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POLICY REPORT

CURBING THE NONCOMMUNICABLE DISEASE EPIDEMIC IN THE MIDDLE EAST AND NORTH AFRICA:

Prevention Among Young People Is the Key

DECEMBER 2017

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This policy report accompanies the data sheet entitled *Noncommunicable Diseases in the Middle East and North Africa: Addressing Risk Factors Among Young People Is Key to Curbing the Epidemic* that provides the latest available country-specific data and data sources on four key noncommunicable disease risk factors among young people in MENA since 2006. It is available at www.prb.org/Publications/Datasheets/2017/ncd-risk-youth-mena.aspx.

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CURBING THE NONCOMMUNICABLE DISEASE EPIDEMIC IN THE MIDDLE EAST AND NORTH AFRICA:

Prevention Among Young People Is the Key

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POPULATION REFERENCE BUREAU

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Introduction

Noncommunicable diseases (NCDs) have become the world's leading causes of death, accounting for 70 percent of all deaths globally in 2015. In the Middle East and North Africa (MENA) region, NCDs were responsible for 74 percent of all deaths in 2015, claiming the lives of 1.6 million people.[1]

The leading NCDs in MENA are cardiovascular diseases (CVDs), cancers, diabetes, and chronic respiratory diseases. These four main NCDs accounted for 1.3 million deaths, or 57 percent of all deaths in MENA in 2015—an increase from 0.9 million deaths in 2000.[2] In the coming decades, these NCDs are projected to account for an even greater proportion of the region's deaths. MENA countries have some of the world's highest diabetes rates, and CVDs are already the single largest killer in the region.[3] Chronic respiratory disease prevalence is also high and rising, reflecting MENA's high use of smoked tobacco. Moreover, the region's new cancer cases are projected to nearly double by 2030.[4]

Compared to high-income countries, NCDs in lower income countries generally claim lives at younger ages, often at the peak of individuals' economic productivity. While the likelihood of dying prematurely (between ages 30 and 70) in 2015 from any of the four main NCDs was 12 percent in high-income countries globally, it was 19 percent in MENA overall—20 percent in MENA's middle-income countries and 16 percent in the region's high-income countries.[5] NCDs pose a significant threat to the health and well-being of populations, economic growth, and sustainable development throughout the region, underscoring the importance of prioritizing their prevention.

The four main NCDs share four risk factors:

- Tobacco use.
- Harmful use of alcohol.
- Physical inactivity.
- Unhealthy diet.

These risk factors are all modifiable behaviors that are typically initiated or established during adolescence or young adulthood, setting the stage for NCDs later in life. The World Health Organization (WHO) estimates that behaviors begun in adolescence account for 70 percent of premature deaths in adults worldwide.[6] Preventing or reducing risk behaviors among MENA's youth today can minimize the future burden of the growing NCD epidemic.

This report describes the key NCD risk behaviors among young people in selected countries in MENA and provides examples of policy and program interventions to reduce these behaviors. It focuses on the following 19 countries: Algeria, Bahrain, Djibouti, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Syria, Tunisia, the United Arab Emirates (UAE), West Bank and Gaza, and Yemen.[7]

NCD prevention among young people also aligns with the targets of the WHO *Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013-2020* and the United Nations (UN) Sustainable Development Goals (SDGs). Both initiatives aim to reduce premature NCD deaths by one-third by 2030. Because the countries across MENA

Young men play soccer in Shibam, Yemen.

vary in their experiences and progress in addressing the risk behaviors among youth, valuable opportunities exist for countries to learn from the experiences of others, including their neighbors in the region.

Youth Offer a Critical Opportunity to Curb Epidemic in MENA

Most MENA countries have Muslim-majority populations and share Arabic as a common language, but their religious and cultural practices, political environments, and economic development levels vary widely. All 19 countries evaluated in this report, however, have experienced large increases in their youth population—from a total of 59 million in 1980 to 136 million in 2017 for the region. Young people—defined as ages 10 to 24—make up one in three people in West Bank and Gaza, and Yemen and, on average, one in four people regionwide.

Various societal and cultural changes related to globalization, urbanization, and economic growth are driving a rise in NCD risk behaviors among this large cohort of young people in MENA, setting them up for poorer health in adulthood than is found in adults today. Given that this young cohort is also much larger than the older cohorts they will replace, a window of opportunity exists now to modify their risk behaviors to change the trajectory of NCDs in MENA. The importance of addressing the health needs of the region's young people is also heightened because many are living in countries experiencing marked social, economic, and political change, including war, civil unrest, and population displacement during their transition to adulthood (see Box 1).[8]

The region's unemployment rate for youth ages 15 to 24 has worsened over time and is now the highest in the world, though rates vary across countries. The proportion of the 15-to-24-year-olds who are neither in employment nor in education or training (NEET) is estimated to be as high as 39 percent in Iraq, 28 percent in Jordan, and 31 percent in West Bank and Gaza.[9] Youth unemployment is linked to tobacco and alcohol use, unhealthy eating, and mental health disorders, such as depression and anxiety.[10]

Adolescence and young adulthood typically mark a period of experimentation and identity formation. This life phase represents a unique window of opportunity to encourage positive behaviors at a time when young people have increasing autonomy and control over their lives. In many countries in the region, this phase is now prolonged due to delayed marriage related to the high cost associated with getting married and starting a family.[11] This life course change may affect the likelihood of young people developing behavioral risk factors associated with NCDs.

Alcohol and tobacco use are often initiated during adolescence and young adulthood when peer pressure and

BOX 1

Refugee Youth Need Health Services and Interventions

The violent conflict and population displacement affecting about half of the countries in MENA create additional challenges to providing health services to people living in affected areas. War, displacement, and refugee camp living conditions can significantly impact the physical and mental health of camp residents, especially children and youth.

The United Nations Relief and Works Agency for Palestine Refugees (UNRWA) has conducted school-based surveys on student health and tobacco use among secondary school students in its five locations. The 13-to-15-year-old students in the refugee camps generally have high levels of tobacco use, physical inactivity, and overweight or obesity, which tend to be similar to or higher than local students' levels.[1] It is critical that interventions to address the risk behaviors reach the refugee youth living in the camps to ensure that they have an equal chance of growing up without NCDs and reaching their full potentials. Existing interventions designed to meet the needs of the refugee youth are, however, extremely limited.

