

Waterpipe Smoking: The pressing need for risk communication through health warning labels



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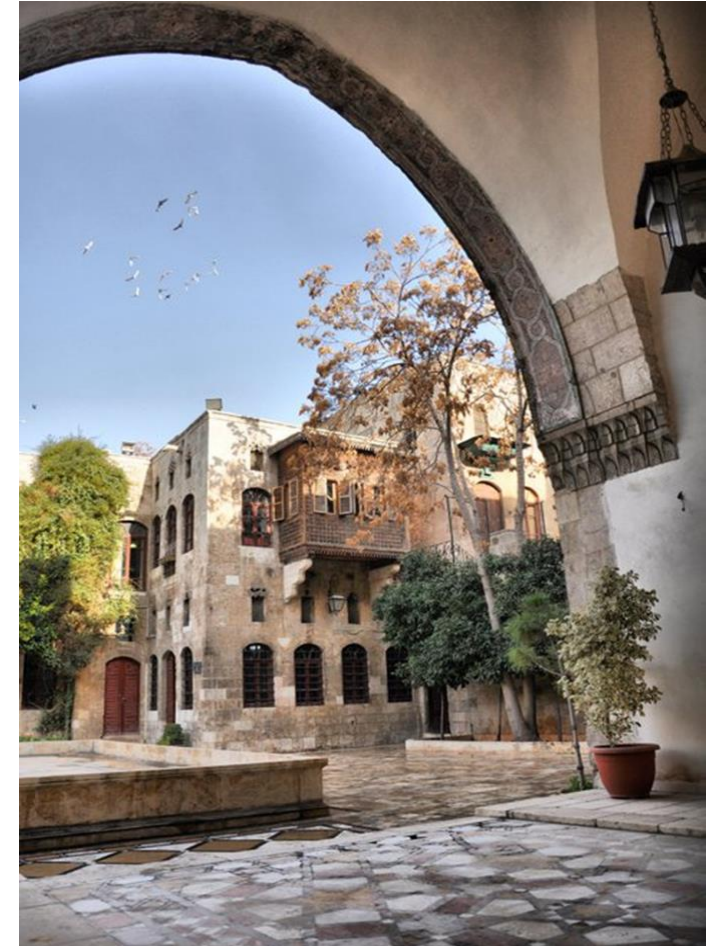
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Translating evidence and building capacity to support waterpipe control in the Eastern Mediterranean

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The main collaborators are:

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- University of Miami, Dr. Taghrid Asfar
- American University of Beirut, Dr. Rima Nakkash
- Faculty of Medicine of Tunis, Tunisia; Dr. Habiba Ben Romdhane
- University of Memphis, Drs. Kenneth D. Ward & Michael Schmidt
- Virginia Commonwealth University, Dr. Thomas Eissenberg
- University of South Carolina, Dr. James Thrasher





Aims

- Understand late nicotine dependence trajectories among a cohort of young waterpipe (WP) and cigarette smokers in Lebanon
- **Develop and test WP-specific health warning labels (HWLs) for the EMR using a mixed methods approach**
- Conduct situational analysis of local tobacco control policy environment in Tunisia and Lebanon
- Train researchers in Tunisia and Lebanon through a mixture of didactic training and applied mentored research

Objectives

- The potential of HWLs for WP regulations
- Challenges for developing HWLs for WP
- The development of the first set of HWLs for WP using Delphi study among international expert panel
- Adapting the developed HWLs to the target population using focus groups
- Further testing of the HWLs in experimental and lab studies

The need to communicate the risk of WP with smokers

- In most countries in the EMR, WP smoking has become the No. 1 tobacco use method among youth
- WP's rise among youth has been fueled by widespread misperception of “reduced-harm” compared to cigarettes, falsely attributed to the “filtering” effect of water
- Accumulative evidence shows that WP smoking can lead to dependence, and many of the known smoking-related diseases
- There is an important gap in communicating available evidence about the harmful and addictive nature of WP smoking to young people

Why Health Warning Labels?

- HWLs represent an important strategy for communicating the risks associated with WP smoking globally (e.g. FCTC; Article 11)
- HWLs can serve as portable sources of health information for smokers and nonsmokers as they will be displayed each time the product is used
- HWLs on cigarettes proved to be effective in encouraging smoking cessation, and discouraging initiation among young people





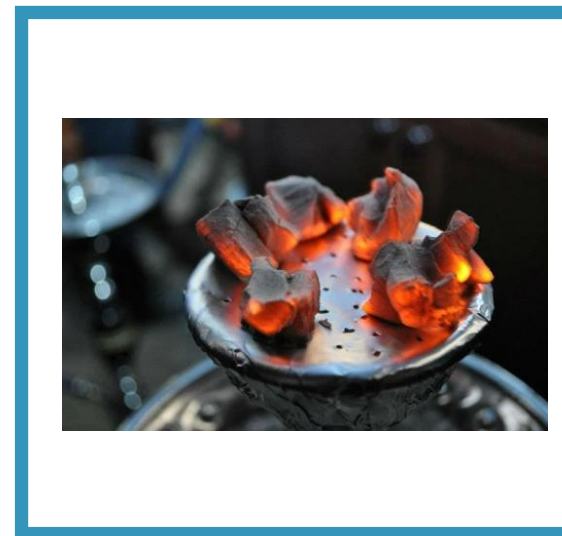
Challenges for developing HWLs for WP

- The WP is a multi-component tobacco use method (*e.g., tobacco, device, and charcoal*)
- The setting of WP use (*e.g., smokers in café are served a pre-prepared WPs, and are not exposed to HWLs on the tobacco package, while their extended contact with the device*)
- WP specific risk (*e.g., using the charcoal to heat the tobacco*)
- WP social context (*e.g., sharing WP*)



Adaptation of HWLs to WP

- Tobacco package
- Device
- Charcoal
- The WP café/lounge - Menu



Choose your hookah

Step 1

Choose Your Head

All hookahs start at \$12.99, customize yours any way you like! You can have your tobacco served out of a fresh fruit head for a longer lasting, more flavorful session, or a traditional ceramic head.

