Does Grameen Bank Membership Change Secondhand Smoke Exposure Among Women of Reproductive Age in Bangladesh?

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Introduction

Secondhand smoke (SHS) exposure, defined as exposure to tobacco smoke, is a health threat to people of all ages. SHS exposure has been linked with lung disease, and can cause developmental issues in fetuses as a result of in utero exposure (CDC, 2017).

In Bangladesh, smoking and in-home smoke exposure combined are the leading cause of death (Nargis, 2015). In Bangladesh, over 45% of households experience SHS exposure (Mitra et al., 2011). Women of low socioeconomic status and low education are more likely to be exposed to secondhand smoke than women belonging to higher socioeconomic classes with higher education levels (Fischer, 2015).

This research aims to assess whether membership in the Grameen bank is associated with secondhand smoke exposure. The target population are women of reproductive age because women, in Bangladesh, often spend a lot of time in the home and don’t smoke themselves. In addition, a majority of women are exposed to cooking fumes from solid fuels as well. In addition, over 97% of Grameen bank members in Bangladesh are women (“About Us,” 2019). A multinomial logistic regression was performed to determine if there is an association between Grameen Bank membership and SHS exposure, ceterus paribus. This information will help microfinance institutions assess whether or not to have a tobacco education policy for members, and if such policy is already in place, whether it is effective.

Methods and Materials

Data was obtained from the 2011 Bangladesh Demographic Health Survey (SHS). The Bangladesh DHS (BDHS) is a two-stage stratified nationally representative survey of the population. 17,811 women between the ages of 12 and 49 interviewed on basic health information, wealth, occupation, and beliefs/attitudes were included in this study (Table 1). A weighted model was made using a multinomial logistic regression in STATA 14.0 to assess the association between Grameen Bank Membership and SHS exposure.

Results: Tables

Table 1: Weighted Demographic Information among Women of Reproductive Age, Bangladesh, 2011

<table>
<thead>
<tr>
<th>Region</th>
<th>N (%)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Dhaka</td>
<td>6,450 (34.0)</td>
<td>2,831 (15.6)</td>
<td>1,967 (11.1)</td>
<td>1,557 (8.6)</td>
</tr>
<tr>
<td>Chittagong</td>
<td>2,715 (14.7)</td>
<td>1,556 (8.5)</td>
<td>1,319 (7.3)</td>
<td>838 (4.5)</td>
</tr>
<tr>
<td>Sylhet</td>
<td>2,263 (12.3)</td>
<td>1,491 (8.2)</td>
<td>1,037 (5.8)</td>
<td>699 (3.8)</td>
</tr>
<tr>
<td>Rajshahi</td>
<td>1,725 (9.6)</td>
<td>937 (5.2)</td>
<td>661 (3.7)</td>
<td>391 (2.1)</td>
</tr>
<tr>
<td>Rangpur</td>
<td>1,458 (8.1)</td>
<td>757 (4.1)</td>
<td>502 (2.8)</td>
<td>293 (1.6)</td>
</tr>
<tr>
<td>Khulna</td>
<td>1,153 (6.3)</td>
<td>605 (3.3)</td>
<td>402 (2.2)</td>
<td>246 (1.3)</td>
</tr>
<tr>
<td>Barisal</td>
<td>1,023 (5.6)</td>
<td>569 (3.1)</td>
<td>380 (2.1)</td>
<td>244 (1.3)</td>
</tr>
</tbody>
</table>
| Data was obtained from the 2011 Bangladesh Demographic Health Survey. Reference category: no exposure; weighted results

Table 2: Odds Ratios (OR) of Home Smoke Exposure by Grameen Bank Membership

<table>
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<th>Variable</th>
<th>OR (95% CI)</th>
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<td>Grameen Bank Member</td>
<td>1.216 (1.04, 1.43)</td>
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Discussion

The results suggest that women who belong to a Grameen Bank were more likely to be exposed to secondhand smoke than women who were not Grameen Bank members (Table 2). Belonging to Grameen Bank relative to not belonging to the Grameen Bank increases the odds of exposure to no exposure by 31 percent, controlling for all other variables.

As expected, marital status (widowhood, and divorced status), wealth, and education were protective factors. For example, widows were 5 times less likely (1.0/0.20=5) to be exposed to secondhand smoke in the home, an indication that the smoker is perhaps the husband married households.

A positive association between Grameen Bank membership and in-home smoke exposure among Women of reproductive age could be because the household has access to money to buy tobacco products, more than without, even if the Grameen Bank participant is not smoking herself.

The Grameen Bank often finances small businesses. If the households of Grameen Bank members were involved in small business pursuits, it is possible that ownership of a small business could increase overall stress, which may lead to higher level of consumption of smoking tobacco products.

Acknowledgements

I would like to acknowledge and thank Dr. Shaharul Haque Farooq for guidance and support on this study. I would also like to thank Dr. Gobinda Habib, Dr. Philip Landrigan, Dr. Dhritiman Sany, Md. Ataur Rahman and Md. Monirul Islam for their support

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References


This study (Table 1).

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