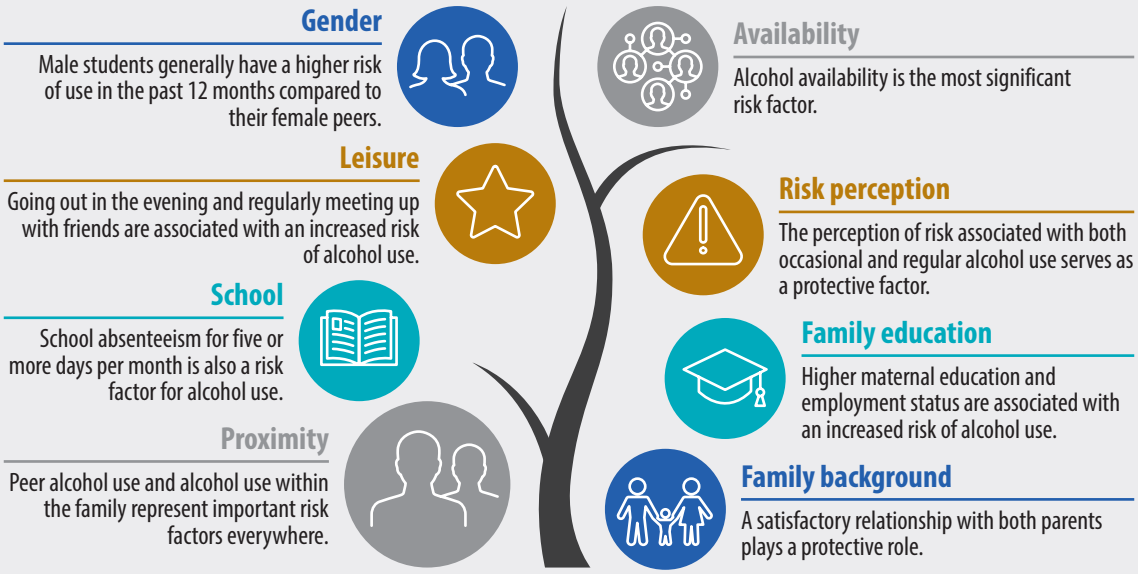
Identifying common risk factors across countries

Wide variability between the MedSPAD countries was a common feature across substances and indicators. However, some commonalities can be identified across all countries in an analysis of factors associated with substance use.

Male students generally have a higher risk of alcohol use in the past 12 months compared to their female peers. This pattern is consistent across all countries except Lebanon. With reference to leisure activities, going out in the evening (at least once a week) and regularly meeting up with friends are associated with an increased risk of alcohol use in all countries, except for Lebanon in the former and Egypt in the latter.

School absenteeism (for any reason from truancy to illness) for five or more days per month was also a risk factor for alcohol use, except in Lebanon.

1.8 Alcohol: environmental and individual factors associated with use in the last 12 months



In the family environment, a satisfactory relationship with both parents plays a protective role. The mother's role appears particularly relevant, where higher maternal education and employment status are associated with an increased risk of alcohol use among siblings.

Alcohol availability was identified as the most important risk factor, with reported easy access to alcohol being statistically significant in all countries. Alcohol use in peers and in the family are also important risk factors everywhere, highlighting the crucial role of students' immediate environment in shaping risky behaviours.

Finally, risk perception of both occasional and regular alcohol use serves as a protective factor, reducing the likelihood of past-year alcohol use among young people across all countries.

Discussion, implication for prevention and policy conclusions

Adolescence is a period marked by experimentation and risk-taking, during which exposure to substances such as alcohol can have long-term consequences. Understanding the prevalence, patterns and factors driving alcohol use in young people is essential for creating effective prevention and intervention strategies.

Research shows that young people often engage in higher-risk drinking behaviours such as consuming two to three times the amount of alcohol that adults typically do on a single occasion (Spear 2002; Spear and Swartzwelder 2014). A proposed explanation for this behaviour is that the neurodevelopmental changes in adolescence enhance sensitivity to alcohol's rewarding effects while diminishing sensitivity to its potential adverse effects (Spear and Swartzwelder 2014).

Despite the ban on selling alcoholic beverages to young people, and although the prevalence of drinking across North Africa and the Middle East is notably lower than in other regions, the MedSPAD results indicate that about 3% of adolescent students begin drinking before the age of 13.

According to MedSPAD data, about 18% of students in Egypt, Lebanon, Morocco and Tunisia report that obtaining alcoholic beverages is relatively easy. The rate is lower than that recorded in MedSPAD countries along the northern Mediterranean. All MedSPAD countries have national regulations for on-premise and off-premise outlet hours, days and places of sale, but no regulations that regulate outlet density. The minimum legal purchase age varies between countries, from 16 years in Morocco to 21 years in Egypt. Despite these regulations, alcohol seems to be relatively accessible to young people, particularly in Lebanon and Morocco, as evidenced by the reported ease of access. Analysis of associated factors suggests that alcohol availability is one of the key risk factors for alcohol use.

Gender differences are also prominent. Male students are generally two to three times as likely to use alcohol as female students. Alongside cultural and social influences, this may help explain the observed prevalence rates: 6.5% of students have used alcohol in their lifetime, 5.1% within the past year and 3.6% in the past month. These rates are notably lower than the average prevalence reported in the northern Mediterranean, where the majority of adolescent students drink alcohol: 83.2% of students have used alcohol in their lifetime, 75.4% within the past year and 53.3% in the past month (Benedetti et al. 2022). Additionally, the perception of risk associated with alcohol use appears to influence consumption patterns. On average, more than half of MedSPAD students believed that occasional alcohol use carries little to no risk, and a similar proportion believed the same about regular drinking and heavy episodic drinking.

This quick overview may point out how cultural, social, familial and policy factors all combine to influence the prevalence and patterns of alcohol consumption among young people in the southern Mediterranean region as well as elsewhere.

1.3. Cannabis and other substance use

Highlights

- Cannabis use among young people in the southern MedSPAD region is lower than in the northern MedSPAD area, with a lifetime prevalence of 4.7%, past-year prevalence of 4.1% and past-month prevalence of 2.8%.
- Male students consistently report higher cannabis use than female students across all time frames, with lifetime use among male students (7.1%) over three times as high as among female students (2.1%).
- Tunisia records the highest prevalence of lifetime cannabis use (5.8%), largely driven by male students (11.6% versus 2.2% for female students).
- Egypt has the highest prevalence of current cannabis use (3.7%), with significant gender disparities (5.2% for male students versus 1.3% female students).
- Lebanon reports the lowest rates of cannabis use overall (lifetime use 1.4%; past-month use 0.5%).
- The rate of early (by age 13) cannabis initiation (1.7%) is relatively close to that in the northern MedSPAD region (3.6%).
- The highest early initiation rate is in Egypt (2.5%), while Tunisia reports the lowest rate (0.7%).
- Tunisia also shows the largest gender gap, with 1.6% of male students vs. 0.1% of female students reporting early initiation.
- The perceived availability of cannabis is much lower in the southern MedSPAD region (9.8%) compared to the north (32.8%).

- Morocco has the highest perceived availability (23.9%), followed by Tunisia (13.5%), with Egypt and Lebanon reporting much lower rates (4.7% and 4.8%, respectively).
- Among young people, 9.9% report family cannabis use, while 15.2% report cannabis use among friends.
- Morocco has the highest family-related cannabis use (17.6%), while Tunisia reports the highest friend-related use (21.3%).
- Risk perception varies between occasional and regular use, with 57.3% of young people perceiving occasional use to be low-risk, and to 45.4% perceiving regular use to be low-risk.
- Male students consistently report a lower risk perception than their female peers.
- According to the Cannabis Abuse Screening Test (CAST), 1.0% of young people in the south MedSPAD region are at risk of cannabis-related problems, with the highest rates in Morocco and Egypt (1.3%).
- Male students are at significantly higher risk of cannabis-related problems across all countries, with Tunisia reporting the highest rate among male students (2.8%).
- In the past year 5.6% of south MedSPAD adolescents have used at least one illicit substance other than cannabis, with a significant gender gap (7.7% of male students versus 3.4% of female students).
- The highest prevalence of other drug use in the past year was found in Egypt (8.4%), with new psychoactive substances (NPS) being the most reported (4.2%).
- Tunisia has the lowest prevalence of other drug use in the past year (1.6%), with the use rate among male students (2.4%) being more than double that of female students (1.1%).
- Among MedSPAD students, 1.9% have been initiated into substances other than cannabis by age 13.
- Cocaine, ecstasy and heroin are perceived as easy to obtain by 5.3% of MedSPAD students.
- Friends who use drugs, including ecstasy (7.0%), cocaine (5.9%) and heroin (4.7%) are reported by 10.8% of students.

Policy framework

Drug policy is commonly defined as a government policy that addresses the issues relating to the use of illicit substances, with a primary focus on health outcomes but also covering broader social impacts.

Understanding the prevalence of drug use and its associated harms – including effects on health and social stability – requires consideration of the surrounding sociocultural context and regulatory frameworks that shape the control of drug demand, supply and use.

Young people's engagement in substance use, the consequences they face and the support they receive are all influenced by or dependent on the wider political and social environment. A brief overview of drug policies in the MedSPAD countries may help to contextualise the findings of this study about substance use. It focuses on the main punitive and rehabilitative responses to core drug-related offences, including drug use, possession for personal use and supply-related offences.

The data and information provided by national drug monitoring systems play a critical role in any evidence-based drug policy. All the MedSPAD countries already have or are developing a national monitoring system. National observatories on drugs should facilitate access to accurate, up-to-date, comparable and reliable data through scientifically sound methodological approaches to produce evidence for policy making. Egypt, Lebanon, Morocco and Tunisia all have national observatories in place to cover any illicit psychoactive substance. They also have a written national policy or action plan on drugs in place.

Drug consumption

In the MedSPAD countries in this study, the use of any substance or plant classified as a narcotic is considered a criminal offence that can be punished with imprisonment and the payment of a fine. However, in Morocco the 1974 law provides an alternative to incarceration: the option of treatment at the discretion of the judge. The Ministry of Justice in Morocco is proposing a new law to allow certain drug-related crimes to be handled by the health system rather than the penal and justice system. In Lebanon, in some circumstances individuals arrested for drug use who do not have previous drug-related offences can be moved out of the criminal justice system into voluntary addiction treatment. In Egypt the penalty varies according to the drug and the quantity consumed, while in Tunisia it varies according to the quantity of the drug consumed.

Drug possession for personal use

In Morocco, people arrested for drug possession face a fine and between two months and one year in prison. In Egypt and Tunisia the legal punishment for drug possession is incarceration and the payment of a fine, with the alternative of undergoing treatment for addiction. In Tunisia the 2017 drug policy reform allows for a reduction in penalties. In Lebanon, the possession of a drug for personal use is considered a misdemeanour under the Criminal Code.

Drug supply

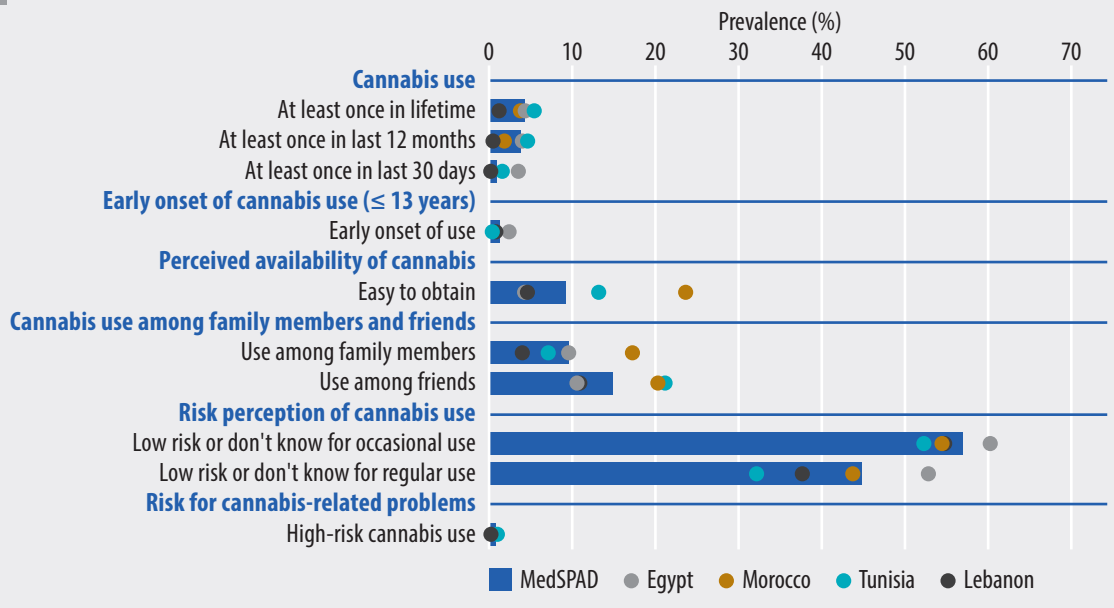
In all these countries the production and possession of drugs with the intention of distributing and supplying them to others is considered a criminal offence. There are differences in the length of imprisonment and the fines involved. The harshest penalties are in Egypt, where the supply of drugs in defined circumstances can lead to the death penalty. In Tunisia the penalty for drug trafficking ranges from six years to life imprisonment. In Egypt and Tunisia treatment for addiction is not offered as an alternative to punishment. According to the Criminal Code of Morocco, the punishment for drug-related offences is up to 30 years' imprisonment and a fine of up to €60 000. However, drug traffickers are generally sentenced to imprisonment for 8-10 years. Article 8 of the Law on the Suppression of Drug Addiction sets out the possibility for criminal proceedings to be stopped when an offender submits to being treated for addiction. However, this provision in Article 8 is rarely applied in practice.

Cannabis

Prevalence of use and related indicators

In the southern MedSPAD area the prevalence of cannabis use among young people is relatively low compared to the northern MedSPAD area. Overall, 4.7% of students report lifetime use, 4.1% use in the past year and 2.8% use in the last 30 days. Across all time frames, male students report consistently higher cannabis use than female students. Lifetime use stands at 7.1% for male students compared to 2.1% for female students, indicating that male students are more than three times as likely as female students to have tried cannabis at least once. The gender difference is wider over more recent time frames, with past-year use at 6.3% for male students versus 1.6% for female students, and last-month use at 4.6% for male students compared to just 0.9% for female students.

1.9 **Cannabis: prevalence of use and related indicators (%)**



Tunisia has one of the highest reported rates of lifetime and recent cannabis use, which are also characterised by the greatest gender difference in the MedSPAD countries. Lifetime use stands at 5.8%, driven largely by male use (11.6% among male students versus 2.2% among female students). This gender

difference is also reflected in recent use (4.8%), with 9.4% of male students versus 1.9% of female students reporting cannabis use in the past year, and for current use (1.9%), with 4.1% of male students versus 0.6% of female students reporting cannabis use in the past month. However, the prevalence of current use in Tunisia is almost half of that observed in Egypt.

In Egypt 4.5% of young people report lifetime use, 4.4% use in the past year and 3.7% use in the past 30 days. Gender differences are also present here, with 6.0% of male students reporting lifetime use compared to 2.0% of female students. This gender disparity is observed for both use in the past year (6.0% versus 1.9%) and use in the past month (5.2% versus 1.3% for the last 30 days).

Although the prevalence of lifetime cannabis use observed in Morocco (4.1%) is close to that in Egypt, the prevalence of both recent and current use is lower, with 2.2% of students reporting use in the past year and 1.7% in the last month. This disparity becomes even more pronounced in more recent indicators of use, with male students more likely to report use in the past year (3.9% versus 0.9% for female students) and in the past month (2.9% versus 0.8% for female students).

Lebanon has the lowest rates of cannabis use overall, with only 1.4% of young people reporting lifetime use, declining to 0.8% for past-year use and 0.5% for past-month use.

Despite the prevalence of cannabis use in Egypt, Lebanon, Morocco and Tunisia being lower than that in northern MedSPAD countries, the average rates of early initiation into cannabis use in both regions are closer. Among students, 1.7% report first using cannabis by age 13 or younger, compared to 3.6% estimated in the northern MedSPAD countries (Benedetti et al. 2022). Male students are significantly more likely than female students to report early initiation into cannabis use, with 2.8% of male students reporting first use by age 13 compared to just 0.6% of female students.

The highest prevalence of early initiation among the countries studied is in Egypt (2.5%), while the lowest is in Tunisia (0.7%). However, the largest gender disparity is observed in Tunisia, with 1.6% of male students reporting early use compared to only 0.1% of female students. In contrast, the smallest gender difference is observed in Morocco, where 1.0% of male students report early use compared to 0.6% of female students.

The perceived availability of cannabis, although lower than that observed in the northern MedSPAD area – 9.8% for male students versus 32.8% for female students (Benedetti et al. 2022) – shows clear variation between countries. Perceived cannabis availability is highest in Morocco, where 23.9% of young people report that cannabis is easy to obtain. Tunisia also exhibits a relatively high perceived availability, with 13.5% of young people considering cannabis to be accessible. In contrast, perceived availability is much lower in Egypt and Lebanon, with only 4.7% and 4.8% of young people, respectively, reporting that cannabis is easy to obtain.

Overall, male students are more likely than female students to perceive cannabis to be accessible, with 11.7% of male students reporting its availability compared to 7.8% of female students. The gender disparity is most pronounced in Egypt, where 6.3% of male students perceive cannabis to be easily obtainable, compared to only 2.0% of female students. Significant gender differences are also observed in Tunisia, where 18.3% of male students report easy cannabis availability compared to 10.4% of female students. In Morocco the disparity is even more striking, with 30.8% of male students perceiving cannabis to be accessible, compared to 18.5% of female students. The prevalence among Moroccan male students is rather high, approaching the levels observed in some European countries.

In the south MedSPAD region, 9.9% of young people report that a family member uses cannabis, while a higher proportion (15.2%) report having friends who use it. The highest rate of students reporting cannabis use in their family is found in Morocco (17.6%) and the lowest in Lebanon (4.2%). The highest proportion reporting cannabis use among friends is observed in Tunisia (21.3%), closely followed by Morocco (20.7%). Lebanon reports the lowest rates for family cannabis use (4.2%) and Egypt the lowest rates for cannabis use among friends (10.8%).

Overall, male students are more likely than female students to report cannabis use in their families and among their friends: 11.2% of male students report family cannabis use compared to 8.5% of female students. The gender difference is more pronounced when it comes to peer use, with 18.8% of male students reporting cannabis consumption among friends compared to 11.2% of female students.

Risk perception is a key factor, with a notable difference between perceived risks for occasional versus regular cannabis use. Among MedSPAD students, 57.3% perceive occasional cannabis use to be low-risk; this perception drops to 45.4% for regular use. Compared to the prevalence of use, the gender difference

in risk perception is less pronounced: male students are more likely than female students to report a low-risk perception for both occasional and regular cannabis use. Specifically, 59.2% of male students perceive occasional use to be low-risk, compared to 55.2% of female students. A similar trend is observed for regular use, with 49.1% of male students perceiving it to be low-risk, compared to 41.3% of female students.

Egyptian young people show the highest rates of low-risk perception for occasional use (60.5%) and regular use (53.2%), with no difference between male and female students. In contrast, the highest awareness of the risks related to cannabis use is observed in Tunisia, with 52.6% of students perceiving occasional cannabis use to be low-risk and 32.3% having the same view about regular cannabis use. The findings in Lebanon are quite similar, with 55.2% in the first case and 38.0% in the second. While male students in Tunisia tend to have a reduced perception of risks compared to female students, in Lebanon there is no significant difference between male and female students.

To measure the possible presence and extent of cannabis-related problems among young people the Cannabis Abuse Screening Test was used in the MedSPAD questionnaire (see Chapter 4 – Methodology).

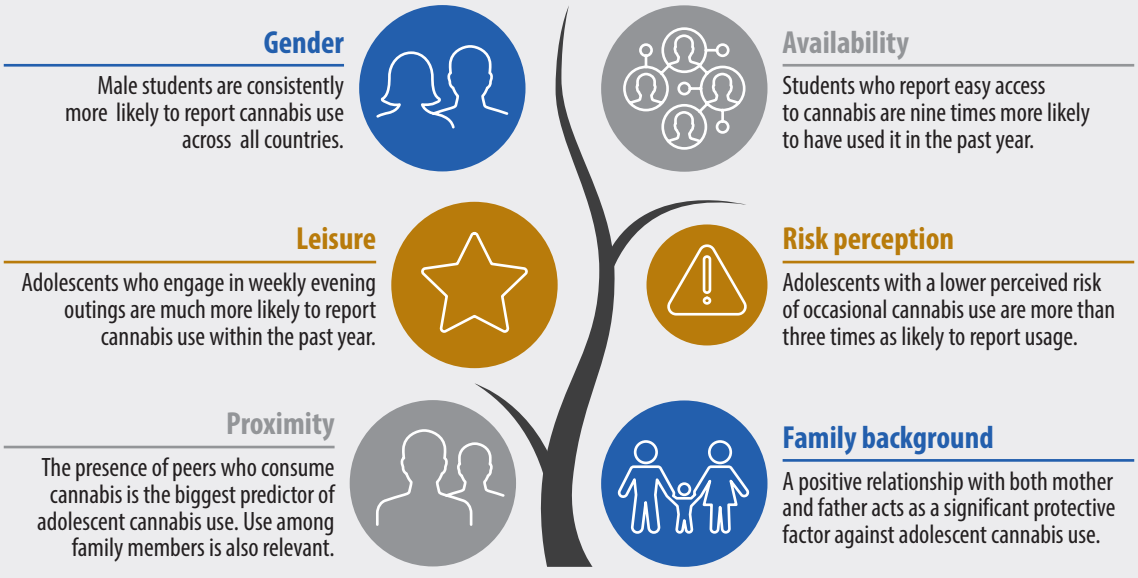
While the prevalence of young people identified as being at risk of developing cannabis-related problems (1.0%) is low compared to European countries (for instance, 5.2% in the north MedSPAD area, as reported by Benedetti et al. 2022), there are notable differences between countries and between genders. The highest prevalence is observed in Egypt and Morocco (both at 1.3%), followed by Egypt (at 0.8%). The lowest prevalence occurs in Lebanon, where only 0.3% of young people, predominantly male, are classified as high-risk users. Overall, the prevalence of high-risk cannabis use is primarily driven by male students across the countries. The highest rate is observed in Tunisia, where 2.8% of male students are at high risk of cannabis-related problems, compared to just 0.4% of their female peers. Significant gender differences are also evident in Egypt and Tunisia, where 1.2% and 2.8% of male students, respectively, are at high risk, compared to 0.3% and 0.4% of female students.

Identifying common risk factors across countries

Male students are consistently more likely to report cannabis use across all countries. Overall, in the south MedSPAD region, being male increases the odds of cannabis use by four times. This pattern is consistent across individual countries, with Tunisia exhibiting the highest gender disparity.

Regular evening outings are significantly correlated with increased cannabis consumption in most countries. Young people who engage in weekly evening outings – from once a week to almost every day – are much more likely to report cannabis use within the past year. The correlation is especially strong in Tunisia and Morocco.

1.10 Cannabis: environmental and individual factors associated with use in the last 12 months



Proximal factors, such as cannabis use among family and friends, also play a crucial role. The presence of peers who use cannabis is the biggest predictor of adolescent cannabis use, particularly in Morocco. Family members' cannabis consumption also markedly increases the likelihood of adolescent use, particularly in Lebanon. A positive relationship with both one's mother and one's father acts as a significant protective factor against adolescent cannabis use. Male and female students who report satisfaction with their relationships with both parents are significantly less likely to use cannabis compared to those with strained family connections. In Egypt, Morocco and Tunisia negative relationships with both parents nearly triples the likelihood of engaging in cannabis use.

The second most relevant factor associated with cannabis use is the perceived availability of cannabis. Students who report easy access to cannabis are nine times as likely to have used it in the past year compared to their peers.

Finally, young people with a lower perceived risk of cannabis use are more than three times as likely to report usage.

Other illicit substances

Prevalence of use and related indicators

The MedSPAD study also provides insights into the use of various illicit substances among young people over the past 12 months, including cocaine, ecstasy, heroin, amphetamines, methamphetamines, crack, hallucinogens and new psychoactive substances (NPS). NPS are a diverse group of synthetic drugs designed to mimic the effects of traditional illicit drugs such as cannabis, ecstasy, cocaine and heroin. They are often created to circumvent existing drug laws, as they are chemically modified versions of substances that may not yet be controlled or regulated.

In the south MedSPAD region, 5.6% of young people report using at least one of these substances in the past 12 months. The results reveal a significant gender difference, with male students more likely to report substance use than female students: 7.7% of male students report having used these substances in the past year compared to 3.4% of female students.

Egypt has the highest prevalence of the use of illicit substances (other than cannabis), with 8.4% of young people reporting use in the past 12 months. Among the various substances investigated, NPS have the highest prevalence of use, with 4.2% of Egyptian students reporting having consumed at least one of these new drugs in the past year. Generally, male students are more likely to use all substances, with 9.9% of male students reporting use compared to 5.9% of female students. The past-year prevalence of drug use (other than cannabis) observed in Lebanon (4.0%) is smaller than that in Egypt. Among the different substances, the most used are amphetamines and methamphetamines (both with a prevalence of 2.3%), followed by crack (2.1%) and NPS (2.0%). The use of hallucinogens (1.8%), cocaine or heroin (0.5% respectively) is less commonly reported.

In Morocco 3.7% of young people report having used illicit substances, with a gender gap of 5.4% for male students and 2.3% for female students. Although the overall prevalence is lower than in Egypt, the gender disparity remains consistent. Among the specific substances, amphetamines have a higher usage rate (2.3%), particularly among male students (3.1% compared to 1.6% for female students). The second and third most used substances are methamphetamines (1.9%) and hallucinogens (1.4%). Crack, ecstasy, cocaine and heroin have a lower prevalence of use, with values below 1%. Notably, use among male students is more prevalent than among female students, with no female students reporting cocaine or heroin use.

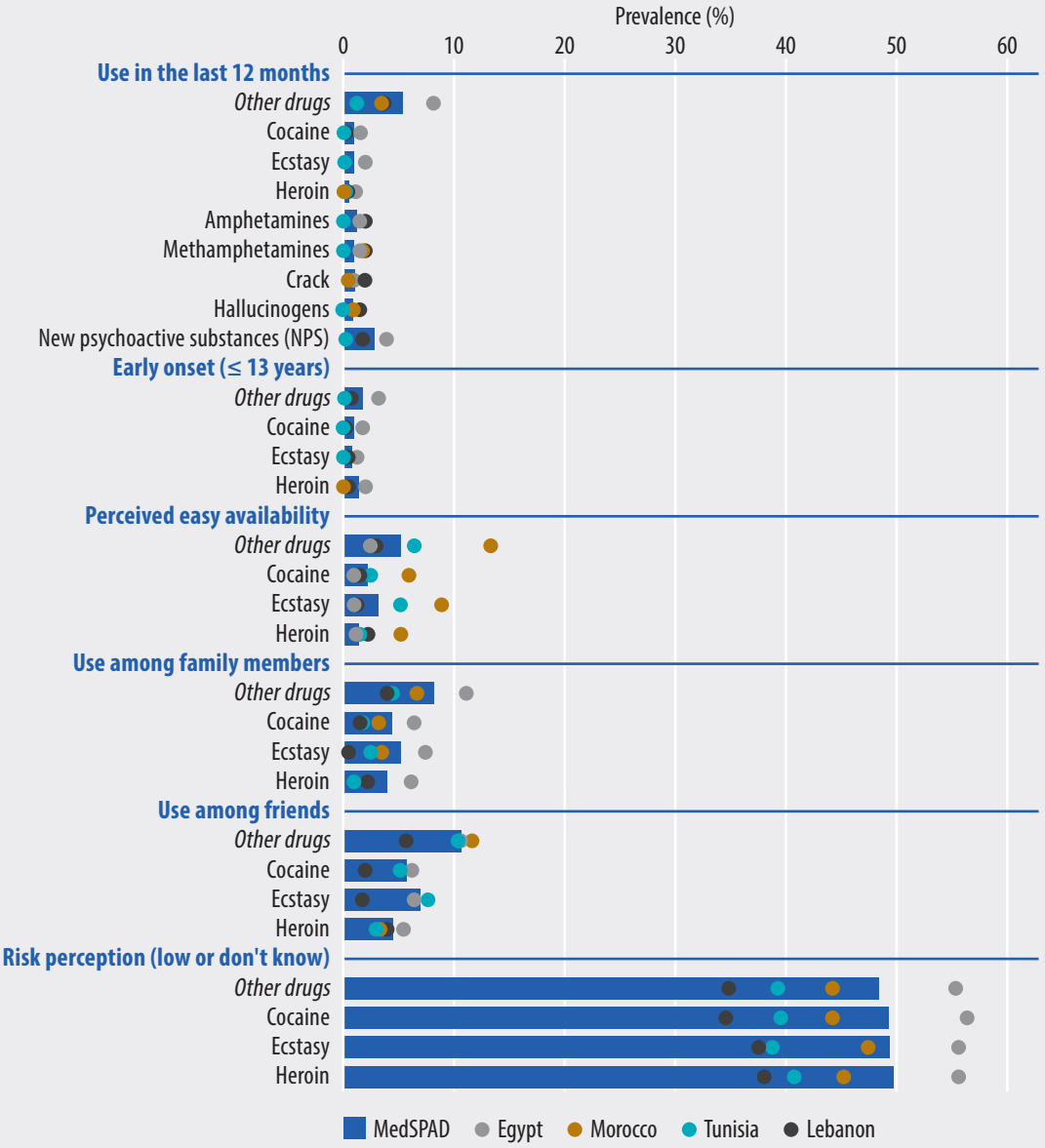
Tunisia shows the lowest prevalence of drug use other than cannabis, with only 1.6% of young people reporting use in the past year. The most reported class of substances in this case are the NPS, reported by 0.7% of Tunisian students.