There is a 3 person maximum per 1 hookah.



Step 2

Choose your flavor

You can mix as many as 4 flavors, but we recommend keeping it 3 or less for flavorful choice. We use Al Fakher and Starbuzz tobacco, the finest in the world, made from real fruit, molasses and tobacco leaves. Ask your friendly server for recommendations!



Al Fakher

Apricot
Banana
Berry

Melon
Mint
Oranges



Starbuzz
(\$3.99 Charge)

Blackberry
Blueberry
Blueberry

Pomegranate
Purple Savor
Queen of Sex

Step 3

Choose your base

Flavor can be added to the base where the smoke is filtered for an extra smooth, fragrant hookah session.



- Water Base (no charge)
- Milk Base - \$4.99 charge
- Orange Base - \$4.99 charge
- Strawberry Base - \$4.99 charge
- Coke Base - \$4.99 charge
- Fanta Base - \$4.99 charge
- Watermelon Base - \$4.99 charge
- Pineapple Base - \$4.99 charge
- Energy Drink Base - \$4.99 charge

Step 4

Choose your hose

Healthy Hose - \$4.99 Charge

PLEASE DO NOT SMILE, YOU LEND THE HOSE

Iced Hose - \$2.99 Charge

Regular Hose - No Charge

- Extras and After Smoking Charges:**
- Natural Coconut Shell Coals - \$0.99 Charge
 - Same Flavor Tobacco Refill - \$8.99
 - Different Flavor Tobacco Refill - \$9.99

Broken Hookah - \$99.00 Charge



Age Restriction

HOOKAHS

(18 AND UP ONLY / MUST HAVE I.D. !!)

Traditional Tobacco / \$17 per Hookah:

POMEGRANATE	WATERMELON	MINT
DOUBLE APPLE	VANILLA	CAPPUCCINO
COCONUT	TROPICAL BLEND	MANGO
JASMINE	VANILLA	WHISKEY
BLUEBERRY	ROSE	COLA
		ORANGE
		LEMON

House Specialty Blends (add \$2)

TURKISH DELIGHT (rose and lemon)

COCOA LIBRE! (coconut and vanilla)

CANDY GRAM (mango and pomegranate)

MAGIC COFFEE (mint and cappuccino)

ON THE ROCKS (whiskey and cola)

CREAMSICLE (vanilla and orange)

CUP CAKE (rose and vanilla)

MINT JULEP (mint and whiskey)

Herbal Shisha (sugar-cane) / \$17 per hookah

STRAWBERRY	DOUBLE APPLE
MINT	FLOWER POWER

Extras

2 FLAVOR BLEND: ADD \$2

RE-PACKS: \$12-REG, \$15 FOR A

EXTRA COALS: \$1 EA

**RE-PACKS: (AVAILABLE ONLY IF THERE'S NO WAIT LIST)

Warning: Tobacco smoking is a proven cause of lung cancer and heart disease.

Warning:



As with cigarettes, Hookah can cause serious oral disease

Develop the first set of potential WP-specific HWLs



The gap in the current literature

- Several attempts to test HWLs for WP smoking were reported, however;
 - Mostly, HWLs that were tested were developed for cigarette, or proposed by researchers, or local health professionals (e.g., health ministry)
 - None were developed through a scientific and evidence-based process
 - None considered the uniqueness of this tobacco use method

Guidelines for developing and testing HWLs

Consider 2 main factors:

