

Tobacco Use in Adolescents

Amani Al Hajeri, MD, CABFM, IBFM, MSc MG*

Tobacco is well known risk factor for many serious diseases, which could cause incredible economical burden. Tobacco in its various forms is hazardous to health but cigarette smoking poses a greater risk. It is estimated that one in three adults, or 1.1 billion people use tobacco and it is expected that this number will reach 1.6 billion by 2025¹.

Studies show that adults who do not start smoking at young age are unlikely to start smoking later in their lives, see figure 1. Moreover, those who start at a younger age are likely to become heavy smokers. It is estimated that every day there are between 82,000 and 99,000 young people starting to smoke worldwide¹.

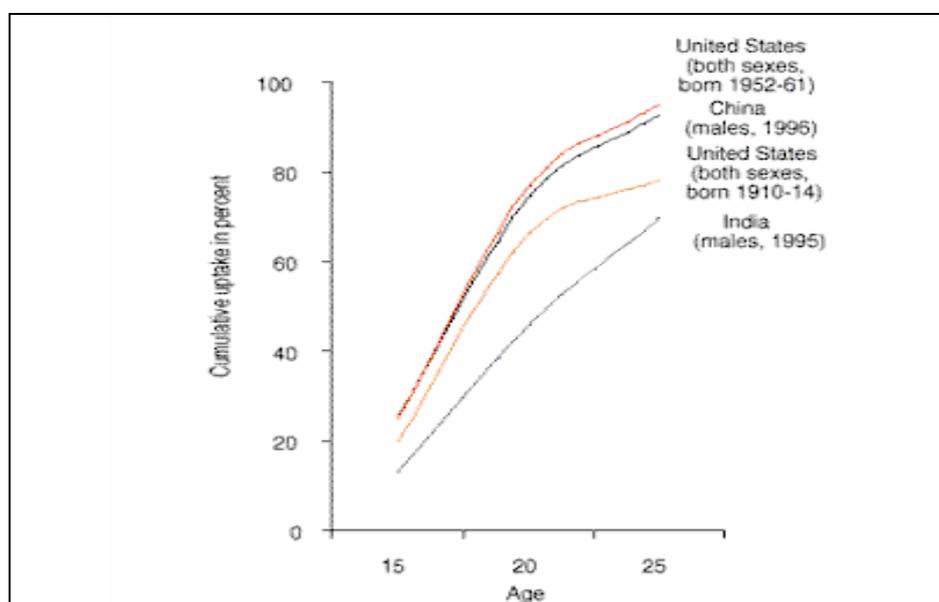


Figure 1: Smoking Trend-Starting at a Younger Age (Source: Bank Report. *Curbing the Epidemic: governments and the economics of tobacco control* 1999)

Current figures suggest that 150 million adolescents worldwide use tobacco². Unfortunately, adolescent seems to be more subjected to the adverse health events related to smoking such as, respiratory diseases, elevation in serum lipids and nicotine dependence³⁻⁵.

This article is part of the BMB coverage of the international anti-tobacco campaign; it aims to highlight the importance of targeting the adolescent population; highlight the current efforts to fight tobacco use among youngsters and the optimal ways of designing a quitting program at the level of primary health care.

* Clinical Geneticist
 Genetic Department
 Salmaniya Medical Complex
 Kingdom of Bahrain
 Email: alhajeriamani@gmail.com

Prevalence and Risk Factors

According to many reports, there was a decline of tobacco use among adolescent during the 1970s and 1980s but there was a sudden rise during the 1990s^{6,7}.

Smoking rates among boys in Gulf Cooperation Council countries (GCC) are very similar to those of industrialized countries. Nevertheless, the overall prevalence of smoking female and male youths in GCC countries is still much lower due to fewer female smokers⁸⁻¹¹.

Risk factors known to promote tobacco use among adolescents include^{12,13}:

1. Socioeconomic factors such as the parents level of education and occupation.
2. Environment-related factors such as parents' smoking or acceptance of smoking, availability of cigarettes, perception that tobacco use is the norm, peer and sibling pressure and cigarette advertising.
3. Behavioral and personal-related factors such as low academic performance, low self-esteem, type of personality and rebelliousness. Psychiatric stress disorders also play a role, such as attention-deficit/hyperactivity disorder and depression, which have been linked to increased adolescent smoking rates.