In Jordan, the Integrated School Health (ISH) project has worked with students in government schools and youth centers inside the camps to improve the health of displaced Syrian youth living in refugee camps between January and November in 2016.[2] Most of the Syrian students have come from impoverished areas and their physical and mental health have been severely impacted by war and camp living. Funded by UNICEF and the Eastern Mediterranean Public Health Network, ISH promotes NCD prevention through healthy lifestyles, such as regular physical activity, healthy diet, and avoiding tobacco use. The project also provides physical exams and collects data on student health; trains teachers, nurses, and other key personnel on healthy lifestyle; and implements interventions to promote healthy lifestyles more broadly among teachers, parents, and the community.

REFERENCES

1 World Health Organization (WHO) and Centers for Disease Control and Prevention, "Global School-Based Student Health Survey, Fact Sheet, the Occupied Palestinian Territory," accessed at www.who.int/chp/gshs/palestine/en/, on Oct. 5, 2017.

2 NCD Alliance and WHO Regional Office for the Eastern Mediterranean EMRO, *Handbook of Civil Society Case Studies: Noncommunicable Disease Prevention and Control in the Eastern Mediterranean Region* (Geneva: NCD Alliance, 2017).

the desire to fit in among peers are high and developmental changes increase vulnerability to substance use and addiction.[12] Although dietary and physical activity patterns may start to form during childhood, adolescence and young adulthood are typically the time when they are more firmly established as youth gain more control over their diet and activities. When started or supported during this phase of life, healthy behaviors such as eating well and exercising regularly are likely to carry through to adulthood. Meanwhile, unhealthy habits started young can persist and be difficult to change.

Addressing NCD risk factors among youth is critical for building human capital. Healthier young people will have better cognitive skills, allowing them to perform better in school, achieve higher levels of education, and contribute better to economic growth and sustainable development. By monitoring trends and scaling up feasible, effective interventions to curb NCD risk behaviors among youth, countries in MENA can start their young people on a path toward a healthy adulthood and set the stage for a thriving and prosperous future.

The Four Main NCDs Share Four Key Risk Factors

TOBACCO USE

Tobacco use is by far the number one preventable cause of death globally, and is the only one of the four risk factors that contributes to all four main NCDs (CVDs, cancers, diabetes, and chronic respiratory diseases). Each year, tobacco use claims the lives of 6 million globally and this figure is projected to increase to 8 million by 2030.[13] Some MENA countries have among the highest tobacco and cigarette use rates in the world. Forty-five percent of men in Egypt were daily tobacco smokers in 2015 and 32 percent of men in Kuwait were daily cigarette smokers in 2014.[14] The cigarette market is growing at the world's highest rate in WHO's Eastern Mediterranean Region, which contains most of the countries in MENA. Overall, cigarette consumption in this region has increased by more than one-third since 2000.

Tobacco use is widely prevalent among young people across MENA countries. Among 13-to-15-year-old boys in secondary school, the most recent surveys show that more than half in the West Bank were current tobacco users (defined as using any tobacco products in the past 30 days including cigarettes, water pipes, and smokeless tobacco), followed by approximately a third in Iran, Jordan, Lebanon, and Syria, and more than a quarter in Bahrain and Kuwait.[15]

In over half the region's countries, more than one in two boys who are current tobacco users smoke cigarettes. While cigarette smoking is still relatively low in the region's other countries, signs point to cigarette use increasing as the tobacco industry targets the region's youth (and women) with advertising. According to WHO, one-third of tobacco experimentation among youth globally is due to tobacco advertising, promotion, and sponsorship (TAPS).[16] The large and growing population of young people in MENA is a prime target for the tobacco industry because the region's cultures have a long history of tobacco use and smoking is becoming increasingly more socially acceptable. Among secondary school students in Djibouti, one in six reported ever being offered a free tobacco product from a tobacco company in 2013. In Yemen, almost three in 10 reported owning items bearing a tobacco brand logo in 2014.

Girls' rates of tobacco use are typically half or less than boys' rates, especially for cigarette smoking. However, tobacco use among girls—particularly the use of products other than cigarettes such as water pipes and smokeless cigarettes—is increasing in some countries because of changing norms and greater access to different products.

One major concern in MENA is the growing use of water pipes (such as *shisha* and *nargile*), especially among youth. In Lebanon, about 40 percent of boys and 30 percent of girls ages 13 to 15 in secondary school reported currently using water pipes in 2011. Water pipe use is typically initiated earlier than cigarettes and acts as a gateway for cigarette smoking.[17]

Many people falsely believe that water pipe smoking is less harmful than cigarettes. However, the nicotine dose in a typical shisha smoking session is more than 1.7 times higher than that contained in one cigarette.[18] Furthermore, while secondhand smoke from any smoked tobacco poses health risks, one hour of exposure to shisha smoke compared to similar exposure to cigarette smoke may result in two to 10 times the amount of harmful chemicals in the air, including some that cause cancer.[19]

Although still much lower compared to water pipe use, e-cigarettes are also starting to become popular in the region, including in some countries where their sale is banned. Although the ingredients can vary, the nicotine in most e-cigarettes is still addictive, creating concerns among public health experts that e-cigarettes also may act as a gateway to cigarette smoking among youth. However, most available policy and program interventions for tobacco use both globally and in the region focus on cigarette smoking, but do not address water pipe or e-cigarette smoking. Greater attention to the use of these other tobacco products is urgently needed to protect the health of young people in the region.

Despite the high and increasing prevalence of tobacco use among youth in the region, the availability of cessation support for any type of tobacco products is substantially limited, especially those targeting young people. Although more than 60 percent of the secondary school students ages 13 to 15 in both Qatar and UAE in 2013 reported trying to stop smoking during the previous 12 months, only 26 percent and 21 percent of students in these countries, respectively, reported ever receiving help or advice from a program or professional to stop smoking. Given that large percentages of secondary school students who currently use tobacco reported wanting to stop smoking throughout the region, a critical need exists to step up the efforts to ensure that youth can access cessation support.

UNHEALTHY DIET AND PHYSICAL INACTIVITY

Unhealthy diets and physical inactivity globally contribute to about 12 million NCD deaths annually. These diet and exercise patterns together contribute to overweight and obesity, which in turn contribute to various NCDs such as type 2 diabetes, CVDs, and certain cancers.

While rates of overweight and obesity are rising among youth around the world, the rates are particularly high in parts of MENA, especially in the Gulf States. Surveys conducted between 2007 and 2015 show that more than 25 percent of male and female secondary school students, ages 13 to 15, in about half of the region's countries were either overweight or obese. As many as three countries had overweight and obesity rates that were 40 percent or higher among boys—Bahrain, Kuwait, and UAE—and one among girls—Kuwait (see Figure).