Gender differences are also present, with 2.4% of male students versus 1.1% of female students reporting use of any drug other than cannabis. These differences are particularly pronounced for cocaine use, with 0.8% of male students versus 0.2% of female students reporting usage.

Overall, 1.9% of MedSPAD students report the first use of drugs other than cannabis at age 13 or younger. In this case, the investigated substances are cocaine, ecstasy and heroin, which have similar rates of early use. Egypt shows the highest rates of early onset for these substances (3.3%). For cocaine, 1.9% of Egyptian young people report first use by age 13, with male students more likely than female students to initiate

early (2.6% of male students vs. 0.7% of female students). Similarly, early initiation into ecstasy (1.5%) and heroin (2.2%) use are higher in Egypt, with a consistent gender disparity across these drugs. The lowest prevalence of early initiation into substance use was found in Tunisia (0.3%) and Morocco (0.4%), where no gender difference is observed.

1.11 **Other illicit substances: prevalence of use and related indicators (%)**



Across the MedSPAD region, 5.3% of young people perceive cocaine, ecstasy and heroin to be easy to obtain. The substance most frequently reported as easily accessible is ecstasy (3.5%), followed by cocaine (2.4%) and heroin (2.2%). Some striking differences emerge in examining perceived availability between countries. Morocco shows the highest perceived availability of these substances, where 6.2% of young people report cocaine to be accessible, 9.3% ecstasy and 5.6% heroin. This perception of availability is heightened among male students, particularly for ecstasy, where 13.6% of Moroccan male students perceive availability compared to 6.0% of female students. In contrast, Egypt presents the lowest perceived availability for all three substances. Only 1.2% of young people perceive cocaine and ecstasy to be accessible, and 1.5% perceive heroin to be accessible.

Overall, the prevalence of drug use within social and familial networks varies across the MedSPAD countries, with notable gender differences. About 8.5% of MedSPAD young people report having a family member who uses at least one drug from among ecstasy (5.4%), cocaine (4.7%) and heroin (4.2%). Reported use

among friends is slightly more prevalent, with 10.8% of young people reporting having at least one friend who uses drugs. More specifically, 7.0% of students have friends who use ecstasy, 5.9% cocaine and 4.7% heroin.

Male students are generally more likely than female students to report drug use among their family and friends: 10.2% of male students, compared to 6.8% of female students, report family drug use, while 13.3% of male students, compared to 8.0% of female students, report drug use among friends.

In Egypt reported drug use within family and friend networks appears higher than in the other countries. About 11.3% of young people report having a family member who uses at least one of the drugs from among cocaine, ecstasy and heroin. Peer use is also higher: 10.8% of young Egyptians report having friends who use drugs, with male students again having a higher exposure (13.0%) compared to female students (7.2%).

Egypt is followed by Morocco, where 7.1% of students report family drug use and 12.0% report drug use among friends. Tunisia and Lebanon have lower but similar rates of drug use among family members and friends: 4.7% of young Tunisians and 4.2% of Lebanese young people report family drug use; 10.8% of young Tunisians and 6.0% of Lebanese young people report drug use among friends.

The MedSPAD survey results reveal that risk perception around the occasional use of cocaine, ecstasy and heroin is similar, with about half of students perceiving those substances as being of low-risk or not having enough information to express an opinion.

Gender analysis reveals a slight but consistent trend: male students are more likely than female students to perceive lower risk associated with drug use. For instance, 51.5% of male students, compared to 46.8% of female students, perceive occasional cocaine use to be low-risk, with a similar pattern for ecstasy and heroin.

At the country level, Egyptian teenagers demonstrate elevated levels of low-risk perception regarding drug use, with approximately 56% believing that occasional use of cocaine, ecstasy or heroin poses no serious risk, regardless of the substance in question. The prevalence of this view among male students does not significantly differ from that among female students.

Morocco shows the second highest levels of low-risk perception, with bigger gender differences, compared to Egypt. For example, 51.4% of Moroccan male students perceive occasional cocaine use to be low-risk, compared to 39.1% of female students. Similar trends are seen for ecstasy and heroin, with male students generally perceiving lower risks.

In Tunisia the trend in low-risk perception is still present but is somewhat lower than in Egypt and Morocco. About 39% of Tunisian young people perceive occasional cocaine, ecstasy or heroin use to be low-risk. There are no statistically significant gender differences.

Among the MedSPAD countries, Lebanese young people have the highest levels of risk perception about drug use. The prevalence of low-risk perception ranges between 34.7% for cocaine and 37.8% for ecstasy and heroin, with no statistically significant differences between male and female students.

Identifying common risk factors across countries

1.12 **Other illicit substances: environmental and individual factors associated with use in the past 12 months**

In the MedSPAD sample, several factors emerge as significant predictors of the use of drugs other than cannabis.

Male gender significantly increases the likelihood of recent drug use, with male students being twice as likely as female students to report having used cocaine, ecstasy or heroin in the past year. Among the strongest risk factors, having family or friends who use drugs stands out, with young people exposed to drug-using social networks showing markedly higher usage rates. Young people with family members who use other drugs are nine times as likely to report personal use, while those with friends who use drugs are eight times as likely to do so themselves.

The relevance of the family environment is confirmed by students whose perception of their relationship with their parents as unsatisfactory having significantly higher odds than their peers of engaging in any substance use.

Low-risk perception of occasional drug use increases the odds of engaging in use by almost three times. Similarly, going out in the evening at least once a week increases the odds by two times.

Discussion, implication for prevention and policy conclusions

Findings from this study provide a comprehensive understanding of young people's use of cannabis and other illicit drugs in the south MedSPAD region, highlighting critical patterns, disparities and risk factors. Although the prevalence of substance use is generally lower than in north MedSPAD countries (Benedetti et al. 2022), regional and demographic differences highlight areas of concern.

Lifetime cannabis use among young people in the south MedSPAD region averages 4.7%, with notable gender disparities, with male students consistently more likely than female students to use cannabis. This trend intensifies over indicators of more recent use, with Tunisia exhibiting the most pronounced gender gap, possibly reflecting a need for targeted interventions.

Early initiation into cannabis use, while less prevalent than in European countries, remains a concerning issue. Approximately 1.7% of young people report having used cannabis by the age of 13. Among the south MedSPAD countries, Egypt shows the highest rate of early initiation. This early onset underscores the importance of early preventive measures, particularly in countries with higher rates of initiation. While most individuals who use cannabis do not experience serious adverse consequences, approximately 1 in 10 develop dependency, with the likelihood being higher among those who initiate use at an early age (Hall 2009). Robust evidence also links early cannabis use to an increased risk of lower educational attainment and mental health issues (Hall and Degenhardt 2009; Macleod et al. 2004; Moore et al. 2007; van Ours and Williams 2009). Emerging research also suggests that early cannabis use may result in cognitive impairments, particularly in verbal learning and memory performance (Solowij et al. 2011; Jacobsen et al. 2004).

Cannabis continues to be the most widespread drug cultivated worldwide (UNODC 2024), The perceived availability of cannabis shows clear variation across the region, with Morocco showing the highest rates and Lebanon the lowest. This is in line with the data about drug supply provided by the United Nations Office on Drugs and Crime (UNODC), which ranks Morocco as the world's second largest producer of cannabis resin after Afghanistan. Accessibility correlates strongly with use, as young people who perceive cannabis to be easily obtainable are nine times as likely to report use. Social exposure also plays a significant role: young people with family members or peers who use cannabis are much more likely to use it themselves, with Tunisia and Morocco showing the highest peer-influence rates. Regular evening outings and low risk perceptions of cannabis use are also strongly associated with higher consumption rates.

Protective factors such as positive family relationships appear to be critical in reducing adolescent cannabis use, while strained parental relationships significantly increase the risk.

While the prevalence of high-risk cannabis use is relatively low (1%), as measured by the CAST, gender- and country-specific differences are evident. Male students consistently exhibit a higher risk, with Tunisia having the highest proportion of male students at risk, again highlighting the need for gender-specific prevention interventions. Interestingly, despite Egypt having the highest prevalence of current cannabis use in the region (3.7%), the proportion of young people at high risk of developing cannabis-related problems is among the lowest (0.8%), after only Lebanon. In contrast, Morocco and Tunisia, where the prevalence of recent cannabis use is approximately half that of Egypt, show a higher prevalence of high-risk cannabis use (1.3%).

These findings suggest that the relationship between cannabis use and high-risk use is complex and is influenced by various factors, including the quantity consumed and broader social and cultural contexts. Important factors may be societal attitudes towards cannabis use, which may impact individuals' self-assessment of excessive use, their willingness to stop and external pressures or recommendations (such as from parents or teachers) to cease usage. Additionally, cultural norms may shape the likelihood of conflicts arising from cannabis use (Philbin et al. 2019; Santaella-Tenorio et al. 2019).

It is important to interpret the CAST results with caution because these contextual influences may affect the findings. As the "Methodology" section of this report (see Chapter 4) points out, different coding systems and cut-off scores have been applied since its initial validation in 2007.

This report has, on the basis of previous research, adopted the binary version with a cut-off score of two or more points for the purpose of comparison with the north MedSPAD and the European School Survey Project on Alcohol and Other Drugs (ESPAD) results, but different computation methods would produce different results.

For substances beyond cannabis, Egypt shows the highest prevalence of use (7.8%) and Tunisia the lowest (1.6%). Gender disparities are consistent, with male students reporting higher use across all countries and substances. New psychoactive substances are the most often reported illicit substance used, particularly in Egypt (4.2%). This figure is relatively high, even compared to the European countries in general, where the estimated prevalence is 3.4% (ESPAD Group 2020), and those bordering the northern rim of the Mediterranean (2.7%). Recent findings show that *strox* and *voodoo* are two of the most popular types of NPS in the Egyptian drug market, whose use has grown in recent years, particularly among students (Hashim et al. 2022).

The perceived availability of drugs other than cannabis is generally low in the south MedSPAD area. Risk perception is also a key factor, with nearly half of young people underestimating the risks of occasional drug use, especially in Egypt. This is relevant information, as the perceived risk of substance use is significantly associated with substance use behaviours during adolescence (Kollath-Cattano et al. 2020; Mariani and Williams 2021). Scientific studies also show that the less harmful they consider a substance, the more likely young people are to use it (Cleveland et al. 2008; Resko 2014).

Social and familial influences play a key role in the decision to use a substance. Young people with drug-using family members or friends are eight to nine times as likely to use drugs themselves, with these influences being strongest in Egypt and Morocco.

The perceived use of substances by friends, which is part of the descriptive norms governing individual behaviours, was found by a study based on the ESPAD data (Helmer et al. 2021) to be the most important factor associated with personal cannabis use. Perceived peer substance use exerts a high behavioural influence on young adolescents and emerging adults. Schuler et al. (2019) find that cannabis use among friends may be more important among young people than use by adult family or siblings. This is because young people are highly influenced by descriptive norms ("everyone does it") and injunctive norms ("everyone approves of it") in their social environment, and derive greater emotional reward from conforming to these norms (Blakemore and Robbins 2012), During this stage, young people spend more time with their peers, and their social groups expand as a result of changes in class structures and increased out-of-class interactions (Lam et al. 2014), given these dynamics, prevention strategies in south MedSPAD countries may benefit from incorporating resistance training to peer pressure, which is often included as a component of life-skills programmes. Such strategies may prove particularly effective in addressing risky health behaviours.

1.4. Pharmaceuticals for non-medical use

Highlights

- The overall prevalence of tranquilliser and/or sedative use for non-medical reasons among young people is 7.9% in their lifetime, 6.2% in the past 12 months and 5.1% in the last 30 days.
- Lifetime use of tranquillisers and/or sedatives shows no significant gender differences.

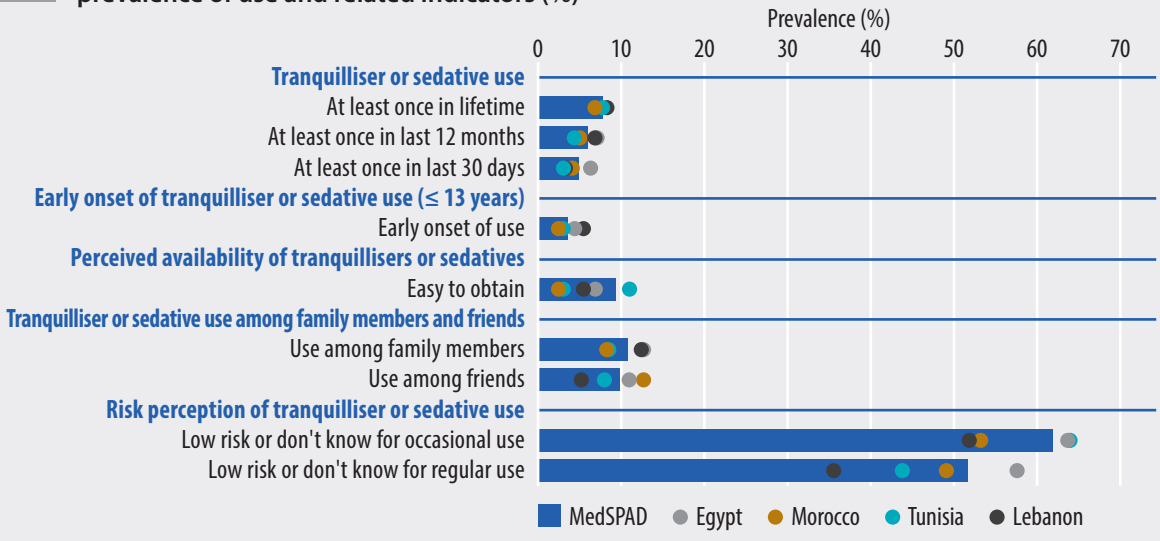
- Among MedSPAD students 3.8% report having used painkillers in their lifetime and 2.8% in the past 12 months.
- On average, the prevalence of anabolic steroid use is 2.7% in a lifetime and 2.6% in the past 12 months.
- Egypt reports the highest prevalence of the use of tranquillisers and/or sedatives (lifetime 8.2%, last 12 months 7.4%, last 30 days 6.5%) and of anabolic steroids (lifetime 3.3%, last 12 months 2.9%).
- Lebanon reports the highest prevalence for the use of painkillers, with both lifetime and last 12-month use at 8.1%.
- While in Egypt male students report higher prevalence of tranquilliser and/or sedative use for all measures, in Morocco and Tunisia female students report higher prevalence across all measures. No significant gender differences are identified in Lebanon.
- Among MedSPAD students 9.7% report easy access to tranquillisers and sedatives and the majority believe that occasional non-medical use carries little or no risk.
- Statistically significant higher lifetime use of painkillers is reported among female students, while male students report significantly higher lifetime use of anabolic steroids.
- Family use of tranquillisers and/or sedatives is reported by 11.0% of students, and peer use by 10.2% of students.
- The main common risk factors for the non-medical use of tranquilisers and/or sedatives, painkillers and anabolic steroids among young people include proximity to users (parents or friends), perceived ease of access to these substances and low awareness of associated risks.

Prevalence of use and related indicators

Non-prescribed tranquillisers and sedatives

Overall, 7.9% of young people report having used tranquillisers and/or sedatives for non-medical reasons in their lifetime, 6.2% in the last 12 months and 5.1% in the last 30 days. The use of tranquillisers and/or sedatives for non-medical reasons varies slightly between countries. Lebanon and Egypt report by far the highest rates for each measure of use, with about 8% of young people having used tranquillisers and/or sedatives for non-medical reason in their lifetime and about 7% in the past 12 months; Egypt also has the highest prevalence of use in the last 30 days (6.5%). In contrast, Morocco exhibits the lowest prevalence of lifetime use (6.9%), and Tunisia the lowest prevalence in the last 12 months (4.5%) and in the last 30 days (3.1%).

1.13 **Tranquillisers and/or sedatives for non-medical reason: prevalence of use and related indicators (%)**



Interestingly, at the aggregate level, gender differences are not statistically significant for the use of tranquillisers and/or sedatives for non-medical reason in their lifetime and in the past 12 months, while male students are slightly more likely to report use in the last 30 days (5.7% versus 4.5% for female students).

The comparison across countries shows some peculiarities in gender differences between the use measures. In Egypt male students have a higher prevalence of use in their lifetime (9.1% versus 6.6% among female students), in the past year (8.6% among male students versus 5.4% among female students) and in the last 30 days (7.7% among male students versus 4.6% among female students). In Morocco and Tunisia the gender difference is inverted: female students report a higher prevalence for all measures of use. In Lebanon no statistically significant differences were found between male and female students.

On average, 3.9% of MedSPAD students report having used tranquillisers and/or sedatives for non-medical reasons for the first time at the age of 13 or younger. The highest rate at the country level is reported in Lebanon (5.6%), followed by Egypt (4.5%), Tunisia (3.0%) and Morocco (2.6%). Overall, the prevalence among male and female students does not show statistically significant gender differences, although in Egypt the rate was 5.1% among male students compared to 3.5% among female students, and in Morocco 1.4% among male students compared to 3.6% among female students.

Overall, 9.7% of students report that they find it easy to obtain tranquillisers and/or sedatives. Notable variations are observed between countries, led by Morocco, where 16.3% of students report easy access to tranquillisers and/or sedatives, followed by Lebanon (12.6%), Tunisia (11.1%) and Egypt (7.1%).

Although there is a significant gender difference at the aggregate level, with female students more likely to be able to find these products (10.4%) compared to male students (9.0%), no significant differences can be observed within countries. Regarding the use of tranquillisers and sedatives by family members and peers, 11.0% of students report that at least one family member uses them and a similar proportion (10.2%) that their friends do.

The highest prevalence of family use is recorded for Egypt (12.7%) and the lowest for Morocco (8.3%), while the highest prevalence for friends' use is recorded for Morocco (12.8%) and the lowest for Lebanon (5.2%). In almost all MedSPAD countries gender differences are statistically significant, generally with more male students frequently reporting the use of tranquillisers and/or sedatives by family and peers. At a country level, the biggest gap was observed in Egypt, where male students report the use of tranquillisers and sedatives by both family members (14.3% compared to 10.2% of female students) and friends (13.1% compared to 7.8% of female students) more frequently than female students. In both Morocco and Tunisia female students tend more frequently to report the use of tranquillisers and/or sedatives by family members.

On average, more than half of MedSPAD students (62.1%) believe that occasional tranquilliser and/or sedative use for non-medical reasons carries little to no risk. This percentage decreases to 51.9% when students are asked about regular use for non-medical purposes. At the country level, the lowest awareness of the risks associated with both occasional and regular use is found in Egypt, where 64.0% and 57.9% of students, respectively, believe that the use of this class of substances carries no or low risk. In contrast, the highest awareness for both occasional and regular use is found in Lebanon. In Morocco gender differences are significant, and male students are more likely to believe that both occasional and regular use of tranquillisers and/or sedatives carries little or no risk. In Tunisia the gender difference is reversed, with the occasional use of tranquillisers and/or sedatives more frequently deemed risky by male students than by female students.

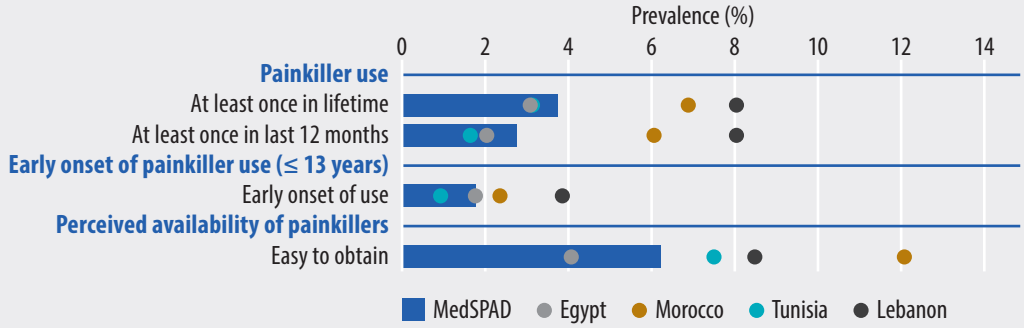
Painkillers to get high

Overall, 3.8% of young people report using painkillers to get high in their lifetime and 2.8% in the past 12 months. The use of painkillers without medical prescription varies widely between countries. Lebanon reports by far the highest rates for each measure of use, with 8.1% of young people reporting that they have used painkillers in the past year. Egypt records the lowest prevalence of lifetime use (3.1%) and Tunisia the lowest prevalence of use in the last 12 months (1.7%).

Interestingly, across the south MedSPAD region, the prevalence of use among female students is higher than among male students, with a significant difference of painkillers use in lifetime.

The comparison across countries shows some peculiarities in gender differences. In Egypt, male students have a higher prevalence of use in the past years (2.5% versus 1.5% among female students), while in Tunisia female students report more frequently than their male peers the use of painkillers in both lifetime and past year. In Lebanon and Morocco no statistically significant differences were observed.

1.14 **Painkillers to get high: prevalence of use and related indicators (%)**



On average, 1.8% of MedSPAD students report using painkillers for the first time at the age of 13 or younger. At the country level, the highest rate is reported in Lebanon (3.9%), followed by Morocco (2.4%), Egypt (1.8%) and Tunisia (1.0%). Overall, the prevalence among male students and female students does not show significant differences.

The only statistically significant gender difference is seen in Tunisia, where female students have a higher early onset rate than male students (1.5% versus 0.2%).

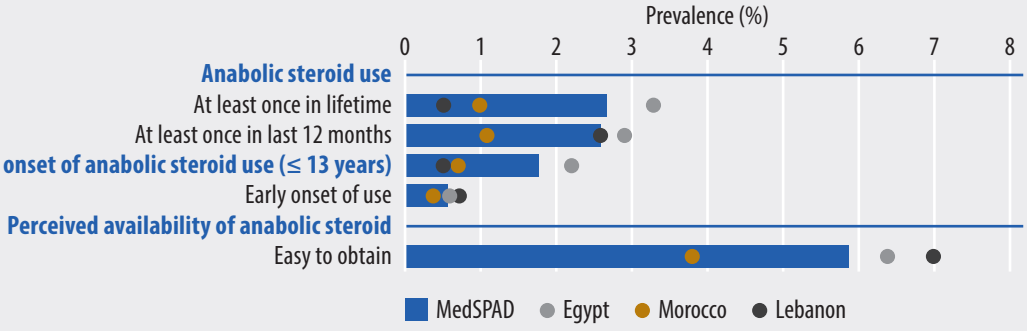
Overall, only 6.3% of students report that they find it easy to obtain painkillers, with no gender difference. Notable variations are observed between countries, led by Morocco, where 12.1% of the students report easy access to painkillers. Egypt reports the lowest perception of access (4.1%): male students (4.7%) report easy access more frequently than female students (3.3%).

Anabolic steroids

Overall, 2.7% of young people report having used anabolic steroids in their lifetime and 2.6% in the past 12 months. Egypt reports by far the highest rates for each measure of use, with 3.3% of young people having used anabolic steroids in their lifetime and 2.9% having used them in the past 12 months, while Morocco has the lowest prevalence of use in a lifetime and in the past 12 months (1.1%).

Significant differences are observed in Egypt, with male students reporting more frequently than female students the use of anabolic steroids both in their lifetime (4.2% compared to 1.7% among female students) and in the past 12 months (3.8% compared to 1.5% among female students).

1.15 **Anabolic steroids: prevalence of use and related indicators (%)**[2]



On average, 1.8% of MedSPAD students report having used anabolic steroids for the first time at the age of 13 or younger. At the country level, the highest rate of early onset is reported in Egypt (2.2%), followed by Morocco (0.7%), and the lowest in Lebanon (0.5%). Overall, the prevalence among both male and female students shows significant differences, with male students (2.5%) reporting higher rates of early onset compared to female students (0.9%). Egypt is the only country where gender differences are statistically significant: 2.8% of male students and 1.3% of female students used anabolic steroids for the first time at the age of 13 or younger.

2. It should be noted that data on the use of anabolic steroids were not collected in Tunisia, and therefore the country is not included in the comparative analysis.

Overall, 5.9% of students report that they find it easy to obtain anabolic steroids, with significant gender differences (7.8% among male students compared to 3.4% among female students). Notable variations are observed between countries, with Lebanon showing the highest prevalence (7.0%) and Morocco the lowest (3.8%). The most relevant gender gap is observed in Lebanon, with male students (12.1%) reporting greater accessibility than female students (3.2%).

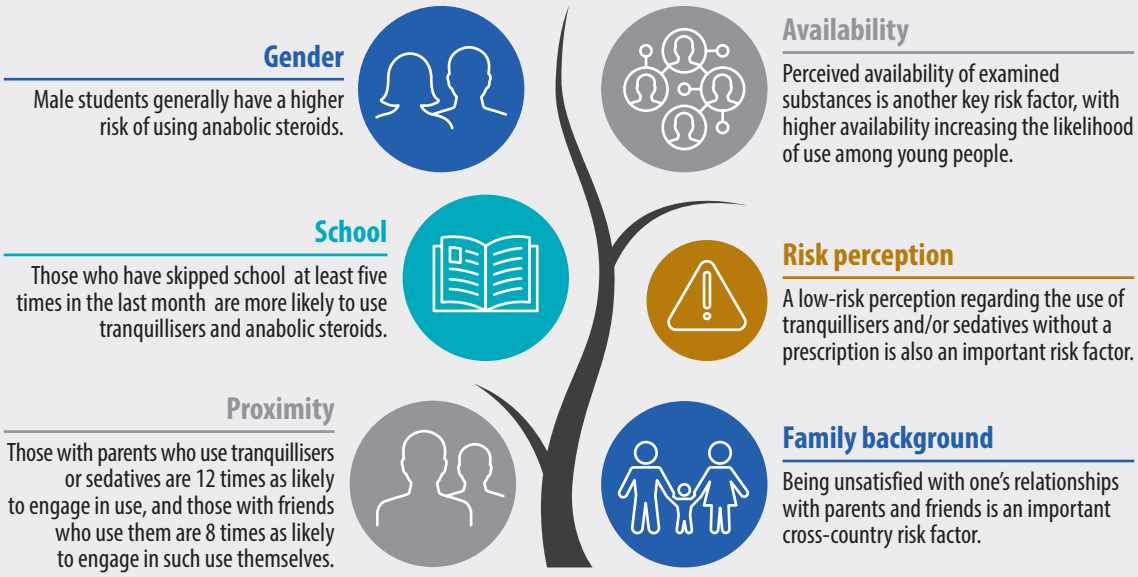
Identifying common risk factors across countries

In examining risk and protective factors, it is essential to account for the specific cultural and social characteristics that are unique to each country. These contextual differences provide critical insights into the targeting of prevention efforts. However, it is equally important to adopt a broader perspective to identify commonalities across countries, which enables a more comprehensive understanding of universal patterns and shared challenges.

Across the countries, gender does not play a consistent role in the use of tranquilisers and/or sedatives for non-medical reasons. Male students are more likely to have used this class of drugs in Egypt but not in Morocco and Tunisia, where, in contrast, female students are more likely to use these drugs outside a medical prescription. In Lebanon gender does not seem to play a significant role.

Among leisure activities, going out in the evening (at least once a week) is associated with an increased risk of tranquilliser and/or sedative use in all countries, except in Tunisia; in Lebanon the behaviour is just above the significance threshold. School absenteeism (for any reason, from truancy to illness) for five or more days per month is also a risk factor for tranquilliser and/or sedative use.

