Fifth MedSPAD Regional Report

MedSPAD Committee

Contents

1. Substance use among adolescents

1.1. Tobacco and alternative smoking products

Highlights

Lifetime cigarette use was reported by 15.2% of adolescents, past-12-month use by 10.3%, and past-30-day use by 7.8%.

Tobacco use was generally higher among boys, with rates being 2 to 4 times greater than those among girls across most products and measures.

Among MedSPAD students, 13.2% reported using e-cigarettes at least once in their lifetime, 9.2% in the past year, and 6.4% in the past month. Lebanon showed the highest prevalence (37.2%, 25.8% and 20.4% respectively). Morocco had the lowest rates of past-month use (3.3%).

12.9% of adolescents have tried water pipes, with 8.7% using them in the past year and 6.5% in the past month. Lebanon shows the highest prevalence, while Morocco reports the lowest. Boys report significantly higher use than girls, with last-year and last-month rates about four times higher for males.

Early initiation (by age 13 or younger) was reported by 7.6% for cigarettes, 4.0% for e-cigarettes, 2.5% for chewing tobacco, and 5.3% for water pipe use.

Overall 3.1% of adolescents reported having started daily cigarette smoking by age 13, with the highest prevalence in Egypt (4.9%) and the lowest in Tunisia (0.8%).

Boys were more likely than girls to start using nicotine-based products at a younger age.

One in five students (20.8%) reported 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%) reported 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 when referring to e-cigarette use (18.4%).

About two in five students (38.2%) indicated having a friend who smokes, with Tunisia again showing the highest percentage (57.1%) and Egypt the lowest (28.7%). In a smaller proportion (25.9%) MedSPAD students reported 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 believes that regular e-cigarette use is not risky. The prevalence increases when asked about waterpipe use (50.9%).

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 have stimulated many governments in the past decades to introduce tobacco control policies to discourage smoking. Primarily, smoking is deterred by implementing high taxes on tobacco products to increase their prices (Palali & van Ours, 2019). Furthermore, there is a range of non-price tobacco control policies that can be applied, such as restrictions or bans on tobacco advertising, regulations requiring health warnings on packaging, diverse anti-smoking campaigns, and laws that ban tobacco use in specific locations.

The introduction of ENDS (Electronic Nicotine Delivery Systems) or ENNDS (Electronic Non-Nicotine Delivery Systems) 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 incorporated regulations and tobacco monitoring programs that also address ENDS/ENNDS products. Middle- and low-income countries are 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 prevent the health burden imposed by 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 like the WHO Framework Convention on Tobacco Control (FCTC) and include both legislative measures and public health initiatives to reduce tobacco-related harms.

In all MedSPAD countries included in the present report a national policy for tobacco control is in place. This was approved or revised in recent years, indicating particular attention to this topic.

In fact, Egypt, Lebanon, Morocco, and Tunisia have implemented national policies to regulate tobacco products, reduce tobacco consumption, protect non-smokers from second-hand smoke, promote global collaboration, and encourage cooperation to combat illicit tobacco trade and share best practices. Each of these countries has ratified the FCTC.

Egypt became a Party to the FCTC in 2005, though the 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 on product packaging and marketing. Furthermore, in order to monitor patterns and trends in tobacco use and exposure, as part of the Global Tobacco Surveillance System, Egypt has conducted the Global Adult Tobacco Survey (GATS) in 2009 and the Global Youth Tobacco Survey (GYTS) in four rounds, with the last in 2014. Egypt has also integrated a set of questions on tobacco use into 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 2017/2018.

Lebanon ratified the FCTC in 2005 and in 2011 issued the new tobacco-control act (Law 174) serving 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 (2001, 2005, 2011), the Global School-based Student Health Survey (GSHS) (the last in 2017), and the STEPwise survey (last edition in 2016-2017).

Morocco signed the FCTC in 2004 but did not ratify it, following previous tobacco regulation in 1996, which was updated in 2008. Morocco's tobacco legislation includes bans on smoking in certain public places, restrictions on advertising and sponsorship, prohibition of tobacco sales to minors, and health warnings on

packaging. Since 2001, Morocco has collected data periodically through the GYTS every five or six years, with the last data collection in 2016.

Tunisia ratified the FCTC in 2010 and last updated national regulation in 2023. The first legal framework for tobacco control in Tunisia is represented by Law N° 98-17 of 1998 on prevention of the harmful effects of smoking, further strengthened by Decree N. 2611 approved in 2009. Tunisia's tobacco legislation includes smoke-free public spaces, bans on tobacco advertising, health warnings for tobacco risks, and a prohibition on sales to individuals under 18. Monitoring-related activities for tobacco use in Tunisia include the WHO STEPwise Approach to Surveillance (STEPS), with the last data collection conducted in 2016.

Pricing and Taxation
Tobacco taxation, passed on to consumers in the form of higher cigarette prices, has been recognized as one of the most effective population-based strategies for decreasing smoking and its adverse health consequences (World Health Organization, 2008; Jha & Chaloupka, 1999). Indirect taxes have the most significant impact on the price of tobacco products. Within indirect taxes, excise taxes are the most important because they are applied exclusively to tobacco and contribute the 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 the import duties and the value added taxes and sales taxes. It is estimated that in Morocco, taxes cover 76.1% of the retail price, in Tunisia and Egypt, taxes cover 69.4% and 74.9% of the retail price respectively, and in Lebanon, taxes cover 9.9% of the sales price (WHO, 2023).

Physical Availability
The WHO Global Strategy recommends establishing a national legal minimum age for 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. Furthermore, in all participating countries legislation regulating the use and accessibility of tobacco products has defined public places, such as transport, universities, government buildings, hospitals and others, where smoking is not allowed with the aim of reducing both the use and exposure of non-smokers to second-hand smoke.

Marketing and advertising
Longitudinal studies repeatedly find that young people who are exposed to tobacco marketing are more likely to start smoking. Thus, it is true for traditional tobacco products and for e-cigarettes (Lovato et al., 2003; Chen-Sankey et al., 2019). All four MedSPAD countries have national regulations prohibiting many forms of tobacco advertising, promotions and sponsorship by tobacco companies to limit the exposure of the youth population to marketing. In Egypt, Lebanon, Morocco, and Tunisia there are bans on national television, radio and print media as well as on some but not all other forms of direct and/or indirect advertising, like placements regulation that is present only in Tunisia.

Other efforts in these countries are made with mass media campaigns, most prevalent in Tunisia and Morocco, and with health warnings on packages, with appropriate characteristics and large size in Egypt, smaller in Tunisia and Lebanon and with not all required characteristics, and not present or with small size in Morocco.

E-cigarettes legislation
Nicotine-based electronic products are currently widespread even though they have been on the market for a relatively short time, almost a decade. Their massive diffusion has forced reflection and the planning of regulations that would protect especially the youngest from their use. This is why some countries have taken the decision to develop a policy framework, including bans on the use of Electronic Nicotine Delivery Systems - ENDS in public indoor areas; bans on advertising, promotion and sponsorship; the application of health warnings on packaging; age restrictions on the sale of ENDS; and flavor bans or restrictions. Only Tunisia, has a monitoring system of ENDS use among adolescent population but with absent regulation

whereas in Egypt and Lebanon there is a national legislation about these products. In 2020, Egypt introduced taxes on e-cigarette liquids –regardless of whether they contain nicotine. Furthermore, through a decree issued in 2021 packaging for e-cigarette liquid is required to contain a health warning. In Lebanon, a decision bans the importation and trading of all types of e-cigarettes and orders the withdrawal of all e-cigarettes from the Lebanese market (Global Tobacco Control, 2023).