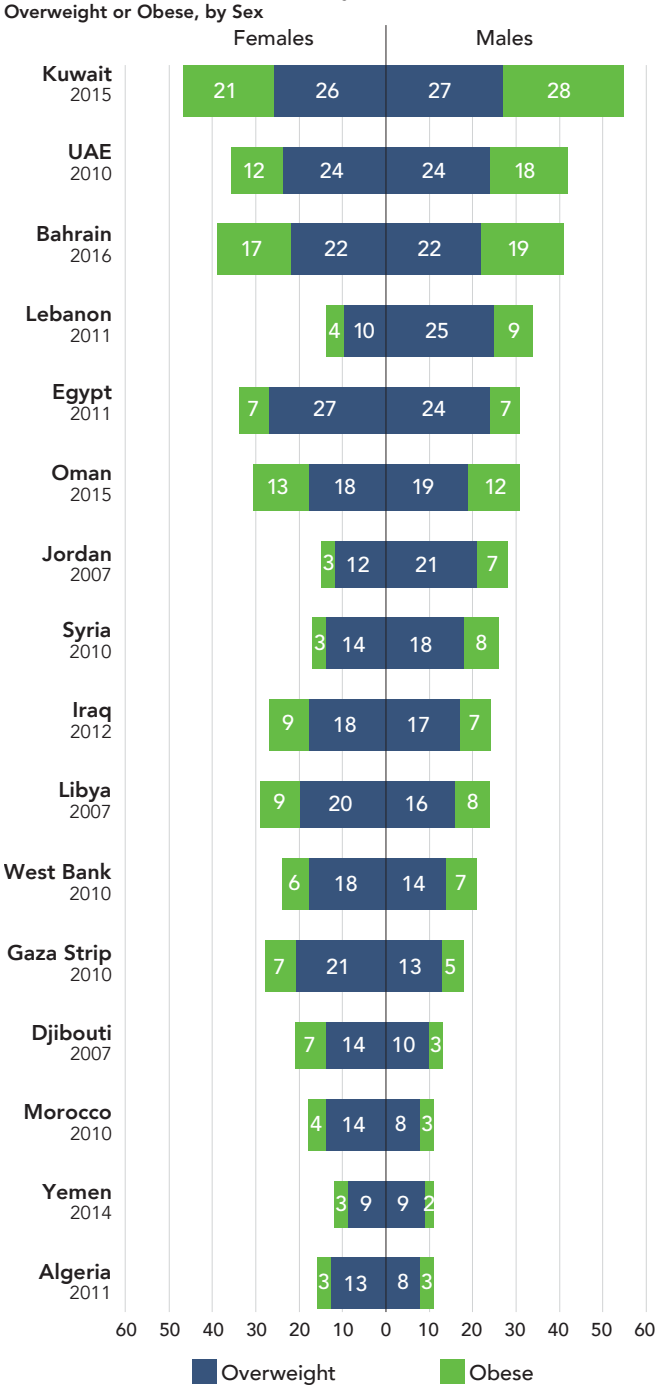
The high and increasing rates of overweight and obesity among youth in MENA are particularly troubling because of the high diabetes rates in some of the countries. According to the International Diabetes Federation, Bahrain, Egypt, Kuwait, Lebanon, Saudi Arabia, and UAE all have estimated prevalence rates of 15 percent or higher among the adult population ages 20 to 69 in 2017.[20] Between 2017 and 2045, the number of adults with diabetes in MENA is projected to double from 39 million to 82 million.

Diabetes not only lowers the quality of life, but it creates a significant financial burden—diabetics require two to three times the health care resources as people without diabetes (exact expenditure amounts vary across countries depending on available resources).[21] In Saudi Arabia, health expenditures per person with diabetes in 2015 were an estimated US$1,145, which is projected to increase to as high as US$1,430 by 2040.[22]

FIGURE

MENA Faces Overweight and Obesity Epidemic Among Youth

Percent of 13-to-15-Year-Old Secondary School Students Who Are Overweight or Obese, by Sex



Sources: World Health Organization and Centers for Disease Control and Prevention, Global School-Based Student Health Survey.

Students in Egypt walk home from school.

While many countries in the region are fighting high rates of obesity, others are facing the double burden of both increasing overweight and obesity on one hand, and persistent undernutrition on the other. Among 13-to-15-year-old boys in secondary school, 12 percent in Yemen in 2014 and 13 percent in Morocco in 2010 were overweight or obese, while 18 percent and 11 percent were underweight, respectively.

Unhealthy Diet

Youth in MENA have experienced substantial changes in their diet and physical activity levels over the last four decades due to the changing environment resulting from a combination of economic development, urbanization, and globalization. Though diet in the region varies across geography, there has been a shift away from healthier, traditional diets, generally consisting of vegetables, fruits, whole grains, and moderate or small amounts of fat and meat.

The diets of young people in the MENA region today consist increasingly of calorie-dense, highly processed food with large amounts of sugar, salt, and saturated fat. Young people also have greater access to soft drinks and other sugar-sweetened beverages that add substantially to their calorie intake. A nutrition study in the UAE showed that beverage calories were one of the major contributors to total calories consumed among youth, making up as much as 14 percent of total calories among boys.[23] In eight MENA countries among 14 for which data were available, half or more secondary school students (ages 13 to 15) reported usually drinking sugary carbonated soft drinks at least once per day during the past 30 days, with the rate as high as 77 percent in Algeria.[24]

Physical Inactivity

In addition to having a less healthy diet, young people spend less time being physically active and more time in sedentary activity such as watching television and using a computer. With urbanization and socioeconomic development, physical activity levels that used to be required for work and transportation have been significantly reduced. At the same time, being physically active and exercising outside has become more challenging due to heavy traffic, limited recreation spaces, air pollution, and crime-related safety concerns.

Physical activity levels are low in MENA for both sexes, but particularly for girls. While WHO recommends 60 minutes of moderate- to vigorous-intensity physical activity daily for young people ages 5 to 17, the share who do not meet the recommended level among 13-to-15-year-old secondary school students was extremely high across countries—around 70 percent to 80 percent among boys and 80 percent to 90 percent among girls.[25]

Physical activity not only helps young people maintain healthy weight and develop healthy bodies, it also helps with their mental health, reducing the anxiety and depression that are common among young people (see Box 2). Young people who are physically active are also generally less likely to have an unhealthy diet and to use tobacco and alcohol.