1.16 Tranquillisers and/or sedatives, painkillers, and anabolic steroids for non-medical reasons: environmental and individual factors associated with use in the last 12 months



In the context of students' proximal environment, a non-intact family with fewer than two family members increases the risk of using non-prescribed tranquillisers and sedatives. With reference to the quality of family relationships, dissatisfaction with one's relationship with parents and friends emerges as an important cross-country risk factor, except in Lebanon, where the relationship with parents is not significant.

Proximity to and descriptive norms derived from family and friends are generally among the most significant risk factors for the non-medical use of tranquilisers and/or sedatives. It is estimated that individuals with parents who use these substances are 12 times as likely to use them themselves, while those with friends who engage in such use are eight times as likely to do so for non-medical purposes.

Another highly influential risk factor is the perceived availability of the substance, which, when availability is high, appears to increase the likelihood of use among adolescent students. In the same way, a low perception of the risks associated with using tranquillisers and/or sedatives without medical advice further raises the odds of personal use.

Gender does not appear to be a significant factor in the use of painkillers across all countries. However, dissatisfaction in one's relationships with parents, and having a mother in full- or part-time employment, are risk factors. This highlights the critical role of care and support in preventing the use of prescription medicines for non-medical reasons.

In the use of anabolic steroids, being male, missing school for five or more days in the past month, dissatisfaction with one's relationship with both mother and father and, most importantly, having easy access to these substances are all factors that significantly increase the likelihood of use among students.

Discussion, implication for prevention and policy conclusions

The non-medical use of prescription medications was first identified among youth in the United States and has since become a major public health problem worldwide (Boyd et al. 2016).

The misuse of pharmaceuticals is defined as the use of a medication that is not prescribed to a user or is taken in a manner not recommended by a doctor or not in line with the medicine information leaflet (e.g. a higher dose, through a non-approved route of administration). Misuse also includes situations where the medication has been illegally obtained (e.g. purchased from a dealer or via the internet) or obtained under false pretences (e.g. doctor shopping, feigning symptoms).

Students may misuse pharmaceuticals for a range of reasons, including to induce euphoria, to enhance the effects of alcohol and other drugs, to self-medicate illness or injury, to mitigate the symptoms of withdrawal from alcohol and other drugs, or to improve school performance (Larance et al. 2011; McCabe et al. 2017).

Research suggests that the non-medical use of prescription medications by young people is linked to the misuse of prescription drugs (McCabe et al. 2011), psychological distress and suicidal thoughts. It is also negatively associated with academic performance and overall health-related quality of life (Schepis and Hakes 2014), Furthermore, the non-medical use of prescription medications tends to correlate with other substance-use behaviours and may be part of a wider externalizing spectrum (Schepis and Hakes 2014).

The ESPAD survey conducted in 2019 indicates that, on average, 9.2% of European students reported lifetime use of pharmaceuticals for non-medical purposes, with quite large differences between countries. In most ESPAD countries, female students were more likely than male students to use pharmaceuticals non-medically. While efforts to monitor and understand the phenomenon are growing in Europe, this is still an under-investigated topic in North Africa and the Middle East. Understanding the prevalence of and the underlying factors driving the non-medical use of these substances among young people is essential for developing targeted prevention and intervention programmes.

The prevalence of tranquilliser, painkiller and anabolic steroid use varies across the southern Mediterranean region, reflecting cultural and social differences (Apantaku-Olajide and Smyth 2013). The most used class of pharmaceuticals are tranquillisers and sedatives, followed by painkillers and anabolic steroids, which have a lower prevalence of use.

Across the region, 7.9% of young people report lifetime use of tranquillisers and/or sedatives. Egypt displayed the highest rate of past-month use (6.5%), with a prevalence almost double that found in the other countries. The more recent use of painkillers and anabolic steroids shows a similar trend, with Lebanon and Egypt both reporting a higher prevalence. Gender patterns diverged between countries, with male students generally reporting greater use of anabolic steroids, while female students often use painkillers more. The use of tranquillisers and/or sedatives is more prevalent among male students in Egypt and among female students in the other countries, reflecting the interplay of gender-specific social roles with other factors.

Risk factors shared across these substances highlight the role of social environments and accessibility. Proximity to and descriptive norms derived from family and friends are generally among the most significant risk factors for the non-medical use of medical drugs. Young people are significantly more likely to use these substances if they are in close proximity to users, particularly parents and friends. Behavioural patterns such as frequent evening outings and school absenteeism increase the likelihood of use, which suggests that unsupervised time and disengagement from structured activities play a critical role. Additionally, the perceived ease of obtaining these substances, coupled with a low perception of associated risks, emerges as a strong predictor of the non-medical use of pharmaceuticals.

The significance of protective factors such as parental monitoring, participation in sports and higher parental education levels in some countries underscores the importance of tailoring prevention interventions to specific contexts and of fostering positive relationships and environments. In some

countries, for example Egypt, higher parental education is associated with a reduced risk of tranquilliser, sedative and painkiller use, reflecting the cultural importance of education and its potential buffering effect.

The general findings underline the need for culturally tailored interventions that address gender-specific patterns, social networks, risk perception and accessibility.

Educational campaigns that highlight the risks of non-medical drug use, together with policies that limit access to these substances, could be instrumental in reducing their use. Moreover, promoting protective factors, such as extracurricular activities and family engagement, could play a crucial role in mitigating risks.

The prevalence rates observed, and the analysis of individual factors associated with prescription medicine misuse among south MedSPAD young people, underscore the importance of strengthening the monitoring of the phenomenon in Egypt, Lebanon, Morocco and Tunisia, and the need for multidimensional prevention and intervention strategies. By addressing the interplay of social, psychological and environmental influences, stakeholders can reduce the prevalence and long-term impact of this behaviour.

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Chapter 2

Other risk behaviours among adolescents

Highlights

- Overall, 16.5% of MedSPAD students report having engaged in gambling activities at least once in the past year; 19.6% of male students report having gambled, compared to 13.2% of female students.
- Cards or dice are the most popular form of gambling in almost all countries (12.3%), followed by sports or animal betting (10.3%) and lotteries (8.2%). Slot machines are the least popular form of gambling (7.9%).
- Among MedSPAD students, 14.3% report having gambled at least once in the past year in physical settings, and 11.7% having gambled online through websites and gambling platforms.
- Overall, 1.6% and 3.2% of students fall into at-risk and problematic gambling profiles, respectively. The highest figures are found in Tunisia (3.5% and 4.3% respectively), followed by Morocco (1.6% and 3.0% respectively), Egypt (0.7% and 2.8% respectively) and Lebanon (0.3% and 1.7% respectively).
- Among MedSPAD students, 77.1% spent time on social networks in the seven days prior to the survey. Social media seem to be very popular in Lebanon (96.7%) and Tunisia (95.2%), but less popular in Morocco (84.3%) and even less so in Egypt (64.1%).
- Social media use is the only behaviour for which, at the aggregate level, female students report slightly higher engagement (79.4%) than male students (74.9%).
- Social network use is lower on school days (68.8%) compared to non-school days (74.0%).
- Overall, 55.5% of MedSPAD students feel their relationship to social media to be problematic.
- Among MedSPAD students, 59.4% report having played video games in the past month. Nearly 70% of male students play video games compared to about 48% of female students.
- Overall, 45.5% of students report playing video games on school days and 56.7% on non-school days.
- Overall, 40.3% of MedSPAD students report perceiving a high risk of problematic behaviour in their use of video games.
- Male students play video games much more than female students, and male students' self-perception of problems in the management of this habit is also higher.

2.1. Gambling

Policy framework

Gambling – placing bets on uncertain outcomes – has become increasingly popular as a form of entertainment

and is encouraged by a rapidly expanding and highly competitive industry that makes opportunities to gamble readily available. This increased availability of gambling opportunities has the potential to encourage young people into gambling and to impact the prevalence of problem gambling among them (Pérez 2024).

The public health community has therefore urged governments to recognise the harms associated with gambling and to incorporate population-based harm prevention strategies into gambling policies (Ukhova et al. 2024). In most countries worldwide gambling is legally available and is increasingly being regulated.

In all MedSPAD countries gambling is regulated by law, primarily in relation to land-based gambling, whereas online gambling remains largely unregulated.

In Egypt, lotteries are fully legal and are regulated by a law passed in 1973, while a law of 2022 permits gambling only in facilities used by non-Egyptians. There have been decrees that regulate the operation of casinos in hotels and impose royalties on their earnings. Online betting is unregulated in Egypt and the minimum legal age for gambling is 18 years. There is no national plan to prevent or funds available to treat gambling harms.

In Lebanon, gambling activities are regulated by the Ministry of the Interior and Municipalities under Law No. 417. The law prohibits some forms of gambling but allows licensed casinos and online gambling platforms to operate. The government controls land-based casino gambling but there is no specific legislation to ban online gambling. Online gambling platforms are legal in Lebanon but must be licensed and regulated by the government. Online betting is limited to an officially licensed site. The Lebanese Government regulates gambling through monopolies and currently allows casino gambling, a national lottery and a regulated online sports betting site. There are strict restrictions on minors (age 18) participating in gambling activities to prevent underage gambling and protect vulnerable individuals.

Morocco has legalised most forms of gambling. A decree passed in 2002 allowed casinos to operate legally, while lotteries and sports betting are strictly monopolies of the state. The country has several land-based casinos, which are regulated and licensed by the government to ensure that they adhere to regulations. The legal gambling age is 18 years and upwards. However, online gambling is not regulated at all. Online gambling operators cannot apply for an online gambling licence or offer virtual casino games. In the absence of any regulations on online gambling, Moroccans participate in online gambling on foreign websites.

In Tunisia, gambling was first regulated by a law in 1974. This allowed only certain forms of land-based gambling and set out a clear licensing framework for casinos and lotteries. The country has some casinos that are open only to foreigners, most of which are located in tourist destinations. Gambling activities such as casino games, sports betting and horse racing are all closely supervised by regulatory bodies to ensure that they meet safety and compliance standards, as are the state-run lotteries and bingo. Online gambling remains technically prohibited under Tunisian law, so no local or foreign companies are allowed to offer online gambling. The minimum legal age for gambling is 18 years. There are no national plans to prevent or funds available to treat gambling harms. Gambling disorder is not included among the behavioural addictions covered by addiction treatment centres.

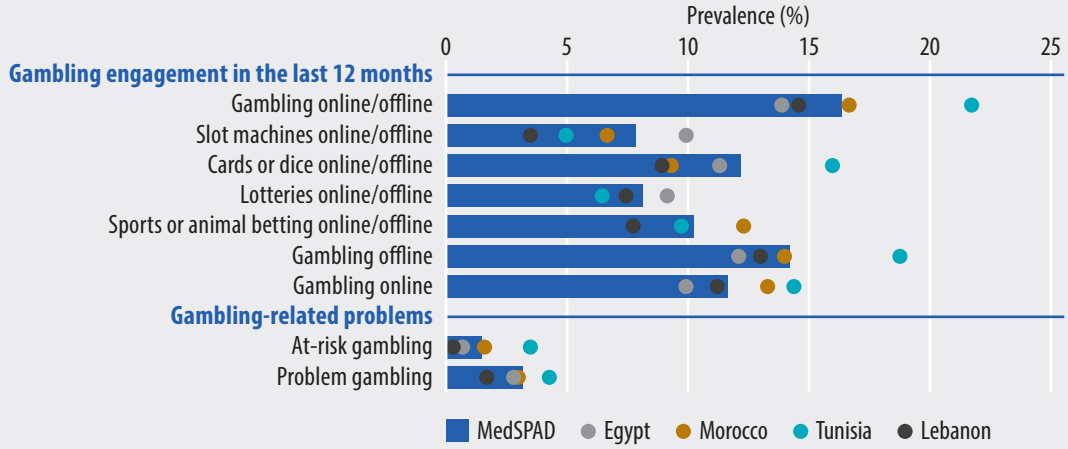
Prevalence of use and related indicators

The MedSPAD study provides a glimpse into adolescent gambling behaviours, including gambling, gaming and social media use. Overall, 16.5% of MedSPAD students report engaging in gambling activities at least once in the past year. There is a gender disparity in the results, with 19.6% of male students reporting they have gambled, compared to 13.2% of female students.

Tunisia is the country with the highest overall rate of gambling (21.8%) among the MedSPAD countries. Morocco has the second highest rate (16.7%), followed by Lebanon (14.6%) and Egypt (13.9%). Cards or dice are the most popular form of gambling in almost all countries (12.3%), followed by sports or animal betting (10.3%) and lotteries (8.2%); slot machines are the least popular form of gambling (7.9%). An exception at the country level is Morocco, where the most popular form of gambling is sports or animal betting (12.3%).

In all the countries and for all gambling types, male students tend to gamble more often than female students. In terms of country, the biggest gender difference is found in Morocco, where 24.2% of male students gamble, compared to 10.7% of female students. In terms of gambling type, the biggest gender difference is found in Tunisia, where the prevalence of slot machine gambling is six times higher among male students (10.3%) compared to female students (1.6%).

2.1 Gambling: prevalence and related indicators (%)



In terms of the specific gambling mode, 14.3% of MedSPAD students report having gambled at least once in the past year in a physical setting, while 11.7% indicated having gambled online through websites and gambling platforms. Land-based gambling is more popular than online gambling in all countries. For both gambling modes, there is a clear gender disparity, with male students reporting higher gambling engagement compared to female students. As described in the Methodology section, the SOGS-RA screening instrument (Poulin 2002; Winters et al. 1993) was used in the MedSPAD questionnaire to assess the presence of possible problem gambling behaviour.

In the overall MedSPAD sample, 1.6% and 3.2% of students, respectively, fall into at-risk and problematic gambling categories. At the country level, the highest figures are found in Tunisia (3.5% and 4.3% respectively), followed by Morocco (1.6% and 3.0%), Egypt (0.7% and 2.8%) and Lebanon (0.3% and 1.7%).

In general, male students are more likely to display an at-risk and problem gambling profile, with prevalence rates about three times as high as among female students (2.4% versus 0.8% and 4.8% versus 1.5%, respectively). The biggest gender gap was found in Morocco and Tunisia, where the prevalence among male students is about seven times as high as among female students. No gender difference was found in Lebanon for at-risk or problem gambling prevalence, or in Egypt for at-risk gambling.

2.2 Gambling: environmental and individual factors associated with use in the last 12 months

The MedSPAD data enable the detection of key risk and protective factors influencing gambling behaviours.

Gender is confirmed as a relevant factor also in association with gambling: male students are about twice as likely to engage in gambling than their female peers.

Students who have missed five or more days of school in the past month have a higher risk of engaging in gambling. Social behaviours, particularly the frequency of evening outings, are also a risk factor.

Family structure and dynamics appear to play a positive role in relation to gambling behaviour only in some countries. For example, a low educational level in parents is a risk factor in Egypt and Tunisia.

What seems to be a significant factor influencing students' engagement in gambling activities across all countries is having an unsatisfactory relationship with their peers.

2.2. Social media

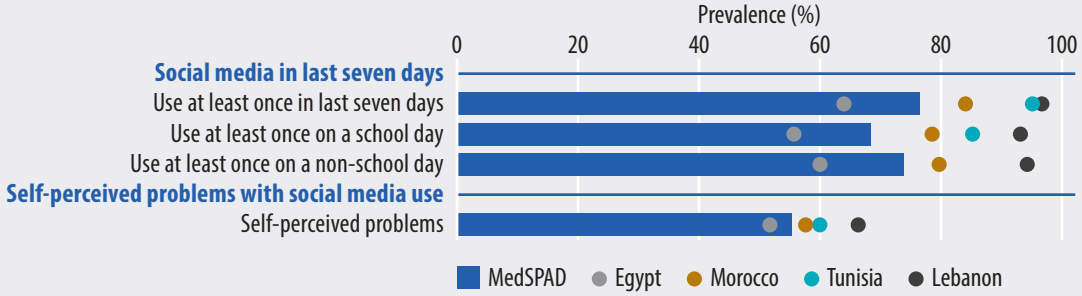
Prevalence of use and related indicators

Given the rapid integration of digital technologies into daily life, social media use among young people has become a critical area of research and concern, and for this reason the MedSPAD survey dedicates a section to this subject.

Overall, 77.1% of MedSPAD students have spent time on social networks in the seven days prior to the survey. Social media appears to be very popular in Lebanon (96.7%) and Tunisia (95.2%), where almost all students report some social media activity in the past week. Social media seems to be less popular in Morocco (84.3%) and even less so in Egypt, where only about two in three students (64.1%) had engaged in it in the past week.

This is the only investigated risky behaviour for which, at the aggregate level, female students report slightly higher engagement (79.4%) than male students (74.9%). However, at the country level, statistically significant gender differences in social media engagement were seen only in Morocco and Egypt. In Morocco, social media use is higher among female students (87.1%) than among male students (80.7%), while in Egypt it is higher among male students (66.1%) than among female students (60.9%).

2.3 Social media use: prevalence and related indicators (%)



On school days, overall social network usage is lower (68.8%), compared to non-school days (74.0%). The gender pattern within each country outlined above is confirmed for both school and non-school days. In Egypt, male students engage more with social media than female students, while the opposite holds true for Morocco and no significant gender differences are observed in Lebanon and Tunisia.

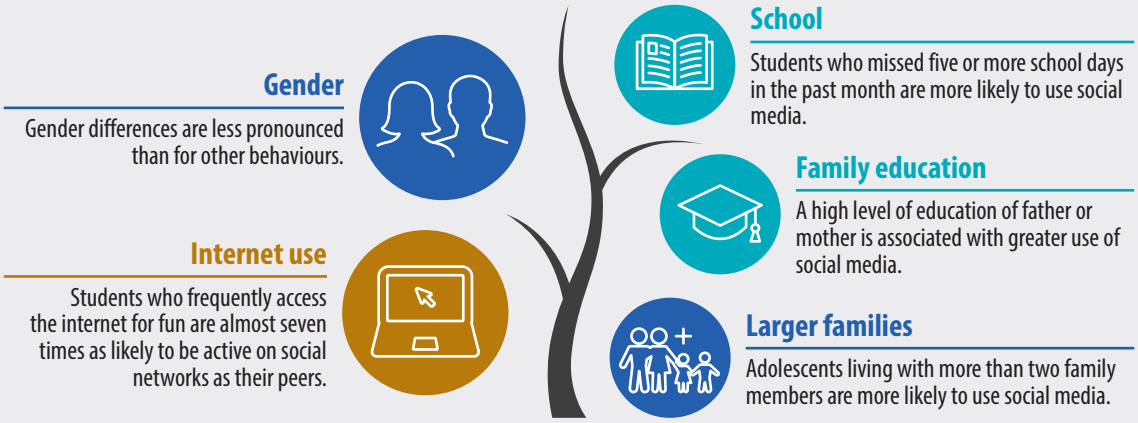
The MedSPAD survey also includes a non-clinical screening tool (Holstein et al. 2014) focused on students' perception of problems related to time spent on social media, of bad feelings because of restricted access, and of family concerns. A positive score for this test indicates self-perceived high risks of problem use. For more details, see Chapter 4 – Methodology.

According to the MedSPAD results, overall, 55.5% of young people regard their relationship to social media as problematic. There are no big differences in prevalence across countries. The highest rate is recorded in Lebanon (66.4%) and the lowest in Egypt (51.7%). The gender pattern relating to the simple use of social media is reversed, with male students showing a higher perceived problematic relationship (59.3%) than female students (51.4%). At the country level, in both Egypt and Morocco the prevalence of self-perceived problems is markedly higher among male students (58.6% versus 40.6% in Egypt; 61.8% versus 55.0% in Morocco).

The MedSPAD data highlight a range of factors associated with social network use among young people, drawing attention to specific demographic, social and behavioural elements.

Gender plays a different role in social media use compared to substance use and other risk behaviours, and reveals interesting country differences. While no significant gender divide is observed in Lebanon and Tunisia, male students in Egypt are much more likely to use social media, while the opposite holds true in Morocco.

2.4 Social media use: environmental and individual factors associated with use in the last seven days



Internet use for leisure purposes is closely intertwined with social network activity: students who frequently access the internet for fun are almost seven times as likely to be active on social networks than their peers. This factor is the most strongly associated with social media use, to the point where nearly all social network users in Lebanon, Morocco and Tunisia also report high internet use for entertainment.

In terms of school attendance, students who missed five or more school days in the past month are more likely to use social media, except in Morocco.

Family characteristics and socio-economic status are also relevant factors. Students in larger family units (i.e. those living with more than two family members) are more likely to use social networks. On the contrary, students with low-educated parents have lower odds of using social media. Additionally, students who perceive their family to be less well off than their peers' families have higher odds of social network engagement.

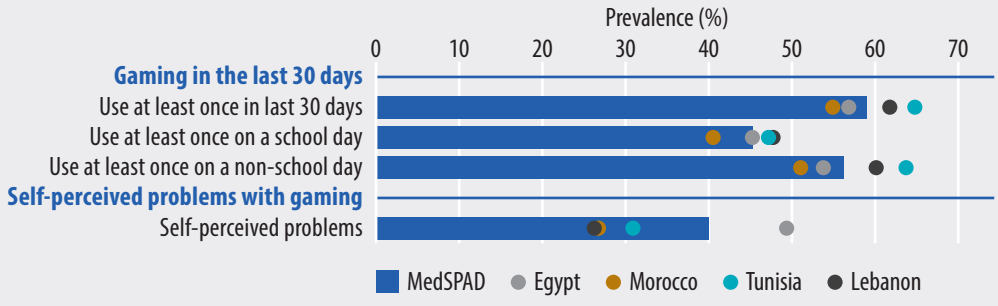
2.3. Gaming

Prevalence of use and related indicators

The MedSPAD survey is looking at video games because they have become a common leisure activity among young people worldwide.

Among MedSPAD students 59.4% report having played video games in the past month. Video games are most popular in Tunisia, where 65.1% of students have spent some time in the past 30 days playing them, closely followed by Lebanon (62.0%). Despite video games being less popular in Egypt and Morocco, more than half of students surveyed in those countries report some video game activity in the same time frame (57.2% and 55.2% respectively).

2.5 Gaming: prevalence and related indicators (%)



The interest in video games is not equally shared between the genders: male students (nearly 70%) are much more likely to engage in this activity than female students (48%). This gap is repeated across individual countries, with male students consistently showing higher engagement. This difference is

particularly relevant in Tunisia, where 88.5% of male students play video games compared to just 50.5% of female students; this is the most significant gender divide in gaming across the surveyed countries. The smallest gender difference, although highly significant, is found in Egypt, where 63.2% of male students have played video games in the past 30 days compared to 47.3% of female students.

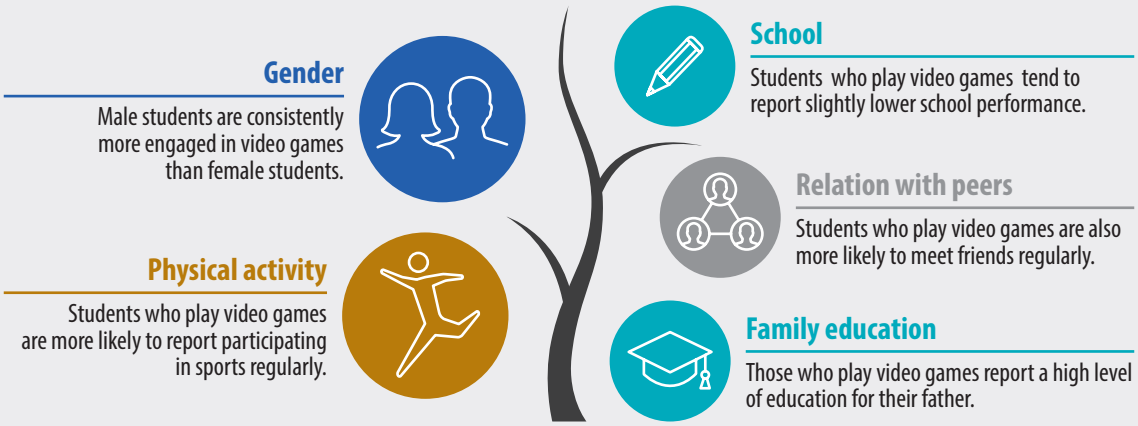
A lower percentage of students (45.5%) report playing video games on school days, compared to non-school days (56.7%). The gender gap remains on both school and non-school days. On school days, male students (57.8%) are more likely to play video games than female students (32.2%). This pattern persists on non-school days, with 67.4% of male students gaming compared to 45.1% of female students.

The MedSPAD survey also includes two non-clinical screening tools (Holstein et al. 2014) to focus on a student's perception of problems relating to the time they spend gaming, of bad feelings because of restricted access, and of family concerns. A positive score for this test indicates self-perceived high risks of problem use. For more details, see Chapter 4 – Methodology.

Overall, 40.3% of MedSPAD students report perceiving a high risk of problematic behaviour in the use of video games. The highest prevalence of self-perceived problems with video game use is among Egyptian students, where this perception is much more frequent than in the other countries. Lebanon shows the lowest prevalence (26.3% of the student population).

Engagement in gaming is higher among male students than among female students, and so is the self-perception of problems in the management of this habit. The prevalence of self-perceived problems is highest in Egypt, and the biggest difference in prevalence between male students and female students is in Tunisia (49.4% versus 19.4%). The smallest difference is in Lebanon, where the prevalence is 32.8% of male students compared to 21.6% of female students.

2.6 Gaming: environmental and individual factors associated with use in the last 30 days



Video gaming is not just an isolated activity but intertwines with various aspects of young people's lives, including social interactions, family dynamics, physical activity and academic performance.

Across all four countries, gender stands out as a significant predictor of gaming engagement. Male students are consistently more engaged in video games than female students, with odds almost three times as high.

Interestingly, rather than acting as a protective factor, physical activity is positively associated with gaming engagement in the past month in almost all countries except Lebanon, that is, students who play video games are more likely to report participating in sports regularly.

Social interactions also play a significant role in relation to gaming. In all countries except Lebanon, students who play video games are also more likely to meet their friends regularly.

Daily use of the internet for fun seems to be closely linked to gaming. Young people who use the internet for leisure are two times as likely to play video games as their peers, probably reflecting a strong preference for digital forms of entertainment. This is especially evident in Lebanon, Tunisia and Morocco where nearly all gamers use the internet for fun; in Egypt this pattern is less evident.

Young people who play video games also tend to report slightly lower school performance, although those with a highly educated father (upper secondary school or university) are more at risk of gaming engagement.

2.4. Discussion, implication for prevention and policy conclusions

Youth gambling has become an established public health issue as a result of the high prevalence of gambling and problem gambling reported in many countries.

Problem gambling is a general term that includes sub-clinical conditions describing gambling behaviour that results in adverse consequences for individuals, families and communities. It is a result of the interaction of several social, psychological and biological factors.

Researchers have raised concerns about the increasing involvement of youth in gambling, despite age limits preventing minors from approaching gambling products. Furthermore, the estimated prevalence of problem gambling among youth worldwide is much higher than in the general population, with values ranging between 0.2% and 12.3% (Calado et al. 2017).

The legalisation and liberalisation of national gambling markets is resulting in the expansion of gambling worldwide (Aimo et al. 2023). Underage gambling is not legal in most countries, but the increased availability of multiple gambling products and of online gambling is raising concerns about their risks for young people in particular. As in many other countries, empirical research into adolescent gambling and problem gambling in Egypt, Lebanon, Morocco and Tunisia is still limited. This MedSPAD study fills the gap, providing for the first time comparative estimates of gambling prevalence and patterns of use in these countries.

The first interesting finding is that, despite gambling being generally prohibited for citizens in most of these countries, and illegal for minors, the prevalence of gambling engagement is not so different from that estimated for Europe by the ESPAD project. In Europe 22% of students have gambled for money on at least one game of chance in the past year, and in the southern MedSPAD countries 16.5% of students report having done so offline, online or both.

There seems to be a slight preference for land-based gambling activities, with about 14% of students engaging in these, compared to about 12% engaging in online gambling activities. Interestingly, the latter prevalence is higher than that found in Europe, where in 2019 only about 8% of students reported having gambled online. This may be partly a result of the different degrees of enforcement of gambling legislation on online platforms. In the southern MedSPAD area online gambling is largely unregulated, which allows foreign operators to offer gambling opportunities in those countries.