1.1.1. Cigarettes

Prevalence of use and related indicators

[SEE TABLE 7.1.1 IN ANNEX]

Overall, 15.2% of boys and girls reported 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).

Prevalence was generally higher among males than females across countries. The gender gap was most pronounced in Egypt, where all measures of cigarette smoking were more than 4 times higher among boys than girls.
In Tunisia, lifetime cigarette use was 30.3% for boys and 12.5% for girls. The gender disparity remained significant for recent use, with 11.2% of boys and 3.4% of girls reporting smoking in the last 30 days.
In each Southern MedSPAD country, the prevalence rates of tobacco use were consistently higher among boys than girls across all timeframes. For lifetime cigarette use, boys reported a 12.8% higher rate than girls, while in the last 12 months, the difference was 9.9%. The gap narrowed slightly for recent use, with boys still showing a 8.9% higher prevalence of cigarette use in the past 30 days compared to girls.

Regarding smoking initiation, overall 7.6% of adolescents reported smoking their first cigarette at age 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 significant gender differences, with boys being more likely to start smoking at a younger age. Specifically, 11% of boys starting by the age of 13, compared to just 3.9% of girls. The biggest gender disparity was detected In Tunisia, where the rate of early onset among boys was almost 4 times higher than among girls (16,8% vs 4.5%)

The prevalence of early onset of daily smoking followed a similar pattern, with 3.1% of adolescents reporting smoking daily by age 13. Looking at individual countries, Lebanon stood out for having the highest rate of early initiation into cigarette use (11.9%). However, when focusing on 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 showed lower and closer prevalence rates (0.8%, 1.1% and 1.8%, respectively).
Regarding gender disparities, compared to the onset of cigarette use, the gap widens, as boys were five times more likely than girls to start smoking on a daily basis by the age of 13. The biggest gender difference was observed in Tunisia, with 2% of boys reporting early daily smoking compared to 0.1% of girls, whilst no significant gender differences were observed in Lebanon.

Overall, one in five students (20.8%) reported that they would find 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, boys were more likely than girls to report easy access to cigarettes. The biggest gender gap was observed in Egypt, where 19.9% of boys reported easy access to cigarettes, compared to just 7.2% of girls.

In terms of social environment, over half of the students (52.4%) reported that at least one family member smokes. The highest rate was found in Tunisia, where 64.4% of students reported 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). Notable country-level differences were observed, with the highest rate of students perceiving occasional smoking as low risk observed in Lebanon (83.5%) In contrast, Morocco showed the highest awareness of the dangers implied by 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 regular smoking regularly carries no risk.

When it comes to gender differences, perceptions of risk for occasional smoking were largely consistent across boys and girls, with no significant disparities except in Morocco (63.9% among boys and 54.8% among girls). However, when asked about regular smoking, female students demonstrated a heightened risk awareness in all countries except Egypt, where the prevalence was about 57% both among girls and boys.

Identifying common risk factors across countries

<mark>[SEE TABLE 7.1.2 IN ANNEX]</mark>

Adolescent smoking poses significant long-term health risks and increases the likelihood of continued smoking into adulthood, making it important to identify risk factors common to all countries to support targeted prevention and intervention efforts.

Male students generally have higher odds of past-year cigarette use compared to their female peers, a pattern consistent in all countries except Lebanon. Among leisure activities, habits like 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 showed the lowest correlation, suggesting 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 adolescent 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 reported 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 significant 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 smoking 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 adolescent smoking across all MedSPAD countries.

1.1.2. E-cigarettes

Prevalence of use and related indicators

[SEE TABLE 7.1.3 IN ANNEX]

Among MedSPAD students, 13.2% reported using e-cigarettes at least once in their lifetime, 9.2% in the past year, and 6.4% in the past month. However, significant differences emerged across participating countries. Lebanon showed the highest prevalence, with 37.2% of adolescents reporting lifetime e-cigarette use, 25.8% using in the last 12 months, and 20.4% in the last 30 days. At the other end of the spectrum, Morocco had the lowest rates of past-month use, corresponding to 3.3%.
As noticed with traditional cigarettes, e-cigarette use was more common among boys in all countries except Lebanon, with odds 2 to 6 times higher than among girls. The most evident gender disparity in recent use was found in Morocco, where 6.0% of boys, and 1.1% of girls reported e-cigarette use in the past month.

Overall, 4.0% of adolescents reported 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 adolescents reporting having started to use e-cigarettes every day by the same age.
Egypt, Lebanon, and Tunisia had similar prevalence rates of early e-cigarette use Morocco reported lower rates of early initiation, with 1.6% using their first e-cigarette at 13 or younger. The highest rate of early daily use was found in Egypt (3.6%), while 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, as well as in Tunisia for the latter indicator. Gender differences were instead found in the other cases. For example, in Morocco, boys 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 girls respectively.
13.6% of adolescents reported that e-cigarettes were easily accessible to them. However, perceived availability varied significantly across countries. The highest prevalence was found in Lebanon, where 45.6% of adolescents indicated that for them it would be easy to get hold of e-cigarettes, followed by Morocco (21.2%) and Tunisia (16.9%). Egypt has the lowest prevalence, with only 7.6% of adolescents stating that e-cigarettes would easily be available to them.
Boys reported higher rates than girls in all countries, with particularly pronounced differences in Morocco and Egypt, where rates were more than double those of girls.

Focusing on family and friends, the MedSPAD data indicates that 25.9% of adolescents reported having at least one friend who uses e-cigarettes.
Lebanon had the highest reported rates, with almost two in three adolescents (65.9%) who reported having friends who smoke e-cigarettes, and 35.7% said a family member smokes. In Tunisia 39.4% of adolescents indicated that at least one friend uses e-cigarettes and 20.0% reporting that a family member does.
Once again it is Egypt that shows one of the lowest figures, with 15.6% of adolescents reporting e-cigarette use among their friends. Morocco also displayed a moderate level of exposure, with 26.9% of adolescents reporting that at least a friend uses e-cigarettes.
Adolescents' perceptions of the risks associated with smoking e-cigarettes differ noticeably based on the frequency of use. The data, while not reaching statistical significance, reveal that 68.7% of MedSPAD adolescents view occasional e-cigarette use as low-risk, while a smaller percentage, 45.6%, perceive regular use as carrying little to no risk.
When looking across countries, Lebanon reported the highest rates of low-risk perception. There, 83.5% of adolescents believed that occasional e-cigarette use is of little to no risk, while 31.6% reported the same perception for regular smoking.

In contrast, Morocco had the lowest perception of e-cigarettes as low-risk, with 58.8% of adolescents seeing occasional smoking as low-risk and 29.5% perceiving regular smoking as low-risk.
Overall, gender differences in risk perception are less pronounced than in other contexts.

Identifying common risk factors across countries

[SEE TABLE 7.1.4 IN ANNEX]

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 consistent in all countries except Lebanon. Alongside below-average school performance, social behaviours —particularly frequent social outings like 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.
The role of family relationships in e-cigarette use is more pronounced than some social factors. Across all countries, students who report a positive engagement with their family generally show lower odds of e-cigarette use. On the contrary, having a mother with a full-time or part-time employment appears a significant risk factor in all countries except Lebanon.
In every country e-cigarette use among friends is the biggest risk factor.While less strongly than peer influence, e-cigarette use among family members 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 are at substantially higher risk 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 those without.

Students' perception of the risks associated with both occasional and regular e-cigarette use also plays a significant protective role. Those who perceive occasional e-cigarette use as low-risk are more likely to engage in usage across all countries. Notably, Tunisia and Lebanon show the strongest associations between low-risk perception and e-cigarette use.