HARMFUL USE OF ALCOHOL

In 2012, an estimated 3.3 million deaths worldwide were attributable to alcohol, more than half of which were related to NCDs, primarily CVDs, diabetes, cancers, and gastrointestinal diseases.[26] Alcohol use among youth is also linked to many other health risks, including road traffic accidents, risky sexual behaviors, violence, and poor mental health. Because alcohol is particularly harmful to a young and developing body—and because early initiation substantially increases the likelihood of developing alcohol dependency later—any amount of alcohol use among children and youth should ideally be avoided.[27]

While alcohol ranks seventh among the leading risk factors for all types of deaths and disability globally, it ranks 25th among the risk factors in MENA countries.[28] This ranking may reflect low alcohol consumption in the region or it may partly reflect underreporting in surveys because of the stigma attached to alcohol use. Alcohol use is officially prohibited in some MENA countries, including Libya, Saudi Arabia, and Yemen, and is socially taboo in many other countries. Assessing the actual level of alcohol use in the region is therefore challenging for the entire population, and especially among youth.

Representative data on alcohol use among youth in the region is scarce. The Global School-Based Student Health Survey conducted by WHO and the US Centers for Disease Control and Prevention was administered in 18 MENA countries, but only three countries—Lebanon, Morocco, and Syria—have ever included questionnaires on alcohol use.

BOX 2

Mental Health Issues Among Youth Also Require Attention

Although mental health conditions are not among the four main NCDs identified by WHO, they are also important to address, particularly among young people. Major depressive disorder is among the top five causes of disability-adjusted life years (DALYs)—a key measure of the number of years of life lost due to premature death or disability—for the 15-to-19 and 20-to-24 age groups for both sexes in the WHO's Eastern Mediterranean region that includes most of the countries in MENA.[1]

Data on suicidal thoughts in the Global School-Based Student Health Survey are available in 11 countries and territories in the region (Bahrain, Gaza, Jordan, Morocco, Lebanon, UAE, Iraq, Yemen, Tunisia, West Bank, and Kuwait). In all of these countries or territories, at least 15 percent of secondary school students ages 13 to 15 reported having seriously considered attempting suicide in the previous 12 months.[2]

Many young people living in about half of the countries in the region are affected by violent conflict and mass displacement of populations. While mental health disorders, such as depression and anxiety, often emerge in adolescence, young people affected by societal violence, including armed conflict, civil unrest, and displacement, face a greater mental health burden.[3] A review of studies found that the estimated prevalence of post-traumatic stress disorder (PTSD) in children and adolescents ranged from 23 percent to 70 percent in West Bank and Gaza and from 10 percent to 30 percent in Iraq across studies.[4]

Mental health conditions are linked to all four NCD risk behaviors, including tobacco use, excessive alcohol use, lack of physical activity, and unhealthy diet. They can also affect adherence to medication for NCDs and other diseases. Mental health disorders severely diminish individuals' quality of life, as well as limit their academic and professional achievement, robbing society of their social and economic contributions. Policies and funding for mental health programs are currently a low priority throughout much of MENA. However, addressing the mental health conditions of young people is critically important for the future well-being of the region's youth and the economic and social health of the countries.

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2 World Health Organization and Centers for Disease Control and Prevention, "Global School-Based Student Health Survey, Fact Sheet," accessed at www.who.int/chp/gshs/factsheets/en/, on Oct. 20, 2017.

3 Carla Makhlouf Obermeyer, "Adolescents in Arab Countries: Health Statistics and Social Context," Doha International Family Institute (DIFI), *DIFI Family Research and Proceedings* (2015), accessed at www.qscience.com/doi/pdf/10.5339/difi.2015.1, on Oct. 20, 2017.

4 Lydia Dimitry, "A Systematic Review on the Mental Health of Children and Adolescents in Areas of Armed Conflict in the Middle East," *Child: Care, Health and Development* 38, no. 2 (2012): 153-61.

Among 13-to-15-year-olds in secondary school, the share who reported currently using alcohol (defined as any use in the past 30 days) were substantially higher in Lebanon at 37 percent and 22 percent among boys and girls in 2011, respectively, compared with 12 percent and 3 percent in Syria in 2011 and 6 percent and 2 percent in Morocco in 2006. The trend data available for Lebanon between 2005 and 2011 show increases by 28 percent among boys and 75 percent among girls over the six-year period, which narrowed gender differences in alcohol use. In both Lebanon and Syria, a large majority (88 percent) of students who reported ever having alcohol had their first drink before age 14.

Binge drinking, which is exceedingly harmful to the body, is more common among youth. More than one in five students (21 percent) in Lebanon reported ever drinking so much alcohol that they were extremely intoxicated, compared with one in 25 (4 percent) in Morocco. Despite the relatively low prevalence of current alcohol use and heavy episodic drinking in Morocco, as many as 15 percent of all boys and 12 percent of all girls in secondary school reported ever having a problem that resulted from drinking alcohol, such as having a hangover, feeling sick, getting into trouble with family or friends, missing school, or getting into fights.

Understanding alcohol use among young people in the countries across MENA, regardless of their official stance on alcohol use, is important since market research shows a sharp increase in overall alcohol consumption in the region between 2001 and 2011, including in countries that ban alcohol.[29] The sale of liquor grew by 72 percent in the region during the period, compared with the global average of 30 percent. While alcohol sales in some of the region's countries declined in recent years (due to economic slowdowns and increased health awareness in the public), market research documents continued growth in other countries. Egypt, for example, saw a steady increase in the sale of alcoholic beverages in 2016, despite the large price increases due to the introduction of a value-added tax and the devaluation of its currency.[30] While it is not clear whether any of the trends in alcohol sales reflected changes in consumption among young people themselves, it is possible that the trends may have influenced their behaviors.