The context in which the label will be embedded

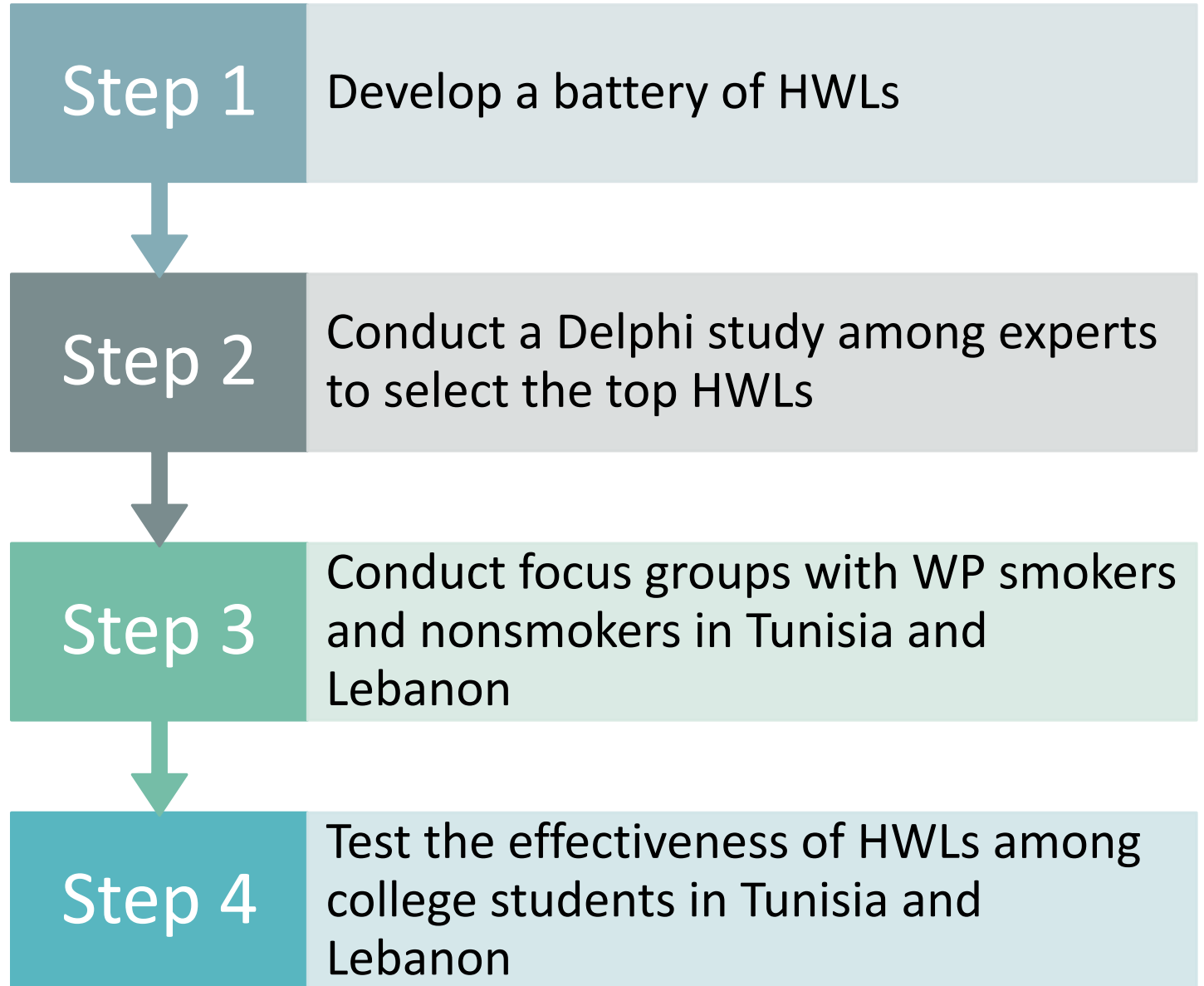
Characteristics of the target population

Evaluate the HWLs through a combination of:

Formative evaluation: conducted while the HWLs are being developed (e.g., Focus groups with the target population)

Summative evaluation: which involves quantitative testing of the final HWLs (e.g., experimental & lab studies)

Our plan



Step1. Develop a battery of HWLs

- Review of WP literature to identify priority themes for WP health effects
- Develop the content (image + text) of the HWLs
- Adapt the general design of prototype HWLs in terms of design
 - Font size
 - Colors
 - Borders
 - General appearance
 - Layout (size, placement) for WP's 3 components

Review of WP literature

- Multidisciplinary experts in WP research reviewed the WP literature to identify priority themes for negative effects of WP smoking
- Five major themes were identified:
 - Health risks associated with WP smoking (*e.g., lung cancer, oral cancer, cardiovascular & respiratory diseases, periodontal disease, and skin disease*)
 - Addiction (*nicotine dependence*)
 - Harm to others (*e.g., exposure to second hand smoke*)
 - WP-specific harms (*e.g., exposure to CO, metals and carcinogens from using charcoal, infection from sharing WP*)
 - WP harm compared with cigarettes

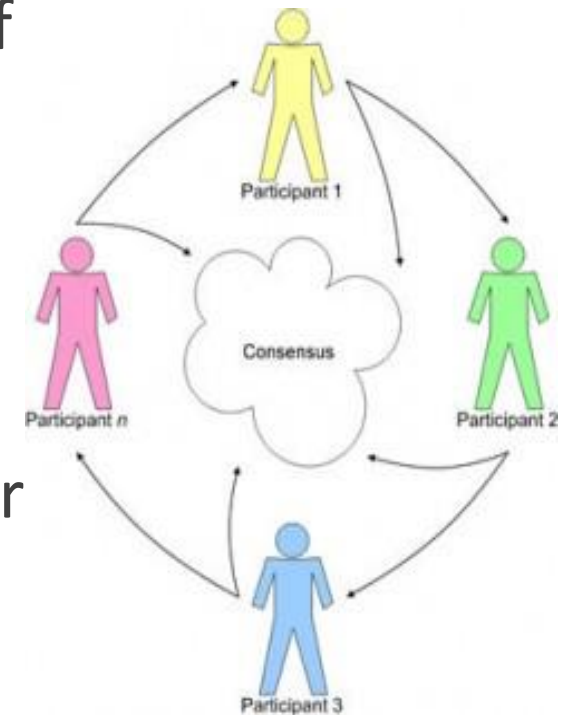
Develop the HWLs content (image + text)

- **TEXT** - Develop at least five messages for each theme
- **IMAGE** - Select an image for each message:
 - Review existing HWLs for cigarettes (e.g. www.tobaccolabels.org), and FDA labels (US) that could be adapted for WP, as well as HWLs that had already been developed and tested for WP
 - Main considerations for selecting the images were to be clear, easy to understand, can arouse emotion, and lead to interest or curiosity
- Construct the HWL (text + image) to decide on the general design (color, size, e.g., use the word “WARNING” in large black on yellow background)