Smoking among Girls

It has been observed in many regional studies that the prevalence of smoking among females is far less than males^{8,12,14}. Nevertheless, there is a noticeable increase of smoking Shisha (water pipe) among local girls.

International figures reporting on girls smoking habits are also alarming. It is estimated that 7% of the surveyed girls smoke, see figure 2. The figure reveals that girls who are cigarette smokers represent 2% in the eastern Mediterranean region; however, other tobacco use among girls represent 9% (mainly Shisha)¹⁵. In Bahrain, Shisha use is demonstrated in figure 3.

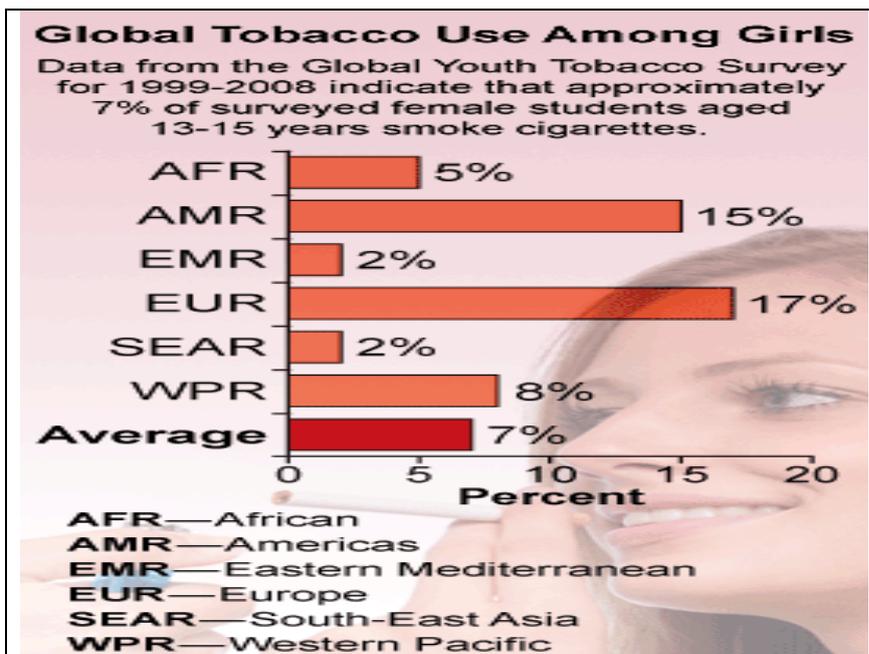


Figure 2: Tobacco Use among Girls by Region (Source: Centers for Disease Control and Prevention, http://www.cdc.gov/Features/dsTobacco_Use_Girls/)

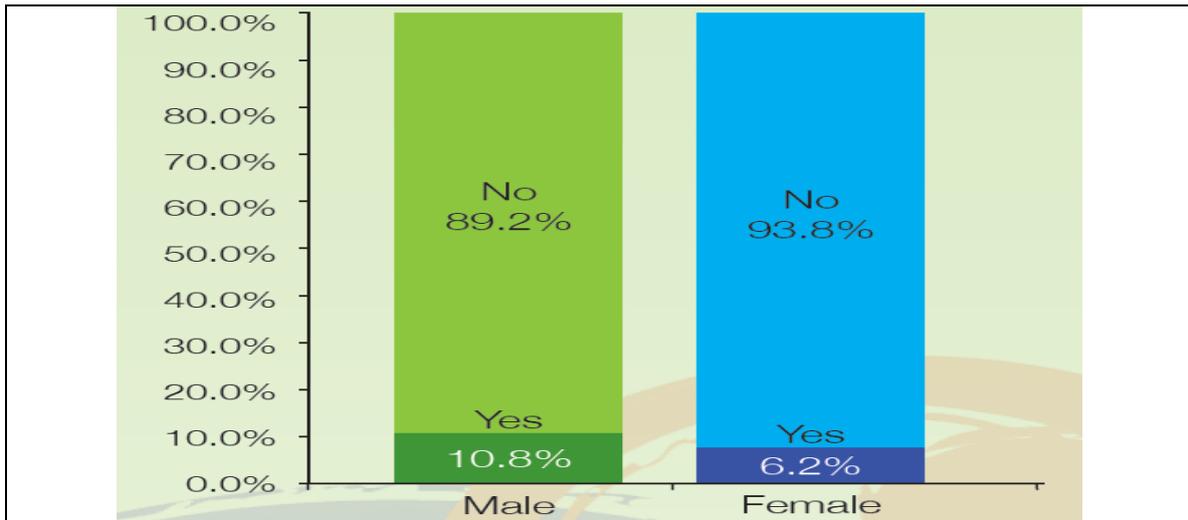


Figure 3: Prevalence of Currently Smoking Shisha/Water-Pipe according to Sex
(Permission from Reference 16)

The rise in female tobacco use is not unexpected if one takes into account that it is the strategy of many major tobacco companies to target young females¹⁷.