TABLE

Risk Levels for Noncommunicable Disease Risk Factors Among Young People in MENA

	NCD Risk Factors Among Youth										
	Current Tobacco Use							Current Alcohol Use			
	Any Products		Cigarettes		Other Products		Year				
	Male	Female	Male	Female	Male	Female		Male	Female	Year	Male
NORTH AFRICA											
Algeria	17	3	12	1	6	1	2013 [4]	–	–		69
Djibouti	18	11	8	4	6	6	2013 [4]	–	–		81
Egypt	18	8	8	1	9	2	2014 [4]	–	–		77
Libya	11	5	6	2	8	4	2010	–	–		79
Morocco	14	5	8	2	–	–	2016	6	2	2006	86
Tunisia	20	4	12	2	12	3	2010	–	–		74
MIDDLE EAST											
Bahrain	27	10	21	5	–	–	2016	–	–		73
Iran	33	20	5	1	32	20	2007	–	–		
Iraq	19	9	8	4	11	4	2014 [4]	–	–		75
Jordan	34	19	17	7	28	17	2009	–	–		82
Kuwait	29	15	22	9	–	–	2015	–	–		81
Lebanon	42	31	18	6	42	31	2011 [4]	37	22	2011	58
Oman	12	3	9	2	–	–	2015	–	–		83
Qatar	23	9	15	5	11	3	2013 [4]	–	–		80
Saudi Arabia	21	9	13	5	15	7	2010	–	–		
Syria	32	17	11	3	29	17	2010	12	3	2010	81
United Arab Emirates	16	8	10	3	11	6	2013 [4]	–	–		66
Yemen	24	10	9	3	12	6	2014 [4]	–	–		85
West Bank and Gaza											
West Bank	44	20	29	8	31	15	2016 [4]	–	–		77
Gaza Strip	24	11	10	4	12	6	2013 [4]	–	–		71
UNRWA CAMPS[3]											
Jordan	32	16	19	7	20	10	2014 [4]	–	–		69
Lebanon	33	18	19	5	22	16	2013 [4]	–	–		75
Syria	50	34	20	6	43	31	2008	–	–		71
West Bank	48	25	31	13	31	15	2014 [4]	–	–		69
Gaza Strip	21	14	14	8	13	6	2013 [4]	–	–		74

Physical Inactivity			Overweight or Obese			
Female	Year		Male	Female	Year	
89	2011		11	16	2011	
91	2007	5	13	21	2007	
90	2011		31	34	2011	
89	2007	5	23	29	2007	
91	2016	5	12	18	2016	
89	2008	5			2009-10	8
86	2016	5	40	39	2016	
	[2013]	5,6			2011-12	9
86	2012		24	27	2012	
89	2007	5	28	14	2007	
85	2015	5	55	47	2015	
72	2011		34	14	2011	
90	2015	5	31	32	2015	
90	2011		–	–		
	2009-10	5,7			2009-10	10
89	2010		26	18	2010	
77	2010		42	36	2010	
92	2014	5	12	12	2014	
87	2010		21	24	2010	
81	2010		17	28	2010	
80	2010		28	20	2010	
89	2010		29	28	2010	
84	2010		–	–		
82	2010		23	28	2010	
83	2010		18	23	2010	

Definition of Risk Levels

High Risk Medium Risk Low Risk

Current Tobacco Use

Percent using cigarettes/other tobacco products/any products in the past 30 days among 13-15-year-old secondary school students[1]

- 16% or Above
- 7% to 15%
- Below 7%

Physical Inactivity

Percent not engaging in physical activity for at least 60 minutes per day on five out of the last seven days among 13-15-year-old secondary school students[2]

- 70% or Above
- 50% to 69%
- Below 50%

Current Alcohol Use

Percent having any drinks with alcohol in the past 30 days among 13-15-year-old secondary school students[2]

- 40% or Above
- 20% to 39%
- Below 20%

Overweight or Obese

Percent who are overweight or obese among 13-15-year-old secondary school students[2]

- 20% or Above
- 10% to 19%
- Below 10%

Notes: Data points for the risk factors appear for countries with comparable data available from the following surveys: Global Youth Tobacco Survey and Global School-Based Student Health Survey (GSHS) for tobacco use, and GSHS for alcohol use, physical inactivity, and overweight status. For the countries without data from these surveys, data from other sources were used whenever possible to assess risk levels.

Data points from these other surveys appear only when they are comparable with the data from the above sources. Only the colors representing risk levels are displayed for the countries without comparable data.

Technical notes and the data sources are provided in the accompanying data sheet at www.prb.org/Publications/Datasheets/2017/ncd-risk-youth-mena.aspx.

(-) Indicates data unavailable or inapplicable.
1 Based on the Global Youth Tobacco Survey and the Global School-Based Student Health Survey.
2 Based on the Global School-Based Student Health Survey.
3 Surveys were conducted in secondary schools in the refugee camps for Palestinian refugees in the respective countries by the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA).
4 Data refer to current use of other smoked tobacco products.
5 Data refer to physical inactivity level in seven (not five) out of the last seven days.
6 Sanaeinasab et al. (2013)
7 Al-Hazzaa et al. (2011)
8 Maatoug et al. (2015)
9 Kelishadi et al. (2013)
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Country and subregional surveys:

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Studying the alcohol use among youth is also important because the alcohol industry considers the region's large and growing population of young people a great opportunity to increase their sales. For example, it has started using innovative marketing strategies, such as introducing nonalcohol alternatives to enhance "brand recall" among its consumers, particularly young people.[31] Saudi Arabia has a total ban on alcohol, but low- or non-alcoholic beer is in demand among the large and growing youth and young adult population, who are the primary target for beer consumption. While sales of non- or low-alcohol beer products in Saudi Arabia stalled in 2016 due to economic slowdowns after showing steady growth earlier, young people ages 18 to 35 remained as the primary customers.[32] Alcohol companies have continued targeting young people by creating new flavors and running extensive advertising using satellite television channels and promotional campaigns in stores, such as offering discounts for purchasing multiple packs.

Egypt is one of only four countries in the region with an adopted national alcohol policy, including measures to keep alcohol away from young people, such as regulating alcohol advertising and marketing, mandating a minimum legal drinking age, and reducing the density of venues selling alcoholic beverages. Nevertheless, online retail of alcohol is becoming popular among young Egyptians.[33] Online retailing by two of the largest Egyptian alcoholic beverage companies provide wide access to alcoholic beverages, especially for young people, by making it possible to order from anywhere and to have products delivered to most locations.

Boys ride bicycles in Nizwa, Oman.

While neither Saudi Arabia nor Egypt have alcohol consumption data for a nationally representative sample of youth, the alcohol marketing trends described above—particularly the alcohol industry's targeting of young people—underscores the importance of collecting data. Assessing the levels of alcohol use among youth in all the region's countries, regardless of the existing alcohol bans or policies, will help those working to support healthy youth behaviors to stay abreast of the evolving situation and better plan for youth needs in the future.

Strategies Exist to Address Behavioral Risk Factors

The best way to prevent NCDs and their metabolic precursors—high blood pressure, cholesterol, and glucose-levels, and overweight and obesity—is to invest in the primary interventions to reduce behavioral risk factors. Because personal choice and environment affect young people's health behaviors, interventions need to target young people as well as those who influence them, and ensure that a range of supportive, reinforcing policies and programs are in place. Ideally, interventions are developed with feedback from young people themselves and involve them in planning and implementation when possible. By implementing a smart combination of effective, sustainable interventions that focus on creating long-lasting healthy behaviors, it is possible to make changes and see progress within a generation.