1.1.3. Water pipe

Prevalence of use and related indicators

[SEE TABLE 7.1.5 IN ANNEX]

Overall, 12.9% of adolescents reported having used water pipe 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 across countries, with Lebanon displaying the highest prevalence by far, while Morocco reports consistently lower levels across all indicators of use. Gender differences in water pipe use are prominent, with boys generally exhibiting higher prevalence rates than girls. At an aggregate level, male students report using water pipe much more frequently than female students, particularly in reference to last-year and last-month use, where rates are approximately four times higher. In relation to the latter indicator, the gender gap is most pronounced in Tunisia, where current use (use in the past 30 days) stands at 8.3% among boys compared to just 1.4% among girls. In Lebanon, however, there are no significant gender differences across lifetime, past-year, or past-month measures.

Overall, 5.3% of adolescents 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 prevalence is greater in boys, with rates approximately 7.4%, in contrast to 3.0% in girls.
Regular use of water pipes at such a young age is less common, with an overall prevalence of 2.1% and less pronounced differences among countries, yet the gender disparity persists. Boys report a higher rate of daily water pipe use by age 13 (3.4%) compared to girls (0.8%), with Morocco and Egypt showing the biggest gender difference.
18.6% of adolescents across MedSPAD countries report easy access to water pipes, with availability notably higher among boys (23.4%) compared to girls (13.4%). This gender gap in accessibility is particularly pronounced in Egypt, where the rate of male students referring that water pipes are easily accessible to them is three times higher than that of female students, while not statistically significant in Lebanon.

Perceived peer use of water pipes also seems rather frequent (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 adolescents reports water pipe use within 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 significantly higher prevalence rates among male students (30,7%, compared to 25,6% among females) Tunisia is the only country where more girls than boys report having a family member who smokes a water pipe (33.9% versus 29,4%).

Across the region, the perception of low risk associated with water pipe use indicates that more than half of adolescents consider both occasional (65.9%) and regular (50.9%) use to be low-risk.
In Morocco, 50% of adolescents 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 boys associating low risk to both occasional (64.1%) and regular (54.1%) use more frequently than their female peers (57,6% and 46,7% respectively).

Identifying common risk factors across countries

[SEE TABLE 7.1.6 IN ANNEX]

The analysis of common risk factors associated with water pipe use confirms that male gender is a risk factor for nicotine use and reveals the association with social behaviours among users.

As also observed for other types of consumption, boys and girls who frequently socialize, especially through evening outings, are more likely to engage in water pipe use. Low school connectedness, indicated by missing five or more days of school in the past month, along with below-average school performance, are associated with higher odds of water pipe use. Additionally, reduced satisfaction with parental relationships is linked to increased use.

Family and peer use, along with perceived availability and the belief that both occasional and frequent use carry low risk, are also risk factors for engaging in water pipe use.

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 illustrates, there are significant variations in usage patterns across countries influenced by product type, demographics, and social dynamics.

Recent studies highlight the significant prevalence of tobacco use among adolescents in the Middle East and North Africa, with cultural factors, peer influence, and parental habits playing crucial roles. Akel et al. (2022) report that both cigarette and waterpipe smoking are common in Lebanon, influenced by social norms that downplay the risks of waterpipe use. In Morocco, Moutawakkil et al. (2024) emphasize that peer environment and socioeconomic status are key factors in adolescent tobacco initiation. Fakhfakh (2019) notes challenges of implementing effective tobacco control measures in Tunisia and Morocco, despite existing public health policies. Additionally, Veeranki et al. (2016) find a strong correlation between parental smoking and adolescent tobacco use, underscoring the need for targeted interventions to address these interconnected influences.

In this multi-layered context, traditional cigarettes remain the most used nicotine-based product, with Tunisia and Lebanon reporting the highest lifetime usage rates (19.4% and 29.4%, respectively), while Morocco shows the lowest (8.9%). This geographic variation extend to e-cigarette and water pipe prevalence of use, with Lebanon leading in both cases (37.2% and 41,8% of lifetime use prevalence). Gender differences are significant across all nicotine-based products, especially for cigarettes and e-cigarettes, where boys consistently report higher use rates than girls.

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

Risk perception also emerges as a significant factor: it varies greatly across countries and, together with social factors, it may contribute to explain the big differences in consumption prevalence rates observed. For example, in Lebanon, more than 80% of adolescents view occasional smoking as low-risk and 20% smoked cigarettes in the past year, contrasting with Morocco, where a higher awareness of health risks may explain the lower overall prevalence of use (about 4%).
Perceived accessibility also strongly influences usage rates. Nearly half of Lebanese students reported easy access to cigarettes and e-cigarettes, a figure far exceeding the region's average, pointing at regulation enforcement as an important factor to be addressed to reduce adolescent uptake. Conversely, protective factors such as strong family ties mitigate tobacco use, underscoring the importance of promoting family involvement in prevention programs.

The policy landscape in Southern Mediterranean countries reflects an ongoing commitment to combat tobacco use, aligned with international frameworks like the WHO Framework Convention on Tobacco Control (FCTC).
Tunisia's recent 2023 policy update emphasises smoke-free public places, health warnings, and a strict prohibition on underage sales, aiming to curb tobacco's social acceptability and accessibility. This could help reducing smoking and e-cigarette use, which currently involves about 10% of adolescent students (past-year prevalence). Alongside policy, further public health education efforts targeting perceptions of risk may be essential to counteract social and peer influences encouraging tobacco use.

In Morocco, which scores the lowest prevalence of cigarette and e-cigarette use among adolescents, the comparatively lower rates may be linked to a more widespread awareness of tobacco risks: about 60% and

30% of adolescents perceive occasional and regular smoking respectively as low-risk, indicating a higher baseline awareness of the dangers associated with tobacco use.

Egypt, a longstanding FCTC member with a history of regulatory updates, has the lowest rates of perceived availability for both cigarettes and e-cigarettes. Egypt's comprehensive monitoring approach, utilizing surveys such as the GYTS and the STEPwise system, supports policy development by providing robust data on adolescent behaviour and informing targeted interventions. However, some gaps in enforcement seem to persist: adolescents 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 among all countries.

In summary, while tobacco control policies across these countries share core elements—advertising bans, age restrictions, and health warnings—their effectiveness seem to vary widely. Stronger enforcement and youth-focused awareness campaigns, particularly addressing risk perception, may enhance the impact of these policies. The MedSPAD findings highlight the many hurdles that must be overcome to reduce the amount of nicotine use among teenagers in the Southern Mediterranean region, which however remain substantially lower than in the Northern region. To effectively address these difficulties, a holistic approach is required, one that combines the successful implementation of policies, the engagement of the community, and focused prevention efforts. When it comes down to it, ongoing efforts are very necessary in order to encourage healthy behaviours, lessen the damage caused by tobacco in the region, and face the current challenge of rapidly growing variety and availability of nicotine-based alternative smoking products.

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1.2. Alcohol

Highlights

Lifetime alcohol use was reported by 6.5% of 16-year-olds, past-12-month use by 5.1%, and past-30-day use by just 3,6%

The prevalence was generally higher among boys, with rates being 2 to 3 times greater than those among girls at both the aggregate and country levels.

Lebanon recorded the highest rates of alcohol use, while Tunisia showed the lowest prevalence across all measures of use.

One in thirty 16-year-olds had experienced alcohol intoxication at least once in their lifetime, and one in fifty in the past 30 days.

Almost 6% of adolescents reported heavy episodic drinking occasions in the past 30 days, with significant gender differences in almost all countries

3.2% of MedSPAD students reported consuming alcohol for the first time at age 13 or younger, while 2.2% reported experiencing alcohol intoxication for the first time at the same age.

Overall, 17.5% of 16-year-olds reported easy access to alcoholic beverages, with notable variations among countries, ranging from 45.6% in Lebanon to 10.1% in Egypt.