In Europe, lotteries are the preferred gambling product among students, closely followed by sports or animal betting. In the south MedSPAD area, cards and dice are the most popular type of gambling activity, with sports or animal betting the second most popular; lotteries and slot machines are chosen by less than 10% of students. This may be due partly to cultural factors (for example, young people may play card and dice games as a social activity in private settings) and partly to market factors such as an increase in the number of sports betting online platforms and operators trying to appeal more and more to younger audiences.

Several studies have also highlighted that the increase in gambling opportunities has led to an increase in gambling-related problems among young people (Calado et al. 2017; Delfabbro et al. 2016). On the basis of the results of the SOGS-RA screening test and the MedSPAD survey, 1.6% of students in the south MedSPAD region are at risk of, and 3.2% already have, a problem gambling behaviour.

This information is of utmost importance from a public health perspective. Gambling should not be underestimated, even in countries where it is not legally permitted. The evidence shows a strong link between exposure to gambling in youth and an increased risk of gambling problems in adulthood (Dowling et al. 2017; Edgerton et al. 2015). To prevent problem gambling in future generations, prevention efforts should therefore focus specifically on protecting young people from engaging in gambling activities.

In addition to gambling, the MedSPAD study has also collected detailed information about gaming and social media use for the first time.

Video gaming is an immensely popular leisure activity worldwide, especially among young people, and has been linked to cognitive, emotional and interpersonal benefits (Adachi and Willoughby 2017). However, excessive gaming can lead to negative outcomes, including heightened anxiety and depression, lower academic performance, sleep disturbances and challenges in peer relationships. The MedSPAD data indicate that, despite the majority of students in the south Mediterranean area having engaged in some form of gaming in the past month, gaming in these countries remains still less popular than it is in Europe. Lower engagement with gaming in these countries may be a consequence of the varying levels of access to gaming opportunities, even though digital technologies and the internet have become an integral part of daily life in these countries. The use of the internet for fun is one of the main factors linked to students' engagement in gaming in MedSPAD countries, probably reflecting their strong preference for digital forms of entertainment and their availability.

The MedSPAD results also highlight that in the southern Mediterranean area, on average, more than four in 10 students report a self-perceived high risk of problems with gaming. This prevalence is almost double that estimated by MedSPAD in the northern Mediterranean area (21.3%) (Benedetti et al. 2022).

Social media use among young people has grown considerably in recent years. While many students use social media regularly, those with problematic social media use often struggle to control their use of it, experience distress when access is limited and remain preoccupied with thoughts about social media even when they are offline.

Both gaming and social media use can provide positive experiences for young people by helping them to connect and stay engaged with their peers. This is supported by the analysis of associated factors, which highlight how online entertainment and social interaction go hand in hand for this age group.

However, an increasing number of students are developing addiction-like symptoms, where excessive engagement in these activities begins to interfere with essential areas of their lives, such as school performance, physical activity and meaningful in-person interactions with family and friends. The high prevalence of adolescent students in the southern MedSPAD area who perceive their social media use and gaming to be problematic, together with notable disparities in use patterns by gender and socio-economic characteristics, underscores the need for countries in the region to carefully reassess their approach to regulating and providing access to digital technologies for young people. Effective regulatory frameworks promoting age-appropriate content and strong parental and educational guidance, in addition to prevention efforts that promote a healthy, balanced lifestyle in the digital age, may be essential to curbing the spread of problematic behaviours among young people.

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Chapter 3

Impact of MedSPAD in policy and prevention

The Mediterranean School Survey Project on Alcohol and Other Drugs has played a critical role in shaping substance use prevention and policy strategies across the Mediterranean region. By providing reliable evidence-based data on substance use trends, risk and protective factors among young people, MedSPAD has become key to informed decision making, fostering multisectoral collaboration and guiding national prevention efforts.

This chapter examines the impact of MedSPAD on policy and prevention initiatives in Egypt, Lebanon, Morocco and Tunisia. Each of these countries has used MedSPAD findings to design and implement targeted interventions aimed at reducing substance use and promoting well-being among young people. The data collected have informed national policies, strengthened school-based prevention programmes and supported the development of new legislative and regulatory measures.

By illustrating specific initiatives stimulated by MedSPAD in these four countries, this chapter underscores its vital role in integrating substance use prevention into national health and education strategies, advancing legislative reforms and enhancing cross-sectoral co-operation. MedSPAD's contributions continue to shape sustainable and evidence-driven approaches to addressing substance use among young people in the region.

3.1. Egypt

The results of MedSPAD Egypt were announced at the beginning of 2023, with all stakeholders and policy makers present, including representatives from the Ministry of Health and Population, the Ministry of Social Solidarity, the Ministry of Education, Al-Azhar Institute, WHO, the National Centre for Social Research, the Central Agency for Public Mobilization and Statistics (CAPMAS), Al-Ahram Press and the Drug Control Fund.

Key recommendations from the meeting included expanding the inpatient and outpatient services of the General Secretariat of Mental Health and Addiction Treatment (GSMHAT) for adolescent substance abuse treatment; implementing a comprehensive school mental health programme for early detection; introducing school-based drug prevention programmes; raising awareness through targeted campaigns for preparatory and secondary school students; sharing results with adolescent students; conducting parenting workshops; and establishing character-building programmes within schools.

In response to the recommendations, awareness campaigns targeting schoolchildren and students were launched across various Egyptian governorates. Important steps were taken to implement the European Drug Abuse Prevention's (EUDAP) Unplugged programme (https://eudap.eu/unplugged), a school-based drug prevention initiative designed to prevent the onset of drug use and to delay the progression from experimentation to addiction involving substances such as alcohol, tobacco and cannabis. Additionally, mental health services for young people were integrated into primary healthcare centres with the development of a specialised programme.

Most notably, a parliamentary initiative was introduced to address the detrimental effects of excessive internet use, video gaming and gambling on the mental and physical health of children and young people.

In 2024, following the results of the MedSPAD survey, policy makers took two key actions. First, the General Secretary of Mental Health and Addiction Treatment developed an intervention programme to address tobacco addiction, shisha (water pipe) use, alcohol consumption and gaming disorders among young people. This initiative, supported by the Pompidou Group of the Council of Europe, consists of an integrated care pathway and models of care specifically designed for alcohol use disorders, tobacco and shisha dependence, and gaming addiction, as well as prevention and harm reduction strategies.

Second, there have been two presidential initiatives launched under the auspices of the Minister of Health and Population to combat addiction and addictive behaviours.

The presidential initiative to combat addiction focuses on prevention, early detection and treatment for young people, targeting lower and upper secondary school students. It integrates the Unplugged programme, accredited by UNODC, into the school curriculum through a weekly class. The programme aims to enhance adolescents' resilience to negative social influences that lead to addiction while developing essential life skills such as coping strategies and refusal techniques. It also promotes awareness through campaigns and early detection via a school mental health programme. This initiative is led by the Ministry of Health and Population in collaboration with the Ministry of Education, the Ministry of Youth and Sports, the National Council for Mental Health and various civil society organisations.

The presidential initiative to combat internet and video game addiction seeks to reduce internet addiction and its negative consequences among young people, and to position Egypt as a regional leader in treating internet addiction disorder. It provides early detection and prevention services, including psychiatric and psychological assessments, and treatment and rehabilitation programmes. The initiative also aims to establish specialised centres for internet addiction, address stigma and improve access to care.

Recently, and in response to findings from the MedSPAD Egypt study – the first study in the country to estimate the prevalence of gambling behaviours among schoolchildren and adolescents' students – the parliament has been discussing legislation to regulate online gambling, including the implementation of age restrictions.

3.2. Lebanon

The MedSPAD survey has played a pivotal role in shaping the understanding of substance use among young people in Lebanon.

The data collection process for the MedSPAD survey, conducted in 2021-22, was particularly challenging because of the compounded crises Lebanon faced during this period. Lebanon has been grappling with unprecedented economic, social and political crises for the past six years, which have severely affected its education system and the well-being of young people.

The Covid-19 pandemic marked the onset of these challenges, forcing schools and universities to shift to online learning from March 2020. This disruption delayed the implementation of awareness and prevention programmes in schools. Even when physical classes partially resumed in late 2020, restrictive measures limited in-school activities.

Following the pandemic, Lebanon faced escalating crises, including widespread strikes across sectors, surging poverty, food insecurity and deteriorating public services. By 2021, approximately three quarters of the population were living in poverty. The rapid depreciation of the Lebanese currency and persistent power outages further eroded living standards. Public education, already weakened by years of underfunding and poor policies, has suffered immensely, prompting widespread teachers' strikes that continue to impact 520 000 students, including 170 000 Syrian refugees.

The prolonged school closures and overall decline in the education sector have had serious repercussions on students' mental health and well-being, heightening the risks of anxiety and depression, as well as of substance use as a coping mechanism.

Notwithstanding these challenges, the MedSPAD survey provided evidence-based data on the prevalence, patterns and risks of substance use among Lebanese youth, creating a foundation for informed policy making, advocacy and preventive interventions. The findings have had a clear influence on national strategies and fostered multisectoral collaborations to address the challenges of substance use.

The survey's findings were widely disseminated to stakeholders across different sectors, contributing to awareness, advocacy and policy development aimed at addressing substance use at both national and community levels.

The survey findings led to several recommendations to address substance use challenges among young people at the national level:

- to expand substance use awareness across Lebanon;
- to target younger adolescents with prevention programmes;
- to promote life skills education, healthy lifestyle campaigns and primary prevention strategies in communities;
- to strengthen collaborations between sectors to prevent risky behaviours and enhance youth protection;
- to continuing to monitor and use the MedSPAD survey as a tool to assess substance use and related behaviours among young people in education.

Findings from the MedSPAD survey were shared with multiple bodies and used targeted outreach efforts, including:

- the Ministry of Public Health, the National Mental Health Programme and the education sector, including public and private schools;
- civil society organisations (CSOs) working in health, protection and education through the Lebanese Humanitarian and Development Forum;
- social media platforms to highlight key findings, accompanied by graphs, visuals and a short reel discussing national recommendations.

These efforts are aimed at raising awareness of the survey's key outcomes and fostering discussions on how to address substance use among young people.

The National Mental Health Programme incorporated the MedSPAD survey into the new National Strategy for Substance Use Treatment and Prevention. This reflects the survey's role in guiding evidence-based approaches to addressing risky behaviours in young people. By providing reliable data, the survey has informed policies and served as a baseline for monitoring substance use trends among young people.

In April 2024 the Enhancing Schools and State Engagement in Youth Prevention of Substance Use through Evidence-Based Interventions project, funded by the Pompidou Group of the Council of Europe, was launched by Skoun. The project aims to disseminate the findings of the MedSPAD survey to relevant stakeholders and to develop an advocacy plan for integrating substance use prevention sessions into schools and informal youth-led communities.

Building on the MedSPAD survey's findings, the project seeks to reinforce prevention efforts at the grass-roots level.

The survey results and outcomes have been disseminated to various key stakeholders, including the Ministry of Public Health, the National Mental Health Programme, education sector leaders, public and private schools and local CSOs. These CSOs, working in health, protection and education, received the findings through the Lebanese Humanitarian and Development Forum for local organisations.

The MedSPAD survey's findings have sparked widespread interest among stakeholders, including government bodies, educational institutions and local organisations. Key actors have expressed a willingness to engage in further discussions on drug prevention, emphasising both in-school and community-based approaches to addressing substance use among adolescents.

By providing data-driven insights, fostering stakeholder engagement and guiding national strategies, the survey has established a foundation for evidence-based interventions.

The ongoing advocacy and new initiatives, such as the project funded by the Pompidou Group, reflect Lebanon's commitment to addressing the challenges of substance use among young people.

3.3. Morocco

MedSPAD represents a major collaborative initiative in Morocco, bringing together the Ministry of Health, the Ministry of National Education and the Moroccan Federation of NGOs on Drugs Prevention. This partnership underscores the importance of evidence-based decision making in the development and implementation of prevention strategies aimed at high school students.

Since the first MedSPAD survey, at least 242 prevention interventions have referenced MedSPAD data, incorporated its findings or directly targeted high school students on the basis of its results. The involvement of the MedSPAD national team in various initiatives has further reinforced the impact of these efforts, ensuring that interventions are tailored to the specific needs of Moroccan youth. MedSPAD data have contributed to shaping a variety of prevention strategies led by the Ministry of National Education including the integration of health education and awareness campaigns into school programmes. These efforts also involved encouraging student participation in clubs focused on health and risk prevention, as well as providing support structures in schools to address students' concerns. Safe spaces have been created for students to engage in personal development, while student-led initiatives for health awareness have been promoted. These strategies further focused on encouraging students to be actively involved in prevention efforts, empowering them to lead prevention activities, as well as producing interactive and digital resources to enhance learning and engagement.

Beyond the educational sector, MedSPAD data have influenced broader prevention and safety efforts. These include programmes aimed at combating violence, promoting tolerance and fostering civic behaviour and social responsibility. Prevention strategies have also been enhanced through cross-sectoral and community collaborations to enhance prevention strategies, and efforts have been made towards strengthening the links between schools and their surrounding environments. Annual awareness activities were organised to reinforce prevention messages, while initiatives to strengthen students' health and well-being aimed to help them make informed decisions. In addition, raising awareness of the dangers of substance use and other risky behaviours remains a central focus. To further improve school safety, drug-free zones have been established around schools in conjunction with the Ministry of the Interior and the National Security, alongside the implementation of patrols and biker brigades to maintain a safer environment.

MedSPAD data have also been instrumental in addressing emerging threats such as cybercrime. Initiatives in this area include a national awareness campaign on cybercrime risks, conducted annually in February as part of Safer Internet Day. These efforts also involve the promotion of digital safety to encourage responsible and secure internet use, as well as leveraging digital tools, including internet platforms, to engage students in prevention efforts.

Despite its successes, MedSPAD faces several challenges to optimising its impact. These include the need to strengthen co-ordination among various networking stakeholders involved in prevention, as well as ensuring that data from research findings are translated into effective prevention policies. There is also a need to refine techniques, skills, messaging and concepts for a better use of data in preventive efforts. Additional challenges involve training educators, policy makers and community leaders, and establishing robust mechanisms for monitoring and adapting prevention measures.

MedSPAD continues to play a crucial role in guiding Morocco's prevention policies, reinforcing a data-driven approach to safeguarding the well-being of young people and fostering a healthier school environment. By addressing current challenges and leveraging its collaborative framework, MedSPAD can further enhance its contribution to drug prevention and health promotion in Morocco.

3.4. Tunisia

Prior to the release of the first MedSPAD results in Tunisia, several initiatives were already underway, including the Life Skills Training for Middle School Students project (in 2017), co-ordinated by the Directorate of School and University Medicine and supported by UNICEF.

The MedSPAD surveys then became the principal means for monitoring drug use trends among young people, serving as a critical indicator. The extensive dissemination of these survey results not only facilitated an impactful media campaign but also captured the attention of many journalists and raised awareness of the issue among stakeholders.

Various strategic initiatives for drug use prevention and control were undertaken or strengthened in Tunisia based on the findings of the MedSPAD survey.

National and regional multisectoral meetings on drug use prevention were organised to foster stakeholder collaboration.

In June 2021, the Ministry of Health, with the support of UNODC and multisectoral participation, adopted the National Strategy for the Prevention, Harm Reduction and Management of Illicit Psychoactive

Substance Use Related Disorders in the Community and in Prison 2021-25. The operational plan was officially validated on 26 June 2023, the International Day against Drug Abuse and Illicit Trafficking.

Discussions on the drug use problem and policy options to control it, including updating the law on drug consumption, have taken place among journalists and key actors in the health sector.

Moreover, a preventive campaign was launched on 15 September 2023 to coincide with the start of the 2023-24 school year. Developed by the Ministry of Education in collaboration with the Ministry of the Interior, the campaign introduced a comprehensive security plan to protect students and the educational community from threats such as extortion, violence and drug-related crimes through the academic year. This initiative also aims to enhance security around schools. The School and University Medicine Service in Monastir launched a school-based education project on addiction during the 2022/23 academic year.

Other preventive intervention projects include a school-based intervention project piloted by the National Institute of Health in collaboration with key stakeholders, including the Tunis Regional Health Directory and the Regional Education Delegation. The project's main objective is to educate high school students about the negative impacts of psychoactive substance use, while promoting the benefits of artistic activities for young people's mental and social well-being.

Another pilot prevention project targeted school students in Ben Arous, Tunisia, and was supported by the National Institute of Health and Clermont Graduate University. Additionally, a leisure activities intervention project, co-ordinated by the Tunisian Association of Addictology (STAD), focused on providing students with leisure activities during off-peak school hours to promote healthy lifestyles.

Collaborations with the civil society has also played a growing role in raising awareness about addiction issues. Formal agreements have been established between various ministries (Health, Youth and Sport, Education) and the Tunisian Association of Addictology (STAD) to support preventive actions. A significant step forward was the opening of the first day hospital for women with substance use disorders at Razi Hospital in March 2023. Furthermore, training activities for health professionals have been implemented to enhance their capacity in addressing addictions.

Since 2013, capacity-building efforts for key actors in the prevention and treatment of drug use disorders have included the establishment of a master's degree in addictology at the Faculty of Medicine at University Tunis El Manar, supported by MedNET and the Pompidou Group. Three additional faculties of medicine have also established similar programmes. Furthermore, numerous collaborative training activities have been organised, supported by the Ministry of Health and various international partners, including the Colombo Plan Drug Advisory Programme, the Bureau of International Narcotics and Law Enforcement Affairs, the US Department of State, the European Monitoring Centre for Drugs and Drug Addiction, the African Union, UNODC, UNICEF and WHO. Since 2018, a sustainable collaboration has been established between the National Institute of Health (NIH) and the Colombo Plan, with financial support from the Bureau International de la Lutte Contre les Stupéfiants et l'application de la Loi (INL). This partnership has facilitated a range of training sessions – both in-person and online – focusing on the Universal Preventive Curriculum and Universal Treatment Curriculum for national trainers. Recent training sessions co-ordinated by NIH have focused on school-based prevention targeted at health and education professionals. Additionally, numerous training sessions have been conducted by national trainers both in Tunisia and abroad, including in Qatar. The first regional training on the Universal Preventive Curriculum, organised by EUDA, NIH and the National Bureau of Narcotics (Ministry of Health) and with participants from Algeria, Morocco and Tunisia, took place in Tunis in May 2024.

Collaboration between Tunisia and the African Union through the African Union Drug Demand Reduction Project aims to enhance research and data collection capacities for drug use prevention and treatment across Africa, including participation in epidemiological surveillance efforts. Furthermore, the Ministry of Health is closely working with EUDA as part of the EU4MD project (Phase I and Phase II). The government has also approved the establishment of a national information system on drugs and addiction (SIDRA). A national project, funded by the Council of Europe and technically supported by EUDA, was launched in April 2024 to implement a surveillance system through the NIH, in collaboration with National Bureau of Narcotics and the Computer Centre of the Ministry of Health, as a preliminary step towards the creation of a national observatory on drug use.

Finally, the production of scientific documents based on MedSPAD results, including medical theses, published communications and ongoing articles, have contributed to raising awareness among health professionals and other key stakeholders.

Chapter 4

Methodology

MedSPAD is a research project initiated in 2003 by the Pompidou Group of the Council of Europe. It is composed of experts nominated by the MedNET Committee (MedSPAD members), and aims to, first, conduct a school survey in MedSPAD countries based on the MedSPAD methodology and, second, share the results with other countries. The outcome should be a high-quality Mediterranean school survey report on substance use and related behaviours that is comparable with other school surveys.

So far, several MedSPAD surveys have been conducted in different countries using similar questionnaires and methodologies. The results have been collected in specific country reports and in three MedSPAD regional reports (2015, 2017, 2019).

The primary objective of MedSPAD is to share experiences among participating countries, those who may wish to join the project and countries conducting the ESPAD survey. The ambitious long-term objective is to develop a common methodology, a goal towards which MedSPAD countries have been working intensively, so as to produce an evidence-based regional report that draws on a database containing the data of all participating countries.

To this end, and despite the difficulties of the Covid-19 pandemic, which resulted in restrictions on mobility and school activity, three countries succeeded in conducting the MedSPAD survey in 2020-21 using a common questionnaire for the first time: Egypt conducted the survey in 2020 and Morocco and Tunisia in 2021. The resulting data have been collected and validated centrally to produce a common database. In 2022 the MedSPAD fourth regional report included comparable information from countries that in 2019 conducted the ESPAD survey.

The results presented in the fourth regional report were therefore based on data from 11 countries – Croatia, Cyprus, France, Greece, Italy, Malta, Portugal and Spain (termed the northern MedSPAD countries) – which had carried out the 2019 ESPAD survey, in addition to Egypt, Morocco and Tunisia (termed the southern MedSPAD countries), which had carried out the MedSPAD survey in 2020-21. In 2022-23, despite the health, economic and political crisis, Lebanon managed to conduct the MedSPAD survey, which had initially been planned for 2020-21.

This fifth regional report presents the MedSPAD results of the countries that conducted the survey between 2020 and 2023 – Egypt, Lebanon, Morocco and Tunisia – to allow for comparison between the countries.

4.1. Sample description

In line with the ESPAD methodology, the target population of the MedSPAD survey was defined as students who have reached the age of 16 in the calendar year of the survey and who were present in the classroom on the day of the survey. Students who were enrolled in regular, vocational, general or academic studies were included, while those enrolled in either special schools or special classes for students with learning disorders or severe physical disabilities were excluded. Table 4.1 presents the main sample characteristics.

4.1 Sampling characteristics

	Egypt	Morocco	Tunisia	Lebanon	MedSPAD
Survey year	2020	2021	2021	2022	-
Target population birth year	2004	2005	2005	2006-7	-
Geographical coverage	National	National	National	4 governorates	-
Data collection mode	Web-based and paper and pencil	Paper and pencil	Paper and pencil	Paper and pencil	-
Sample type	Multistage stratified random	Stratified random	Clustered multistage stratified random	Multistage stratified random	-
Sampling unit(s)	Class	Class	Class	Class	-
Data weighted	No	No	Yes	Yes	-
Weight type	-	-	Geographical area and school type	Sociodemographic composition	-
Student representativeness (%) (a)	81	92	90	-	88
Class participation rate (%) (b)	99	99	-	-	99
Student participation rate (%) (c)	91	86	89	-	89
No. of students	4 519	1 163	2 383	341	8 406

Notes: (a) Proportion of MedSPAD target students covered by the sampling frame; (b) proportion of selected classes participating in the survey; (c) proportion of students of participating classes answering the questionnaire.

The study was carried out on a representative sample of the target population in all participating countries. Data were collected through self-administered questionnaires. All countries used a paper and pencil questionnaire except for Egypt, where a mixed administration mode (paper and pencil and web-based) was employed. Students answered the questionnaires anonymously in the classroom, with teachers or research assistants functioning as survey leaders.

In Egypt, data collection took place in December 2020 (student birth cohort of 2004), in Tunisia from April to June 2021 (student birth cohort 2005), in Morocco in December 2021 (student birth cohort 2005) and in Lebanon between October 2022 and January 2023 (student birth cohort 2006 and 2007). In all countries, school classes were the last unit in a multistage stratified random sampling process.

In total, data were collected from 8 406 students in four countries. Sample sizes ranged from 341 students in Lebanon to 4 519 in Egypt. All the samples had national geographical coverage except for Lebanon, where the socio-economic crisis mean that the study could be conducted in only four governorates (North, South, Beeka and Nabatiyeh) out of nine.

The class and student participation rates (share of selected classes and students participating) were generally high. Student representativeness was very high across the MedSPAD area, with almost all countries reaching 90% or more.

Data were weighted in two countries (Lebanon and Tunisia) to adjust the sample for the sociodemographic composition of the target population in terms of geographical distribution and type and size of schools.

4.2. MedSPAD questionnaire

Design

In previous MedSPAD surveys, each country used its own questionnaire and this challenged the statistical comparability of results. For the first time, in this MedSPAD survey a new common questionnaire was used that had been developed by the Italian National Research Council in consultation with the MedSPAD Committee.

The first aim of the MedSPAD questionnaire was to investigate young people's awareness and experience of different psychoactive substances. New topics were added, such as new psychoactive substances, gambling, gaming and social media use, as well as new screening tests for problem behaviours related to cannabis use, gambling, gaming and social media use. The new questionnaire was designed with the long-term objective of achieving a sufficient level of comparability not only between the countries running the MedSPAD survey, but also with countries running the ESPAD survey. For this reason, the MedSPAD questionnaire has questions in common with the ESPAD questionnaire.

Topics

The MedSPAD questionnaire covered the use of tobacco and nicotine-based products; alcohol; tranquillisers and sedatives, painkillers and anabolic steroids; cannabis and other psychoactive substances; social media use, gaming and gambling. It investigated:

- patterns of use of cigarettes, electronic cigarettes, water pipes and chewing tobacco;
- the consumption of different alcoholic beverages (beer, wine, premixed drinks, spirits, etc.) and specific drinking patterns such as binge drinking (five or more drinks on a single occasion) and alcohol intoxication;
- the use of tranquillisers and sedatives, painkillers and anabolic steroids for non-medical purposes and without a doctor's prescription;
- the use of cocaine, ecstasy, heroin, inhalants, amphetamines, anabolic steroids, crack, GHB (gamma hydroxybutyrate), hallucinogens (LSD, magic mushrooms, etc.), methamphetamines and NPSs;
- social media use, gaming and gambling both offline and online.

Indicators

The questionnaire modules were designed to collect uniform information across the topics covered. The following indicators were included: age of first substance use; patterns of substance use and engagement in risk behaviours; high-risk use; perceived availability of substances; presence of family members and friends who use substances; risk perception; changes in habits due to the Covid-19 pandemic.

4.3. Creation of the southern MedSPAD dataset

The national datasets from southern MedSPAD countries were centrally collected and validated using standardised procedures adapted from ESPAD to maximise the comparability of results. The validation of datasets included verification of data quality and data cleaning. Potential inconsistencies were detected in the verification process (values out of range, missing variables, incorrect coding, etc.) and appropriate corrective actions to be applied to the data were shared with the national teams.

In relation to data cleaning, first, all missing values were examined and the possibility of recoding them assessed. The logical substitution of missing values was performed in a rather conservative way. Where students indicated that they have never used a specific substance and did not respond to other questions about such use, any missing values were substituted with no use for that particular substance. However, no substitutions were made if any contradictory indications of use were reported. Second, records to be excluded from the subsequent analyses were identified in agreement with the national teams and deleted. This included those with missing information on gender or birth year, and those with poor data quality; all cases with responses to fewer than half of the core items were discarded, as were all cases where the respondent appeared to have followed patterns involving repetitive marking of extreme values. Cases labelled as invalid by the national teams due to poor data quality were also excluded. Finally, the countries that used sampling weights were asked to recalculate them on the final sample.

After the completion of all these processes, the southern MedSPAD datasets were merged. The last step included the extraction from the merged dataset of records corresponding to the MedSPAD target population, namely all students who had reached the age of 16 in the calendar year of the survey.

4.4. Statistical analysis

The purpose of this report is not only to describe the MedSPAD results in Egypt, Lebanon, Morocco and Tunisia, but also to provide a framework to interpret them and to offer insights that can inspire or guide prevention efforts.

Two kinds of analyses were performed for each substance or group of substances and behaviour. All estimates in the report were calculated on the basis of valid responses.

First, prevalence rates were generated for the different countries. Results were calculated for the total MedSPAD sample and by country. Prevalence rates were also calculated by gender, supplemented by statistical tests (odds ratio and p-value) to identify significant gender differences.

The second objective was to identify the exposure factors associated with each substance or behaviour, with the aim of describing common patterns across countries. Prevalence in the past 12 months was used as a relevant indicator. For each substance and risk behaviour, students' individual and environmental characteristics were described, and a binomial logistic regression analysis was conducted to identify which characteristics were significantly associated with the variable of interest. Results were expressed as odds ratios (ORs), indicating the strength of the association between exposure (either individual or environmental characteristics) and outcome (substance use in the past 12 months or behaviour), along with the corresponding p-value. Statistical significance of the OR is report by presenting *p*-values as follows: *** $p < 0.0001$; ** $p \leq 0.01$; * $p \leq 0.05$; ns $p > 0.05$. All analyses were conducted with sample-weighted data to ensure representativeness and to produce an accurate statistical estimate (robust standard error). All statistical analyses were conducted using Stata 16.

All result tables are collected in the final appendix, and results are presented in each chapter through figures. Figures illustrating common risk factors include only those indicators that reached statistical significance not only in the total MedSPAD sample but also in at least three countries.

The main indicators presented in this report were calculated as follows.

Availability of substance

Students were asked how difficult they thought it would be to obtain a particular substance if they wanted to. In the MedSPAD questionnaire, the response categories were "impossible", "difficult", "easy" and "don't know". The responses "easy" were used to indicate perceived easy availability.

