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6.3.3 Conclusions on the Effect of THS on Tobacco Use Initiation among Non-Users

The introduction of an MRTP into the market could have a negative impact on the health of the population as a whole, if the MRTP could cause never smokers to initiate tobacco use or former smokers to relapse. For public health planning, it would be ideal to have epidemiological data available on actual use trajectories to ascertain the potential negative impact on non-smoker populations. However, this is not possible before the product is marketed. Behavioral intention (i.e., self-reported intention to try or use the MRTP regularly, in this case THS) is a reasonable proxy to assess the effect of THS on tobacco use initiation among adult never smokers and former smokers.

6.3.3.1 Likelihood of THS Initiation among Adult Never Smokers

Studies conducted in the PBA program consistently showed that THS is not attractive to adult never smokers, as evidenced by the very low levels of Intent to Use reported by study participants exposed to various THS communications (Section 6.3.1). In the THS-PBA-02-US qualitative study, reasons expressed by adult never smokers to reject THS were twofold: (i) because THS contains tobacco, and (ii) because of the statements contained in the THS communications ("using THS 2.2 is addictive and can harm your health," and "it is not for non-smokers."). In the [THS-PBA-03-US] quantitative study, exposure to "plain text" messages on THS generated low positive Intention to Use[1] THS among adult never smokers (≤3% for each of the 5 messages tested) and LA-25 adult never smokers (≤6% for each of the 5 messages tested). Following exposure to branded communication materials (i.e., THS Brochure, Tobacco Sticks Pack, THS Direct Mail), positive Intention to Use was particularly low for both adult never smokers and LA-25 adult never smokers throughout all tested materials and all claims (between 0 % and 1.1 % positive Intention to Use in [THS-PBA-05-RRC-US], [THS-PBA-05-RRC2-US], and [THS-PBA-05-REC-US]).

Together, the findings from quantitative PBA studies (i.e., [THS-PBA-03-US], [THS-PBA-05-RRC-US], [THS-PBA-05-RRC2-US], and [THS-PBA-05-REC-US]) demonstrated that the Intent to Use THS was very low among young adult never smokers (LA-25 Never Smokers), and at a level comparable to that of adult never smokers of a wide age range. Consistently, the body of results across studies indicates that THS is not perceived as attractive by adult never smokers.

Levels of Intention to Try THS were found similar to levels of Intention to Try CC and e-cigarettes for all THS communication materials tested, regardless of the modified risk claim. These findings suggest that adult never smokers are unlikely to be more attracted to try THS than they would with other tobacco products .

[1] Positive intention to use was operationalized as the percentage of study participants who responded "*Very Likely*" or "*Definitely*" to the Item "*If you try THS and like it, how likely or unlikely are you to use THS regularly*".

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The results from the PMI PBA program are overall in line with tobacco use trends observed in the US. The prevalence of cigarette smoking in adults as well as in youth populations has decreased over the last decade, and the overall prevalence of alternatives to CC is considerably higher among current cigarette smokers than among never smokers (Section 6.3.2). The evidence from pre-market PBA studies support the conclusion that persons who never used tobacco products – including young adults – are unlikely to find THS to be of sufficient interest to start the use of THS, even in the event of significantly lower risk than cigarettes, mainly due to the fact that THS contains tobacco and is addictive.

6.3.3.2 Likelihood of THS Initiation among Adult Former Smokers

Adult former smokers consistently reported low levels of Intent to Use THS across all PBA studies that assessed THS communication materials. Positive Intention to Use THS among adult former smokers ranged from 4.1% to 15.7% when exposed to "plain text" product messages, and from 1% to 6.4% when exposed to branded labeling and advertising materials, regardless of the types of modified risk claims. These findings are in accordance with the fact that the large majority of study participants (> 92%) in PBA quantitative studies (i.e., [THS-PBA-03-US], [THS-PBA-05-RRC-US], [THS-PBA-05-RRC2-US], and [THS-PBA-05-REC-US]) had a correct understanding that THS is not intended for non-smokers (reported in detail in Section 6.4.1).

The levels of Intention to Use THS among adult former smokers were similar to the low levels of Intention to Use CC or e-cigarettes. These findings indicate that adult former smokers are as likely (or unlikely) to relapse with THS as they are to relapse with other tobacco products already available to them. Thus, the observed levels of Intent to Use among former smokers seem not to be specific to THS, but rather appear to represent a general interest in tobacco or nicotine-containing products (which is, in turn, consistent with their smoking history).

Overall, positive Intention to Try or Use THS regularly was slightly higher among adult former smokers compared to adult never smokers in all PBA studies. These results are consistent with the trends observed in the US, showing higher rates of tobacco initiation among persons who have been smokers in the past compared to those who have never used tobacco products (Section 6.3.2).

The evidence provided by the PBA studies support the conclusion that THS is unlikely to be attractive to adult former smokers who might be influenced to re-initiate the use of tobacco products.

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6.3.3.3 Likelihood that Non-Users who Adopt THS Switch to Cigarette Smoking

The assessment of the degree to which THS use leads to subsequent switching to cigarette smoking requires epidemiological data, as this cannot be measured before the product is on the market. The only evidence available to date comes from epidemiological studies on alternative tobacco products that are currently on the market in the US.

Based on the retrieved published literature on e-cigarette use, 4 studies reported an increased risk of cigarette smoking initiation in e-cigarette users (Table 29 in Section 6.3.2). In all these studies, e-cigarette use was defined as "ever use" and smoking initiation as "ever cigarette smoking even a few puffs". Given the fact that not all ever users or ever smokers continue to either use e-cigarettes or smoke cigarettes, these results provide little evidence on the role of e-cigarettes as precursor of continued cigarette smoking.

Based on the review of 5 studies assessing the risk of cigarette smoking among smokeless tobacco users (Table 34 in Section 6.3.2), 3 studies reported an increased risk of cigarette smoking in those who used smokeless tobacco, while 2 other studies found no difference in risk. These conflicting results may be partially linked to differences in study design and definition of smokeless tobacco use and cigarette initiation, but overall they provided little evidence on the degree to which smokeless tobacco use leads to subsequent switching to cigarette smoking.

Extrapolation from e-cigarette and smokeless tobacco use experience in the US to assess the likelihood that THS may be a gateway to smoking needs to be considered with caution. The experience and overall proposition offered by THS is clearly very distinct from e-cigarettes and smokeless tobacco, and it is only with post market data on actual usage patterns and use/smoking trajectories among adult smokers, adult never smokers and adult former smokers that we will be able to determine whether persons who adopt THS are likely to switch/switch back to cigarette smoking (see Module 8 for more details).

In addition to the data presented in Section 6.3, to address the possible influence of the introduction of an MRTP on cigarette smoking initiation, relapse and gateway effects, simulations were conducted using the population health impact model (PHIM) as described in details in Section 6.5. The outcomes of these specific simulations are reported in Section 7.4 PHIM Simulation_ Sensitivity Report.

In Summary, the evidence presented in Section 6.3 demonstrates that persons not currently using CC (i.e. adult never smokers and adult former smokers) do not find THS to be of sufficient interest to start the use of THS, and this independently of the presence of a reduced risk versus reduced exposure claim or of the format of the communication (i.e., THS Brochure, Tobacco Sticks Pack or THS Direct Mail).

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