Nearly one in six students reported 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 significant factors influence the levels and patterns of alcohol consumption in the adolescent population.
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 decrease the harmful use of alcohol, the World Health Organization (WHO) endorsed its Global Strategy to reduce the harmful use of alcohol in 2010, 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
An adopted written national policy on alcohol is defined as a written organized set of values, principles and objectives for reducing the burden attributable to alcohol in a population.
Since the endorsement of the 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 concerning alcohol dates back to 1959. In 2022, a national law on industrial product security and market surveillance resulted in changes to the prices of alcohol products. Since 1956 Egypt has a law in force, last revised in 1976, and also has a national action plan in place.

Morocco has several laws that regulate the alcohol consumption, sale, and taxation, the last approved is a law of 2007 regulating the marketing of spirits and similar products. In 2016 Lebanon revised the legislation on alcohol, with the implementation of an action plan up to 2021, aimed to enhance prevention, treatment, rehabilitation, and harm reduction efforts around substance use, including alcohol.

The mandate for monitoring and surveillance on alcohol and health at the national level usually originates from national strategies and action plans as well as from 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. While Tunisia has a national monitoring system in place, Egypt, Morocco, and Lebanon do not.

Pricing and Taxation

Among the most effective alcohol policy components with the highest population coverage there are pricing policies, with excise taxes as the most common policy measure. Egypt, Lebanon, Morocco, and Tunisia apply taxes on the sale of, or on production for the sale of beer, wine and spirits.

Physical Availability

The WHO Global Strategy recommends establishing a national legal minimum age for purchase and consumption of alcohol. Given that alcohol carries more risk to youth, a common goal of alcohol policies is to prevent and delay youth initiation. Minimum legal purchase age policies are one of the means deemed most effective for achieving this goal. While Egypt set it at 21 years, in Morocco the legal age is 16 years, and in Lebanon and Tunisia the legal age is 18 years, which is by far the most common age limit applied wordwide for the legal purchase either on-premise or off-premise spirits. Regulating the hours and days of sale and the geographical 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-premise and off-premise outlet hours, days and places of sale.

Marketing and Advertising

Longitudinal studies repeatedly find that young people who are exposed to alcohol marketing are more likely to start drinking and to engage in risky drinking habits (Anderson et al., 2009; Jernigan et al., 2016). Tunisia is the only country that has applied a total ban on alcohol marketing, prohibiting the advertising, product placement, sponsorship and sales promotion of these products. Egypt has a legally binding regulation on alcohol advertising, placement and sponsorship, which does not encompass sales promotion, Morocco has legally binding regulation also on sales promotion, on the other hand, Lebanon has no active regulation on marketing and advertising. Neither of Egypt, Morocco, and Tunisia legally requires health warning labels to be placed on alcohol advertisements and/or on alcohol containers while Lebanon legally requires health warning labels on alcohol products about pregnancy and under-age drinking but not on cancer or drink-driving.

Prevalence of use and related indicators

[SEE TABLE 7.2.1 IN ANNEX]

Overall, 6.5% of adolescents reported drinking alcohol in their lifetime, 5.1% in the last 12 months and 3.6% in the last 30 days. Alcohol use varied greatly across countries. Lebanon reported by far the highest rates, with 26.5% of adolescents having consumed alcohol in their lifetime, 21.4% in the past 12 months, and 12.5% in the last 30 days, while Tunisia showed the lowest prevalence for each measure of alcohol use. Prevalences were generally higher in boys than in girls, with rates being 2 to 3 times higher both at the aggregate and country level. The biggest gender gap was found in Tunisia, where current alcohol use (use

within the last 30 days) was 2.3% among boys and 0.4% among girls. The only exception is Lebanon where no statistically significant differences were found for lifetime, last year, or last month use.

3.6% of adolescents reported having 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 boys compared to girls. Two exceptions were found at the country level: Morocco, where no statistically significant differences were observed for alcohol intoxication in the past year and past month, and Lebanon, where no significant differences were found for any of the measures investigated.

On average, one in 30 MedSPAD students (3.2%) reported consuming alcohol for the first time at the age of 13 or younger. At the country level, the highest rate was reported in Lebanon (13.3%), followed by Egypt (3.9%), and the lowest in Morocco (0.9%). Overall, the prevalence among males (4.6%) was nearly three times higher than that among females (1.7%). The biggest gender gap was observed in Tunisia (male: 2.7%; female: 0.7%), whilst no significant gender differences emerged in Morocco and Lebanon.
Regarding alcohol intoxication, 2.2% of MedSPAD students reported having their first experience at age 13 or younger, with proportions ranging from 3.5% in Egypt and Lebanon to 0.3% in Tunisia. In this case as well, the likelihood of early onset is significantly higher among male students, with a prevalence roughly four times greater than that of female students.

Overall, only 17.5% of students reported that they would find it easy to obtain alcoholic beverages. This rate is nearly five times lower than the 83.8% recorded in MedSPAD countries along the northern Mediterranean, highlighting significant social and cultural differences between the two regions. Notable variations are also observed among countries on the southern rim, with Lebanon leading, where nearly half of the students (45.6%) reported easy access to alcohol, followed by Morocco (34.5%), Tunisia (19.3%), and Egypt (10.1%).In all countries except Lebanon, boys were more likely than girls to think they could get hold of alcohol easily.

Regarding parental and peer alcohol use, 15.2% of students reported that at least one of their family members drinks alcohol, and a similar proportion (15.9%) indicated that their friends do as well. The higher 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 boys were more likely to report alcohol use among their peers (except in Lebanon), no gender differences emerged when reporting alcohol use within their families. In terms of family alcohol use, girls were more likely to report this in Lebanon and Tunisia, while no gender difference was found in Morocco. In contrast, boys in Egypt were more likely to report alcohol use within the family context.

On average, more than half of MedSPAD students (57.3%) believed that occasional alcohol use carries little to no risk. This percentage drops to 52.5% when students are asked about 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 these behaviors carry no or low risk. In contrast, the highest awareness was found in Tunisia for regular drinking and in Lebanon for heavy episodic drinking.
In terms of gender differences, no significant disparities were observed in the perceived risk of occasional alcohol consumption. However, female students tended to have a higher perception of risk regarding both

regular drinking and heavy episodic drinking. At the country level, while no significant gender differences emerged in Egypt and Lebanon, females in Morocco and Tunisia exhibited a higher risk perception.

Identifying common risk factors across countries

[SEE TABLE 7.2.2 IN ANNEX]

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

Regarding alcohol, male students generally have a higher risk of use in the past 12 months compared to their female peers. This pattern is consistent across all countries except Lebanon. Among 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 case and Egypt in the latter.
School absenteeism (for any reason, ranging from truancy to illness) for five or more days per month was also a risk factor for alcohol use, except in Lebanon.

In the family environment, a satisfactory relationship with both parents plays a protective role. Furthermore, the mother's role appears particularly relevant, as higher maternal education and employment status are associated with an increased risk of alcohol use among siblings.
Alcohol availability was identified as the most significant risk factor, with reported easy access to alcohol being relevant in all countries. Peer alcohol use and alcohol use within the family also represent 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 adolescent past-year alcohol use 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 like 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 adolescents often engage in higher-risk drinking behaviours, sometimes consuming alcohol at two to three times the amount adults typically do in a single occasion (Spear, 2002; Spear & Swartzwelder, 2014). One proposed explanation for this behaviour is that the neurodevelopmental changes unique to adolescence enhance sensitivity to alcohol's rewarding effects while diminishing sensitivity to its potential adverse effects (Spear & 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, 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—a rate nearly five times 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 none regulate outlet density. The

minimum legal purchase age varies among the countries, from 16 years in Morocco to 21 years in Egypt. Despite these regulations, alcohol seem to remain accessible to adolescents, 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; boys generally report higher rates of alcohol use than girls, with rates being 2 to 3 times higher. 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. 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 thought the same about regular drinking and heavy episodic drinking.

