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POLICY BRIEF

PUBLIC HEALTH & EPIDEMIOLOGY AXIS - SMOKING

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Title: Cigarette and Waterpipe Smoking in Lebanon

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SUMMARY

Tobacco use is the number one cause of preventable mortality. Five million deaths each year are attributable to smoking, with an estimated rise of as much as 10 million deaths per year by the 2030s¹. Yet, despite the widespread awareness of the harms of smoking, millions continue to smoke around the world partly due to the difficulty it takes to quit smoking. Concerning waterpipe smoking, its popularity is dramatically increasing in Lebanon, reaching 36.9%, the highest among countries in the region².

Based on evidence from multiple research conducted on asthma in children, INSPECT-LB produced recommendations regarding several aspects of cigarettes and waterpipe smoking.

POLICY IMPLICATIONS/MAIN RECOMMENDATIONS TO THE MINISTRY OF PUBLIC HEALTH

- Endorse the incorporation of shocking images and health textual warnings on tumbac and cigarette boxes. Significantly higher intentions to quit smoking were associated with a higher motivation and influenced by shocking images and health related warnings on tobacco boxes.
- Initiate public health educational programs and interventions to surge the intention to quit cigarette and waterpipe smoking as the first step of quitting.
- Encourage health care professionals to play an important role in explaining the side effects of waterpipe smoking in order to decrease dependence.
- Set up awareness campaigns to increase alertness on dangers of waterpipe smoking and dependence and encourage young adults to embrace health-promoting behaviors.

SUMMARY OF THE RESEARCH FINDINGS

Introduction

Many waterpipe smokers falsely consider that waterpipe smoking is a less dangerous and toxic alternative to cigarettes². This evidence validates the extensive potential damage of waterpipe smoking, as well as its addictive nature.

Previous findings estimating the economic burden of major cancer due to smoking showed that smoking was responsible for 16.5% of cancer deaths, 17.2% of years of potential life lost and 21% of the cost of productivity^{3,4}. A waterpipe session consistently implicates almost 200 puffs, with an average puff volume exceeding 500ml among actual waterpipe tobacco smokers in real life situations⁵, much more than the quantity inhaled by cigarette smokers (500-600ml of smoke)^{6,7}. Smoking cessation among adult smokers is critically imperative to improving public health initiatives since about 50% of smokers die from tobacco-related diseases.

Coronary heart disease (CHD) is the single largest cause of death in the developed countries and is one of the leading causes of disease burden in developing countries as well⁸. Smoking was responsible for 16.3% of cancer deaths, 17.2% of years of potential life lost and 21% of the cost of productivity in Iran (2012)⁴. Cigarette smoking may be an important factor in potential changes in lipid profile already in young healthy people^{9,10}. A significant increase in total cholesterol and LDL-C is well shown in tobacco users, as compared to non-tobacco users¹¹⁻¹³. Thus, smokers have less

favorable lipid profiles, even after accounting for current and lifetime smoking history and other CVD risk factors ¹⁴.

Background and Outcomes

The first study involved 382 patients randomly chosen from 5 outpatient clinics in 5 hospitals in Lebanon. Past attempt to quit waterpipe smoking was significantly higher among smokers who have cough and expectoration for more than 3 weeks (Odds Ratio ORa=8.2), at higher stages of readiness to quit (ORa=2.78) and being highly motivated (ORa=2.27). A longer duration of abstinence to smoke waterpipe was higher among waterpipe smokers less than 45 years (ORa=6.85), who considered very important to report health warning on tumbac packages (ORa=3.09) and with a low waterpipe dependence (ORa=2.13). Moreover, 40.8% of participants reported having higher stages of readiness to quit while 33% and 7.9% of them intended to quit in 2 and 6 months later respectively. Higher stages of readiness to quit were associated with high motivation to quit smoking (ORa=1.98; $P=0.007$), chronic wheezing and real quit attempt duration of ≥ 1 month (ORa=2.35, $P=0.020$ and ORa=2.15, $P=0.003$, respectively). Highly motivated smokers (ORa=1.83, $P=0.040$), who would have changed their favorite pack due to the graphical warnings (ORa=2.11, $P=0.010$) and who had past quit attempt (ORa=4.39, $P<0.001$) had more intention to quit in 2 months. Having past quit attempts would increase the intention to quit in 6 months by 7.48 times (ORa=7.48, $P=0.007$). Smokers who have chronic allergies (ORa=2.45, $p=0.03$), those who have ever stopped smoking for at least one month due to the warnings implemented on the packages (ORa=4.6, $p<0.0001$) and smokers with an intention to quit in 2 months (ORa=2.49, $p<0.0001$) had significantly more past quit attempts. Furthermore, longer quit attempts duration (more than 1 month) were significantly associated with low-nicotine dependent smokers (ORa=0.56, $p=0.02$), higher-motivated smokers (ORa=1.85, $p=0.01$), people with chronic allergies (ORa=2.07, $p=0.02$), smokers who have ever stopped smoking for at least one month due to the warnings (ORa=3.72, $p<0.0001$) and those with an intention to quit in 2 months (ORa=1.98, $p=0.05$) ^{15,16}.

The second study was a cross-sectional study conducted in 4 laboratories, chosen from 4 different districts in Lebanon. All patients coming for a regular blood test to the laboratory and who were 18 years old and above, were included in the study. However, patients treated with a statin were excluded since statins are established in the primary and secondary prevention of coronary artery disease ¹⁷. Furthermore, patients having thyroid disorders at the time of the study were also excluded for hyper- and hypothyroidism can affect lipid levels and thus change the risk estimation of coronary heart disease ¹⁸. Exclusion criteria also included individuals with a history of cardiovascular, endocrine, dementia or gastrointestinal disorders.

Current cigarette smoking (Beta=25.57; $p<0.0001$) was significantly associated with higher LDL levels and higher total cholesterol levels (Beta=53.29; $p<0.0001$) in exclusive cigarette smokers. Among current cigarette smokers who were current waterpipe smokers, a significant increase in LDL level was observed relative to current cigarette smokers who were not waterpipe smokers (Beta=66.64 vs Beta=37.37; $p<0.001$) ¹⁹.

Current waterpipe smoking was significantly associated with and total cholesterol levels (beta = 34.12). Cumulative WS (number of waterpipes per week \times duration in years) was significantly associated with higher LDL-C and total cholesterol levels respectively ($p < 0.001$ for all 3 variables). The university level of education (beta = 8.89) and current alcohol drinking (beta = 8.81) were significantly associated with higher LDL scores. Our study demonstrated an association between previous or current waterpipe smoking and lipid level. Future research are needed to detect the direct cause of the relation between waterpipe smoking and cardiovascular disease ²⁰.

Conclusion

All aforementioned projects were conducted by the public health axis of INSPECT-LB; many other projects are already submitted to peer reviewed journals and some are still ongoing.

Members of INSPECT-LB public health axis are ready to discuss any of these suggestions with the Ministry of Public Health, and present all needed documents. Hoping that these efforts would optimize the patient's health.

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