Step 2: Conduct a Delphi study among international expert panel to select the top HWLs

- We recruited by email a panel of 30 experts in areas of WP control, HWLs, public health graphic design, and FDA regulations (*40% male; 14 from the USA, 11 from Middle East, three from Europe, one from Canada, one from Australia*)

Participants completed 3 rounds of Delphi questions to reach consensus on a set of the most effective HWLs for each theme



Delphi study: Round (1)

- HWLs was sorted into five groups corresponding to the five themes
- Participants were instructed to view the labels and rate them from 1 (not at all important), to 10 (very important) on five dimensions:
 1. Attention - (notice, engagement, size, color)
 2. Communication - (message clarity, understandability, believability)
 3. Identification - (relatedness to participants)
 4. Harm perception
 5. Intention to quit
- Participants were also asked to suggest revisions for improvement (e.g., language level and tone of the text, and its synergy with the picture).

Delphi study: Round (2)

- Participants were provided a link to another online survey that showed the HWLs that had been revised based feedback from the first round
- HWLs in each theme were ordered in terms of importance based on results from the 1st round rating from the most important (highest score) to the least important (lowest score)
- Participants were instructed to view the HWLs in each group and rank them in the order from most important to least important):

“To aid judgement of importance you may want to consider the effect of the HWLs in term of: attention (notice, general design); communication (clarity, understandability, believability); and effect (eg, harm perception, intention to quit)?”



Round (3)

- Experts were sent the labels ordered according to the results of round (2) ranking shown against their own ranking
- They were asked to reconsider their ranking and re-rank the HWLs as they did in round (2)



Select the final HWLs

- HWLs were ranked within each theme based on experts' agreement using the interquartile deviations (IQD: 0.00/most agreement to 3.00/least agreement)
- Then, if there was a tie, the rank between the tied labels was based on the median (the smaller the median, the more important)
- HWLs in each theme with IQDs < 2 were selected for the final list

Theme (1): WP health risk

Warning:



Chemicals in Hookah smoke can cause serious oral disease

Warning:



Chemicals in Hookah smoke can cause serious lung disease

Warning:



Hookah smoking causes skin wrinkles; When you smoke, it shows

Warning:



Quit Hookah smoking: Stay alive for those close to you

Warning:



Hookah smoking causes strokes and heart attacks

Warning:



Died aged 34

Hookah smoking can kill you

Theme (2): Addiction

Warning:



Hookah is so addictive you will keep smoking even after it makes you seriously ill

Warning:



Hookah smoking is addictive

Warning:



Hookah smoking is addictive

Warning:



Hookah smoking is addictive

Warning:



Hookah smoking is addictive

Theme (3): Harm to others

Warning:



Hookah
smoke
can harm
your children

Warning:



Hookah
smoking
during
pregnancy
can harm
your baby

Warning:



Hookah
smoking
during
pregnancy
can harm
your baby

Warning:



Hookah
smoke
can harm
your children

Warning:



Hookah smoking
by
pregnant women
can result in
low birth weight
babies

Theme (4): WP-specific harms

Warning:



Smoking
Hookah
can spread
infectious
disease

Warning:



Sharing
Hookah
can cause
mouth
disease

Warning:



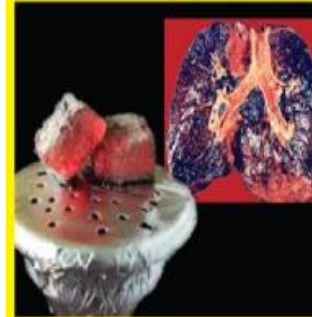
Hookah
smoke
contains
ARSENIC

Warning:



Hookah smoke
contains toxins,
including tar,
carbon monoxide,
and
heavy metals

Warning:



Using the
charcoal
to heat
the Hookah
produces
chemicals
that cause
cancer

Warning:



The water
in the Hookah
does not filter out
the
toxic
ingredients
in the
tobacco smoke

Theme 5: WP harm compared with cigarettes

Warning:



Hookah smokers inhale about 100 times more smoke than cigarette smokers

Warning:



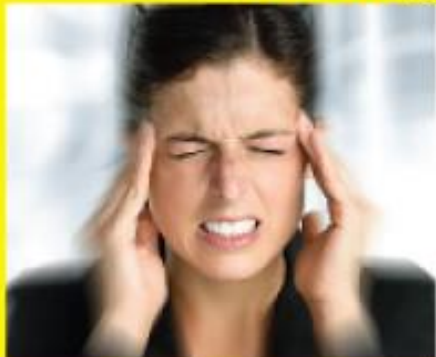
As with cigarettes, Hookah can cause serious oral disease

Warning:



Both cigarettes and Hookah cause heart disease

Warning:



"Hookah sickness" is carbon monoxide poisoning

Warning:



Both cigarettes and Hookah cause lung cancer

Warning:



Hookah smokers inhale about 100 times more tobacco smoke than cigarette smokers. This puts them at higher risk for disease.