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

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UNDER CONSTRUCTION:

1.3 Cannabis and other substances use (Cocaine, Ecstasy, Heroin, Amphetamin, Methamphetamine, Crack, Hallucinogens, NPS, Pharmaceutical for non-medical purpose)
Highlights
Policy framework

1.3.1. Cannabis
Prevalence of use and related indicators
Cannabis Use in the Last 12-Months
Identifying common risk factors across countries
At-risk cannabis use
Identifying common risk factors across countries

1.3.2. Cocaine, Ecstasy, Heroin, Amphetamine, Methamphetamine, Crack, Hallucinogens, NPS
Prevalence of use and related indicators
Identifying common risk factors across countries
Discussion, implication for prevention and Policy conclusions
References

1.3.3. Pharmaceutical for non-medical use
Highlights
Policy framework (valutare se fattibile)
Prevalence of use and related indicators
Identifying common risk factors across countries
Discussion, implication for prevention and Policy conclusions
References

2. Other risk behaviours among adolescents

Highlights

Overall, 16.5% of MedSPAD students reported engaging in gambling activities at least once in the past year. 19.6% of males reported to have gamble, compared to 13.2% of females.

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%).

14.3% of MedSPAD students reported having gambled at least once in the past year in physical settings, while 11.7% indicated 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).

77.1% of MedSPAD students spent time on social networks in the 7 days prior to the survey. While social media seem so popular in Lebanon (96.7%) and Tunisia (95.2%), these seem to be less popular in Morocco (84.3%) and even less in Egypt (64.1%).

Social media use is the only behaviour for which, at the aggregate level, females report slightly higher engagement (79.4%) than males (74.9%).

On school days, overall social network usage reduces to 68.8%, a lower rate compared to non-school days, during which this activity rises to 74.0%.

Overall, 55.5% of MedSPAD students feel their relationship with social media to be problematic.

59.4% of MedSPAD students reported having played them in the past month.

The interest in videogames is not equally shared: nearly 70% of boys play games compared to about 48% of girls.

45.5% of adolescents reported playing video games on school days, a lower rate compared to non-school days, during which gaming rises to 56.7%.

Overall, 40.3% of MedSPAD students reported perceiving a high risk of problematic behaviour in the use of video games.

Male engagement in gaming is higher than among females, and so does the self-perception of problems in the management of this habit.

Policy framework for gambling

Gambling—placing bets on uncertain outcomes—is increasingly popular as a form of leisure and entertainment, supported by a rapidly expanding and highly competitive supply. This increased availability of gambling opportunities has the potential to trigger gambling engagement among young people, and to impact the prevalence of youth problem gambling (Pérez, 2024).

Therefore, the public health community has urged governments to recognise the harms associated with gambling and to incorporate population-based harm prevention strategies into gambling policies (Ukhova

et al., 2024). Gambling is legally available in most countries worldwide and is becoming increasingly legislated.

In all MedSPAD countries gambling is regulated by law. This mainly concerns land-based gambling, while online gambling is still not a regulated activity.

In Egypt, the Minister of Tourism and Antiquities issues decrees to regulate the activities and operation of casinos that are established inside some hotels on national territory and to impose royalties. A law issued in 2022 postulated that gambling is allowed in facilities only for non-Egyptians. Regarding the specific gambling types, lotteries are fully legal and regulated under a law passed in 1973, while casino gambling is legal for foreigners. Online betting is unregulated in Egypt. The minimum legal age for gambling is 18 years, and there is no national plan or funds dedicated to the prevention or treatment of gambling harms.

In Lebanon, gambling activities are regulated by the Ministry of Interior and Municipalities under Law N. 417. The law prohibits certain forms of gambling, while allowing licensed casinos and online gambling platforms. Land-based casino gambling is controlled by the government. No specific legislation exists that bans online gambling. Therefore, online gaming platforms are legal in Lebanon, but they must be licensed and regulated by the government. Currently, legal online betting is limited to an officially licensed site. The Lebanese government regulates gambling through monopolies, allowing along with casino gambling, a national lottery and a regulated online sports betting site. There are strict restrictions on minors participating in gambling activities to prevent underage gambling and protect vulnerable individuals.

Morocco has legalised most forms of gambling. Through a decree passed in 2002, casino establishments in the country started operating legally. Lottery and sports betting are strictly monopolies of the state. Today the country hosts several land-based casinos, that are regulated and licensed by the Moroccan government to ensure that they adhere to current regulations. The legal gambling age is 18 years old.
While land-based casinos have been legalised in Morocco, online gambling is not regulated in any legal form. Since there are no laws that mention online gambling, operators cannot apply for an online gambling license and offer virtual casino games to citizens. However, in the absence of legal provisions, citizens can participate in online gambling on foreign websites.

In Tunisia, gambling was first regulated by a Law dating back to 1974. Gambling regulation allows only certain forms of land-based gambling, setting out a clear licensing framework for casinos and lotteries. The country has some casinos that are only allowed to foreign visitors, most of them located in tourist destinations. These venues, allow certain activities like casino games, sports betting, and horse racing, all under close supervision by regulatory bodies to ensure they meet safety and compliance standards. Lotteries and bingo are also regulated, state-run and allowed to be played in Tunisia. However, online gambling remains unregulated and technically prohibited under Tunisian law, so no companies, local or foreign, are allowed to offer online gambling. The legal age for gambling is 18 years, there are no national plans or funds for the prevention of gambling harms and gambling disorder is not included among the behavioural addictions to be taken care of by addiction treatment centers.

2.1. Gambling

Prevalence of use and related indicators

[SEE TABLE 7.5.1 IN ANNEX]

The MedSPAD study also provides a glimpse into adolescent gambling behaviours, including gambling, gaming and social media use.

Overall, 16.5% of MedSPAD students reported engaging in gambling activities at least once in the past year. Breaking this figure down by gender a disparity emerges, with 19.6% of males reporting to have gamble, compared to 13.2% of females.

When examining gambling prevalence across different countries, Tunisia emerges as the one with the highest overall rate (21.8%). Morocco is the country with the second highest gambling prevalence (16.7%), followed by Lebanon (14.6%), and Egypt (13.9%).

Regarding the specific types of gambling, 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%). At the country level, Morocco is an exception since the most popular gambling type is sport or animal betting (12.3%).

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

In this country, 28.8% of males reported gambling, compared to 17.4% of females. The biggest gender difference was found regarding slot machine gambling, with a prevalence of 10.3% among male students versus only 1.6% of females.

Regarding the specific gambling mode, 14.3% of MedSPAD students reported having gambled at least once in the past year in physical settings, 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, the gender disparity is evident, with males reporting a higher gambling engagement compared to females.

As described in the Methodology section, the SOGS-RA screening instrument (Poulin 2002; Winters, Stinchfield and Fulkerson 1993) was used in the MedSPAD questionnaire to assess the presence of possible problem gambling behaviour.

In the whole MedSPAD sample, 1.6% and 3.2% of students fall into at-risk and problematic gambling profiles, respectively. 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% respectively), Egypt (0.7% and 2.8% respectively) and Lebanon (0.3% and 1.7% respectively).

In general, boys are more likely to display an at-risk gambling profile, with prevalence rates about three times higher than among girls (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 higher than among female students. No gender difference either in at–risk or problem gambling prevalence was found in Lebanon, as well as in Egypt for at-risk gambling.