The availability of each type of alcoholic beverage (beer, premixed drinks, wine and spirits) was investigated separately. Countries included other alcoholic beverages if they were considered relevant, as optional questions in the questionnaire. Alcohol was considered to be easily available if at least one of each five types of beverages was marked as "easy" to obtain.

Age at first use of substance

Students were asked how old they were when they used a particular substance for the first time, started to use it on a daily basis (cigarettes, e-cigarettes, water pipes and chewing tobacco) and consumed it excessively (alcohol intoxication), where applicable. The response categories ranged from "9 years old or less" to "16 years or older" in increments of one year, and included the category "never". First use at 13 years or younger was defined as an indicator of early onset.

Use in lifetime, past 12 months and past 30 days

Students were asked how many times they have consumed a particular substance or engaged in a specific risk behaviour in their lifetime, in the past 12 months and in the past 30 days. The response categories were "0", "1-2", "3-5", "6-9", "10-19", "20-39" and "40 or more". The prevalence of any use (lifetime, past 12 months and past 30 days) and prevalence of intoxication were also calculated.

In the case of gambling, gambling activity was assessed by asking students how often in the past 12 months they have engaged in four different gambling activities: playing on slot machines, playing cards or dice for money, playing the lottery, and betting on sports or animal races. In the MedSPAD survey, the question was asked in relation to both offline and online gambling. For each gambling mode, the response options were: "I have not gambled", "monthly or less", "2-4 times a month" and "2-3 times or more a week". As response options provide a frequency interval and not exact values, an overall index of gambling

activity was created using dichotomising response options (yes/no). Any response other than "I have not played" was coded as "yes" for each of the questions. Then, any "yes" for each of the four online and offline types was coded as "yes" for online/offline gambling. Lastly, overall prevalence was defined as any "yes" for either online or offline gambling. Therefore, in this report gambling prevalence was calculated as the rate of those who have gambled for money on at least one of the four games of chance (playing on slot machines, playing cards or dice for money, playing the lottery, betting on sports or animal races) either offline or online in the past 12 months.

Risk perception of substance use

Students were asked for their opinion on the possible risks associated with substance use. In the MedSPAD questionnaire, the response categories were "no risk", "low risk", "moderate risk", "great risk" and "don't know". The responses "low risk" and "don't know" were defined as an indicator of reduced perceived risk.

High-risk cannabis use

The CAST was used to screen for possible cannabis-related problems (Legleye et al. 2007, 2011), The six items of CAST are worded as follows: (1) "Have you smoked cannabis before midday?" (2) "Have you smoked cannabis when you were alone?" (3) "Have you had memory problems when you smoke cannabis?" (4) "Have friends or members of your family told you that you ought to reduce your cannabis use?" (5) "Have you tried to reduce or stop your cannabis use without succeeding?" and (6) "Have you had problems because of your use of cannabis (arguments, fights, accidents, bad results at school, etc.)?" All of these questions refer to the past 12 months. The response categories for the CAST are "never", "rarely", "from time to time", "fairly often" and "very often". The possible scores for each item are 0 or 1, with the threshold for scoring 1 point being "from time to time" for the first two items and "rarely" for the remaining items (which refer to more serious problems). A total score of 2 or more points (range 0-6) is considered to indicate high-risk use. This cut-off score has been shown to best distinguish individuals at high risk of cannabis-related problems from individuals at low risk of such problems in community samples (Legleye et al. 2007, 2011).

It should be noted that there is an ongoing debate about the validity of screening tests, including the CAST. With regard to the CAST specifically, different coding systems and cut-off scores have over time been validated on representative samples (Bastiani et al. 2013; Legleye et al. 2007, 2011, 2013, 2017), and there is no definitive agreement about the best system or scores to use. Clearly, different computation methods will generate different prevalence results.

In this report, we adopted a binary computation of scores with a cut-off of 2 or more points used to indicate "high-risk use", which has been proposed in adolescent samples (Gyepesi et al. 2014; Legleye et al. 2011) and that allows comparability with the CAST results published in the 2019 ESPAD report (ESPAD Group 2020).

When used in the context of self-report surveys, the CAST may allow the early identification of young people who are likely to present with problem cannabis use or dependence. It should be noted, however, that this test is a screening tool – it can be used to make comparisons and perform epidemiological analyses but it cannot provide a clinical diagnosis.

This report provides prevalence estimates of high-risk users in the total sample based on the CAST. The additional tables available provide estimates of the proportion of high-risk users among those students who answered the introductory question of the CAST (i.e. claimed to have used cannabis in the year prior to the survey) positively; the frequency of responses for each of the six CAST items among 12-month users; and the CAST item averages presented separately for each country using a continuous five-point scale from 1 ("never") to 5 ("very often").

Problem gambling

In the MedSPAD questionnaire, two specific screening tools were used to assess the presence of possible problem gambling behaviour: the SOGS-RA (Poulin 2002; Winters et al. 1993) and the Lie/Bet (Johnson et al. 1997) questionnaires.

In this report, the results of the SOGS-RA scale have been used as an indicator of at-risk or problem gambling behaviour.

The SOGS-RA scale consists of 12 items, each of which is scored either 1 (affirmative) or 0 (non-affirmative). The first item ("How often have you gone back another day to try and win back money you lost gambling?") is scored 1 if the respondent indicates "every time" or "most of the time", and 0 otherwise. Although there

are some variations between studies in the interpretation of scores, generally a score of 4 or greater is considered to indicate "problem gambling", a score between 2-3 "at-risk gambling" and a score of 0-1 "no problem" (Poulin 2002; Winters et al. 1993).

Self-perceived problems with social media use and gaming

A specific screening tool (Holstein et al. 2014) was adapted to assess the presence of self-perceived problems related to two distinct behaviours: social media use and gaming. This tool is a non-clinical instrument focusing on a student's perception of problems related to three items: too much time spent on these activities, bad feelings because of restricted access, and parents' concerns related to the time spent on these activities. Students were asked to what extent they agreed with these three statements, with the response categories being "strongly agree", "partly agree", "neither agree nor disagree", "partly disagree" and "strongly disagree". Positive answers ("strongly agree" and "partly agree") were summed to produce an index score. An index score of 0-1 points was considered to indicate a low level of self-perceived problems, and a score of 2-3 points a high level of self-perceived problems related to social media use and gaming.

4.5. Results tables and figures

Results in this report are presented through figures in the main text, supplemented by statistical tables in the appendix.

Prevalence estimates and means were calculated for each participating country, taking sample weights into account for the countries that used them. In the tables, totals and gender-specific estimates for male and female students are presented by country. All percentages in the report were calculated on the basis of valid responses and are shown for the total samples, and in separate tables for male students and female students. All estimates are based on the total sample and represent population estimates.

Two types of tables are based on the applied analysis. The first presents the results of a descriptive analysis of the indicators related to the substance or behaviours examined. The results are presented by country and by gender. The analysis is completed with a statistical test to identify significant gender differences.

The second type of table presents the distribution and the result of univariate logistic regression for selected indicators and possible exposure factors. The primary objective is to identify exposure factors that transcend geographic boundaries, thereby identifying commonalities across all countries.

Two kinds of analyses were performed for each substance or group of substances and behaviour.

First, prevalence rates were generated for the different countries. Results are calculated for the total MedSPAD sample and by country. Prevalence rates are also calculated by gender, supplemented by statistical tests allowing the identification of significant gender differences.

Second, to identify common risk factors across countries for each substance or behaviour, the prevalence in the past 12 months was used as a relevant indicator and examined through univariate logistic analysis in relation to the student individual and environmental characteristics. The primary objective was to discern prevalent risk factors that transcend geographic boundaries, thereby identifying commonalities across all countries. Results were produced through odds ratios, which represent a measure of association between the exposure (individual or environmental characteristic) and the outcome (substance use or behaviour in the past 12 months).

In all logistic regression models presented in this report, one category of each categorical variable was designated as the reference and is omitted from the figures and Appendix tables for brevity. All reported odds ratios (ORs) therefore reflect comparisons between the displayed category and the omitted reference category. For gender, "Female" serves as the reference, so only results for "Male" are shown, indicating the odds of the outcome for males relative to females. For all other variables, the reference category is typically "No," representing the absence of the characteristic under investigation.

All results tables are collected in the final appendix, while results are presented in each chapter through figures. Figures illustrating common risk factors include only the indicators that reached statistical significance not only in the total MedSPAD sample but also in at least three countries.

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Chapter 5

Concluding remarks

Over the years, the Council of Europe's Pompidou Group has played a pivotal role in supporting the MedSPAD project. Thanks to this support, and with the efforts of national teams and the scientific co-ordination of the Italian National Research Council, the project has made substantial progress, attracting the interest of a growing number of countries and international organisations.

The 2020-21 MedSPAD survey in Egypt, Lebanon, Morocco and Tunisia provided for the first time harmonised and comparable information on substance use, gambling, gaming and social media behaviours. These insights offer valuable evidence to guide prevention efforts and to inform policy development in these countries.

A key objective of the MedSPAD project is to foster dialogue and collaboration between research, policy and prevention. The critical challenge of bridging the gap between disciplines involved in preventing substance use and risk behaviours requires strengthening the use of school survey data as a foundation for evidence-based interventions.

Enhancing the dissemination of school survey results is essential to increasing their use and ensuring their accurate interpretation. This process strengthens connections between researchers and decision makers, facilitating the integration of evidence into health promotion among young people and the provision of appropriate services.

With this aim, this report identifies common patterns in substance use and risk behaviours, as well as key risk and protective factors, while also highlighting country-specific differences. This dual perspective enhances the understanding of challenges across different contexts, facilitating both the identification of shared intervention strategies and the development of targeted initiatives tailored to different national needs.

The MedSPAD project continues to expand, with a growing number of countries expressing an interest in joining it. An increase in participation underscores the project's value and its vital role in advancing evidence-based approaches to prevention and policy making.

As we look ahead, exploring ways to ensure the sustainability and continued expansion of the MedSPAD project seems highly valuable. Strengthening collaboration with national authorities, research institutions and international organisations may further enhance the project's impact. Moreover, the insights gathered offer a great opportunity to collaborate in developing tailored prevention strategies by informing public health policies and supporting evidence-based decision making. By translating these findings into concrete actions, we can collectively contribute to more effective interventions that address both shared challenges and the specific needs of each country.

Chapter 6

MedSPAD documentation

6.1. MedSPAD regional reports

These can be found on the dedicated webpage of the Pompidou Group's website: www.coe.int/en/web/pompidou/mednet/medspad.

MedSPAD Committee (2022), "Adolescent substance use and risk behaviours in the Mediterranean region" (Fourth MedSPAD regional report).

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6.2. Methodology documents

Guidelines for the Mediterranean School Survey Project on Alcohol and Other Drugs (MedSPAD), P-PG/Med (2021) 8.

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6.3. Country MedSPAD reports

2020 MedSPAD Egypt, P-PG/Med (2022) 16.

2021-2022 MedSPAD Morocco, P-PG/Med (2022) 17.

20021-2022 MedSPAD Tunisia, P-PG/Med (2022) 18.

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MedSPAD Tunisia, P-PG MedNET (2014) 19.

MedSPAD II Tunisie, P-PG/Med (2017) 41.

MedSPAD Maroc, P-PG MedNET (2014) 22.

MedSPAD III Maroc, 2017, P-PG/Med (2018) 1.

MedSPAD Lebanon, P-PG MedNET (2009).

Appendix

1 Cigarettes: prevalence of use and related indicators among students characteristics by country and gender (%) [Figure 1.1]

	MedSPAD				Egypt				Morocco				Tunisia				Lebanon			
	Total	Girls	Boys	OR	p	Total	Girls	Boys	OR	p	Total	Girls	Boys	OR	p	Total	Girls	Boys	OR	p
Cigarette-related indicators																				
Cigarette use																				
At least once in lifetime	15.2	8.6	21.4	2.9	***	13.6	4.6	19.1	4.9	***	8.9	4.5	14.5	3.6	***	19.4	12.5	30.3	3	***	29.4	26.9	32.8	1.3	ns
At least once in last 12 months	10.3	5.2	15.1	3.3	***	10.9	3.6	15.5	5	***	4.1	1.7	7.3	4.5	***	10.8	6.8	17.3	2.9	***	20.4	19.1	22	1.2	ns
At least once in last 30 days	7.8	3.2	12.1	4.2	***	9.7	3.1	13.7	4.9	***	3	1.4	5	3.8	***	6.4	3.4	11.2	3.6	***	10.1	8.2	12.7	1.6	ns
Early onset of cigarette use (≤ 13 years)																				
Early onset of use	7.6	3.9	11	3.1	***	7.5	3.4	10.1	3.2	***	3.4	2	5.1	2.6	**	9.3	4.5	16.8	4.3	***	11.9	10.1	14.5	1.5	ns
Early onset of daily use	3.1	1.1	5	4.9	***	4.9	2.1	6.7	3.3	***	1.1	0.3	2.2	7.1	**	0.8	0.1	2	18.9	***	1.8	1.5	2.3	1.5	ns
Perceived availability of cigarettes																				
Easy to obtain	20.8	16.1	25.1	1.7	***	15.1	7.2	19.9	3.2	***	30.5	25.9	36.4	1.6	***	23.9	19.6	30.8	1.8	***	42.5	36.5	50.7	1.8	*
Cigarette use among family members and friends																				
Use among family members	52.4	52.6	52.1	1	ns	47.7	43.5	50.2	1.3	***	43	43.4	42.5	1	ns	64.4	66.6	60.9	0.8	**	62.1	58.6	67	1.4	ns
Use among friends	38.2	27.7	47.7	2.4	***	28.7	10	40.1	6	***	31.4	22.1	42.7	2.6	***	57.1	47.8	71.8	2.8	***	56.3	53.3	60.2	1.3	ns
Risk perception of cigarette use																				
Low risk or don't know for occasional use	68.7	68.3	69.2	1	ns	67.5	67	67.8	1	ns	58.8	54.8	63.9	1.5	***	73.9	74.1	73.6	1	ns	83.5	80.5	87.7	1.7	ns
Low risk or don't know for regular use	45.6	41.2	49.7	1.4	***	57.2	57.1	57.2	1	ns	29.5	24.3	36.1	1.8	***	33.5	32	36.1	1.2	ns	31.6	27	38.1	1.7	*

Note: OR = odds ratio; NA = not available; ns = not significant. ***p < .001; **p ≤ .01; *p ≤ .05; ns p > .05.

Cigarettes: environmental and individual factors associated with use in the last 12 months among students characteristics by country (%) [Figure 1.2]

	MedSPAD					Egypt					Morocco					Tunisia					Lebanon				
	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p
Cigarette use in the last 12 months																									
Gender																									
Male	52.1	49.3	76	3.3	***	62	58.9	87.7	5	***	44.1	42.7	77.1	4.5	***	38.4	35.6	61.3	2.9	***	42.8	41.9	46.3	1.2	ns
Leisure																									
Sport (actively)	50.5	50.3	52.2	1.1	ns	39.5	39.3	41.5	1.1	ns	67.8	67.6	74.5	1.4	ns	61.3	61	63.7	1.1	ns	63.6	61.8	70.7	1.5	ns
Read book for enjoyment	26.5	27.3	20.4	0.7	***	25.5	26.4	17.9	0.6	***	37.4	37.8	28.3	0.6	ns	23	23.4	20	0.8	ns	30.4	29.2	34.9	1.3	ns
Go out in the evening	10.3	9.2	20.2	2.5	***	12.4	11.3	21.2	2.1	***	3.5	2.8	21.7	9.8	***	10.5	9.2	21.2	2.7	***	4.1	3.1	8.3	2.9	ns
Other hobbies	29.3	29.5	28.2	0.9	ns	21.8	22.1	19.3	0.8	ns	36.7	36.9	33.3	0.9	ns	38.7	38.9	37	0.9	ns	41.3	37.1	58.1	2.4	**
Meet up with friends	46.4	44.6	62.4	2.1	***	44.5	43.3	54.6	1.6	***	41.4	40.3	68.9	3.3	***	52.2	49.8	71.9	2.6	***	49.8	42.4	79.4	5.2	***
Internet for fun	83.7	83.4	85.7	1.2	ns	74.5	74.2	76.9	1.2	ns	92.7	92.6	95.7	1.8	ns	94.9	94.6	97.3	2	ns	97.7	97.4	98.6	1.8	ns
Watch television	22.7	22.5	24.9	1.1	ns	24.7	24.6	25.6	1.1	ns	33.3	32.9	43.5	1.6	ns	12.7	12.1	18.1	1.6	**	30.7	30.3	32.1	1.1	ns
School																									
Missed school for five or more days in the last month	17.9	16.8	27	1.8	***	26.3	25.6	32.2	1.4	***	7.5	6.5	29.8	6.1	***	8.6	7	21.7	3.7	***	4.9	4.3	7.6	1.8	ns
School performance below the average	61.9	60.9	70.3	1.5	***	53.7	51.8	68.9	2.1	***	86.2	85.9	93.6	2.4	ns	61.6	61.1	66.4	1.3	ns	77	76.9	77.7	1	ns
Family background																									
Lives with fewer than two family members	14.1	13.8	16.4	1.2	ns	18.8	18.4	21.9	1.2	ns	20.1	19.4	34.8	2.2	**	2.5	2.4	3.5	1.5	ns	12.4	12.2	13.2	1.1	ns
Relationship with parents unsatisfactory	13	11.4	27	2.9	***	12.4	10.9	24.3	2.6	***	16.1	15.3	36.2	3.1	***	11.6	9.8	26.6	3.3	***	21	15.9	41.2	3.7	***
Relationship with friends unsatisfactory	14.5	13.9	20	1.6	***	12.8	12.1	18.3	1.6	***	25.6	25.1	37.8	1.8	ns	12.7	11.6	21.2	2	***	12.9	12.3	15.7	1.3	ns
Father: higher education level	57.8	57.6	59.6	1.1	ns	66.2	67	59.8	0.7	***	36.5	36.3	41.7	1.3	ns	51.5	50.5	59.7	1.5	**	62.5	60.6	70.2	1.5	ns
Mother: higher education level	54.7	54.4	57.3	1.1	ns	63.5	64.5	55.9	0.7	***	25.2	25.4	20.8	0.8	ns	50.1	48.9	60.1	1.6	***	72	69.1	83	2.2	*
Father: job full-time/part-time	88.8	88.7	89.7	1.1	ns	91.3	91.2	92.5	1.2	ns	84.9	85.2	76.6	0.6	ns	86.5	86.2	89.6	1.4	ns	86.7	88.2	80.5	0.6	ns
Mother: job full-time/part-time	40.8	40	47.9	1.4	***	41.9	41.3	46.6	1.2	*	22.1	22.1	20.8	0.9	ns	48.4	47.5	56	1.4	*	39.8	38.4	45.1	1.3	ns
Family well-being: better than other families	31.9	31.6	34.4	1.1	ns	43	43.2	41.1	0.9	ns	14.5	14.2	20.8	1.6	ns	21.4	21.2	23.6	1.1	ns	35.5	33.3	44.3	1.6	ns
Cigarette-related indicators																									
Availability																									
Perceived easy availability	20.7	16.5	56.9	6.7	***	15.1	10.9	49	7.8	***	30.3	28.4	72.9	6.8	***	23.7	18.5	65.8	8.5	***	42.2	35.2	69.2	4.1	***
Proximity																									
Use among family members	52.3	49.8	74.3	2.9	***	47.7	44.3	75.1	3.8	***	43.1	42	68.1	2.9	***	64.5	63.5	72.8	1.5	**	61.3	56.9	78.7	2.8	**
Use among friends	38.1	33.2	79.7	7.9	***	28.7	23.4	71.7	8.3	***	31.2	28.7	87.2	17	***	57	52.8	90.7	8.7	***	56.1	46.9	91.5	12.2	***
Risk perception																									
Low risk or don't know for occasional use	68.7	67	83.6	2.5	***	67.5	65.9	80.1	2.1	***	58.8	57.8	83	3.6	***	73.9	72.1	88.4	2.9	***	83.5	81.5	91.8	2.5	ns
Low risk or don't know for regular use	45.7	44.4	56.8	1.6	***	57.2	56.1	65.9	1.5	***	29.4	28.5	50	2.5	***	33.6	32.6	41.9	1.5	**	31.7	26.9	50.6	2.8	***

Note: OR = odds ratio; NA = not available; ns = not significant. ***p < .001; **p ≤ .01; *p ≤ .05; ns p > .05.

3 E-cigarettes: prevalence of use and related indicators among students characteristics by country and gender (%) [Figure 1.3]

	MedSPAD				Egypt				Morocco				Tunisia				Lebanon			
	Total	Girls	Boys	OR	p	Total	Girls	Boys	OR	p	Total	Girls	Boys	OR	p	Total	Girls	Boys	OR	p
E-cigarette related indicators																				
E-cigarette use																				
At least once in lifetime	13.2	8.2	17.8	2.4	***	7.8	2.2	11.3	5.6	***	10.3	4	18.1	5.3	***	21.3	13.3	34.1	3.4	***	37.2	35.8	39.3	1.2	ns
At least once in last 12 months	9.2	5.2	12.8	2.6	***	6.5	2	9.2	5	***	6.2	2.6	10.7	4.5	***	13.4	7.5	22.8	3.6	***	25.8	25.5	26.1	1	ns
At least once in last 30 days	6.4	3.1	9.5	3.2	***	6.2	2.2	8.7	4.2	***	3.3	1.1	6	5.9	***	6.3	3	11.6	4.3	***	20.4	19	22.4	1.2	ns
Early onset of e-cigarette use (≤ 13 years)																				
Early onset of use	4	1.8	5.9	3.3	***	4.4	1.8	5.9	3.4	***	1.6	0.6	2.7	4.5	**	4.3	2.2	7.6	3.7	***	4.5	3.6	5.7	1.6	ns
Early onset of daily use	2.2	0.8	3.5	4.7	***	3.6	1.6	4.9	3.1	***	0.9	0.2	1.8	11.6	*	0.2	0.1	0.3	2.8	ns	1.2	0	2.8	1	ns
Perceived availability of e-cigarettes																				
Easy to obtain	13.6	10.9	16.1	1.6	***	7.6	4	9.8	2.6	***	21.2	14.4	29.8	2.5	***	16.9	13.5	22.2	1.8	***	45.6	40.1	53.3	1.7	*
E-cigarette use among family members and friends																				
Use among family members	18.4	18.9	17.9	0.9	ns	17.7	16	18.7	1.2	*	12.8	13.4	12.1	0.9	ns	20	22.3	16.3	0.7	***	35.7	36.8	34.3	0.9	ns
Use among friends	25.9	20.4	31	1.8	***	15.6	5.6	21.8	4.7	***	26.9	19.2	36.6	2.4	***	39.4	32.3	50.8	2.2	***	65.9	65.2	66.9	1.1	ns
Risk perception of e-cigarette use																				
Low risk or don't know for occasional use	72.3	72.2	72.4	1	ns	69.5	68.6	70	1	ns	64.8	61.5	69.1	1.4	***	80	79.6	80.5	1.1	ns	81.9	82.4	81.3	0.9	ns
Low risk or don't know for regular use	62.6	60.4	64.7	1.2	***	64	63.7	64.3	1	ns	58.7	53.9	64.8	1.6	***	63	60.9	66.4	1.3	*	54.4	49.8	60.7	1.6	ns

Note: OR = odds ratio; NA = not available; ns = not significant. ***p < .001; **p ≤ .01; *p ≤ .05; ns p > .05.

E-cigarettes: environmental and individual factors associated with use in the last 12 months among students characteristics by country (%) [Figure 1.4]

	MedSPAD					Egypt					Morocco					Tunisia					Lebanon				
	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p
E-cigarette use in the last 12 months																									
Gender																									
Male	52.1	50	72.6	2.6	***	62	60.2	88.4	5	***	44.2	42.1	76.4	4.5	***	38.5	34.3	65.5	3.6	***	41.7	41.5	42.3	1	ns
Leisure																									
Sport (actively)	50.5	49.5	60.7	1.6	***	39.5	39.5	39.8	1	ns	68	67.4	76.1	1.5	ns	61.3	59.6	72.3	1.8	***	63.8	59.7	75.6	2.1	*
Read book for enjoyment	26.6	27.4	18.9	0.6	***	25.5	25.9	18.6	0.7	**	37.2	37.9	27.1	0.6	ns	23.1	24.5	14.1	0.5	***	31.2	31.3	31	1	ns
Go out in the evening	10.3	9.5	18.5	2.2	***	12.4	11.9	19.4	1.8	***	3.5	2.7	15.3	6.4	***	10.5	8.8	21.1	2.8	***	3.8	2.1	8.5	4.3	*
Other hobbies	29.3	29	32	1.2	ns	21.8	21.7	23.8	1.1	ns	36.7	37.5	25.7	0.6	*	38.7	39.2	35.6	0.9	ns	40.6	36.5	52.2	1.9	*
Meet up with friends	46.4	44.7	63.5	2.2	***	44.5	44.2	48.6	1.2	ns	41.2	39.8	62	2.5	***	52.1	48.3	76.5	3.5	***	49.4	43.1	67.3	2.7	***
Internet for fun	83.7	83.4	86.3	1.3	ns	74.5	74.8	69.1	0.8	*	92.6	92.6	93	1.1	ns	95	94.5	97.8	2.6	*	97.2	97.3	97.1	0.9	ns
Watch television	22.7	22.2	28.4	1.4	***	24.7	24.1	34.1	1.6	***	33.4	32.9	40.8	1.4	ns	12.7	11.8	18.3	1.7	**	31	29.2	36.2	1.4	ns
School																									
Missed school: five or more days in the last month	17.9	17.5	21.8	1.3	***	26.3	26.1	30.5	1.2	ns	7.5	6.4	23.9	4.6	***	8.5	7	18.2	2.9	***	4.9	5.2	4.3	0.8	ns
School performance: below average	61.9	61.1	70.6	1.5	***	53.7	53.2	60.3	1.3	*	86.2	85.5	97.1	5.8	*	61.8	60.6	69.5	1.5	**	76.8	75.3	81.1	1.4	ns
Family background																									
Lives with fewer than two family members	14.1	14	15.2	1.1	ns	18.8	18.2	26.7	1.6	***	20.1	19.9	24.3	1.3	ns	2.5	2.4	3	1.2	ns	12.3	11.7	14	1.2	ns
Relationship with parents: unsatisfactory	13	12	22.8	2.2	***	12.4	11.7	21.9	2.1	***	16.1	15	32.9	2.8	***	11.6	10.3	19.7	2.1	***	20.9	18.1	29	1.8	ns
Relationship with friends: unsatisfactory	14.6	14.2	17.9	1.3	**	12.8	12.5	17.1	1.4	*	25.7	25	35.7	1.7	*	12.8	12.3	15.9	1.4	ns	12.7	12.6	13.1	1	ns
Father: higher education level	57.8	57.8	58.4	1	ns	66.2	66.9	56.2	0.6	***	36.4	35.8	45.7	1.5	ns	51.6	50.5	58.7	1.4	*	63.3	59.1	75.5	2.1	*
Mother: higher education level	54.7	54.1	60.5	1.3	***	63.5	63.8	59	0.8	ns	25.1	25.3	22.5	0.9	ns	50.1	47.9	64.3	2	***	72.3	68.5	83.4	2.3	*
Father: job full-time/part-time	88.9	88.8	89.2	1	ns	91.3	91.4	90.3	0.9	ns	84.9	85.1	81.4	0.8	ns	86.5	86	89.4	1.4	ns	88.2	87	91.7	1.6	ns
Mother: job full-time/part-time	40.8	39.4	54.7	1.9	***	41.9	41	54.2	1.7	***	22.1	21.3	33.8	1.9	*	48.3	46	63.1	2	***	39.9	38.9	42.8	1.2	ns
Family well-being: better than other families	31.9	31.8	32.5	1	ns	43	43.2	40	0.9	ns	14.4	14.2	16.7	1.2	ns	21.4	20.5	27.6	1.5	*	35.4	31.9	45.8	1.8	*
E-cigarette-related indicators																									
Availability																									
Perceived easy availability	13.5	9.9	49.3	8.9	***	7.6	6	30.8	7	***	21.1	18.5	60.6	6.8	***	16.8	10.7	55.9	10.6	***	44.5	32.8	78.3	7.4	***
Proximity																									
Use among family members	18.3	16	41.7	3.8	***	17.7	15.6	47.3	4.8	***	12.8	11	39.4	5.2	***	19.9	17.7	34.4	2.4	***	35	29.2	51.6	2.6	***
Use among friends	25.8	20.8	75	11.4	***	15.6	12.9	54.6	8.1	***	26.7	23	82.9	16.2	***	39.4	31.7	88.6	16.7	***	65.4	57.3	87.8	5.4	***
Risk perception																									
Low risk or don't know for occasional use	72.3	70.6	88.7	3.2	***	69.5	68.5	83.4	2.3	***	64.7	63.7	80	2.3	**	79.9	77.7	94.4	4.8	***	81.7	77.9	92.9	3.7	*
Low risk or don't know for regular use	62.6	61.1	77.4	2.2	***	64	63.3	75.1	1.7	***	58.6	57.6	74.3	2.1	**	63	59.9	83	3.3	***	53.6	49.3	66.6	2.1	*
Low risk or don't know for regular use	62.6	61.1	77.4	2.2	***	64	63.3	75.1	1.7	***	58.6	57.6	74.3	2.1	**	63	59.9	83	3.3	***	53.6	49.3	66.6	2.1	*

Note: OR = odds ratio; NA = not available; ns = not significant. ***p < .001; **p ≤ .01; *p ≤ .05; ns p > .05.