The top 4 HWLs

Warning:



Chemicals in Hookah smoke can cause serious oral disease

Warning:



Hookah smoking during pregnancy can harm your baby

Warning:



Both cigarettes and Hookah cause heart disease

Warning:



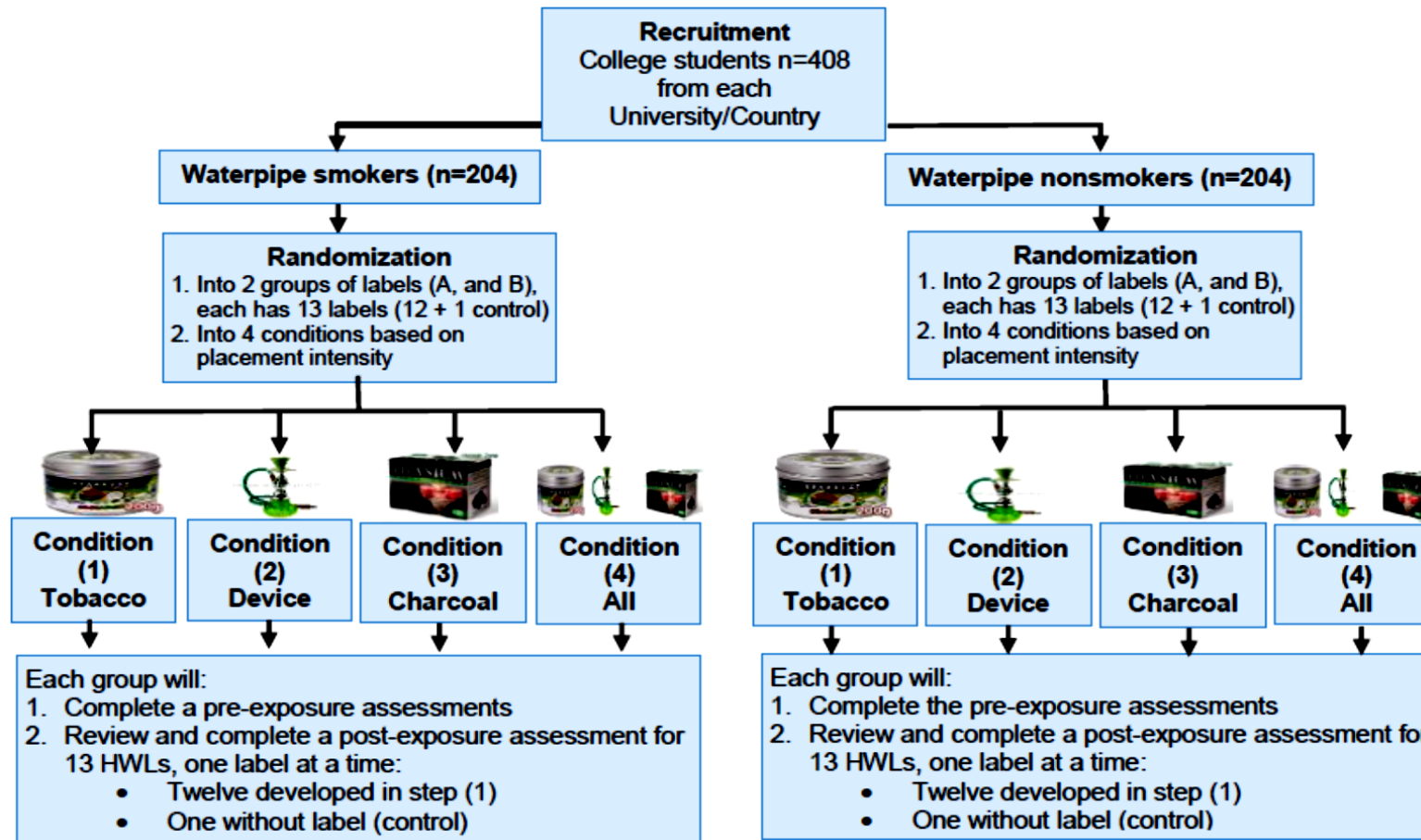
Hookah smokers inhale about 100 times more smoke than cigarette smokers

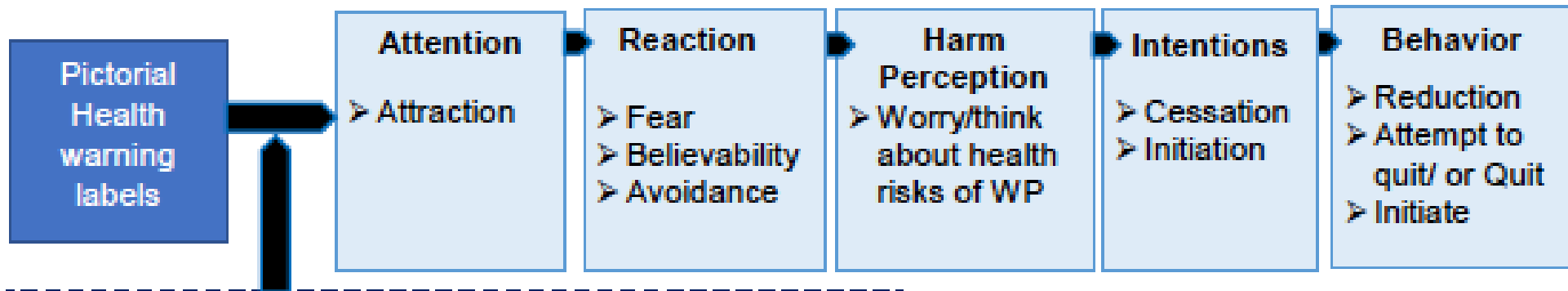
Step 3: Conduct focus groups with the target population

Conduct 8 focus groups in each country (4 smokers, 4 nonsmokers; 7-10/group; total participants/country 40) to:

