Tobacco Use among Birzeit University Faculty and Staff: A Pilot Investigation.
Institute of Community and Public Health, Birzeit University
Reem Ladadwa1, Rita Giacaman PharmD1, MPhil, Abdullatif Hussein PhD1, Steven Bernstein MD2,
Hani Mowafi MD2, Fuad Abujarad MS, PhD2

1Institute of Community and Public Health, Birzeit University, Birzeit, State of Palestine
2Yale School of Medicine, New Haven, CT

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OBJECTIVE
The main objective of this online pilot study is to investigate Birzeit University’s faculty and staff’s
general views regarding the acceptability of joining an mHealth program to assist them in quitting
smoking and their choice of method of communicating messages and follow up. We also aimed to assess
the patterns of tobacco use among the respondents’, the types of tobacco they used, their attempts to quit
using tobacco, what they used to try to quit and why, and their current motivation to do so.

METHOD
We reviewed the literature on tobacco use and mHealth and developed a questionnaire which contained
some of the questions found in the literature, including the Fagerstrom’s test for nicotine dependence 1
which is also found on the World Health Organization’s website. We then developed added questions
relevant to the Palestinian context based on a literature review on smoking in Palestine. We piloted the
pilot questionnaire among five Birzeit University staff and adjusted the questionnaire for clarity in line
with the results. We then sent an email to all the Birzeit University faculty and staff, asking them to
participate and obtaining their approval to participate. We also placed the same questionnaire on the
Birzeit University Faculty and Staff Facebook page, to target those who do not usually check their emails.

RESULTS
Participant Characteristics
Of a total number of 895 faculty and staff working at Birzeit University in 2019, we were able to obtain
88 responses (10% random sample). Of those who responded, 61 reported using tobacco (70%) and 26
who reported not using tobacco at all (30%).

Among those who reported using tobacco, 21 (69%) were men, and 19 (31%) women. Ages ranged from
23-69 years with 31% between the ages of 40-48. Fifty (82%) reported that they were married. As shown
in Figure 1, 39 (64%) reported having a post-graduate degree (Master or Ph.D.), 15 (25%) a Bachelor
degree, and 7 (11%) less than a Bachelor degree. Of the total 61 tobacco users, 36 (59%) reported
themselves as staff members and 24 (39%) as faculty members.
The majority reported their financial status as average or above average compared to those around them with 24 (39%) reporting their economic status as above average, 35 (57%) as average and 2 (3%) below averages shown in Figure 2.

Nicotine dependence:
Of those who reported tobacco use, 34 (56%) smoked cigarettes only, 12 (19%) smoked Argileh (also known as Nargileh, Hubbly bubbly, or Waterpipe), 6 (10%) smoked the locally available e-cigarette IQOS, 6 (10%) smoked both cigarettes and Argileh, 2 (3%) smoked cigarettes and IQOS, and 1(2%) smoked Argileh and IQOS (Figure 3).
As shown in Figure 4, 50 (85%) reported daily usage of tobacco, 6 (10%) reported using tobacco somedays, and 3 (5%) reported using tobacco at special occasions only. Among all tobacco users, 33 (54%) reported not smoking early in the morning, whereas 18 (29%) reported smoking early in the morning. Thirty (49%) reported not smoking while sick; however, 21 (34%) said smoking even when sick.

As shown in Figure 3, Type of tobacco consumed reported by survey participants.

<table>
<thead>
<tr>
<th>Type of Tobacco Consumed</th>
<th>Percentage of Participants who Reported Tobacco Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>IQOS &amp; Argileh</td>
<td>2%</td>
</tr>
<tr>
<td>Cigarettes &amp; IQOS</td>
<td>3%</td>
</tr>
<tr>
<td>Cigarettes &amp; Argileh</td>
<td>10%</td>
</tr>
<tr>
<td>IQOS</td>
<td>10%</td>
</tr>
<tr>
<td>Argileh</td>
<td>19%</td>
</tr>
<tr>
<td>Cigarettes</td>
<td>56%</td>
</tr>
</tbody>
</table>

Figure 4: Tobacco consumption frequency among survey participants.

<table>
<thead>
<tr>
<th>Tobacco Consumption Frequency</th>
<th>Percentage of Participants who Reported Using Tobacco</th>
</tr>
</thead>
<tbody>
<tr>
<td>On special occasions</td>
<td>5%</td>
</tr>
<tr>
<td>Some days</td>
<td>10%</td>
</tr>
<tr>
<td>Everyday</td>
<td>85%</td>
</tr>
</tbody>
</table>

Among the forty-nine cigarette smokers, 13 (26%) reported smoking less than 11 cigarettes per day, 21 (43%) reported smoking between 11-20 cigarettes per day, 14 (29%) reported smoking between 21-30
cigarettes per day, and 1 (2%) reported smoking more than 31 cigarettes per day, as shown in Figure 5 below.

Figure 5: Number of cigarettes smoked daily by participants

As seen in Figure 6, of those who reported smoking cigarettes, 7 (14%) reported smoking within 5 minutes of waking up, 20 (41%) reported smoking after 5-31 minutes of waking up, 8 (16%) reported smoking after 31-61 minutes of waking up, and 15 (31%) reported smoking after 1 hour of waking up.