5 Water pipe: prevalence of use and related indicators among students characteristics by country and gender (%) [Figure 1.5]

	MedSPAD				Egypt				Morocco				Tunisia				Lebanon			
	Total	Girls	Boys	OR	p	Total	Girls	Boys	OR	p	Total	Girls	Boys	OR	p	Total	Girls	Boys	OR	p
Water-pipe-related indicators																				
Water-pipe use																				
At least once in lifetime	12.9	7.1	18.3	2.9	***	11.1	3.9	15.6	4.5	***	9.2	4.3	15.3	4	***	14	7.5	24.5	4	***	41.8	40.8	43.1	1.1	ns
At least once in last 12 months	8.7	3.7	13.2	3.9	***	8.8	2.3	12.7	6.1	***	5.6	2.9	9	3.3	***	7.7	3.2	14.9	5.3	***	25.1	22.9	28.3	1.3	ns
At least once in last 30 days	6.5	2.5	10.2	4.4	***	7.8	2.5	11.1	5	***	3.4	1.5	5.8	4	***	4	1.4	8.3	6.5	***	16	14.1	18.5	1.4	ns
Early onset of water-pipe use (≤ 13 years)																				
Early onset of use	5.3	3	7.4	2.6	***	5.6	2.4	7.5	3.2	***	1.5	0.5	2.7	6	**	4.5	2.4	7.9	3.5	***	19.5	20.4	18.3	0.9	ns
Early onset of daily use	2.1	0.8	3.4	4.4	***	3.5	1.4	4.9	3.6	***	0.7	0.3	1.2	3.9	ns	0.2	0.1	0.5	6	ns	1.6	2.2	0.6	0.3	ns
Perceived availability of water pipes																				
Easy to obtain	18.6	13.4	23.4	2	***	14	6	18.9	3.7	***	26.2	20.2	33.9	2	***	20.9	16	28.8	2.1	***	38.1	36.3	40.6	1.2	ns
Water-pipe use among family members and friends																				
Use among family members	29.3	28.9	29.7	1	ns	28.8	25.6	30.7	1.3	***	13.5	13.6	13.4	1	ns	32.2	33.9	29.4	0.8	*	70.5	69.2	72.2	1.2	ns
Use among friends	27	18.3	35.1	2.4	***	22.7	9.3	30.8	4.4	***	30.8	23.6	39.9	2.1	***	29.9	22.1	42.3	2.6	***	52.6	50.3	55.8	1.2	ns
Risk perception of water-pipe use																				
Low risk or don't know for occasional use	65.9	66	65.9	1	ns	65.2	64.5	65.7	1.1	ns	60.4	57.6	64.1	1.3	ns	68.2	69.6	65.8	0.8	ns	78.4	79.5	76.9	0.9	ns
Low risk or don't know for regular use	50.9	48.7	53	1.2	***	57.3	57.7	57	1	ns	50	46.7	54.1	1.3	**	40.9	40.6	41.6	1	ns	39.8	37.4	43.3	1.3	ns

Note: OR = odds ratio; NA = not available; ns = not significant. ***p < .001; **p ≤ .01; *p ≤ .05; ns p > .05.

6 Water pipe: environmental and individual factors associated with use in the last 12 months among students characteristics by country (%) [Figure 1.6]

	MedSPAD					Egypt					Morocco					Tunisia					Lebanon				
	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p
Water-pipe use in the last 12 months																									
Gender																									
Male	52.1	49.5	79.4	3.9	***	62	59.4	89.9	6.1	***	44.2	42.6	70.8	3.3	***	38.4	35.4	74.4	5.3	***	41.7	39.9	47	1.3	ns
Leisure																									
Sport (actively)	50.6	50.3	53.8	1.2	ns	39.5	39.3	42	1.1	ns	67.9	67.8	70.3	1.1	ns	61.4	60.8	69.2	1.4	ns	64.3	64.6	63.3	0.9	ns
Read book for enjoyment	26.6	27.2	19.7	0.7	***	25.5	26.3	16.5	0.6	***	37.4	38	28.1	0.6	ns	23.1	23.5	18.5	0.7	ns	30.3	30.1	31	1	ns
Go out in the evening	10.3	9.3	21	2.6	***	12.4	11.5	21.7	2.1	***	3.5	2.7	16.9	7.3	***	10.5	9.1	26.8	3.6	***	4.1	2.5	8.9	3.9	*
Other hobbies	29.4	29.6	27.5	0.9	ns	21.8	21.9	20.5	0.9	ns	36.8	37.3	28.6	0.7	ns	38.8	39.3	32.7	0.8	ns	41.6	38.9	49.5	1.5	ns
Meet up with friends	46.4	44.9	62.3	2	***	44.5	43.5	54.7	1.6	***	41.2	39.9	62.5	2.5	***	52.2	50	78.1	3.6	***	49.3	44.3	63.7	2.2	***
Internet for fun	83.7	83.6	83.8	1	ns	74.5	74.6	72.9	0.9	ns	92.6	92.6	93.8	1.2	ns	95	94.7	98	2.7	ns	97.2	97.3	97.1	0.9	ns
Watch television	22.7	22.2	28.4	1.4	***	24.7	24.4	27.6	1.2	ns	33.3	32.8	42.2	1.5	ns	12.7	12.3	17	1.5	ns	31.1	25.9	46.2	2.5	***
School																									
Missed school: five or more days in the last month	17.9	17.1	25.6	1.7	***	26.3	25.6	34	1.5	***	7.6	6.8	20.3	3.5	***	8.5	7.7	18.7	2.8	***	5.2	5.4	4.4	0.8	ns
School performance: below average	61.9	60.8	74.4	1.9	***	53.7	52.2	70.1	2.1	***	86.2	85.5	96.9	5.2	*	61.7	61.2	68.3	1.4	ns	77.2	73.8	87.3	2.4	*
Family background																									
Lives with fewer than two family members	14.1	13.6	18.7	1.5	***	18.8	18.3	24.2	1.4	***	20.1	19.6	29	1.7	ns	2.4	2.2	4.4	2	ns	12.7	11.5	16.3	1.5	ns
Relationship with parents: unsatisfactory	13	11.9	24.8	2.4	***	12.4	11.3	23.3	2.4	***	16.2	14.9	38.1	3.5	***	11.6	11	18.6	1.8	***	21.5	17	34.7	2.6	***
Relationship with friends: unsatisfactory	14.5	14	20.1	1.5	***	12.8	12	20.5	1.9	***	25.6	25	34.9	1.6	ns	12.7	12.7	13.3	1.1	ns	12.9	10.5	20.2	2.2	ns
Father: higher education level	57.8	58.1	55	0.9	ns	66.2	67.4	53.8	0.6	***	36.3	36.2	38.1	1.1	ns	51.6	51	58.8	1.4	ns	64	63.6	65.2	1.1	ns
Mother: higher education level	54.7	54.8	53.7	1	ns	63.5	64.4	54.3	0.7	***	25.1	25.1	25	1	ns	50.2	49.9	53.9	1.2	ns	72	71.7	73	1.1	ns
Father: job full-time/part-time	88.9	88.8	89.3	1	ns	91.3	91.3	91.2	1	ns	84.8	85.1	79.7	0.7	ns	86.6	86.2	91	1.6	ns	87.8	89	84.1	0.7	ns
Mother: job full-time/part-time	40.8	40.3	46.3	1.3	***	41.9	41.2	49.3	1.4	***	22	21.8	26.2	1.3	ns	48.4	47.8	55.7	1.4	ns	40.1	43.9	28.4	0.5	*
Family well-being: better than other families	31.8	31.9	31.4	1	ns	43	43.4	38.7	0.8	ns	14.3	14.4	12.5	0.8	ns	21.4	21.2	23.3	1.1	ns	35.2	35.5	34.6	1	ns
Water-pipe-related indicators																									
Availability																									
Perceived easy availability	18.5	14.6	60.1	8.8	***	14	10.3	52.4	9.6	***	26.2	23.1	78.1	11.9	***	20.8	16.8	68.4	10.7	***	37.7	28.6	64.8	4.6	***
Proximity																									
Use among family members	29.3	26.1	62.7	4.8	***	28.8	25.5	62.7	4.9	***	13.5	11.7	43.8	5.9	***	32.1	29.9	58.5	3.3	***	69.8	64.1	86.5	3.6	***
Use among friends	26.9	22.2	76.7	11.5	***	22.7	17.7	73.8	13.1	***	30.6	27.8	78.5	9.5	***	29.8	25.5	81	12.4	***	51.8	42.8	79.5	5.2	***
Risk perception																									
Low risk or don't know for occasional use	65.9	64.4	81.6	2.5	***	65.2	63.8	79.4	2.2	***	60.3	59.4	76.6	2.2	***	68.1	66.8	84.4	2.7	***	77.9	73.8	89.8	3.1	***
Low risk or don't know for regular use	50.9	49.7	63.3	1.7	***	57.3	56.1	69.2	1.8	***	50	48.7	70.8	2.5	***	40.8	39.8	53.5	1.7	***	38.7	34.7	50.2	1.9	*
Low risk or don't know for regular use	62.6	61.1	77.4	2.2	***	64	63.3	75.1	1.7	***	58.6	57.6	74.3	2.1	**	63	59.9	83	3.3	***	53.6	49.3	66.6	2.1	*

Note: OR = odds ratio; NA = not available; ns = not significant. ***p < .001; **p ≤ .01; *p ≤ .05; ns p > .05.

1.7 Alcohol: prevalence of use and related indicators among students characteristics by country and gender (%) [Figure 1.7]

	MedSPAD					Egypt					Morocco					Tunisia					Lebanon				
	Total	Girls	Boys	OR	p	Total	Girls	Boys	OR	p	Total	Girls	Boys	OR	p	Total	Girls	Boys	OR	p	Total	Girls	Boys	OR	p
Alcohol-related indicators																									
Alcohol use																									
At least once in lifetime	6.5	3.8	9	2.49	***	6.4	2.8	8.6	3.26	***	4.8	2.8	8.6	2.78	***	4.7	2.6	8	3.18	***	26.5	24.5	29.3	1.28	ns
At least once in last 12 months	5.1	3.2	6.8	2.2	***	5.5	2.7	7.1	2.73	***	3	2	7.1	2.18	*	3	1.8	5	2.9	***	21.4	21.9	20.8	0.94	ns
At least once in last 30 days	3.6	1.8	5.3	3.07	***	4.7	2	6.4	3.28	***	1.9	0.9	6.4	3.43	**	1.1	0.4	2.3	5.92	***	12.7	13	12.3	0.94	ns
Heavy episodic drinking in the last 30 days	5.9	3	8	2.79	***	6.3	2.9	8.4	3.1	***	4	2.3	8.4	2.7	***		NA	NA	NA		7.5	6.9	8.4	1.25	ns
Alcohol intoxication in the lifetime	3.6	2.3	4.8	2.2	***	4.2	2.3	5.4	2.47	***	3.4	1.9	5.4	3.04	***	1.8	1.6	2.2	1.36	***	8.3	8.2	8.3	1.01	ns
Alcohol intoxication in the last 12 months	2.6	1.4	3.6	2.6	***	3.5	1.8	4.5	2.58	***	1.5	1.1	4.5	2	ns	0.8	0.6	1.1	1.91	***	5.7	5.2	6.3	1.24	ns
Alcohol intoxication in the last 30 days	2.1	1	3.1	3.2	***	3.3	1.5	4.4	2.96	***	1.2	0.9	4.4	1.69	ns	0.3	0.2	0.3	1.22	***	2.1	2.2	2.1	0.98	ns
Early onset of alcohol use (≤ 13 years)																									
Early onset of alcohol use	3.2	1.7	4.6	2.71	***	3.9	1.8	5.2	3.01	***	0.9	0.6	5.2	2.21	ns	1.5	0.7	2.7	3.76	***	13.3	12.2	14.8	1.25	ns
Early onset of alcohol intoxication	2.2	0.9	3.4	3.8	***	3.5	1.4	4.7	3.51	***	0.9	0.6	4.7	1.9	ns	0.3	0.1	0.7	7.81	***	3.5	4	2.9	0.73	ns
Availability of alcohol																									
Availability of at least one alcoholic drink	17.5	14.9	20	1.43	***	10.1	5.1	13.2	2.8	***	34.5	29	13.2	1.72	***	19.3	16.1	24.5	1.7	***	45.6	44.3	47.4	1.13	ns
Alcohol use among family members and friends																									
Use among family members	15.2	15.5	14.9	0.95	ns	10.8	7.6	12.8	1.79	***	15.8	16.7	12.8	0.85	ns	21.3	21.8	20.5	0.92	***	29.1	33.8	22.4	0.57	*
Use among friends	15.9	12.6	18.8	1.6	***	11.8	7	14.8	2.33	***	18.1	13.4	14.8	2.05	***	19.7	15.4	26.5	1.99	***	35.6	39.6	30	0.65	ns
Risk perception of alcohol use																									
Low risk of occasional alcohol consumption	57.3	57	57.6	1.03	ns	59.1	59.8	58.7	0.95	ns	50	46.6	58.7	1.37	**	55.4	56.3	54	0.91	***	72.1	72.1	72.1	1	ns
Low risk of daily alcohol consumption	52.5	47.7	57	1.45	***	64.5	63.9	64.9	1.04	ns	40.4	36.2	64.9	1.48	***	36.8	34.4	40.7	1.31	***	44.3	43.6	45.3	1.07	ns
Low risk of weekly heavy episodic drinking	52.2	47.9	55.4	1.35	***	59.1	58.5	59.5	1.04	ns	33.5	27.9	59.5	1.78	***		NA	NA	NA	NA	23.2	20.9	26.2	1.34	ns

Note: OR = odds ratio; NA = not available; ns = not significant. ***p < .001; **p ≤ .01; *p ≤ .05; ns p > .05.

8

Alcohol: environmental and individual factors associated with use in the last 12 months among students characteristics by country (%) [Figure 1.8]

	MedSPAD					Egypt					Morocco					Tunisia					Lebanon				
	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p
Alcohol use in the last 12 months																									
Gender																									
Male	52.1	51.1	69.7	2.2	***	62	60.9	81	2.7	***	44.3	43.7	62.9	2.2	*	38.5	37.7	63.7	2.9	***	41.9	42.3	40.7	0.9	ns
Leisure																									
Sport (actively)	50.6	50.5	52.4	1.1	ns	39.5	39.5	40	1	ns	68	67.6	79.4	1.8	ns	61.4	61.4	60.1	0.9	ns	63.6	60.9	73.8	1.8	ns
Read book for enjoyment	26.6	26.7	24.6	0.9	ns	25.4	25.7	20.7	0.8	ns	37.5	37.5	37.5	1	ns	23.1	23.1	21.5	0.9	ns	30.8	29.7	35.2	1.3	ns
Go out in the evening	10.3	9.7	22.4	2.7	***	12.4	11.7	23.5	2.3	***	3.6	3.2	17.6	6.5	***	10.5	9.6	39.5	6.1	***	4	3.9	4.3	1.1	ns
Other hobbies	29.4	29.3	30	1	ns	21.8	21.8	22	1	ns	36.8	36.6	43.8	1.3	ns	38.7	38.6	40.5	1.1	ns	40.9	40.9	41.1	1	ns
Meet up with friends	46.4	45.7	59	1.7	***	44.5	44.2	48.8	1.2	ns	41.2	40.4	69.7	3.4	***	52.1	51.2	80.7	4	***	49.8	45	67.1	2.5	**
Internet for fun	83.7	83.8	81.9	0.9	ns	74.5	74.7	70.2	0.8	ns	NA	NA	NA	NA	NA	94.9	94.9	96.8	1.6	ns	97.3	96.9	98.6	2.3	ns
Watch television	22.7	22.3	31.1	1.6	***	24.7	24.4	29.8	1.3	ns	33.4	32.9	47.1	1.8	ns	12.7	12.3	25.7	2.5	**	30.5	29.6	33.6	1.2	ns
School																									
Missed school: five or more days in the last month	17.9	17.4	26.4	1.7	***	26.3	25.9	33.2	1.4	**	7.6	7.1	26.5	4.7	***	8.5	8.1	22.5	3.3	***	5.1	4.6	7.1	1.6	ns
School performance: below average	62	61.7	66.1	1.2	ns	53.6	53.3	60.6	1.3	*	86.2	85.9	94.3	2.7	ns	61.8	62	55.2	0.8	ns	77.2	77	77.9	1	ns
Family background																									
Lives with fewer than two family members	14.1	13.8	19.2	1.5	***	18.8	18.3	26.7	1.6	***	20.2	19.9	32.4	1.9	ns	2.5	2.5	1.3	0.5	ns	12.4	14.4	5.3	0.3	ns
Relationship with parents: unsatisfactory	13.1	12.2	28.8	2.9	***	12.4	11.7	25	2.5	***	16.2	15.6	38.2	3.4	***	11.6	10.8	36.1	4.7	***	21.3	19.1	29.2	1.8	ns
Relationship with friends: unsatisfactory	14.6	14.2	20.7	1.6	***	12.8	12.3	20.8	1.9	***	25.6	25.3	34.3	1.5	ns	12.8	12.4	23	2.1	*	13.1	13.4	11.8	0.9	ns
Father: higher education level	57.8	57.8	57.6	1	ns	66.2	66.9	54.3	0.6	***	36.4	36	47.1	1.6	ns	51.6	51.2	65.2	1.8	*	62.6	61.6	66.4	1.2	ns
Mother: higher education level	54.7	54.3	62.4	1.4	***	63.6	63.9	57.8	0.8	*	25.1	24.6	42.9	2.3	*	50.1	49.6	66.7	2	*	71.9	68.8	83	2.2	ns
Father: job full-time/part-time	88.8	88.8	88.5	1	ns	91.3	91.5	88.8	0.7	ns	84.7	84.8	82.9	0.9	ns	86.5	86.4	90.5	1.5	ns	86.9	86.5	88.3	1.2	ns
Mother: job full-time/part-time	40.8	40.2	53	1.7	***	41.9	41.3	52.4	1.6	***	22.1	21.6	39.4	2.4	*	48.3	47.8	66.9	2.2	**	39.5	37.3	47.6	1.5	ns
Family well-being: better than other families	31.8	31.6	35.8	1.2	ns	43	43.1	41	0.9	ns	14.3	14.6	5.9	0.4	ns	21.5	21.2	30.6	1.6	ns	35.6	34.1	41.1	1.3	ns
Alcohol-related indicators																									
Availability																									
Availability of at least one alcoholic drink	17.5	14.6	72	15	***	10.1	7.4	57.5	16.9	***	34.4	32.7	88.6	15.9	***	19.3	17	94.4	82.3	***	45.6	33.2	91.1	20.6	***
Proximity																									
Alcohol use among family members	15.2	12.9	58.6	9.6	***	10.8	8.3	54.7	13.3	***	15.7	14.5	54.3	7	***	21.3	20.4	52.8	4.4	***	29.1	15.3	79.5	21.6	***
Alcohol use among friends	15.9	13.3	64.5	11.9	***	11.9	9.4	53.7	11.1	***	18	16.1	77.1	17.5	***	19.7	17.7	84	24.7	***	35.6	24.7	75.9	9.6	***
Risk perception																									
Low risk of occasional alcoholic drinks consumption	57.3	56	82.4	3.7	***	59.1	58	78.3	2.6	***	49.9	48.6	88.6	8.2	***	55.4	54.5	85.1	4.8	***	72.1	67.2	91	5	***
Low risk of regular alcoholic drinks consumption	52.5	51.2	76.2	3.1	***	64.5	63.4	84.4	3.1	***	40.3	39.4	68.6	3.4	***	36.8	36.1	60.8	2.8	***	44.3	38.6	66.6	3.2	***
Low risk of five or more alcoholic drinks on the same occasion (binge drinking)	52.2	51.5	63	1.6	***	59.1	58.2	74.2	2.1	***	33.4	32.9	50	2	*	NA	NA	NA	NA	NA	23.2	21.9	28.2	1.4	ns

Note: OR = odds ratio; NA = not available; ns = not significant. ***p < .001; **p ≤ .01; *p ≤ .05; ns p > .05.

9 Cannabis: prevalence of use and related indicators among students characteristics by country and gender (%) [Figure 1.9]

	MedSPAD					Egypt				Morocco				Tunisia				Lebanon			
	Total	Girls	Boys	OR	p	Total	Girls	Boys	OR	p	Total	Girls	Boys	OR	p	Total	Girls	Boys	OR	p	Total	Girls	Boys	OR	p
Cannabis-related indicators																									
Cannabis use																									
At least once in lifetime	4.7	2.1	7.1	3.6	***	4.5	2	6	3.2	***	4.1	2.5	6.1	2.6	***	5.8	2.2	11.6	5.8	***	1.4	0	3.3	1	ns
At least once in last 12 months	4.1	1.6	6.3	4.1	***	4.4	1.9	6	3.4	***	2.2	0.9	3.9	4.3	***	4.8	1.9	9.4	5.4	***	0.8	0	1.8	1	ns
At least once in last 30 days	2.8	0.9	4.6	5.2	***	3.7	1.3	5.2	4	***	1.7	0.8	2.9	3.8	**	1.9	0.6	4.1	7.1	***	0.5	0	1.1	1	ns
Early onset of cannabis use (≤ 13 years)																									
Early onset of use	1.7	0.6	2.8	5.1	***	2.5	1	3.5	3.6	***	0.8	0.6	1	1.6	ns	0.7	0.1	1.6	18.2	***	1	0	2.3	1	ns
Perceived availability of cannabis																									
Easy to obtain	9.8	7.8	11.7	1.6	***	4.7	2	6.3	3.3	***	23.9	18.5	30.8	2	***	13.5	10.4	18.3	1.9	***	4.8	3.1	7.1	2.4	ns
Cannabis use among family members and friends																									
Use among family members	9.9	8.5	11.2	1.4	***	9.9	6.8	11.8	1.8	***	17.6	17.4	17.8	1	ns	7.2	7.1	7.2	1	ns	4.2	5.1	3.1	0.6	ns
Use among friends	15.2	11.2	18.8	1.8	***	10.8	5.6	14	2.8	***	20.7	14.8	28.4	2.3	***	21.3	16.4	29.1	2.1	***	11.1	10.5	12	1.2	ns
Risk perception of cannabis use																									
Low risk or don't know for occasional use	57.3	55.2	59.2	1.2	***	60.5	61.4	59.9	0.9	ns	54.9	49.8	61.4	1.6	***	52.6	50.3	56.3	1.3	**	55.2	54.5	56.1	1.1	ns
Low risk or don't know for regular use	45.4	41.3	49.1	1.4	***	53.2	53.2	53.2	1	ns	44	39.8	49.4	1.5	***	32.3	28.8	37.9	1.5	***	38	36.1	40.5	1.2	ns
Risk for cannabis-related problems																									
High-risk cannabis use	1	0.4	1.6	4.7	***	0.8	0.3	1.2	4.1	***	1.3	0.5	2.3	5.1	**	1.3	0.4	2.8	6.8	***	0.3	0	0.7	1	ns

Note: OR = odds ratio; NA = not available; ns = not significant. ***p < .001; **p ≤ .01; *p ≤ .05; ns p > .05.

Cannabis: environmental and individual factors associated with use in the last 12 months among students characteristics by country (%) [Figure 1.10]

	MedSPAD					Egypt					Morocco					Tunisia					Lebanon				
	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p
Cannabis use in the last 12 months																									
Gender																									
Male	52.1	50.9	80.9	4.1	***	62	61	84	3.4	***	44.4	43.6	76.9	4.3	***	38.4	36.6	75.8	5.4	***	42.1	41.6	100	1	ns
Leisure																									
Sport (actively)	50.6	50.7	47.5	0.9	ns	39.5	39.9	32.5	0.7	*	68	68.1	65.4	0.9	ns	61.4	61	69.5	1.5	ns	63.5	63.5	62.6	1	ns
Read book for enjoyment	26.6	27	16.1	0.5	***	25.5	26	13.5	0.4	***	37.4	37.7	25	0.6	ns	23.1	23.4	18.2	0.7	ns	30.6	30.5	37.4	1.4	ns
Go out in the evening	10.3	9.6	28.2	3.7	***	12.4	11.8	25.3	2.5	***	3.6	3.2	20	7.5	***	10.5	9.2	36	5.5	***	4	4.1	0	1	ns
Other hobbies	29.3	29.4	28	0.9	ns	21.8	22	18.1	0.8	ns	36.7	36.9	29.2	0.7	ns	38.7	38.5	44.5	1.3	ns	40.7	40.2	100	1	ns
Meet up with friends	46.4	46	55.6	1.5	***	44.5	44.5	43.9	1	ns	41.3	41	54.2	1.7	ns	52.1	50.8	77.9	3.4	***	49.6	50	0	1	ns
Internet for fun	83.7	83.9	78.2	0.7	**	74.5	74.9	64.3	0.6	***	92.7	92.6	96.2	2	ns	94.9	94.8	98.1	2.8	ns	97.3	97.3	100	1	ns
Watch television	22.7	22.4	30.3	1.5	***	24.7	24.3	34.7	1.7	***	33.3	33.4	28	0.8	ns	12.7	12.2	23	2.1	**	30.6	30.5	37.4	1.4	ns
School																									
Missed school: five or more days in the last month	17.9	17.3	30.5	2.1	***	26.3	25.8	37	1.7	***	7.6	7.5	11.5	1.6	ns	8.5	7.8	24	3.8	***	5.2	5.2	0	1	ns
School performance: below average	61.9	61.8	66.4	1.2	ns	53.6	53.4	59.2	1.3	ns	86.2	86.1	92.3	1.9	ns	61.7	61.2	71.9	1.6	ns	77.1	77.7	0	1	ns
Family background																									
Lives with fewer than two family members	14.1	13.8	19.9	1.5	***	18.8	18.3	29	1.8	***	20.2	20	30.8	1.8	ns	2.5	2.5	1.6	0.6	ns	12.5	12.6	0	1	ns
Relationship with parents: unsatisfactory	13.1	12.5	26.4	2.5	***	12.4	11.7	27.1	2.8	***	16.3	15.8	38.5	3.3	***	11.6	11	23	2.4	***	21.3	21.5	0	1	ns
Relationship with friends: unsatisfactory	14.6	14.3	21.1	1.6	***	12.8	12.3	21.9	2	***	25.7	25.6	28	1.1	ns	12.8	12.5	18.5	1.6	ns	12.7	12.8	0	1	ns
Father: higher education level	57.8	57.9	53.5	0.8	ns	66.2	66.8	52.5	0.5	***	36.3	36	50	1.8	ns	51.5	51.4	54.9	1.2	ns	62.5	62.2	100	1	ns
Mother: higher education level	54.7	54.8	51.7	0.9	ns	63.5	63.9	55.6	0.7	*	25.1	24.9	32	1.4	ns	50.1	50.1	49.5	1	ns	71.8	72	37.4	0.2	ns
Father: job full-time/part-time	88.8	88.9	87.9	0.9	ns	91.3	91.5	87.2	0.6	*	84.8	84.8	84	0.9	ns	86.5	86.3	89.6	1.4	ns	86.9	86.7	100	1	ns
Mother: job full-time/part-time	40.8	40.5	48	1.4	**	41.9	41.5	50.5	1.4	*	22.1	22	26.9	1.3	ns	48.3	48.3	49	1	ns	39.3	39.3	37.4	0.9	ns
Family well-being: better than other families	31.9	31.6	38.6	1.4	*	43	42.9	46	1.1	ns	14.4	14.4	15.4	1.1	ns	21.5	20.8	34	2	**	35.7	35.7	37.4	1.1	ns
Cannabis-related indicators																									
Availability																									
Perceived easy availability	9.8	8.3	45.1	9.1	***	4.7	3.5	30.5	12.2	***	23.9	22.6	80.8	14.4	***	13.4	10.9	63.1	14	***	4.8	4.5	37.4	12.6	ns
Proximity																									
Use among family members	9.9	8.7	39.2	6.8	***	9.9	8.2	46	9.6	***	17.6	16.8	53.8	5.8	***	7.2	6.4	23.2	4.4	***	4.2	3.8	62.6	42.6	ns
Use among friends	15.1	13	67.1	13.7	***	10.8	8.5	60	16.1	***	20.7	19.3	84.6	23	***	21.3	18.6	75.3	13.3	***	11.1	10.4	100	1	ns
Risk perception																									
Low risk or don't know for occasional use	57.2	56.2	81.2	3.4	***	60.5	59.4	83	3.3	***	54.9	54.3	79.2	3.2	*	52.6	51.3	77.9	3.3	***	55.2	54.8	100	1	ns
Low risk or don't know for regular use	45.4	44.3	70.2	3	***	53.2	52.2	74.5	2.7	***	44	43.6	60.9	2	ns	32.2	30.7	63.7	4	***	38	37.5	100	1	ns
Low risk of five or more alcoholic drinks on the same occasion (binge drinking)	52.2	51.5	63	1.6	***	59.1	58.2	74.2	2.1	***	33.4	32.9	50	2	*	NA	NA	NA	NA	NA	23.2	21.9	28.2	1.4	ns

Note: OR = odds ratio; NA = not available; ns = not significant. ***p < .001; **p ≤ .01; *p ≤ .05; ns p > .05.