1. Provide a 15-20 min PowerPoint presentation divided into “5” theme-segments, with each segment followed by the projection of theme-corresponding HWLs.
2. Each segment will end with discussion about participants’ reactions to the segment’s labels in term of
 - Attention - (notice, engagement, size, color);
 - Communication - (message clarity, understandability, believability);
 - Identification - (relatedness to participants);
 - Improvement - (e.g. how to adapt the labels for local dialect, people, age; how to make them more effective)

Step 4: Experimental study





- Moderators**
- Socio-demographic (e.g. age, sex, SES, race/ethnicity)
 - Past smoking behavior (e.g. smoking history, pattern, nicotine dependence, self-efficacy to quit smoking)

work

MESSAGE IMPACT
FRAMEWORK OF
RESPONSE TO HWLS
(NOAR ET AL. 2016, A)



A Crossover Clinical Laboratory Study

Objectives:

Examine the effect of pictorial HWLs on the WP device on:

1. Harm perception
2. Exposure to respiratory toxicants
3. Smokers' experience
4. Puffing behavior

Methods



WP smokers (n=30) completed two, 45-minute ad libitum smoking sessions (WP without HWL vs. WP with HWL) in a crossover design study



Exhaled carbon monoxide (eCO) was measured before and after each smoking session



Puff topography was recorded throughout the smoking session



Participants completed survey questionnaires assessing subjective smoking experiences and harm perception

Results

Compared to smoking the WP without HWL, smoking the WP fitted with HWL was significantly associated with:

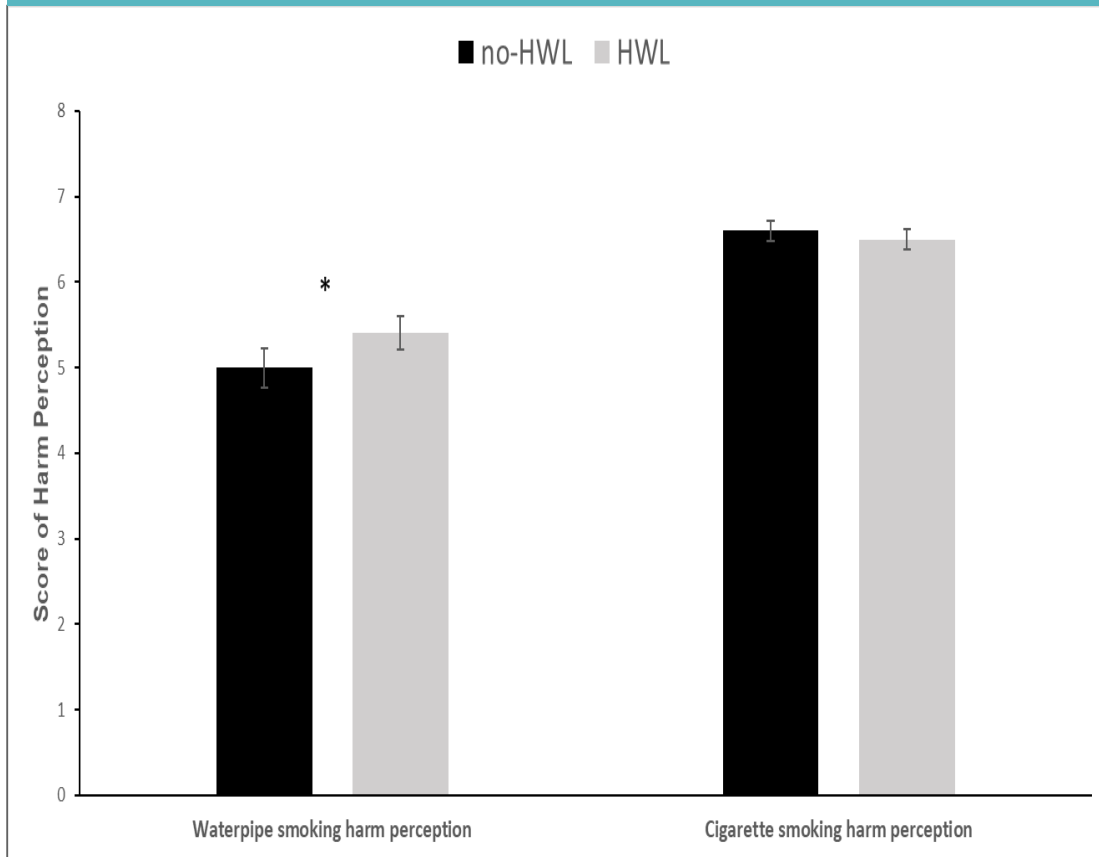
Higher WP harm perception

Lower levels of eCO (16 ppm vs. 22.7 ppm, respectively)