The prevalence among boys in the GCC ranged from 18.4% in Yemen to 34.2% in Bahrain; but the overall prevalence of lifetime cigarette smoking among boys was about twice that among girls¹⁴. In addition, girls are more likely to use Shisha than to use cigarettes in these countries¹⁴.

Measures to Reduce Tobacco Use in Adolescents

Screening and Assessment

Since the family physician is the one most likely to encounter the adolescent population, this provides a good opportunity to screen them for tobacco use. Despite the lack of evidence to recommend for or against routine screening for tobacco use among adolescents, many authorities do recommend determination and documentation of tobacco use and exposure to secondhand smoke at every office visit¹³.

A well recognized screening and interventional tool is the 5 A's method (ask, advise, assess, assist, and arrange), see table 1. It should be implemented for all adolescents visiting the family physician particularly when they are not accompanied by their parents. Nevertheless, family involvement is very important during the intervention.

Table 1: 5 A's Method for Tobacco Intervention (Compiled from Reference 13)

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1. Ask about tobacco use at each appointment
 2. Advise all adolescents who are smoking to stop
 3. Assess adolescent's willingness to attempt quitting
 4. Assist efforts to quit
 5. Arrange reliable follow up
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Treatment

Most studies recommend an aggressive interventional approach for adults, more than 16 years old adults, 'to quit tobacco use'. However, there is a limited evidence of the effectiveness of these interventional programs in adolescents in the primary care setting¹³. Nevertheless, there is enough evidence to support interventional programs in schools through conducting classrooms smoking cessations sessions¹⁸.

Available therapeutic modalities for adolescents include counseling, nicotine replacement therapy and psychoactive medication, such as bupropion and combination therapy. Only the nicotine patch/nicotine gum and bupropion therapies have been studied in adolescents. These studies showed a reduction in the number of cigarettes smoked daily but low abstinence rates¹⁹:

- A. Although counseling adolescents to quit smoking is controversial, there are many studies which showed a positive outcome. One drawback of counseling adolescents is the brief visit to a primary care doctor might be insufficient for proper counseling^{13,19}.
- B. Nicotine patches or gum showed a decrease in the number of cigarettes smoked, but abstinence rates of only 5 percent after six to 12 months compared to 30 percent in adults¹³.
- C. Psychoactive medications such as bupropion have proven to be safe and effective for adolescents with a cessation rate of 27%. However, it is not yet approved by the U.S. Food and Drug Administration for tobacco cessation in adolescents¹³.
- D. Combination of therapeutic modalities, counseling with pharmacotherapy, in adolescent proved to be more effective than single modality¹³.

Other therapeutic modalities have been suggested, such as, school based clinics in which sessions are organized for a limited number of smoking pupils. More studies are needed to address the effectiveness of such clinics¹⁹. Internet quitting sites seems very appealing to target teens, see figure 4, especially if they have attractive features such as animation, chat rooms and real stories of famous youths successfully quitting smoking. Unfortunately, no data is available on this approach.



Figure 4: Internet Site Dedicated to Help Teens to Quit Tobacco Use

Community Based Actions

Public health approaches are essential to promote quitting smoking and other tobacco use among youngsters and anti-tobacco advertisement proved to be very efficient in reducing the rate of smoking among adolescents during the late nineties¹³. Banning smoking at schools also proved to decrease smoking rates up to 40%²⁰. Increasing the price of tobacco also appears to be quite effective in decreasing tobacco use in both adolescents and adults¹³.

Restricting the selling of tobacco to adolescents might seem unpractical but it could be a very efficient tool if supported by law. Increasing the taxes on smoking materials is also beneficial because it does ultimately reduce tobacco consumption by adolescents²⁰.