Successful implementation requires strong public and political commitment, multisectoral collaboration, strengthening of regulatory capacity, and coordination among responsible entities. The challenge does not fall to any single entity, but by collaborating across sectors on various risk-reduction strategies, multiple groups can create a powerful approach to support the health of young people and lower future costs. More intervention studies and rigorous evaluations of existing policies and programs in the region are necessary to understand what works in what contexts and which approaches are most cost-effective and sustainable. For example, many evaluations of diet or physical activity programs among young people have been unable to assess whether changes in behaviors were sustained, or whether they led to physiological outcomes such as reductions in weight. By expanding the evidence base in the region and drawing on global evidence, policymakers can have access to a growing number of best practices and effective interventions for addressing NCD risk behaviors among young people in the region.

Policy and Structural Measures

Policy and structural interventions are broad-based government laws, regulations, policies, or programs designed to create an environment that facilitates healthy behaviors and discourages harmful ones among all citizens, including young people. WHO has identified several "best buy" policy interventions that are cost-effective and high-impact, and also feasible to implement, even in resource-constrained settings. These approaches include: taxation and bans on advertising and promotion for tobacco and alcohol products, regulations for alcohol availability, enforcement of smoke-free environments in public places, and regulations for the food industry on salt and saturated fat content.

Recommended measures include:

- Taxes on harmful substances such as tobacco, alcohol, and soda to make them less affordable and accessible. The revenue generated from taxes can be used for interventions targeting substance use or for other health initiatives.
- Bans or restrictions on the advertisement, promotion, sponsorship, and sale of harmful substances to children or adolescents including tobacco, alcohol, and unhealthy food.
- Health warnings on tobacco and alcohol products, especially large graphic warnings on packaging.
- Enforcement of minimum age requirements for the purchase of tobacco products and alcohol, and restrictions on their sale near schools.
- Mandates for schools and other public places where young people congregate to be 100 percent tobacco and alcohol free.
- Regulation on the types of meals, snacks, and beverages that are offered in schools.
- Creation of safe public spaces and infrastructure for sports, leisure, active transport, and other forms of physical activity.
- Regulations governing the food industry such as directives on maximum salt, sugar, or saturated fat content in food products, and front-of-package food labeling.

Country Examples

Some countries in MENA have already begun to implement successful policy and structural interventions to curb harmful NCD risk behaviors. Although the extent to which they have improved the targeted health outcomes varies, development of these policies and regulations is an important step toward curbing NCDs.

Tobacco Control: The WHO Framework Convention on Tobacco Control (FCTC) is a legally binding treaty that requires countries to implement a number of evidence-based measures to reduce the demand for and supply of tobacco products, and to reduce tobacco harm. Almost all MENA countries have ratified the FCTC.[34] Only some countries, however, have implemented the treaty and levels of enforcement vary widely. Examples of MENA countries' progress on implementing FCTC measures include:

- All countries in the region impose some taxes on cigarettes, but only five have tax that accounts for more than 75 percent of the total product price, the rates research shows to be effective at reducing the demand for tobacco products—Jordan, Saudi Arabia, Tunisia, UAE, and West Bank and Gaza. For water pipe tobacco, only nine countries impose any taxes and only West Bank and Gaza sets the rate as high as 75 percent or higher, with a 79 percent imposed tax. Evidence shows that taxes work particularly well for young people who are more sensitive to price increases than adults.
- Iran, Libya, and West Bank and Gaza have complete bans on smoking in all public places, but only Iran has a high compliance rate. All other countries have partial or no bans. Research has shown that only a complete ban provides full protection from the harm of second-hand tobacco smoke for youth and the population in general.
- Bahrain, Djibouti, Iran, Libya, Qatar, and UAE ban all forms of TAPS, including advertising on television and internet, billboards, and at points of sale; featuring tobacco on television and in films; free distribution of products; and contributions to any events or activities. Because TAPS is a set of tactics that the tobacco industry uses to attract youth, completely banning these marketing activities is essential to prevent youth from initiating tobacco use.
- Djibouti, Egypt, and Iran require large health warnings on

all cigarette packages that cover at least 50 percent of both the front and back, and include graphic warnings known to be particularly effective for youth.

- Iran stands out in the region for receiving the highest rating on five of the six FCTC measures for monitoring country efforts. The one exception is taxation—taxes on the most popular brand of cigarettes are only 20.5 percent, compared with the recommended level of 75 percent.

Tobacco Control and Healthy Diet: Saudi Arabia and UAE imposed excise taxes of 100 percent for tobacco products and caffeinated energy drinks, and 50 percent for sugar-sweetened soft drinks in 2017.[35] The other countries in the Gulf Cooperation Council—a regional, political, and economic union that also includes Bahrain, Kuwait, Oman, and Qatar—are also expected to implement the taxes. The tax on sugar-sweetened beverages that Mexico introduced in 2014 has been successful in reducing overall consumption of these beverages in the population, particularly among young people. Because MENA has some of the world's lowest tobacco product and soft drink prices, the price increases are expected to induce some current users to stop and to prevent new users from starting.

Healthy Diet:

- In Oman, the Ministry of Health collaborated with other government agencies and the private sector, and succeeded in achieving a 10 percent reduction in the salt content in bread products produced by the bakeries supplying about 80 percent of the country's bread in 2015.[36] In 2016, the bakeries agreed to reduce the salt content further to 20 percent. Salt content is monitored regularly through sample testing conducted by the municipalities. Like many other countries in the region, average salt intake is high in Oman and is estimated to be twice the WHO recommendation at close to 10 grams per person a day. Reducing typically high salt content in bread products, which are staples in the diet in Oman and other countries in the region, is an important way to cut back on the population's overall salt intake.
- In UAE, as a part of its public school policy manual, the Abu Dhabi Education Council that governs public schools published clear mandatory requirements on promoting healthy eating within their school communities in 2015.[37] Schools are mandated to make healthy food options available in their cafeterias daily, including low-fat dairy products, at least one type each of cooked vegetables and vegetable salad, and at least three kinds of fruit. They are required to provide salad and fruit both during breakfast and lunch.
- In Qatar, the Supreme Council of Health released dietary guidelines in 2015 to complement the national nutrition and physical activity plan launched in 2011.[38] One of the main aims of the guidelines is to lower the risk of NCDs in the Qatari population. The nutrition guide defines six food groups as well as the number of daily-recommended servings and portion sizes for each group. Besides basic nutrition and fitness guidelines, it also describes the specific needs of children and youth and discusses the importance of parents helping children establish a healthy routine by modeling healthy eating and physical activity. Qatar plans to apply the guidelines on a public policy level to guide food industry marketing and nutrition labeling, and to develop guidelines for school meals and snacks.