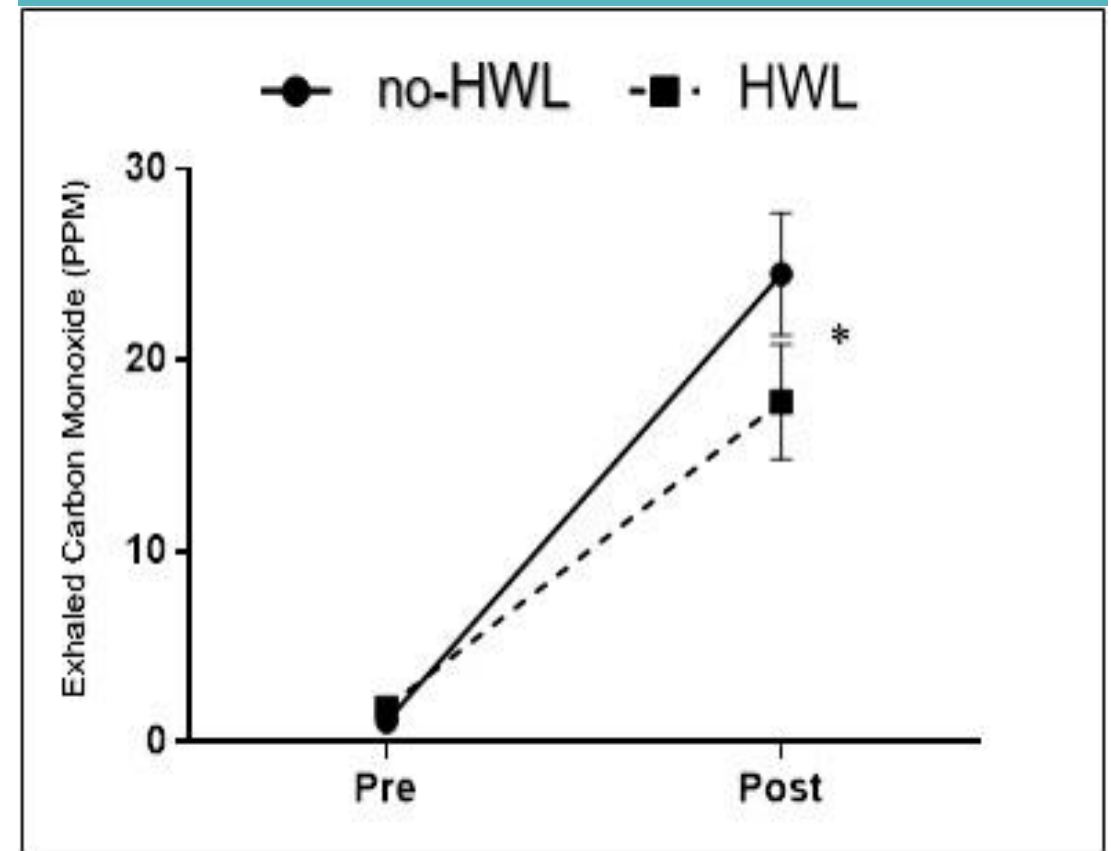
Less puffs, longer inter-puff-intervals, and a lower total puff volume

Less satisfaction, and taste and puff liking

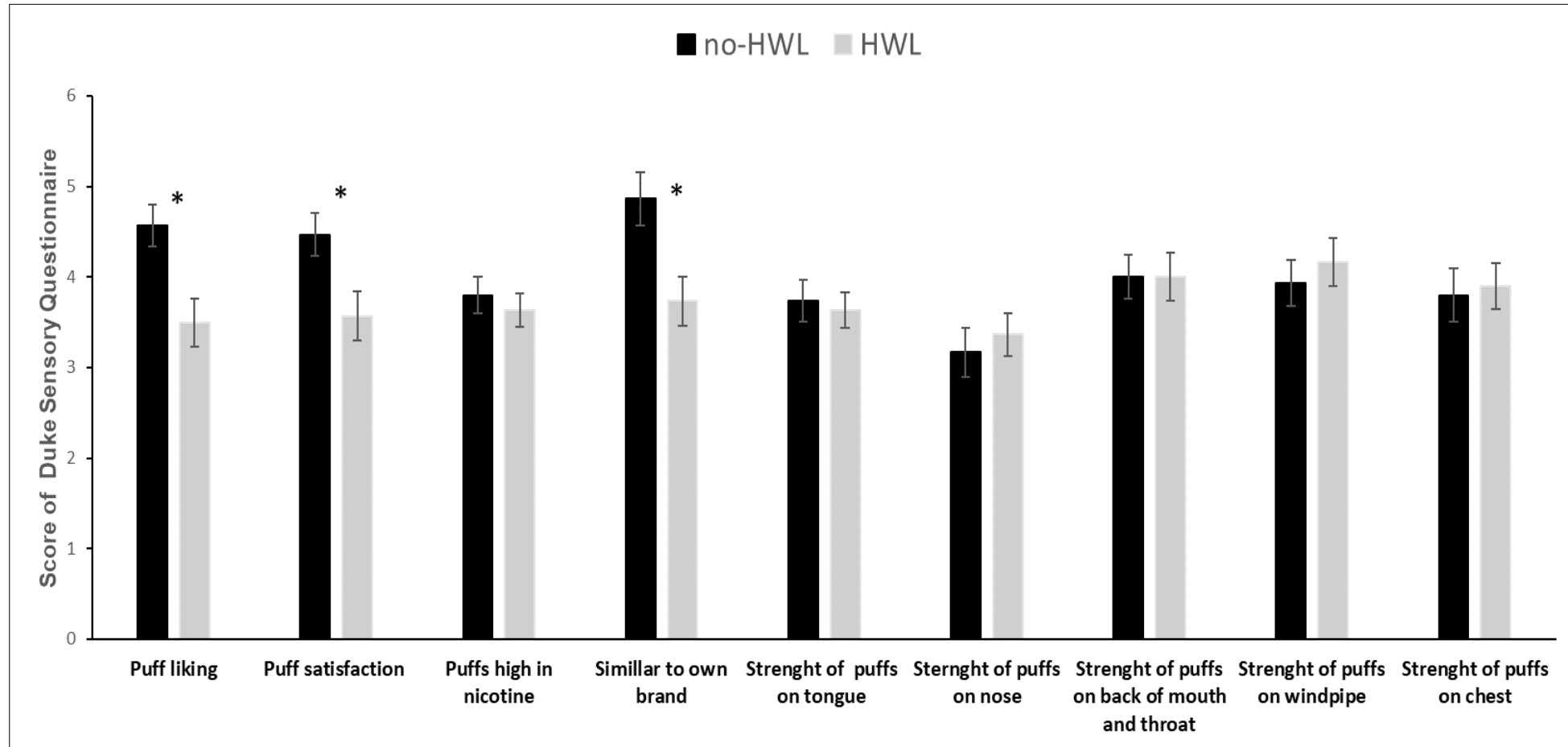
Means (\pm SEM) for post-session harm perception responses by HWL condition ($n = 30$)