Other illicit substances: prevalence of use and related indicators among students characteristics by country and gender (%) [Figure 1.11]

	MedSPAD					Egypt					Morocco					Tunisia					Lebanon				
	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p
Other illicit substances use in the last 12 months																									
Other drugs	5.6	3.4	7.7	2.3	***	8.4	5.9	9.9	1.7	***	3.7	2.3	5.4	2.4	**	1.6	1.1	2.4	2.3	*	4	3.1	5.3	1.8	ns
Cocaine	1.1	0.4	1.7	4.8	***	1.7	0.7	2.2	3.3	***	0.3	0	0.6	1	ns	0.4	0.2	0.8	4.6	*	0.5	0	1.1	1	ns
Ecstasy	1.3	0.5	2.2	3.9	***	2.2	0.8	3	3.8	***	0.3	0.2	0.6	3.8	ns	0.4	0.2	0.7	3.1	ns		NA	NA	NA	NA
Heroin	0.8	0.2	1.4	7.5	***	1.3	0.3	1.9	6.6	***	0.1	0	0.2	1	ns	0.3	0.2	0.5	2.7	ns	0.5	0	1.1	1	ns
Amphetamines	1.4	1	1.6	1.6	*	1.7	1.6	1.8	1.2	ns	2.3	1.6	3.1	2	ns	0.1	0.1	0	1	ns	2.3	1.5	3.4	2.3	ns
Methamphetamines	1.1	0.8	1.4	1.9	**	1.4	1.1	1.5	1.4	ns	1.9	1.3	2.7	2.2	ns	0	0.1	0	1	ns	2.3	1.5	3.4	2.3	ns
Crack	1.1	0.6	1.4	2.5	***	1.1	0.6	1.4	2.4	**	0.8	0.3	1.4	4.4	ns		NA	NA	NA	NA	2.1	1.4	2.9	2	ns
Hallucinogens	1	0.5	1.4	2.7	***	1.3	0.8	1.6	1.9	*	1.4	0.6	2.4	3.8	*	0.1	0	0.3	1	ns	1.8	1.5	2.2	1.5	ns
New psychoactive substances (NPS)	3	1.7	4.1	2.4	***	4.2	2.8	5.1	1.9	***		NA	NA	NA	NA	0.7	0.4	1.3	2.9	ns	2	1.7	2.6	1.6	ns
Early onset (≤ 13 years)																									
Other drugs	1.9	0.7	3.1	4.5	***	3.3	1.5	4.4	3.1	***	0.4	0.3	0.6	1.9	ns	0.3	0.1	0.6	6.1	ns	0.7	0	1.7	1	ns
Cocaine	1.1	0.3	1.7	5	***	1.9	0.7	2.6	3.7	***	0.3	0.3	0.2	0.6	ns	0	0	0.1	1	ns	0.5	0	1.1	1	ns
Ecstasy	0.9	0.2	1.6	7.9	***	1.5	0.4	2.2	5.4	***	0.3	0	0.6	1	ns	0.3	0.1	0.5	5.8	ns	0.6	0	1.4	1	ns
Heroin	1.2	0.4	1.9	4.3	***	2.2	1	2.9	2.8	***	0.1	0	0.2	1	ns		NA	NA	NA	NA	0.6	0	1.4	1	ns
Perceived easy availability																									
Other drugs	5.3	4.4	6.2	1.4	***	2.6	1.6	3.1	2	***	13.6	10.2	17.8	1.9	***	6.8	5.2	9.2	1.8	***	3.2	2.3	4.5	2	ns
Cocaine	2.4	2.2	2.6	1.2	ns	1.2	0.6	1.5	2.4	**	6.2	5.4	7.1	1.3	ns	2.9	2.7	3.3	1.2	ns	1.8	1.7	2	1.2	ns
Ecstasy	3.5	2.7	4.3	1.6	***	1.2	0.8	1.4	1.9	*	9.3	6	13.6	2.5	***	5.5	3.8	8.3	2.3	***	1.5	0.9	2.2	2.4	ns
Heroin	2.2	1.9	2.5	1.3	ns	1.5	0.9	1.8	1.9	*	5.6	4.4	7.1	1.7	*	1.9	1.8	2.2	1.2	ns	2.4	2.3	2.4	1	ns
Use among family members																									
Other drugs	8.5	6.8	10.2	1.6	***	11.3	9.1	12.6	1.4	***	7.1	6.5	7.9	1.2	ns	4.7	4.7	4.6	1	ns	4.2	3.2	5.7	1.9	ns
Cocaine	4.7	3.4	6	1.8	***	6.7	5.3	7.6	1.5	***	3.5	2.6	4.5	1.7	ns	2	1.6	2.5	1.5	ns	1.8	1.8	1.8	1	ns
Ecstasy	5.4	4.1	6.5	1.6	***	7.5	6	8.4	1.5	***	3.8	3.1	4.7	1.5	ns	2.8	3	2.5	0.8	ns	0.8	0	1.8	1	ns
Heroin	4.2	3	5.3	1.8	***	6.3	4.9	7.2	1.5	***	2.5	2.8	2.2	0.8	ns	1.2	1.2	1.1	0.9	ns	2.5	1.4	3.9	2.8	ns
Use among friends																									
Other drugs	10.8	8	13.3	1.8	***	10.8	7.2	13	1.9	***	12	8.5	16.3	2.1	***	10.8	8.9	13.9	1.7	***	6	6.1	5.9	1	ns
Cocaine	5.9	4.1	7.6	1.9	***	6.5	4	8.1	2.1	***	5.4	4.4	6.7	1.6	ns	5.5	4.5	7.3	1.7	**	2.3	2.3	2.2	0.9	ns
Ecstasy	7	5.3	8.6	1.7	***	6.7	4.9	7.8	1.7	***	8	5.2	11.6	2.4	***	7.9	6.3	10.4	1.7	***	1.9	1.7	2.2	1.3	ns
Heroin	4.7	3.2	6	1.9	***	5.6	3.6	6.9	2	***	3.9	2.7	5.5	2.1	*	3.2	2.8	3.9	1.4	ns	4.2	3.9	4.5	1.2	ns
Risk perception (low or don't know)																									
Other drugs	48.6	46.4	50.7	1.2	***	55.6	56.9	54.8	0.9	ns	44.5	39.9	50.4	1.6	***	39.5	38.3	41.4	1.1	ns	34.9	37.1	31.9	1.1	ns
Cocaine	49.2	46.8	51.5	1.2	***	56.5	58.5	55.3	0.9	*	44.5	39.1	51.4	1.6	***	39.7	38.2	42.1	1.2	ns	34.7	34	35.7	1.1	ns
Ecstasy	49.3	46.7	51.7	1.2	***	55.8	57.2	55	0.9	ns	47.7	41.6	55.8	1.8	***	39.1	37.9	41.1	1.1	ns	37.8	37.3	38.6	1.1	ns
Heroin	49.5	47.4	51.4	1.2	***	55.7	57	54.9	ns	ns	45.6	40	52.8	1.5	***	41	40.1	42.5	1.1	ns	38.2	41.5	33.6	0.8	ns

Note: OR = odds ratio; NA = not available; ns = not significant. ***p < .001; **p ≤ .01; *p ≤ .05; ns p > .05.

Other illicit substances: environmental and individual factors associated with use in the last 12 months among students characteristics by country (%) [Figure 1.12]

	MedSPAD					Egypt					Morocco					Tunisia					Lebanon				
	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p
Other illicit substances use in the last 12 months																									
Gender																									
Male	52.1	51	70.8	2.3	***	62	61	73.2	1.7	***	44.4	43.6	65.1	2.4	**	38.5	38.2	58.4	2.3	*	41.9	41.3	55.7	1.8	ns
Leisure																									
Sport (actively)	50.6	51	43.4	0.7	ns	39.5	39.8	36.2	0.9	ns	68	67.7	76.2	1.5	ns	61.4	61.3	65.5	1.2	ns	63.6	62.9	82	2.7	ns
Read book for enjoyment	26.6	26.6	25.9	1	ns	25.5	25.6	23.8	0.9	ns	37.4	37.5	35	0.9	ns	23.1	22.9	33.6	1.7	ns	30.8	30.6	37.1	1.3	ns
Go out in the evening	10.3	9.9	17.1	1.9	***	12.4	12.1	15.7	1.4	*	3.6	3.1	16.7	6.2	***	10.5	10.2	33.3	4.4	***	4	3.6	13.2	4	ns
Other hobbies	29.3	29.6	25.3	0.8	ns	21.8	21.8	21.8	1	ns	36.7	37	29.3	0.7	ns	38.7	38.5	51.2	1.7	ns	40.9	41	39.4	0.9	ns
Meet up with friends	46.4	46.4	46.9	1	ns	44.5	44.5	44	1	ns	41.3	40.9	50	1.4	ns	52.1	51.9	70.5	2.2	*	49.8	49.7	51.7	1.1	ns
Internet for fun	83.7	84.5	69.4	0.4	***	74.5	75.4	64.1	0.6	***	92.7	93.1	80	0.3	***	94.9	94.9	100	1	ns	97.3	97.2	100	1	ns
Watch television	22.7	22	34.8	1.9	***	24.7	23.7	36.3	1.8	***	33.3	33.5	26.8	0.7	ns	12.7	12.4	31.9	3.3	***	30.5	30.8	23.1	0.7	ns
School																									
Missed school: five or more days in the last month	17.9	17.3	27.4	1.8	***	26.3	25.9	31.1	1.3	*	7.6	7.5	12.2	1.7	ns	8.5	8.4	17.3	2.3	ns	5.1	5.4	0	1	ns
School performance: below average	62	62.1	59.6	0.9	ns	53.6	53.6	53.6	1	ns	86.2	86.2	85.7	1	ns	61.8	61.6	76.1	2	ns	77.2	77.7	66.3	0.6	ns
Family background																									
Lives with fewer than two family members	14.1	13.3	26.4	2.3	***	18.8	17.8	29.5	1.9	***	20.2	20.1	24.4	1.3	ns	2.5	2.5	0	1	ns	12.4	12.2	18.8	1.7	ns
Relationship with parents: unsatisfactory	13.1	12.6	20.7	1.8	***	12.4	11.9	18	1.6	***	16.3	15.7	31.7	2.5	**	11.6	11.3	29.8	3.3	***	21.3	20.7	34	2	ns
Relationship with friends: unsatisfactory	14.6	14.4	16.9	1.2	ns	12.8	12.6	14.3	1.2	ns	25.7	25.5	30	1.3	ns	12.8	12.5	28.7	2.8	**	13.1	13	16.3	1.3	ns
Father: higher education level	57.8	58	53.2	0.8	ns	66.2	67.3	54	0.6	***	36.3	36.4	33.3	0.9	ns	51.6	51.5	53.7	1.1	ns	62.6	61.5	89.8	5.5	*
Mother: higher education level	54.7	54.9	52.2	0.9	ns	63.5	64.2	55.8	0.7	***	25.1	25.3	18.6	0.7	ns	50.1	50.2	42	0.7	ns	71.9	71.3	85	2.3	ns
Father: job full-time/part-time	88.8	89	86	0.8	ns	91.3	91.8	86.7	0.6	***	84.8	85	79.1	0.7	ns	86.5	86.6	83.8	0.8	ns	86.9	86.5	96.8	4.8	ns
Mother: job full-time/part-time	40.8	40.5	46	1.2	ns	41.9	41.3	48.6	1.3	**	22.1	21.9	26.2	1.3	ns	48.3	48.5	38.7	0.7	ns	39.5	38.7	58.4	2.2	ns
Family well-being: better than other families	31.9	31.4	39.7	1.4	***	43	43	42.6	1	ns	14.4	13.9	26.2	2.2	*	21.5	21.2	34.8	2	ns	35.6	35.9	26.6	0.6	ns
Other illicit substances – Related indicators																									
Proximity																									
Use among family members	8.5	6.7	39.1	8.9	***	11.3	8.4	43.2	8.3	***	7.1	6.2	32.6	7.4	***	4.7	4.5	11.7	2.8	*	4.2	3.5	21.7	7.6	*
Use among friends	10.8	8.8	42.7	7.7	***	10.8	7.8	42.9	8.9	***	12	10.8	41.9	5.9	***	10.8	10.2	49.1	8.5	***	6	5.3	23.1	5.4	*
Risk perception																									
Low risk or don't know for occasional use	48.6	47.2	72.2	2.9	***	55.6	53.5	78.2	3.1	***	44.5	43.9	60.5	2	*	39.5	39.4	46.8	1.4	ns	34.9	35.8	14.1	0.3	ns

Note: OR = odds ratio; NA = not available; ns = not significant. ***p < .001; **p ≤ .01; *p ≤ .05; ns p > .05.

13 Tranquillisers and/or sedatives for non-medical reasons: prevalence of use and related indicators among students characteristics by country and gender (%) [Figure 1.13]

	MedSPAD				Egypt				Morocco				Tunisia				Lebanon			
	Total	Girls	Boys	OR	p	Total	Girls	Boys	OR	p	Total	Girls	Boys	OR	p	Total	Girls	Boys	OR	p
Tranquillisers and/or sedatives for non-medical reasons – Related indicators																				
Tranquilliser or sedative use																				
At least once in lifetime	7.9	8.2	7.7	0.9	ns	8.2	6.6	9.1	1.4	***	6.9	9.1	4.1	0.4	***	7.9	9.5	5.4	0.5	***	8.4	7.8	9.3	1.2	ns
At least once in last 12 months	6.2	5.7	6.7	1.2	*	7.4	5.4	8.6	1.7	***	5.1	6.3	3.5	0.5	*	4.5	5.4	3	0.5	**	7	7.6	6.1	0.8	ns
At least once in last 30 days	5.1	4.5	5.7	1.3	**	6.5	4.6	7.7	1.7	***	4.1	5.1	2.9	0.6	ns	3.1	4.3	1.2	0.3	***	3.4	3.3	3.4	1	ns
Early onset of tranquilliser or sedative use (≤ 13 years)																				
Early onset of use	3.9	3.6	4.1	1.2	ns	4.5	3.5	5.1	1.5	*	2.6	3.6	1.4	0.4	*	3	3.4	2.4	0.7	ns	5.6	5	6.3	1.3	ns
Perceived availability of tranquillisers or sedatives																				
Easy to obtain	9.7	10.4	9	0.9	*	7.1	6.3	7.5	1.2	ns	16.3	17.7	14.5	0.8	ns	11.1	11.6	10.2	0.9	ns	12.6	12.9	12.2	0.9	ns
Tranquilliser or sedative use among family members and friends																				
Use among family members	11	10.2	11.7	1.2	*	12.7	10.2	14.3	1.5	***	8.3	9.6	6.8	0.7	ns	8.6	10	6.4	0.6	**	12.6	13.2	11.8	0.9	ns
Use among friends	10.2	8.1	12.2	1.6	***	11.1	7.8	13.1	1.8	***	12.8	11.7	14.2	1.3	ns	8	7.3	9.3	1.3	ns	5.2	4.5	6.2	1.4	ns
Risk perception of tranquilliser or sedative use																				
Low risk or don't know for occasional use	62.1	62	62.1	1	ns	64	65.2	63.2	0.9	ns	53.3	48.4	59.6	1.6	***	64.1	65.7	61.4	0.8	*	52	50.9	53.6	1.1	ns
Low risk or don't know for regular use	51.9	50	53.7	1.2	***	57.9	59.4	57	0.9	ns	49.2	44.5	55.3	1.5	***	44.1	43.3	45.3	1.1	ns	35.8	34.5	37.6	1.1	ns

Note: OR = odds ratio; NA = not available; ns = not significant. ***p < .001; **p ≤ .01; *p ≤ .05; ns p > .05.

14 Tranquillisers and/or sedatives for non-medical reasons: environmental and individual factors associated with use in the last 12 months among students characteristics by country (%) [Figure 1.16]

	MedSPAD					Egypt					Morocco					Tunisia					Lebanon				
	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p
Tranquillisers and/or sedatives for non-medical reasons – Use in the last 12 months																									
Gender																									
Male	52.1	51.8	56.4	1.2	ns	62	61.2	72.3	1.7	***	44.4	45.1	30.5	0.5	*	38.5	39.1	25.7	0.5	**	41.6	42	36.4	0.8	ns
Leisure																									
Sport (actively)	50.6	51.2	41	0.7	***	39.5	39.9	34.8	0.8	ns	68	69.2	45.8	0.4	***	61.5	61.8	54.7	0.7	ns	63.5	64.3	52.8	0.6	ns
Read book for enjoyment	26.6	26.7	24.9	0.9	ns	25.4	25.8	21.1	0.8	ns	37.5	37.3	40.7	1.2	ns	23.1	22.9	27.1	1.3	ns	31	31	31	1	ns
Go out in the evening	10.3	10.1	14.4	1.5	***	12.4	12.1	16.1	1.4	*	3.6	3.3	8.6	2.7	*	10.6	10.5	12.5	1.2	ns	4	3.3	14	4.8	ns
Other hobbies	29.3	29.1	33.3	1.2	ns	21.8	21.6	25.1	1.2	ns	36.7	36.4	41.4	1.2	ns	38.7	38.1	50.9	1.7	*	40.6	40	48.6	1.4	ns
Meet up with friends	46.4	46.1	50.4	1.2	ns	44.4	44	49.7	1.3	*	41.2	40.8	49.1	1.4	ns	52.1	52.1	53.2	1	ns	50.1	50	51.2	1.1	ns
Internet for fun	83.7	84	79.6	0.7	ns	74.5	74.9	70.1	0.8	ns	92.6	92.4	96.6	2.3	ns	95	95	95.4	1.1	ns	97.3	97.1	100	1	ns
Watch television	22.7	22.4	27.7	1.3	**	24.7	24.3	30	1.3	*	33.3	33.4	32.2	0.9	ns	12.7	12.3	21.6	2	*	30.6	32	12.3	0.3	ns
School																									
Missed school: five or more days in the last month	17.9	17.3	26.2	1.7	***	26.3	25.8	32.8	1.4	**	7.6	7.2	15.3	2.3	*	8.5	8.3	13.8	1.8	ns	5.2	4.3	16.3	4.3	*
School performance: below average	62	61.6	67.8	1.3	**	53.6	53	62.3	1.5	***	86.2	85.9	91.5	1.8	ns	61.8	61.5	66.7	1.3	ns	77.6	77.4	80	1.2	ns
Family background																									
Lives with fewer than two family members	14.1	13.8	19.1	1.5	***	18.8	18.4	23.5	1.4	*	20.2	19.5	35.1	2.2	**	2.5	2.5	0.8	0.3	ns	12.5	13.3	1.8	0.1	*
Relationship with parents: unsatisfactory	13.1	12.2	25.6	2.5	***	12.3	11.6	22.2	2.2	***	16.2	14.9	42.9	4.3	***	11.6	10.9	26.3	2.9	***	21.4	20.9	27.7	1.5	ns
Relationship with friends: unsatisfactory	14.6	14	23.5	1.9	***	12.8	12.2	19.6	1.8	***	25.7	25	40.4	2	**	12.8	12.2	24.4	2.3	***	13.2	11.8	31.1	3.4	*
Father: higher education level	57.8	58.1	53.9	0.8	ns	66.2	67	56.5	0.6	***	36.3	36.5	32.8	0.8	ns	51.7	51.4	57.9	1.3	ns	62.4	63.2	51.9	0.6	ns
Mother: higher education level	54.7	54.9	51.9	0.9	ns	63.5	64.4	53.2	0.6	***	25	25.2	22	0.8	ns	50.1	49.7	59.2	1.5	ns	72.2	71.9	75.8	1.2	ns
Father: job full-time/part-time	88.8	89	87.2	0.8	ns	91.4	91.5	90.2	0.9	ns	84.7	84.9	81	0.8	ns	86.5	86.7	82.4	0.7	ns	86.8	87.1	83.9	0.8	ns
Mother: job full-time/part-time	40.8	40.5	45.4	1.2	ns	41.9	41.5	46.5	1.2	ns	22	21.9	24.1	1.1	ns	48.3	48	55	1.3	ns	39.7	39.5	42.3	1.1	ns
Family well-being: better than other families	31.9	31.7	34.6	1.1	ns	43	43.1	41.8	0.9	ns	14.4	14.3	17.2	1.3	ns	21.5	21.3	25	1.2	ns	35.8	35.6	37.3	1.1	ns
Tranquillisers and/or sedatives for non-medical reasons – Related indicators																									
Availability																									
Perceived easy availability	9.7	7.2	47.2	11.6	***	7.1	4.4	40.7	14.9	***	16.3	13.4	69.5	14.7	***	11	8.9	56.5	13.3	***	12.6	10.5	40.9	5.9	***
Proximity																									
Use among family members	10.9	8.2	52.6	12.5	***	12.7	9.4	54.2	11.4	***	8.3	6.3	46.6	13	***	8.6	6.6	50.6	14.5	***	12.2	8.9	55	12.4	***
Use among friends	10.2	8.1	42.4	8.4	***	11.1	8.1	48.2	10.5	***	12.8	10.4	56.9	11.4	***	8	7.3	21.8	3.5	***	5.2	4.3	17.8	4.8	*
Risk perception																									
Low risk or don't know for occasional use	62	60.7	82.4	3	***	64	62.7	80.8	2.5	***	53.2	51.8	79.3	3.6	***	64	62.8	90.3	5.5	***	51.8	49.9	77.3	3.4	*
Low risk or don't know for regular use	51.9	50.5	72	2.5	***	57.9	56.7	73.1	2.1	***	49.1	47.9	71.9	2.8	***	44	42.8	69.2	3	***	35.5	32.9	70.1	4.8	**

Note: OR = odds ratio; NA = not available; ns = not significant. ***p < .001; **p ≤ .01; *p ≤ .05; ns p > .05.

15 Painkillers to get high: prevalence of use and related indicators among students characteristics by country and gender (%) [Figure 1.15]

	MedSPAD				Egypt				Morocco				Tunisia				Lebanon			
	Total	Girls	Boys	OR	p	Total	Girls	Boys	OR	p	Total	Girls	Boys	OR	p	Total	Girls	Boys	OR	p
Painkiller-related indicators																				
Painkiller use																				
At least once in lifetime	3.8	4.4	3.2	0.7	**	3.1	3	3.2	1.1	ns	6.9	7.3	6.4	0.9	ns	3.2	4.4	1.2	0.3	***	8.1	7.8	4.7	0.6	ns
At least once in last 12 months	2.8	3.1	2.5	0.8	ns	2.1	1.5	2.5	1.7	*	6.1	6.7	5.3	0.8	ns	1.7	2.6	0.3	0.1	***	8.1	9.2	6.6	0.7	ns
Early onset of painkiller use (≤ 13 years)																				
Early onset of use	1.8	1.9	1.6	0.9	ns	1.8	1.5	2	1.3	ns	2.4	2.8	2	0.7	ns	1	1.5	0.2	0.1	**	3.9	4.8	2.7	0.5	ns
Perceived availability of painkillers																				
Easy to obtain	6.3	6.3	6.3	1	ns	4.1	3.3	4.7	1.4	*	12.1	11.3	13.1	1.2	ns	7.5	7.7	7.1	0.9	ns	8.5	7.3	10	1.4	ns

Note: OR = odds ratio; NA = not available; ns = not significant. ***p < .001; **p ≤ .01; *p ≤ .05; ns p > .05.

Painkillers to get high: environmental and individual factors associated with use in the last 12 months among students characteristics by country (%) [Figure 1.16]

	MedSPAD					Egypt					Morocco					Tunisia					Lebanon				
	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p
Painkillers to get high use in the last 12 months																									
Gender																									
Male	52.1	52.3	46.8	0.8	ns	62	61.8	73.7	1.7	*	44.2	44.6	38.6	0.8	ns	38.4	38.9	5.9	0.1	***	42.5	43.2	34.4	0.7	ns
Leisure																									
Sport (actively)	50.5	50.5	49	0.9	ns	39.5	39.7	33.7	0.8	ns	68.1	68.2	66.7	0.9	ns	61.4	61.6	48.1	0.6	ns	62.7	63	59.1	0.8	ns
Read book for enjoyment	26.6	26.6	27.4	1	ns	25.5	25.5	22.1	0.8	ns	37.4	37.9	29.2	0.7	ns	23.1	23.1	23.2	1	ns	30.8	29.2	48	2.2	ns
Go out in the evening	10.4	10.4	10.5	1	ns	12.4	12.4	13.8	1.1	ns	3.7	3.3	8.7	2.8	*	10.6	10.6	8	0.7	ns	4.1	3.9	6.8	1.8	ns
Other hobbies	29.3	29.1	36	1.4	*	21.8	21.7	26.3	1.3	ns	36.8	36.8	37.1	1	v	38.7	38.5	48.5	1.5	ns	40.4	39.6	49	1.5	ns
Meet up with friends	46.4	46.6	40.2	0.8	ns	44.5	44.7	35.1	0.7	ns	41.1	41.3	38.2	0.9	ns	52.1	52	56.4	1.2	ns	50.2	51.2	39.1	0.6	ns
Internet for fun	83.7	83.6	85.5	1.2	ns	74.5	74.6	71.3	0.8	ns	92.8	92.9	91.2	0.8	ns	95	94.9	100	1	ns	97.2	97	100	1	ns
Watch television	22.7	22.7	23.4	1	ns	24.7	24.7	25.5	1	ns	33.3	33.7	27.5	0.7	ns	12.7	12.6	14.1	1.1	ns	31.3	32.3	19.3	0.5	ns
School																									
Missed school: five or more days in the last month	17.8	17.7	22	1.3	ns	26.3	26.1	36.8	1.7	*	7.5	7.2	11.6	1.7	ns	8.3	8.1	19.6	2.8	*	5.3	5.7	0	1	ns
School performance: below average	61.8	61.6	69.1	1.4	*	53.6	53.6	55.6	1.1	ns	86	85.5	94.2	2.8	*	61.7	61.9	49.2	0.6	ns	76.9	77.5	71	0.7	ns
Family background																									
Lives with fewer than two family members	14.1	13.8	23.1	1.9	***	18.8	18.5	31.6	2	***	20.2	19.7	27.9	1.6	ns	2.4	2.5	0	1	ns	11.9	11.6	15.2	1.4	ns
Relationship with parents: unsatisfactory	13	12.6	24.8	2.3	***	12.4	12.2	19.8	1.8	*	16.2	15.3	29.9	2.4	***	11.4	11.2	24.1	2.5	*	20.6	19.8	30.8	1.8	ns
Relationship with friends: unsatisfactory	14.5	14.3	23	1.8	ns	12.8	12.7	18.2	1.5	ns	25.7	25.5	28.4	1.2	ns	12.7	12.5	21.5	1.9	ns	13.4	12.2	28	2.8	ns
Father: higher education level	57.8	58	50.1	0.7	*	66.2	66.5	49.5	0.5	***	36	36.2	33.3	0.9	ns	51.6	51.4	62	1.5	ns	63	61.7	77.6	2.2	ns
Mother: higher education level	54.7	54.9	49.7	0.8	ns	63.5	63.8	50.6	0.6	**	25.2	25.1	25.7	1	ns	50.1	49.8	69.9	2.3	*	71.6	70.8	80	1.6	ns
Father: job full-time/part-time	88.8	89	84.1	0.7	ns	91.3	91.4	90.2	0.9	ns	84.8	85.2	78.6	0.6	ns	86.5	86.6	81.4	0.7	ns	86.9	87.3	81.6	0.6	ns
Mother: job full-time/part-time	40.8	40.6	48.6	1.4	*	41.9	41.6	55.4	1.7	**	21.9	21.3	30	1.6	ns	48.4	47.9	72.5	2.9	**	39	38.9	40	1	ns
Family well-being: better than other families	31.9	31.9	30.9	1	ns	43	43	40.5	0.9	ns	14.4	14.3	16.2	1.2	ns	21.4	21.2	33	1.8	ns	35.2	35.1	36.5	1.1	ns
Painkillers to get high – Related indicators																									
Availability																									
Perceived easy availability	6.3	5	53.7	22.1	***	4.1	3.5	34	14.2	***	12.1	8.5	67.1	21.9	***	7.5	6.2	77.2	50.8	***	8.4	4.4	52.5	23.8	***

Note: OR = odds ratio; NA = not available; ns = not significant. ***p < .001; **p ≤ .01; *p ≤ .05; ns p > .05.