Identifying common risk factors across countries

[SEE TABLE 7.5.2 IN ANNEX]

The MedSPAD data makes it possible to detect key risk and protective factors influencing gambling behaviours.

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

Adolescents who have missed five or more days of school in the past month demonstrate higher odds to engage in gambling. Social behaviours, particularly the frequency of evening outings, is also a risk factor.

Family structure and dynamics seem instead to play a role only is some countries. For example, a low educational level of parents constitutes a risk factor in Egypt and Tunisia.

What instead seem to constitute a significant factor influencing the engagement in gambling activities across all countries is having an unsatisfactory relationship with peers.

2.2. Social media

Prevalence of use and related indicators

[SEE TABLE 7.5.3 IN ANNEX]

In an era marked by the rapid integration of digital technologies into daily life, adolescent social media use has become a critical area of research and concern, and for this reason the MedSPAD survey dedicates a specific focus to it.

Overall, 77.1% of MedSPAD students spent time on social networks in the 7 days prior to the survey. While social media seem so popular in Lebanon (96.7%) and Tunisia (95.2%) that almost all adolescent students participating in MedSPAD reported some social media activity in the past week, these seem to be less popular in Morocco (84.3%) and even less in Egypt, where they attracted only about 2 in 3 students (64.1%).
This is the only behaviour for which, at the aggregate level, females report slightly higher engagement (79.4%) than males (74.9%). However, at the country level, significant gender differences in social media engagement could only be identified in Morocco and Egypt: in the first country the prevalence of social media use is higher among females (87.1% versus 80.7%), viceversa in Egypt the higher prevalence is among males (66.1% versus 60.9%).

On school days, overall social network usage reduces to 68.8%, a lower rate compared to non-school days, during which this activity rises to 74.0%. The gender pattern within each country is confirmed on both school and non-school days: boys engage more in social media than girls in Egypt, while the opposite holds in Morocco. In Lebanon and Tunisia no significant gender differences are observed.

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 to this test was considered to be indicative of self-perceived high risks of problem use. For more details, see the methodology section.

According to the MedSPAD results, overall, 55.5% feel their relationship with social media to be problematic. No big differences in prevalence can be observed across countries, with the highest rate recorded in Lebanon (66.4%) and the lowest in Egypt (51.7%). Furthermore, the gender pattern observed regarding the simple use of social media is reversed: boys show a higher perceived problematic relationship (59.3%) than girls (51.4%). At the country level both in Egypt and Morocco, the prevalence of self-perceived problems is significantly higher among male students (56.8% versus 40.6% in Egypt and 61.8% versus 55.0% in Morocco).

Identifying common risk factors across countries

[SEE TABLE 7.5.4 IN ANNEX]

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

Compared to the use of substances and other risk behaviours, gender in social media use plays a different role highlighting interesting country differences: while no significant gender divide is observed in Lebanon and Tunisia, in Egypt males are significantly more likely to use social media, whilst in Morocco the opposite holds.

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

Regarding the relationship with school, students who missed 5 or more school days within the past month are more likely to use social media, except in Morocco.
Furthermore, family characteristics and socio-economic status also emerge as significant factors. Adolescents in larger family units (living with more than 2 family members) are more likely to use social networks, as much as those having highly educated parents. Additionally, adolescents who perceive their family as less off than their peers show higher odds of social network engagement.

2.3. Gaming

Prevalence of use and related indicators

<mark>[SEE TABLE 7.5.5 IN ANNEX]</mark>

Video games have become a staple in adolescent leisure worldwide, and for this reason their use is investigated by the MedSPAD survey.

59.4% of MedSPAD students reported having played them in the past month. The country where videogames are more popular is Tunisia, where 65.1% of students spent some time in the past 30 days playing them, closely followed by Lebanon (62.0%). Despite videogames are less popular in Egypt and Morocco, still more than half of surveyed students in those countries reported some videogame activity in the same timeframe (57.2% and 55.2% respectively).

The interest in videogames is not equally shared: boys are much more likely to engage in this activity than females—nearly 70% of boys play games compared to about 48% of girls. This gap is echoed across individual countries, with males consistently showing higher engagement. In Tunisia, this difference is particularly relevant: 88.5% of males play video games compared to just 50.5% of females, representing the most significant gender divides in gaming across the surveyed countries. The smallest gender difference, although highly significant, was found in Egypt, where 63.2% of boys played at videogames during the past 30 days compared to 47.3% of girls.

45.5% of adolescents reported playing video games on school days, a lower rate compared to non-school days, during which gaming rises to 56.7%.
The gender gap remains on both school and non-school days. On school days, males (57.8%) are nearly three times as likely to play videogames than females (32.2%). This pattern persists on non-school days, with 67.4% of males gaming compared to 45.1% of females.

The MedSPAD survey also includes two non-clinical screening tools (Holstein et al. 2014) focus on a student's perception of problems related to time spent on gaming, of bad feelings because of restricted access, and of family concerns. A positive score to this test was considered to be indicative of self-perceived high risks of problem use. For more details, see the methodology section.

Overall, 40.3% of MedSPAD students reported perceiving a high risk of problematic behaviour in the use of video games. The highest prevalence of self-perceived problems with video game use was found among Egyptian students, where this perception is twice as frequent than in the other countries. Lebanon showed the lower prevalence, equating to 26.3% of the student population.

Male engagement in gaming is higher than among females, and so does the self-perception of problems in the management of this habit. Despite the prevalence of self-perceived problems is highest in Egypt, the biggest difference in prevalence between boys and girls was found in Tunisia, where boys are four times more likely to report self-perceived problems than girls (49.4% versus 19.4%). The smallest difference was found in Lebanon, where the prevalence is 32.8% of boys against 21.6% of girls.

Identifying common risk factors across countries

<mark>[SEE TABLE 7.5.6 IN ANNEX]</mark>

Video gaming is not just an isolated activity; it intertwines with various aspects of adolescent life, including social interactions, family dynamics, physical activity, and academic performance.

Across all four countries, gender stands out as a significant predictor of gaming engagement. Boys are consistently more engaged in video games than girls, with an odds almost three times higher.

Interestingly, instead of acting as a protective factor, physical activity is positively associated with gaming engagement in the past month in almost all countries, excluding Lebanon: adolescents who play video games are more likely to report participating in sports regularly.

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

Daily, or almost daily, use of the Internet for fun seems to be closely linked with gaming. Adolescents who use internet for leisure are almost three times more likely to play video games than 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 patterns is instead less evident.

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

Discussion, implication for prevention and Policy conclusions

Youth gambling has become an established public health issue due to the high prevalence of gambling involvement and problematic gambling reported in many countries.

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

Researchers raise concerns regarding 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 and Griffiths, 2017).

Despite underage gambling is not legal in most countries, the continued expansion of gambling characterised by the legalisation and liberalisation of national gambling markets (Aimo, 2023) raises concerns regarding the increased risks for young people stemming from the high availability of multiple gambling products and online gambling.

In Egypt, Lebanon, Morocco and Tunisia, like in many other countries, empirical research into adolescent gambling and problem gambling is still limited. The MedSPAD study fills this gap, providing for the first time comparable estimates of gambling prevalence and patterns of use in those countries.

The first interesting finding is that surprisingly, despite in most cases gambling is not allowed to country citizens and in any case it is illegal for minors, the prevalence of gambling engagement is not so different from that estimated in Europe by the ESPAD project. In fact, while in Europe 22% of adolescent students gambled for money on at least one game of chance in the past year, in the Southern MedSPAD countries 16.5% reported to have done so offline, online or on both channels.