King Hamad bin Issa Al Khalifa of Bahrain issued the law, following approval by the bicameral parliament, which prevents planting, manufacturing or reprocessing of tobacco in the country. The regulation also bans smoking in public places such as airports, public transport, health centers, government offices, schools, pharmacies, hospitals, religious building, shopping complexes, restaurants, cafes, hotels, cinemas, lifts, hair salons, phone booths, ATMs, private cars carrying children and markets. In spite of the law issued in April 2009, violations have been recorded with no deterrent penalties.

It is important that shops are banned from selling cigarettes to teenagers less than 18 years. The violators should be fined and the establishments should be shut down for three months²¹.

In 2004, “quit smoking clinic” was established by the Ministry of Health directorate at Al Hoora health Center. The aim of this clinic is to counsel smokers regardless of age or gender or the type of tobacco used and to provide suitable and feasible nicotine replacement therapy when indicated. This clinic is open for self referred patients or those referred from other health centers. A clinical guideline has been suggested for health professionals in health centers to follow, see figure 5. Unfortunately, there is no specific strategy to screen or treat adolescents seen in our local centers.

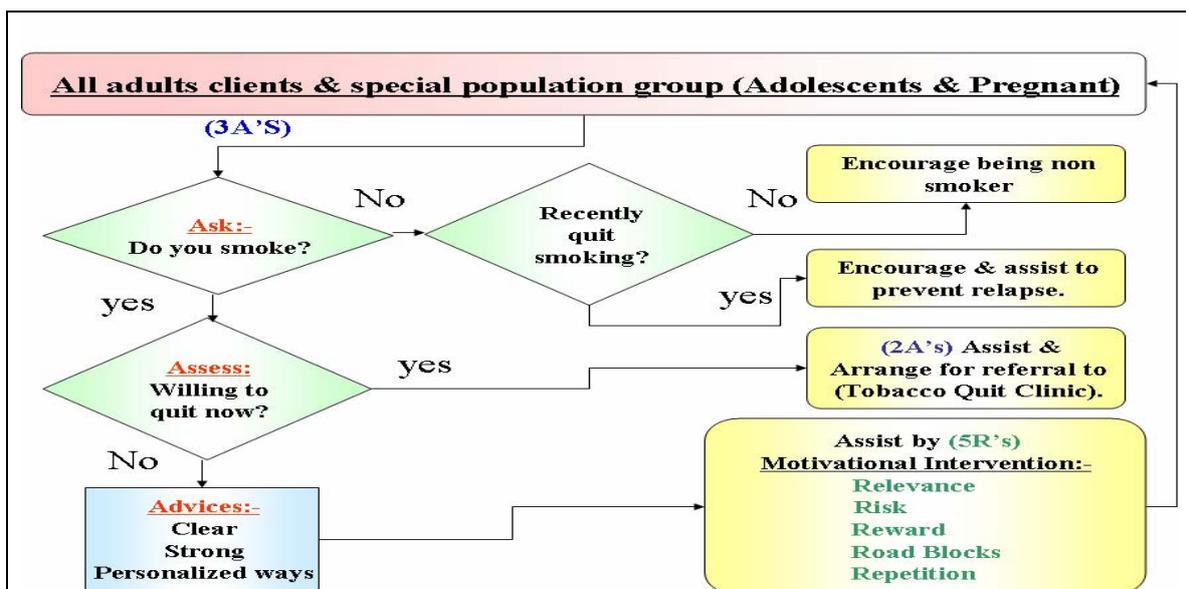


Figure 5: Screening Plan for Tobacco Users (Flowchart is Courtesy of Dr. Kadhem Al Halwachi, November 2004)

CONCLUSION

Despite the fact that there is not enough evidence to support screening or intervention for adolescents using tobacco, the provision of help and counseling as with the adult population is recommended. There is a lack of research assessing the effectiveness of smoking cessation interventions for adolescents. Therefore, it is strongly recommended that more research be conducted on this age group which shows a high dependence rate and a tendency to continue tobacco use for longer periods.

More effort to control smoking in schools is needed. Parents should be encouraged to help their children to quit and school programs have to be designed to fight tobacco use. More emphasis on smoking Shisha among youngsters needs to be undertaken especially among girls. Finally, government commitment needs to be enforced and strong penalties have to be applied to violators.