17 Anabolic steroids: prevalence of use and related indicators among students characteristics by country and gender (%) [Figure 1.15]

	MedSPAD				Egypt				Morocco				Tunisia				Lebanon			
	Total	Girls	Boys	OR	p	Total	Girls	Boys	OR	p	Total	Girls	Boys	OR	p	Total	Girls	Boys	OR	p
Anabolic steroid-related indicators																				
Anabolic steroid use																				
At least once in lifetime	2.7	1.3	3.7	2.8	***	3.3	1.7	4.2	2.6	***	1	0.8	1.4	1.8	ns	NA	NA	NA	NA	NA	0.5	0	1.1	1	ns
At least once in last 12 months	2.6	1.3	3.5	2.8	***	2.9	1.5	3.8	2.6	***	1.1	0.6	1.8	2.9	ns	NA	NA	NA	NA	NA	2.6	1.5	4	2.8	ns
Early onset of anabolic steroids (≤ 13 years)																				
Early onset of use	1.8	0.9	2.5	2.7	***	2.2	1.3	2.8	2.2	***	0.7	0.3	1.2	3.8	ns	NA	NA	NA	NA	NA	0.5	0	1.1	1	ns
Perceived availability of anabolic steroids																				
Easy to obtain	5.9	3.4	7.8	2.4	***	6.4	4	7.8	2	***	3.8	1.7	6.4	3.9	***	NA	NA	NA	NA	NA	7	3.2	12.1	4.1	**

Note: OR = odds ratio; NA = not available; ns = not significant. ***p < .001; **p ≤ .01; *p ≤ .05; ns p > .05.

18 Anabolic steroids: environmental and individual factors associated with use in the last 12 months among students characteristics by country (%) [Figure 1.16]

	MedSPAD					Egypt					Morocco					Tunisia					Lebanon				
	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p
Anabolic steroid use in the last 12 months																									
Gender																									
Male	57.6	57	78.8	2.8	***	62	61.5	80.5	2.6	***	44.3	44.1	69.2	2.9	ns	NA	NA	NA	NA	NA	42.5	41.8	67	2.8	ns
Leisure																									
Sport (actively)	46.2	46.3	45.9	1	ns	39.5	39.5	41.7	1.1	ns	68.1	68	75	1.4	ns	NA	NA	NA	NA	NA	62.7	62.5	71	1.5	ns
Read book for enjoyment	28	28	25.8	0.9	ns	25.5	25.5	25.6	1	ns	37.5	37.6	27.3	0.6	ns	NA	NA	NA	NA	NA	30.8	30.9	27.3	0.8	ns
Go out in the evening	10.3	10	19.7	2.2	***	12.4	12.1	21.2	1.9	***	3.7	3.5	16.7	5.5	ns	NA	NA	NA	NA	NA	4.1	4.2	0	1	ns
Other hobbies	25.7	25.7	25.7	1	ns	21.8	21.7	24.8	1.2	ns	36.8	37	16.7	0.3	ns	NA	NA	NA	NA	NA	40.4	40.1	52	1.6	ns
Meet up with friends	44.2	44.1	46.5	1.1	ns	44.5	44.4	47	1.1	ns	41.2	41	58.3	2	ns	NA	NA	NA	NA	NA	50.2	51	22.2	0.3	ns
Internet for fun	79.2	79.3	77.1	0.9	ns	74.5	74.5	75.8	1.1	ns	92.8	93	75	0.2	*	NA	NA	NA	NA	NA	97.2	97.1	100	1	ns
Watch television	26.8	26.7	30	1.2	ns	24.7	24.6	29.5	1.3	ns	33.5	33.4	41.7	1.4	ns	NA	NA	NA	NA	NA	31.3	31.5	20	0.5	ns
School																									
Missed school: five or more days in the last month	21.6	21.3	34.1	1.9	***	26.3	26	36.8	1.7	**	7.6	7.4	27.3	4.7	*	NA	NA	NA	NA	NA	5.3	5.4	0	1	ns
School performance: below average	61.9	62.1	51.3	0.6	*	53.6	53.8	45.3	0.7	ns	86	85.9	100	1		NA	NA	NA	NA	NA	76.9	77.5	57.1	0.4	ns
Family background																									
Lives with fewer than two family members	18.6	18.3	32.5	2.2	***	18.8	18.3	33.8	2.3	***	20.1	20.1	18.2	0.9	ns	NA	NA	NA	NA	NA	11.9	11.4	30.3	3.4	ns
Relationship with parents: unsatisfactory	13.6	13.4	21.5	1.8	**	12.3	12.1	20.6	1.9	**	16.2	16	41.7	3.8	*	NA	NA	NA	NA	NA	20.6	21.1	5.1	0.2	ns
Relationship with friends: unsatisfactory	15.3	15.1	21.5	1.5	*	12.7	12.5	22	2	***	25.7	25.7	27.3	1.1	ns	NA	NA	NA	NA	NA	13.4	13.7	5.1	0.3	ns
Father: higher education level	60.2	60.3	57.4	0.9	ns	66.2	66.4	58.3	0.7	*	36	36.2	23.1	0.5	ns	NA	NA	NA	NA	NA	63	62.1	94.9	11.3	ns
Mother: higher education level	56.5	56.7	51.4	0.8	ns	63.5	63.8	54.2	0.7	*	25	25.2	7.7	0.2	ns	NA	NA	NA	NA	NA	71.6	71.5	75.9	1.3	ns
Father: job full-time/part-time	89.8	89.8	88.2	0.8	ns	91.3	91.4	88.9	0.8	ns	84.8	84.9	76.9	0.6	ns	NA	NA	NA	NA	NA	86.9	86.6	94.9	2.9	ns
Mother: job full-time/part-time	37.7	37.6	41.1	1.2	ns	41.9	41.9	42.9	1	ns	22	22	23.1	1.1	ns	NA	NA	NA	NA	NA	39	38.8	44.4	1.3	ns
Family well-being: better than other families	36.5	36.3	41.5	1.2	ns	43	42.8	46.4	1.2	ns	14.4	14.4	15.4	1.1	ns	NA	NA	NA	NA	NA	35.2	35.7	17.1	0.4	ns
Anabolic steroid-related indicators																									
Availability																									
Perceived easy availability	5.9	5.1	34.7	9.8	***	6.4	5.5	34.6	9	***	3.7	3.2	46.2	25.8	***	NA	NA	NA	NA	NA	7	6.7	19	3.2	ns

Note: OR = odds ratio; NA = not available; ns = not significant. ***p < .001; **p ≤ .01; *p ≤ .05; ns p > .05.

19 **Gambling: prevalence of use and related indicators among students characteristics by country and gender (%)** [Figure 2.1]

	MedSPAD				Egypt				Morocco				Tunisia				Lebanon			
	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p
Gambling engagement in the last 12 months																				
Gambling online/offline	16.5	13.2	19.6	1.6	***	13.9	10.7	15.8	1.6	***	16.7	10.7	24.2	2.7	***	21.8	17.4	28.8	1.9	***	14.6	11	19.6	2	*
Slot machines online/offline	7.9	4.2	11.3	2.9	***	10	6.8	12	1.9	***	6.7	3.6	10.6	3.2	***	5	1.6	10.3	7	***	3.5	1.8	6	3.5	ns
Cards or dice online/offline	12.3	10.1	14.3	1.5	***	11.3	8.5	13	1.6	***	9.4	5.5	14.3	2.8	***	16	14.4	18.6	1.4	**	9	6.3	12.9	2.2	ns
Lotteries online/offline	8.2	5	11.1	2.4	***	9.2	6.8	10.8	1.7	***	7.5	3.6	12.4	3.8	***	6.5	3.3	11.7	3.9	***	7.5	6.8	8.5	1.3	ns
Sports or animal betting online/offline	10.3	5.5	17.6	3.7	***		NA	NA	NA	NA	12.3	7.2	18.7	2.9	***	9.8	4.8	17.6	4.2	***	7.8	4.2	13.1	3.5	**
Gambling offline	14.3	11.1	17.2	1.7	***	12.1	9.2	13.8	1.6	***	14	8.8	20.5	2.7	***	18.8	14.5	25.7	2	***	13	9.8	17.7	2	ns
Gambling online	11.7	8.3	14.9	1.9	***	10	7.1	11.8	1.8	***	13.3	8.7	19.2	2.5	***	14.4	9.7	21.9	2.6	***	11.2	7.6	16.1	2.3	*
Gambling-related problems																				
At-risk gambling	1.6	0.8	2.4	3.3	***	0.7	0.6	0.7	1.3	ns	1.6	0.5	3.1	7.9	***	3.5	1.2	7.2	7.3	***	0.3	0	0.7	1	ns
Problem gambling	3.2	1.5	4.8	3.5	***	2.8	1.6	3.5	2.3	***	3	0.9	5.6	7.2	***	4.3	1.6	8.4	6.4	***	1.7	0.9	2.8	3.3	ns

Note: OR = odds ratio; NA = not available; ns = not significant. ***p < .001; **p ≤ .01; *p ≤ .05; ns p > .05.

20 Gambling: environmental and individual factors associated with use in the last 12 months among students characteristics by country (%) [Figure 2.2]

	MedSPAD					Egypt					Morocco					Tunisia					Lebanon				
	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p
Gambling use in the last 12 months																									
Gender																									
Male	52.1	50.1	61.8	1.6	***	62.1	60.7	70.7	1.6	***	44	40	64	2.7	***	38.6	35.1	50.9	1.9	***	41.3	38.8	55.5	2	*
Leisure																									
Sport (actively)	50.5	49.6	54.6	1.2	***	39.4	39.6	38.4	1	ns	68	67.2	72	1.3	ns	61.3	59.6	67.1	1.4	**	63.2	63.5	61.8	0.9	ns
Read book for enjoyment	26.5	26.9	24.4	0.9	ns	25.4	25.6	24	0.9	ns	37.1	37.2	36.3	1	ns	23.1	24	20.1	0.8	ns	30.6	30.8	29.6	0.9	ns
Go out in the evening	10.3	9.1	16.2	1.9	***	12.4	11.7	16.7	1.5	***	3.3	2.9	5.4	1.9	ns	10.5	7.8	20.3	3	***	4.2	3.4	8.9	2.8	ns
Other hobbies	29.3	29.2	29.9	1	ns	21.8	21.9	21.6	1	ns	36.5	36.6	36.1	1	ns	38.6	39	37.1	0.9	ns	41.2	41.3	40.7	1	ns
Meet up with friends	46.5	44.7	55.2	1.5	***	44.5	44.5	44.8	1	ns	41.2	38.2	56	2.1	***	52.2	48	67.2	2.2	***	49.7	48.2	59.1	1.6	ns
Internet for fun	83.8	84.1	82.1	0.9	ns	74.6	76	65.8	0.6	***	92.9	93	92.4	0.9	ns	95	94.6	96.4	1.5	ns	97.2	97.1	97.9	1.4	ns
Watch television	22.7	22.2	25.6	1.2	**	24.8	23.6	32	1.5	***	33.3	32.4	37.8	1.3	ns	12.8	12.6	13.4	1.1	ns	30.5	31.4	25.6	0.8	ns
School																									
Missed school: five or more days in the last month	17.9	17.4	20.2	1.2	*	26.4	25.9	29.5	1.2	ns	7.5	6.1	14.4	2.6	***	8.4	7.3	12.5	1.8	***	5.3	5.1	6.9	1.4	ns
School performance: below average	61.8	60.4	69	1.5	***	53.6	53.5	54.3	1	ns	85.9	85.5	88.2	1.3	ns	61.6	57.6	75.9	2.3	***	77.7	77.4	79.5	1.1	ns
Family background																									
Lives with fewer than two family members	14	13.6	15.7	1.2	ns	18.6	17.5	25.6	1.6	***	20.3	20.4	19.8	1	ns	2.4	2.3	3.1	1.4	ns	12.2	13.1	7.1	0.5	ns
Relationship with parents: unsatisfactory	13.1	12.6	15.5	1.3	**	12.4	11.8	16.2	1.4	***	16.5	16	18.8	1.2	ns	11.6	11.3	12.9	1.2	ns	21.4	21.2	22.4	1.1	ns
Relationship with friends: unsatisfactory	14.5	13.7	18.6	1.4	***	12.8	12.1	17.3	1.5	***	25.5	24.4	30.8	1.4	ns	12.7	11.8	16	1.4	*	13.2	12.7	16.1	1.3	ns
Father: higher education level	57.8	59.3	50.3	0.7	***	66.2	67.7	57.6	0.6	***	36.5	36.8	35.1	0.9	ns	51.6	53.3	45.5	0.7	**	62	61.2	66.8	1.3	ns
Mother: higher education level	54.7	56.2	47.5	0.7	***	63.6	64.9	55.1	0.7	***	25.4	25.4	25.1	1	ns	50	51.5	44.8	0.8	*	71.4	71.8	68.4	0.8	ns
Father: job full-time/part-time	88.8	89.3	86.7	0.8	**	91.4	92	87.8	0.6	***	84.7	85.2	82.2	0.8	ns	86.5	86.2	87.6	1.1	ns	86.7	87.7	80.8	0.6	ns
Mother: job full-time/part-time	40.7	40.5	41.8	1.1	ns	41.8	41.4	44.6	1.1	ns	21.8	21.6	22.8	1.1	ns	48.4	49	46.4	0.9	ns	37.7	38.2	34.8	0.9	ns
Family well-being: better than other families	31.9	32.5	28.9	0.8	ns	43.2	43.2	43	1	ns	14.2	13.4	18.1	1.4	ns	21.3	22	18.8	0.8	ns	36.1	36.9	31.2	0.8	ns

Note: OR = odds ratio; NA = not available; ns = not significant. ***p < .001; **p ≤ .01; *p ≤ .05; ns p > .05.

21 Social media: prevalence of use and related indicators among students characteristics by country and gender (%) [Figure 2.3]

	MedSPAD					Egypt					Morocco					Tunisia					Lebanon				
	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p
Social media in the last seven days																									
Use at least once in the last seven days	77.1	79.4	74.9	0.8	***	64.1	60.9	66.1	1.3	***	84.3	87.1	80.7	0.6	***	95.2	95.3	95	0.9	ns	96.7	97	96.4	0.8	ns
Use at least once on a school day	68.8	70.7	67	0.8	***	55.6	51.7	58	1.3	***	78.9	82.3	74.5	0.6	***	85.3	84.5	86.6	1.2	ns	93.5	94.5	92	0.7	ns
Use at least once on a non-school day	74	76.4	71.8	0.8	***	60.1	56.7	62.2	1.3	***	80	82.6	76.7	0.7	**	94.5	94.4	94.6	1	ns	94.7	93.9	95.9	1.5	ns
Self-perceived problems with social media use																									
Self-perceived problems	55.5	51.4	59.3	1.4	***	51.7	40.6	58.6	2.1	***	57.9	55	61.8	1.3	*	60	60.4	59.4	1	ns	66.4	67.4	64.9	0.9	ns

Note: OR = odds ratio; NA = not available; ns = not significant. ***p < .001; **p ≤ .01; *p ≤ .05; ns p > .05.

22 Social media use: environmental and individual factors associated with use in the last seven days among students characteristics by country (%) [Figure 2.4]

	MedSPAD					Egypt				Morocco				Tunisia				Lebanon			
	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p
Social media use in the last seven days																									
Gender																									
Male	51.9	56.9	50.4	0.8	***	62	58.5	63.9	1.3	***	43.6	53.7	41.7	0.6	***	38.5	40.2	38.4	0.9	ns	41.4	46.1	41.2	0.8	ns
Leisure																									
Sport (actively)	50.4	36.7	54.5	2.1	***	39.3	31.6	43.7	1.7	***	67.9	72.7	67	0.8	ns	61.4	51.5	61.9	1.5	*	63.5	60.1	63.6	1.2	ns
Read book for enjoyment	26.5	25.8	26.7	1	ns	25.5	24.1	26.2	1.1	ns	36.9	39.1	36.6	0.9	ns	23	31.6	22.5	0.6	*	30.9	15	31.3	2.6	ns
Go out in the evening	10.3	11	10.1	0.9	ns	12.4	11.5	12.9	1.1	ns	3.5	7.6	2.7	0.3	***	10.6	10	10.6	1.1	ns	4.1	4.7	4.1	0.9	ns
Other hobbies	29.4	19.6	32.3	2	***	21.8	17.4	24.3	1.5	***	36.8	35.3	37.1	1.1	ns	38.8	26.5	39.4	1.8	**	41	39.9	41	1	ns
Meet up with friends	46.5	37.3	49.3	1.6	***	44.7	36.2	49.5	1.7	***	41.1	44.4	40.5	0.8	ns	52.1	42.4	52.6	1.5	*	50	43.6	50.2	1.3	ns
Internet for fun	83.8	59.9	91	6.7	***	74.7	57.2	84.4	4.1	***	93.1	84.7	94.6	3.1	***	94.9	60.4	96.7	18.9	***	97.2	53.9	98.5	56.3	***
Watch television	22.6	33.8	19.2	0.5	***	24.5	35.6	18.3	0.4	***	33.2	28.2	34.1	1.3	ns	12.8	14.8	12.7	0.8	ns	30.8	69.6	29.7	0.2	**
School																									
Missed school: five or more days in the last month	17.9	19.2	17.5	0.9	ns	26.4	21.1	29.4	1.6	***	7.4	14.3	6.1	0.4	***	8.5	1.6	8.9	6	***	5	0	5.2	1	
School performance: below average	61.9	56.6	63.4	1.3	ns	53.7	52.2	54.5	1.1	ns	86	81.7	86.7	1.5	ns	61.8	69.7	61.4	0.7	ns	77.4	51.2	78.3	3.5	ns
Family background																									
Lives with fewer than two family members	13.9	23.1	11.2	0.4	***	18.7	23.8	15.8	0.6	***	20	27.2	18.7	0.6	**	2.4	4.8	2.3	0.5	ns	12.1	53.4	10.7	0.1	***
Relationship with parents: unsatisfactory	13.1	10	14	1.5	***	12.4	9.7	13.9	1.5	***	16.4	12.5	17.2	1.5	ns	11.7	10.4	11.7	1.1	ns	21.6	4.2	22.2	6.5	ns
Relationship with friends: unsatisfactory	14.5	13.1	14.9	1.2	ns	12.7	12	13.1	1.1	ns	25.7	24.3	26	1.1	ns	12.7	11.2	12.8	1.2	ns	13.2	8.1	13.4	1.8	ns
Father: higher education level	57.9	53.9	59	1.2	***	66.3	57.5	71.1	1.8	***	36.5	33.3	37.1	1.2	ns	51.7	38.2	52.4	1.8	**	62.2	30.5	63.3	3.9	*
Mother: higher education level	54.8	52.4	55.5	1.1	*	63.7	57.8	66.9	1.5	***	25.4	19	26.6	1.5	*	50.1	31.6	51	2.2	***	71.5	26.4	73	7.5	**
Father: job full-time/part-time	88.8	88	89.1	1.1	ns	91.3	88.2	93	1.8	***	85	85.5	84.9	0.9	ns	86.5	89.5	86.4	0.7	ns	86.8	74.4	87.2	2.3	ns
Mother: job full-time/part-time	40.9	41	40.8	1	ns	42.1	44.5	40.8	0.9	*	21.5	20.5	21.7	1.1	ns	48.4	30.8	49.3	2.2	***	38.4	17	39.2	3.1	ns
Family well-being: better than other families	31.8	41.7	29.2	0.6	***	43	46.8	41.1	0.8	***	13.7	18	12.9	0.7	ns	21.4	22.2	21.3	0.9	ns	36.1	4.4	37.1	12.7	*

Note: OR = odds ratio; NA = not available; ns = not significant. ***p < .001; **p ≤ .01; *p ≤ .05; ns p > .05.

23 Gaming: prevalence of use and related indicators among students characteristics by country and gender (%) [Figure 2.5]

	MedSPAD				Egypt				Morocco				Tunisia				Lebanon			
	Total	Girls	Boys	OR	p	Total	Girls	Boys	OR	p	Total	Girls	Boys	OR	p	Total	Girls	Boys	OR	p
Gaming in the last 30 days																				
Use at least once in the last 30 days	59.4	47.9	69.9	2.5	***	57.2	47.3	63.2	1.9	***	55.2	43.2	70.3	3.1	***	65.1	50.5	88.5	7.6	***	62	49.1	80	4.1	***
Use at least once on a school day	45.5	32.2	57.8	2.9	***	45.5	34.1	52.5	2.1	***	40.7	27.4	57.5	3.6	***	47.5	31.5	73.1	5.9	***	47.9	37.4	62.6	2.8	***
Use at least once on a non-school day	56.7	45.1	67.4	2.5	***	54	43.3	60.5	2	***	51.3	39.6	66.1	3	***	64	49.3	87.5	7.2	***	60.5	47.5	78.5	4	***
Self-perceived problems with gaming																				
Self-perceived problems	40.3	26.9	52.6	3	***	49.7	37.6	57.1	2.2	***	27	17.1	39.4	3.1	***	31	19.4	49.4	4.1	***	26.3	21.6	32.8	1.8	*

Note: OR = odds ratio; NA = not available; ns = not significant. ***p < .001; **p ≤ .01; *p ≤ .05; ns p > .05.

24 Gaming: environmental and individual factors associated with use in the last 30 days among students characteristics by country (%) [Figure 2.6]

	MedSPAD					Egypt				Morocco				Tunisia				Lebanon			
	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p	Total	No	Yes	OR	p
Gaming use during the last 30 days																									
Gender																									
Male	52	38.5	61.3	2.5	***	62	53.3	68.6	1.9	***	44.1	29.3	56.2	3.1	***	38.5	12.7	52.3	7.6	***	41.7	22	53.8	4.1	***
Leisure activities at least once a week or almost every day																									
Sport (actively)	50.5	42.7	55.8	1.7	***	39.4	32.8	44.4	1.6	***	68.2	63.6	71.9	1.5	***	61.3	50.4	67.1	2	***	62.8	60.4	64.3	1.2	ns
Read book for enjoyment	26.6	27.7	25.8	0.9	ns	25.6	25.6	25.7	1	ns	37.1	38.8	35.7	0.9	ns	23	25.9	21.5	0.8	*	30.7	30.5	30.8	1	ns
Go out in the evening	10.3	8.4	11.6	1.4	***	12.4	11.3	13.1	1.2	ns	3.4	3.6	3.3	0.9	ns	10.5	5	13.5	3	***	4.2	5.3	3.4	0.6	ns
Other hobbies	29.4	27.5	30.6	1.2	***	21.9	20	23.2	1.2	**	36.7	35.1	38	1.1	ns	38.7	38.9	38.7	1	ns	41.2	39.7	42.1	1.1	ns
Meet up with friends	46.6	38.5	52.1	1.7	***	44.7	37.6	50.1	1.7	***	41.2	32.1	48.6	2	***	52.2	42.4	57.4	1.8	***	50	53.2	48	0.8	ns
Internet for fun	83.9	76.7	88.8	2.4	***	74.7	64.8	82.1	2.5	***	93	91.8	94	1.4	ns	95	92.1	96.6	2.4	***	97.6	97.7	97.6	1	ns
Watch television	22.6	27.2	19.4	0.6	***	24.5	32.1	18.8	0.5	***	33.2	34.1	32.5	0.9	ns	12.8	10.4	14	1.4	*	30.3	35.7	27	0.7	ns
School																									
Missed school: five or more days in the last month	17.9	16.1	19.2	1.2	***	26.5	23.4	28.8	1.3	***	7.5	6.3	8.4	1.4	ns	8.5	6.6	9.6	1.5	*	5.4	6.8	4.4	0.6	ns
School performance: below average	61.8	59.3	63.5	1.2	***	53.6	52.1	54.6	1.1	ns	85.9	83.1	88.1	1.5	*	61.7	57	64.1	1.3	***	78	71.1	82.3	1.9	*
Family background																									
Lives with fewer than two family members	13.9	17.6	11.4	0.6	***	18.7	23	15.4	0.6	***	20.1	21.7	18.7	0.8	ns	2.4	2.8	2.2	0.8	ns	11.8	17.1	8.5	0.5	*
Relationship with parents: unsatisfactory	13.1	12.7	13.4	1.1	ns	12.4	11.1	13.4	1.2	*	16.5	17.2	15.9	0.9	ns	11.7	11.2	12	1.1	ns	21.4	29.6	16.3	0.5	**
Relationship with friends: unsatisfactory	14.5	14.2	14.7	1	ns	12.7	11.9	13.3	1.1	ns	25.4	25.4	25.3	1	ns	12.8	12.5	13	1	ns	13.2	14.8	12.3	0.8	ns
Father: higher education level	57.9	53.7	60.8	1.3	***	66.5	62.4	69.5	1.4	***	36.6	32.7	39.7	1.4	*	51.6	45	55.1	1.5	***	62.3	64.7	60.9	0.8	ns
Mother: higher education level	54.8	52	56.7	1.2	***	63.7	61.3	65.5	1.2	***	25.3	23.3	27	1.2	ns	50	45.3	52.6	1.3	***	71.7	74.6	69.9	0.8	ns
Father: job full-time/part-time	88.8	87.8	89.5	1.2	*	91.3	89.3	92.8	1.5	***	84.7	82.3	86.5	1.4	*	86.5	87.7	85.9	0.9	ns	86.6	88.9	85.3	0.7	ns
Mother: job full-time/part-time	40.8	39.7	41.6	1.1	ns	41.9	42.1	41.8	1	ns	22	22	22	1	ns	48.4	45.5	49.9	1.2	ns	38.2	39.9	37.2	0.9	ns
Family well-being: better than other families	31.8	33	31	0.9	ns	43	45.8	41	0.8	***	14.1	12.1	15.7	1.4	ns	21.3	20.2	21.9	1.1	ns	36.6	38	35.8	0.9	ns

Note: OR = odds ratio; NA = not available; ns = not significant. ***p < .001; **p ≤ .01; *p ≤ .05; ns p > .05.

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What are the substance use patterns and risk behaviours among Mediterranean adolescents? This is precisely what the Mediterranean School Survey on Alcohol and Other Drugs (MedSPAD) study aims to investigate, providing valuable insights for policy and prevention efforts.

This publication, developed within the framework of the Mediterranean Network on Drugs and Addiction of the Council of Europe International Co-operation Group on Drugs and Addictions (Pompidou Group), focuses on MedSPAD results from Egypt, Lebanon, Morocco and Tunisia. It offers a detailed analysis of commonalities and differences across the southern Mediterranean region, examining early-onset behaviours, perceived substance availability and the prevalence of alcohol, nicotine, cannabis and other drug use. Additionally, as a newly introduced aspect of the survey methodology, it explores gambling, gaming and social media habits.

To ensure a meaningful interpretation of the MedSPAD results, this study also provides a comprehensive analysis of the policy framework related to each topic, alongside an examination of the individual and environmental factors associated with substance use and risk behaviours among adolescent students. For the first time, it also assesses the impact of MedSPAD in each participating country.

Conducting the study itself represents a significant and innovative effort, requiring the training of local personnel to implement valid, reliable and comparable school-based survey data collection in each country. This is the first time such data have been compiled and analysed in this way, offering unprecedented insight into substance use and addiction among young people on a regional scale.

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