Regarding this distinction, there seems to be a slight preference for land-based gambling activities, which have been chosen by about 14% of students, while online gambling activities only by about 12%. Interestingly, the latter prevalence is higher than that found in Europe, where in 2019 only about 8% of students reported having gambled online. This might be partially attributable to the different levels of enforcement of gambling legislation regarding online platforms. In particular, in the Southern MedSPAD area online gambling is largely unregulated, which often leaves room for foreign operators to offer gambling opportunities in those countries.

Differently from Europe, where lotteries are the preferred gambling product among adolescents closely followed by sport or animal betting, in the South MedSPAD area the most popular type of gambling activity are cards and dice. Sport or animal betting are the second most preferred gambling activity, while lotteries and slot machines have been chosen by less than 10% of students. This may be partly due to cultural factors, such as the fact that card and dice games can be played in private settings as a social activity, and partly due to market factors, like the increasing presence of sports betting online platforms, with operators paying more and more attention to making it appealing to younger audiences.

Several studies also highlighted that the increment of gambling opportunities lead to an increase of gambling-related problems among adolescents (Delfabbro et al., 2016; Calado, Alexander & Griffiths, 2017). Based on the results of the SOGS-RA screening test added to the MedSPAD survey, 1,6% of adolescents in the South MedSPAD region are at risk and 3.2% already developed a problem gambling behaviour.

This information is of utmost importance from a public health perspective, underscoring that gambling should not be underestimated—even in countries where it is not legally permitted. Evidence shows a strong link between exposure to gambling during youth and an increased risk of gambling problems in adulthood (Edgerton, Melnyk & Roberts, 2015; Dowling et al., 2017). Therefore, specific prevention efforts should focus on protecting young people from engaging in gambling activities to prevent the spread of problem gambling in future generations.

Besides gambling, the MedSPAD study allowed to collect for the first time also detailed information about gaming and social media use.

Video gaming is an immensely popular leisure activity worldwide, especially among adolescents, and has been linked to cognitive, emotional, and interpersonal benefits (Adachi & Willoughby, 2017). However, excessive gaming can lead to negative outcomes, including heightened anxiety and depression, lower academic performance, sleep disturbances, and challenges with peer relationships.

The MedSPAD data indicate that, despite the majority of adolescent students in the South Mediterranean area engaged in some form of gaming over the past month, this behaviour is still less popular than in Europe.
This might depend on the different level of access to gaming opportunities, despite in recent decades the use of digital technologies and the internet has become an integral part of the daily life of many citizens. In fact, the use of the internet for fun emerges as one of the main factors linked to the engagement in gaming among MedSPAD adolescents, probably reflecting a strong preference for digital forms of entertainment and the availability of them.

The MedSPAD results also highlight that in the Southern Mediterranean area, on average, more than 4 in 10 students reported a self-perceived high risk of problems with gaming, a prevalence almost double than that estimated by MedSPAD in the northern Mediterranean area (21.3%) (Benedetti et al., 2022).

Social media use among adolescents has risen significantly in recent years. While many adolescents use social media regularly, those with problematic social media use often struggle to control their usage,

experience distress when access is limited, and remain preoccupied with thoughts about social media even when offline.

Both gaming and social media use can offer positive experiences for adolescents by helping them connect and stay engaged with peers. This is confirmed by the analysis of associated factors, which highlighted how online entertainment and social interaction go hand-in-hand for this age group.
However, an increasing number of adolescents are developing addiction-like symptoms, where excessive engagement into these activities begins to interfere with essential areas of life—such as school performance, physical activity, and meaningful in-person interactions with family and friends.

The high prevalence of adolescent students who in the Southern MedSPAD area perceive their relationship with social media use and gaming as problematic, along with notable disparities in usage patterns by gender and socio-economic characteristics, highlights the need also for countries in the region to carefully reassess their approaches to regulating and providing access to digital technologies for youth. Effective regulatory frameworks promoting age-appropriate content, strong parental and educational guidance, as well as prevention efforts promoting a healthy, balanced lifestyle in the digital age might be essential to curb the spread of problematic behaviours among adolescents.

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3. IMPACT OF MEDSPAD IN POLICY AND PREVENTION

<mark>The aim of this chapter is to describe national experiences in the implementation of the results from the MedSPAD project in policies and prevention actions at national level.
Each MedSPAD member is therefore invited to write a section on the situation in her/his country.</mark>

3.1 Egypt

[Nermin: could you please write a section about the impact of MedSPAD in Egypt?]

3.2 Lebanon

[Ramzi: could you please write a section about the impact of MedSPAD in Lebanon?]

3.3 Morocco

[Jallal: could you please write a section about the impact of MedSPAD in Morocco?]

3.4 Tunisia

[Hajer: could you please write a section about the impact of MedSPAD in Tunisia?]

4.   Methodology

MedSPAD is a research project initiated in 2003 by the Pompidou Group of the Council of Europe. It is comprised of experts nominated by the MedNET committee (MedSPAD members) and aims to, firstly, conduct a school survey within MedSPAD countries based on the MedSPAD methodology, and secondly, share 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 based on similar questionnaires and methodologies. The results have been collected in three regional reports (2015, 2017 and 2019).

The primary objective of MedSPAD is to share experiences between countries conducting a MedSPAD survey, those who may wish to do so, and countries already conducting the ESPAD survey. The ambitious long-term objective is to arrive at a common methodology, a goal that MedSPAD countries have been working intensively towards over the past years, in order to produce an evidence-based regional report drawing on a database containing the data of all participating countries.

To this end, despite the difficulties stemming from the Covid-19 pandemic and associated restrictions on mobility and school activity, three countries succeeded in the period 2020-2021 in conducting the MedSPAD survey using, for the first time, a common questionnaire. Egypt conducted the survey in 2020 and Morocco and Tunisia in 2021. The resulting data have been collected and treated centrally to produce a common database. The results presented in this fourth regional report also integrate information from MedSPAD countries that in 2019 conducted the ESPAD survey (Croatia, Cyprus, France, Greece, Italy, Malta, Portugal and Spain). To this end, the data collected through the MedSPAD surveys have been merged with ESPAD data to produce a joint analysis.

Therefore, the results presented in this report are based on data from 11 countries: Croatia, Cyprus, France, Greece, Italy, Malta, Portugal and Spain (termed the northern MedSPAD countries for ease of reference), which carried out the 2019 ESPAD survey, and Egypt, Morocco and Tunisia (termed the southern MedSPAD countries), which carried out the MedSPAD survey in 2020-2021.

Due to the novelty of this experience and the complexity inherent in this ambitious project, and taking account of the work that still needs to be done and of the different survey years, the results of the countries conducting the MedSPAD and ESPAD surveys are presented separately.

4.1.   Sample description

Following the ESPAD methodology, the target population of the MedSPAD survey included in this report was defined as students who had 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 enrolled in regular, vocational, general or academic studies were included; those who were enrolled in either special schools or special classes for students with learning disorders or severe physical disabilities were excluded. Table 6.1.1. presents the main sample characteristics. The methods used are largely comparable across all countries, although the time of data collection varies between the ESPAD and MedSPAD surveys and some characteristics, such as sample type or mode of administration, may differ in a limited number of countries.

[Insert Table 6.1.1.]

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 France, where students answered a web-based questionnaire, and Egypt and Italy, 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 the majority of ESPAD countries, data collection took place between March and May 2019, with the exception of France, where data collection took place from April to June 2018. In Egypt, data collection took place in December 2020 (student birth cohort of 2004), in Tunisia from April to June 2021 and in Morocco in December 2021 (student birth cohort 2005). In most countries, school classes were the last unit in a multistage stratified random sampling process.