Alcohol Control: According to the 2014 WHO Global Status Report on Alcohol and Health, only Algeria, Egypt, Oman, and Saudi Arabia in MENA have adopted national alcohol policies.[39] Seven countries have either all or most of the data about alcohol policies missing in the report. Some other countries have implemented different components of the policy as follows:

- Algeria, Egypt, Jordan, Syria, and Tunisia have excise taxes on alcoholic beverages, and Algeria, Egypt, Jordan, and Oman have a minimum legal drinking age (either age 18 or 21, depending on the countries and types of beverages). Research suggests that excise taxes and minimum legal drinking ages are most effective in reducing traffic fatalities among youth.
- Algeria, Jordan, Oman, and Egypt, have legally binding regulations on alcohol advertising, and Algeria, Jordan, Oman, and Iraq restrict the number of establishments selling alcohol for consumption either on or off premises in particular areas. Research links alcohol advertisements, especially those that target youth, and a large number of alcohol sellers per area to increased consumption of alcohol among young people.
- Algeria and Egypt are the only countries requiring health warning labels on alcohol advertisements, and no countries in the region require such labels on alcohol containers.
- Six countries in the region have a total drink driving ban—a zero alcohol limit for drivers—and another six have set legal blood alcohol content levels for drinking and driving.

Social and Behavior Change Interventions

Beyond policy and structural measures, strategic interventions can be used to increase knowledge and improve awareness about NCD risks, and encourage positive behaviors among young people. School is a logical entry point for intervention since young people spend much of their time there, and school-based interventions are typically highly cost-effective. But, given the many influences in young people's lives, interventions must also be strategically implemented within youth's broader social and cultural environments. For example, at home, parents and caregivers likely influence what foods young people eat as well as their exposure to and attitudes toward alcohol and tobacco. Similarly, all of the four key risk factors can be influenced when youth spend time in their communities, engage in religious or volunteer activities, buy goods and services, work, or socialize with friends.

Successful interventions to address each of the four risk factors should be comprehensive and include multiple components. For example, effective, school-based interventions on diet and physical activity should include lessons on healthy eating and physical activity led by trained teachers, exercise programs, healthy foods available on site, parental or family engagement, and supportive policies.

Given the range of influences on young people's behaviors, a diverse set of approaches can be implemented.

Some examples include:

- School-based nutrition, exercise, or harmful substance education and intervention programs.
- Media-based education and messaging via television, movies, and radio as well as social media platforms such as Facebook, Twitter, and YouTube. Mass media campaigns to warn the public about the tobacco and tobacco harms are an example of a WHO best buy intervention.
- Risk-factor screening, counseling, and tobacco and alcohol cessation programs, provided within a range of settings.
- Community-based education and behavior change programs.
- Workplace programs to encourage regular physical activity and other healthy habits.
- Local business initiatives to encourage responsible purchasing among youth.

Country Examples

Promising social and behavior change interventions in MENA exist and can offer valuable insights to inform planning and scale up.

Tobacco Control:

- In Egypt, during World No-Tobacco Day 2016, the Egypt Health Foundation launched Ermeha (Throw It), an initiative designed to discourage smoking during Ramadan.[40] To date, it has used a variety of tools including print and audiovisual materials, public events, and mass and digital media campaigns to raise awareness about the impact of tobacco use and secondhand smoke on health, particularly among youth. The social media campaign has reached 2 million internet users as well as garnered 40,000 likes, 40,000 subscribers, and 300,000 reactions through its Facebook page. The initiative uses various role models for youth, including celebrities, who also serve as champions for the cause. Key factors contributing to the program's success in reaching young people include partnerships with a variety of local organizations and the use of innovative communication strategies developed by young people themselves.
- In Egypt, Hayah Bela Tadkheen, a nongovernmental organization, launched an anti-tobacco campaign in 2004 that included a cell phone application offering comprehensive guidance on how to stop smoking.[41] The widespread use of mobile phone technologies among young people makes the application easily accessible. Specifically, the application enables the user to identify the best strategy to stop smoking based on individual characteristics such as age, health, and the amount of tobacco consumed; offers advice on how to resist smoking triggers; provides a question-and-answer service for medical advice; and offers recommendations for where to get free testing and treatment. It also sends out cessation incentive messages, invitations to events, and various polls that, in turn, allow the organization to build a database on smokers, their behaviors, and attitudes for further improving the application. Involving young people who work on mobile application technologies was key to the program's success.

- In Lebanon, an intervention study to prevent or delay initiation of water pipe tobacco smoking was conducted among about 1,600 6th and 7th grade students over five months in 2012.[42] The students in intervention schools received eight to 10 of a 50-minute session to increase knowledge about the health impact of water pipe and other tobacco product use; to increase media literacy; to develop decisionmaking and refusal skills; and to make a "social promise" by signing a group pledge to avoid smoking for a period of time. The sessions used a participatory approach and included games, videos, and role play. The evaluation showed that students from the intervention schools were less likely to report having used water pipe tobacco in the month prior to the end of the study (48 percent versus 55 percent). Knowledge and attitudes toward water pipe tobacco smoking after the study also differed between the two groups, with 81 percent of the students in the intervention schools demonstrating knowledge of water pipes compared with 54 percent in the control group schools.

Tobacco Control, Healthy Diet, and Physical Activity: The Nizwa Healthy Lifestyle Project (NHLP) is the oldest, community-based health promotion project in Oman, begun in 2004 to prevent NCDs by addressing tobacco use, unhealthy diet, physical inactivity, and road and household accidents in Nizwa Wilayat, a district with a population of more than 80,000.[43] The project includes a wide range of population-based interventions, including school programs and those that target high-risk groups. Examples of school-based programs include integration of the "Move for Health" exercise program in Nizwa's primary school curriculum. The program, initially developed to promote physical activity among children in the Gulf States, offered teaching modules and guidance for providing interactive training on physical activities and a parents' guide. The program also introduced whole grain bread and low-fat dairy products to the markets as well as schools. The NHLP also established gymnasiums in two female secondary schools to promote physical activity among female students. The program evaluation conducted in 2009-2010 does not report results specific to young people but demonstrates improvements in various health behaviors in the general population. For example, the percent of the population aware that physical inactivity is a risk factor for NCDs increased from 7 percent to 93 percent, while the percent participating in physical activity during leisure time increased from 39 percent to 71 percent between 2001 and 2010.