REFERENCES

1. Prabhat Jha, Frank J. Chaloupka p. cm. World Bank Report (Development in Practice 1999). Curbing the Epidemic: Governments and the Economics of Tobacco Control. Chapter 1. <http://www1.worldbank.org/tobacco/book/html/chapter1.htm>. Accessed on 12.07.2010.
2. Bancej C, O'Loughlin J, Platt RW, et al. Smoking Cessation Attempts among Adolescent Smokers: A Systematic Review of Prevalence Studies. *Tob Control* 2007; 16(6): e8.
3. US Department of Health and Human Services. Preventing Tobacco Use among Young People: A Report of the Surgeon General. US Department of Health and Human Services, Atlanta, Georgia: 1994.
4. Myers MG, Brown SA. Smoking and Health in Substance-Abusing Adolescents: A Two-Year Follow-up. *Pediatrics* 1994; 93: 561-6.
5. Dwyer JH, Rieger-Ndakorerwa GE, Semmer NK, et al. Low-level Cigarette Smoking and Longitudinal Change in Serum Cholesterol among Adolescents. The Berlin-Bremen Study. *JAMA* 1988; 259: 2857-62.
6. Nelson D E, Giovino G A, Shopland D R, et al. Trends in Cigarette Smoking among US Adolescents, 1974 through 1991. *American Journal of Public Health* 1995; 85: 34-40.
7. Martin T. Global Smoking Statistics for 2002. Overall Stats and Youth Smoking Facts. About.com Guide. Updated 28 January 2007. <http://quitsmoking.about.com/cs/antismoking/a/statistics.htm> Accessed on 22.06.2010.
8. Hamadeh RR. Smoking in the Gulf Cooperation Council (GCC) Countries. *Bahrain Medical Bulletin* 1998; 20: 91-4.
9. Bawazeer AA, Hattab AS, Morales E. First Cigarette Experience among Secondary School Students in Aden, Republic of Yemen. *Eastern Mediterranean Health Journal* 1999; 5: 440-9.
10. Maziak W, Mzayek F. Characterization of the Smoking Habit among High School Students in Syria. *European Journal of Epidemiology* 2000; 16: 1169-76.
11. Reid DJ, McNeill AD, Glynn TJ. Reducing the Prevalence of Smoking in Youth in Western Countries: An International Review. *Tobacco Control* 1995; 4: 266-77.

12. Al-Haddad N, Hamadeh R. Smoking among Secondary-school Boys in Bahrain: Prevalence and Risk Factors. *Eastern Mediterranean Health Journal* 2003; 9(1/2): 91-4.
13. Rosen IM, Maurer DM. Reducing Tobacco Use in Adolescents. *Am Fam Physician* 2008; 15; 77(4): 483-90.
14. Al-Mulla A, Helmy S, Al-Lawati J, et al. Prevalence of Tobacco Use among Students Aged 13-15 Years in Health Ministers' Council/Gulf Cooperation Council Member States, 2001-2004. *Journal of School Health* 2008; 78(6): 337-43.
15. Centers for Disease Control and Prevention. http://www.cdc.gov/Features/dsTobacco_Use_Girls/. Accessed on 22.06.2010.
16. AlSayyad J, Omran A. National Non-communicable Diseases Risk Factors Survey 2007. Ministry of Health, Bahrain 2010: 17-27.
17. Partnership for Smoking or Health. Tobacco Industry Targeting of Women and Girls. http://www.moalpha.org/docs/news/tob_partnership/women_target.html. Accessed on 22.06.2010.
18. U.S. Preventive Services Task Force. Recommendations Statement. Counseling to Prevent Tobacco Use and Tobacco-caused Disease. <http://www.ahrq.gov/clinic/3rduspstf/tobaccoun/tobcounrs.htm>. Accessed on 22.06.2010.
19. Mermelstein R. Teen Smoking Cessation. *Tobacco Control* 2003; 12(Suppl 1): i25-i34.
20. Sargent JD, DiFranza JR. Tobacco Control for Clinicians Who Treat Adolescents [Published Correction Appears in *CA Cancer J Clin* 2003; 53(5): 316]. *CA Cancer J Clin* 2003; 53(5): 102-23.
21. Bahrain Issues Strict Anti-Smoking Law. <http://www.mybahrain.net/viewtravelnews.asp?ID=509>. Accessed on 28.06.2010.