Figure 6: The time of the first cigarette smoked after waking up reported by participants.

Quitting Smoking
Of all tobacco users, 40 (65%) reported quitting tobacco at least once in their lifetime, while 20 (33%) reported not quitting smoking at all during their lifetime. As shown in Figure 7, 27 (44%) tobacco users
reported trying to quit tobacco at least once during last year, while 29 (47%) said not trying to quit tobacco at all last year. Of those who reported quitting smoking last year, 15 (54%) reported successfully quitting tobacco for at least one full day. Determination, exercise, and changing habits were the most frequent means of tobacco cessation. For example, of participants who reported successfully quitting tobacco for at least one day during their lifetime, 22 (55%) reported determination, 12 (30%) reported changing habits, and 10 (25%) reported exercise as success factors in their tobacco cessation journey.

Figure 7: Frequency of attempting to quit tobacco last year reported by participants.

Forty (66%) tobacco users reported a desire to quit tobacco, 4 (6%) reported their reluctance to quit tobacco, and 12 (20%) reported their uncertainty about their willingness to quit tobacco. As expected, health was the main driver in people’s desire to quit smoking, with 45 (86%) of the participants who reported a desire to or uncertainty about quitting tobacco reported health as the most important factor behind their desire to quit tobacco. Family and bad smell were the second and third common reasons for quitting tobacco respectively as shown in Figure 8.

Figure 8: Reasons for the desire to quit smoking reported by participants.
Phone Usage and Participating in a mHealth Tobacco Cessation Program:

All participants reported owning a cell phone; however, one (2%) reported not owning a smartphone. The majority use email, WhatsApp, and Facebook messenger (Figure 9).

Figure 9: Distribution of frequently used mobile applications.

Of all participants, 11 (18%) reported that they would participate in a mhealth tobacco cessation program if it lasted for less than one month, 16 (26%) reported that they would join if it was for one month only, 2 (3%) reporting that they would participate if it lasted for two months only, 8 (13%) reported that they would participate if it was for three months only, 6 (10%) reported that they would participate if it lasted for 4 months, and 12 (20%) reported that they would not participate in such a program regardless of time (Figure 10).
**Figure 10:** Attitudes of Birzeit faculty and staff who participated in the survey towards participating in a mHealth tobacco cessation program according to its timing, as reported by them.

We asked participants about their desired method of receiving information if they were registered in a program that promotes tobacco cessation habits, of all 61 participants, 24 (39%) reported WhatsApp, 12 (20%) reported Facebook messenger, 8 (13%) reported texting (SMS), and 7 (11%) reported email as their desired platform of receiving such information (*Figure 11*).

**Figure 11: Distribution of the desired platform for receiving smoking cessation information.**

**DISCUSSION:**
This pilot study conducted on a 10% random sample of faculty and staff at Birzeit University revealed more men reporting using tobacco compared to women. Nevertheless, the proportion of women who reported using tobacco is high at 31%. While we cannot adequately compare these results with the national rate estimated at 2.6 % for women aged 15-64 according to the STEPwise survey at 2011, our results suggest that the prevalence of tobacco use among middle-class women working at a local
university may be higher than the overall prevalence for women in the country. However, we need to interpret such results carefully, especially that the invitation sent to participants indicates that the researchers are planning to develop a program for quitting smoking, which may affect the participation of smokers and nonsmokers differentially since smokers are possibly more motivated to respond to such a study. Nevertheless, this finding offers valuable insight, which should prompt further investigation. It is also interesting to note that a sizeable proportion of our respondents have post-graduate degrees. This may be due to a tendency among postgraduates to be interested in filling google forms. But this also may indicate that educational attainment does is not necessarily negatively associating with tobacco use. Again, this is another question raised in this study for future research.

In this survey, 29% reported smoking Argilehs either alone or in combination with cigarettes or IQOS. Given the observation that some people assume that Argileh is not harmful to health, this is another area, which requires future attention in both research and interventions. The large majority of smokers reported smoking every day and with the majority smoking more than 10 cigarettes per day. This warrants further work especially in terms of interventions.

It is interesting to note that only 29% of smokers reported that they did not attempt to quit smoking and about half reported health concerns as a reason for their desire to quit smoking. This seems to be an indication of the readiness of smokers to join programs aiming at helping them in quitting smoking.

The results of access to methods of communicating smoking cessation messages are quite encouraging, with about half using email, WhatsApp and Facebook Messenger each, and about a third using texting. This is an initial indication of the possibility of using such applications in developing and implementing future interventions. However, a pilot on patients attending health services will be necessary to demonstrate the applicability of such interventions.

Finally, a fifth of respondents reported their willingness to participate in an mHealth program if it were to last for less than one month, more than a quarter for one month, another for 2-3 months, and a fifth for four months. About a fifth reported that they would not want to participate at all. These results are also encouraging in view of the fact that respondents are among the generally health population, as one would imagine that patients would be more willing to join smoking cessation programs by virtue of their health status than people from the general population.