Healthy Diet and Physical Activity:

- In Sousse, Tunisia, a three-year, school-based overweight and obesity intervention study was conducted in three regions between 2009 and 2012.[44] The program encouraged physical activity and healthy eating among students in the intervention schools using various measures: educational sessions provided by teachers who received training from the program, organized soccer games after school, and healthy options in school snack stores with a monthly reward for students choosing healthy snacks. The program also trained some students as leaders and involved them in implementing the program. An evaluation showed a significant increase in fruit and vegetable consumption and a significant decline in the number of overweight students in the intervention schools, while changes in the opposite direction or no change were observed among the students in the control group.
- In Dubai, UAE, a school-based obesity intervention program was conducted in private schools covering grades one through 12 (ages 5 to 18) over three consecutive academic years between 2014 and 2017.[45] Interventions to address overweight and obesity among students included physical activity programs, nutrition education, and school cafeteria policies and guidelines on serving healthy food options. The program also implemented "happy school" initiatives to promote students' holistic development, promoted obesity awareness among parents, and gave awards to schools making unique achievements in supporting the health and well-being of students. The body mass index (BMI) measurements taken at the end of each academic year in June show reduction from 10 percent to 8 percent in the share of obese students over the three-year period.[46]
- In Oman, the WHO's Health-Promoting Schools Initiative was implemented in 2004 and provided interventions to promote healthy eating, physical activity, and mental health.[47] It targeted students in all grades in 19 schools with the initial phase lasting for four academic years. The wide range of interventions included an anti-tobacco campaign, expanded green space within the school environment for physical activity, substance abuse education, revised school food policies, and increased physical education time. The program also incorporated components that involved parents and community, including offering evening physical activity classes for mothers. An external evaluation of the program showed that students in health-promoting schools were significantly more likely to eat breakfast and to have fruits and vegetables three or more times per day (the recommended amount) than those in nonprogram schools. The students in health-promoting schools demonstrated greater knowledge of nutrition, physical activity, hygiene, and tobacco use compared with those in nonprogram schools.

Physical Activity: In UAE, the Ministry of Education implemented a new physical and health education curriculum in government schools in all grades from kindergarten to grade 12 in 2017.[48] The new curriculum covers a wide range of topic areas, including health and well-being, fitness training and testing, diet and nutrition,

and anatomy and physiology—focusing on practical and interactive activities. It also includes an English component to teach students how to read nutrition information on products that are typically available only in English. The curriculum also involves parents to encourage their children to develop healthier behaviors.

Alcohol Control: In Bahrain, a national anti-drug campaign titled "Together Against Violence and Addiction" was launched in 2011 by the Interior Ministry to encourage young people to lead safe and healthy lives by resisting negative influences, such as alcohol, drugs, and violence.[49] The program is part of the U.S.-based international initiative called Drug Abuse Resistance Education (D.A.R.E.) and is the first to be delivered in Arabic. D.A.R.E. programs are conducted by local police officers globally. The program in Bahrain provided extensive training of community police officers, resulting in 124 officers trained by 2015, and reached 66,000 students in 110 government schools.

Strengthening Data Collection Is Essential for Moving the NCD Agenda Forward

Up-to-date data on young people's risk behaviors and associated factors are essential for identifying needs and developing appropriate responses to combating them. Data availability, however, varies substantially across countries in the region. Data sources include country-specific, national, or subnational surveys; global or regional school-based surveys such as the Global School-Based Student Health Survey and the Arab Teens Lifestyle Study; and global household surveys such as the Demographic and Health Survey and the survey for the WHO STEPwise Approach to NCD Risk Factor Surveillance. Data from these surveys are valuable and are often the only information on the young people available for decisionmaking. Many important challenges remain. Some of the surveys listed above have not been repeated in recent years and the data on risk behaviors may be out of date. For example, of the 16 countries that have ever conducted the

Students play in Khobar, Saudi Arabia.

Global Youth Tobacco Survey, almost half conducted the latest surveys five or more years ago (2012 or earlier). While country-specific or subregional surveys available in some countries may provide more detailed, context-specific data, the indicators may not be comparable with those from other locations, hindering cross-country comparisons and learning. While school-based surveys are a cost-effective way to collect information on a large number of youth, they miss out-of-school youth who can be a sizable and high-risk group. Finally, surveys targeting the general population may not have sample sizes of young people large enough to produce reliable estimates.

Data on some risk behaviors, especially alcohol use, are available only in a small number of countries. Because alcohol use is socially stigmatized and is a sensitive issue in many parts of the region, it is critical that survey methods ensure respondent's anonymity to provide protection and to increase validity of responses. The scarcity of population-based surveys on alcohol use can be augmented by using additional data sources, such as data based on clinical samples of alcohol users, sales data from market research, mortality data with causes of deaths information, and data from primary research studies to improve our overall understanding of the alcohol use situation among youth in the countries.[50]

As countries continue to implement surveys and collect more data, consensus is needed on a core set of cross-culturally valid and comparable indicators to be collected for each NCD risk factor and associated factors among young people. Timely and comprehensive data collection is critical yet can be resource intensive. Potential cost-effective approaches include piggybacking on other data collection efforts by including questionnaires on NCD risk behaviors and adding young people to the pool of survey respondents.

Strategies should be in place to ensure prompt and wide dissemination of survey results in an easy-to-understand, nontechnical format. Equally important is ensuring that the latest available evidence reaches key decisionmakers so that policies and programs are developed based on the latest available evidence.

Students study in Agadir, Morocco.

MENA Countries Can Reduce the NCD Burden and Create a Healthy, Prosperous Future

NCDs increasingly threaten the health and economic security of MENA countries. These diseases will continue to place a growing burden on health care systems—and limit economic growth and development—by significantly increasing health care costs and reducing the productivity of working-age people. This negative trajectory can be averted. The decisions made today can change the course of the future if preventing NCD risk behaviors becomes a priority. With a large and growing population of young people, the region's countries now have a window of opportunity to lower NCD risk factor levels among youth to ensure that they live healthy, productive lives and curb the growing health and economic burden of NCDs for individuals, families, and societies.

A successful effort to adapt and scale up strategies to address the four key NCD risk behaviors among young people will require collaboration and coordination across multiple sectors as well as involvement of young people themselves. Filling the critical information gaps with frequent, comprehensive surveillance of risk factors as well as rigorous monitoring and evaluation of policies and programs is also essential for identifying the most effective and sustainable interventions for the countries in the region. Investing in the health of the young is essential for building the foundation of the countries' future. Helping youth avert the premature onset of NCDs and enabling them to reach their full potential will decrease health care costs and enable them to more fully contribute to national growth and vitality. Today's actions for youth will set MENA countries on a path toward continued economic growth and prosperity.

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