LETTER

Validity of self-reported smoking among women hospital staff in Tunisia

In Tunisia, smoking prevalence is high1 (55.6% males vs 5.2% females).2 However, under-reporting of smoking may occur, particularly among women from cultures where social prescriptions still exist.3 No studies on women’s smoking have been published in Tunisia which have validated self-reported smoking with biomarkers such as urinary cotinine.

We aimed to assess the validity of self-reported smoking among female staff in a Tunisian hospital.

Our data were extracted from a cross-sectional study4 conducted between January and May 2005 to assess smoking behaviours of the health professional staff at Charles Nicolle Hospital in Tunis, the largest University Hospital in Tunisia.

About 1120 women were involved in the study and 809 (73%) provided a urine sample. The rate of participation did not differ significantly according to age, occupational group or self-reported smoking status. An anonymous questionnaire was administered. The ‘smokers’ category includes current smokers. Ex-smokers were those who had smoked at least 100 cigarettes in their life but were no longer smoking. The quantitative colorimetric urine test is based on the könig reaction, in which pink-red chromophores formed from nicotine and its metabolite condensates with barbituric acid were extracted into an acetate buffer. As for the analytic condition, an aliquot of urine sample (0.5 ml) was mixed with 0.2 ml of 4 M acetate buffer (pH 4.7), with 0.1 ml of KCN (1%) and then 0.5 ml of barbituric acid (10%). The measurable time was defined as 45 min duration and absorbance at 510 nm.

Data were analysed by SPSS Version 16 using a Student’s t test and χ² test. The significance threshold was 5%.

Among women who self-reported as smokers, 72.7% had a cotinine concentration of cut-off 6.6 μmol/ml (table 1). Among self-reported ex-smokers and non-smokers, 19.4% and 10% of women, respectively, had cotinine in their urine at the cut-off level. The validity of self-reported smoking was similar among subjects from different areas, ages and occupational group categories (table 1).

Non-smokers exposed to environmental tobacco smoke from other household members and friends may have cotinine in urine; however, the rate is typically below 6.6 μmol/ml.6 7 If we assume that all women who tested positive smoke daily or occasionally, the percentage of smokers increases from 9.5% to 18.4%. Self-reports of smoking are accurate in most studies in high-income countries,8 but may be under-reported in low- and middle-income countries, particularly in female and adolescents. For example, the prevalence of self-reported smoking among Iranian men and women aged 19 years and above was 18.7% and 1.3%, respectively, compared to 21.2% and 6.7% based on serum cotinine level.9

The study has some limitations. It was conducted among women in the health profession who are subject to both socio-cultural and professional pressures explaining the under-reporting of smoking status. In addition, since this study involved health professionals in a university hospital in the capital, our results cannot be generalised to all health professionals in the country.

Table 1  Percentage of self-reported non-smokers having urinary cotinine higher than 6.6 μmol/ml by socio-demographic groups and smoking status

<table>
<thead>
<tr>
<th>Variables</th>
<th>Percentages</th>
<th>Probabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional category</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physicians—pharmacists, administrators (n=121)</td>
<td>11.1%</td>
<td>NS</td>
</tr>
<tr>
<td>Nurses (n=418)</td>
<td>10.0%</td>
<td></td>
</tr>
<tr>
<td>Blue workers (n=130)</td>
<td>12.8%</td>
<td></td>
</tr>
<tr>
<td>Area</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban (n=510)</td>
<td>11.3%</td>
<td>NS</td>
</tr>
<tr>
<td>Suburban (n=131)</td>
<td>09.4%</td>
<td></td>
</tr>
<tr>
<td>Rural (n=41)</td>
<td>04.7%</td>
<td></td>
</tr>
<tr>
<td>Age group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20—29 years (n=190)</td>
<td>13.4%</td>
<td>NS</td>
</tr>
<tr>
<td>30—39 years (n=205)</td>
<td>10.3%</td>
<td></td>
</tr>
<tr>
<td>≥40 years (n=286)</td>
<td>07.8%</td>
<td></td>
</tr>
<tr>
<td>Self-reported smoking status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current smokers (n=55)</td>
<td>72.7%</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Occasional smokers (n=21)</td>
<td>14.3%</td>
<td></td>
</tr>
<tr>
<td>Ex-smokers (n=31)</td>
<td>19.4%</td>
<td></td>
</tr>
<tr>
<td>No smokers (n=689)</td>
<td>10.0%</td>
<td></td>
</tr>
</tbody>
</table>

REFERENCES


This paper is freely available online under the BMJ Journals unlocked scheme, see http://tobaccocontrol.bmj.com/site/about/unlocked.xhtml
Validity of self-reported smoking among women hospital staff in Tunisia

Radhouane Fakhfakh, Anis Klouz, Mohamed Lakhal, Chalbi Belkahia and Noureddine Achour

*Tob Control* 2011 20: 86 originally published online September 29, 2010
doi: 10.1136/tc.2010.038661

Updated information and services can be found at:
http://tobaccocontrol.bmj.com/content/20/1/86

These include:

**References**
This article cites 9 articles, 2 of which you can access for free at:
http://tobaccocontrol.bmj.com/content/20/1/86#BIBL

**Open Access**
This is an open-access article distributed under the terms of the Creative Commons Attribution Non-commercial License, which permits use, distribution, and reproduction in any medium, provided the original work is properly cited, the use is non-commercial and is otherwise in compliance with the license. See: http://creativecommons.org/licenses/by-nc/2.0/ and http://creativecommons.org/licenses/by-nc/2.0/legalcode.

**Email alerting service**
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

**Topic Collections**
Articles on similar topics can be found in the following collections

Open access (259)

**Notes**

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/