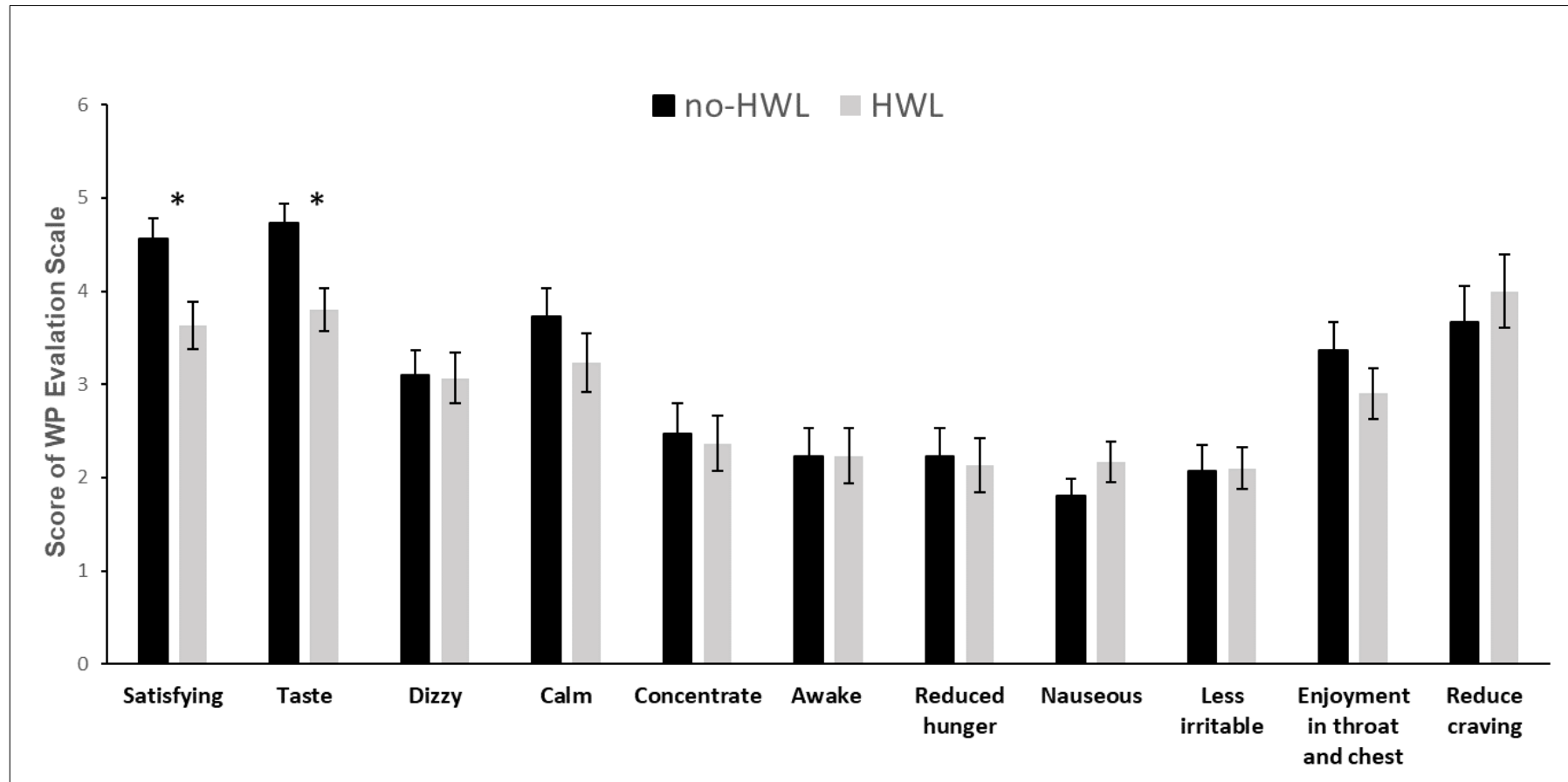
Means (\pm SEM) for exhaled carbon monoxide levels pre/post-session by HWL condition ($n=30$)



Post-session subjective responses for the Duke Sensory Questionnaire by HWL condition



Changes in post-session subjective responses for the WP Evaluation Scale by HWL condition



Conclusion

Placing HWLs on the WP device is effective in reducing WP smoker's positive experiences, puffing parameters, and exposure to harmful respiratory toxicants such as CO

HWLs lead also to more appreciation of WP harmful effects

HWLs are promising regulatory target to address the spread of WP smoking

Thanks you!