In total, data were collected from 34 115 students in 11 countries: 26 069 students in the countries conducting the ESPAD survey and 8 046 in the countries conducting the MedSPAD survey. Sample sizes ranged from 1 214 in Cyprus to 5 988 in Greece. All samples had national geographical coverage, except for those from Cyprus (only government-controlled areas were included) and Egypt (the North Sinai Governorate was not included). The class participation rate (share of selected classes participating) was generally high: it was 91% on average in northern MedSPAD countries, ranging from 75% in Cyprus to 100% in France, and 99 % on average in both Egypt and Morocco. The proportion of students in the selected classes who were present on the day of the survey and who answered the questionnaire was high both in the northern and in the southern MedSPAD area (89% on average). The student representativeness was very high across the MedSPAD area, with all countries except Egypt reaching 90% or more. The lowest rates were reported in Egypt (81%) and the highest in Cyprus, Portugal and Spain (100%).

Data were weighted in three countries to adjust the sample to the socio-demographic composition of the target population. Details about the weighting applied to the samples of the countries of the northern MedSPAD area are reported in the 2019 ESPAD report (The ESPAD Group 2020). Among the countries of the southern MedSPAD area, sample weights were applied to the sample of Tunisia to account for the geographical distribution of the target population and the type and size of schools.

4.2.   MedSPAD questionnaire
Design
In the previous waves of the MedSPAD survey, each country used its own questionnaire and this challenged the comparability of results. To run the MedSPAD survey in 2020-2021, for the first time a new common MedSPAD questionnaire was elaborated by the Italian National Research Council in consultation with the MedSPAD Committee. The MedSPAD questionnaire shares common questions not only with the countries who performed the data collection in 2020-2021, but also with the 2019 ESPAD questionnaire.

The first aim of the MedSPAD questionnaire was to investigate young people's awareness of and experience with different psychoactive substances. New topics were added, such as NPS, 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 elaborated with the long-term objective of reaching a sufficient level of comparability not only among the countries running the MedSPAD survey, but also with countries running the ESPAD survey.

Topics
In the MedSPAD questionnaire, the following topics were investigated:
- tobacco and nicotine-based products: patterns of use of cigarettes, electronic cigarettes, water pipes and chewing tobacco;
- alcohol: the consumption of different alcoholic beverages (beer, wine, premixed drinks, spirits, etc.), as well as specific drinking patterns such as binge drinking (five or more drinks on a single occasion) and alcohol intoxication;
- tranquillisers and sedatives used for non-medical purposes without a doctor's prescription;
- cannabis and other psychoactive substances: the use of cannabis, cocaine, ecstasy, heroin and inhalants; the use of amphetamines, anabolic steroids, crack, ghb (Gamma Hydroxybutyrate), hallucinogens (LSD, magic mushrooms, etc.), methamphetamines and NPS;
- 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.   Statistical analysis

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

Availability of substances

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". In the ESPAD questionnaire the response categories were "impossible", "very difficult", "fairly difficult", "fairly easy", "very easy" and "don't know". The responses "fairly easy" and "very easy" were merged to indicate perceived easy availability in the case of northern MedSPAD countries, while in the case of southern MedSPAD countries the response "easy" was used.

The availability of each type of alcoholic beverage (beer, premixed drinks, wine and spirits) was investigated separately. If considered relevant, countries included other alcoholic beverages as optional questions in the questionnaire. Alcohol was considered to be available if at least one of each five types of beverage 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 1 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 had 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 had 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 both in relation to offline and online gambling, while in the ESPAD survey this distinction was not made. For each type, 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, in the case of the MedSPAD survey, 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, as in the 2019 ESPAD report, in this report gambling prevalence was calculated as the rate of those who had 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. Caution must be used when comparing the results of the MedSPAD and ESPAD surveys here as in the latter, gambling activity was surveyed only in relation to the offline mode.

Risk perception on 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", "slight risk", "moderate risk", "great risk" and "don't know". In the ESPAD questionnaire, the response categories were "no risk", "slight risk", "moderate risk", "great risk" and "don't know". The response "great risk" was defined as an indicator of perceived risk.

High-risk cannabis use

CAST was used to screen for possible cannabis-related problems (Legleye et al. 2007, 2011). The six items of the 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, over time, different coding systems and cut-off scores have 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 (The ESPAD Group 2020).

When used in the context of self-reported surveys, the CAST may allow the early identification of adolescents who are liable 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 cannot provide a clinical diagnosis.

This report provides prevalence estimates of high-risk users in the total sample based on the CAST instrument. The additional tables available provide estimates of the proportion of high-risk users among those students who answered positively to the introductory question of the CAST (i.e. claimed to have used cannabis in the year prior to the survey); 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 and the Lie/Bet questionnaires. In the ESPAD survey, only the Lie/Bet questionnaire was used.

The SOGS-RA scale consists of 12 items, and each 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 is scored 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 is "at-risk gambling", and a score of 0-1 is "no problem" (Poulin 2002; Winters, Stinchfield and Fulkerson 1993).

The Lie/Bet Questionnaire (Johnson et al. 1997), a two-question screening tool, was used to assess the proportion of gamblers with problem gambling behaviour. The two questions used in the tool are "Have you ever lied to family and friends about how much money you have spent on gambling?" and "Have you ever felt that you needed to gamble for more and more money?"; both questions have the response categories "yes" = 1 and "no" = 0 and the Lie/Bet sum score therefore ranges from 0 to 2. A score of 2 points was considered to indicate problem gambling.

Self-perceived problems with social media use and gaming

A specific screening tool (Holstein et al. 2014) was adapted to assess for 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 the above 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 was considered to indicate a high level of self-perceived problems related to social media use and gaming.

4.4.   Results tables and figures

Prevalence estimates and means were calculated for each participating country, taking sample weights into account for the countries that used them. In the majority of tables presented in this report, totals and gender-specific estimates for boys and girls are presented by country. As noted, in each table the results of the countries conducting the MedSPAD and ESPAD surveys are presented separately. Two averages are also presented with an equal weight assigned to each country: a northern MedSPAD average that is based on the ESPAD countries (Croatia, Cyprus, France, Greece, Italy, Malta, Portugal and Spain) and a southern MedSPAD average that is based on southern MedSPAD countries (Egypt, Morocco and Tunisia). 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 boys and girls. All estimates are based on the total sample and represent population estimates.

5. Conclusions

ADD

6. MedSPAD documentation

6.1. MedSPAD Regional Reports

To be found on PG MedNET website: www.coe.int/en/web/pompidou/mednet/MedSPAD:

MedSPAD Committee (2019), "An insight into alcohol, tobacco and other drugs in the Mediterranean Region: Socio-economic, policy context and patterns of use among adolescents"

MedSPAD Committee, "Prevalence of Alcohol, Tobacco and Drug use Among Adolescents in the Mediterranean Region", P-PG/Med (2017) 15

MedSPAD Committee, "A First Glance at the Situation in the Mediterranean Region in Relation to the Prevalence of Alcohol, Tobacco and Drug use Among Adolescents", P-PG/MED (2015) 27

6.2. Methodology documents

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

Guidelines – Mediterranean School Survey Project on Alcohol and Other Drugs (MedSPAD) (revised from first guidelines of March 2011), P-PG / Med (2015) 33/1

Questionnaires used in Algeria, Lebanon, Morocco, Tunisia and Egypt (from 2009 to 2016), P-PG/Med (2016) 26 Ex P-PG / Med (2015) 33/2 Rev

Validity and reliability of school surveys based on the European ESPAD methodology in Algeria, Libya and Morocco (MEDSPAD pilot school survey project), P-PG/Med (2004) 2 E

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

MedSPAD 2016 in Algeria, P-PG/Med (2017) 40

MedSPAD 2016 in Egypt, P-PG/Med (2017) 16

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

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