Online Supplementary Materials to

Can visual nudges reduce smoking tobacco expenditure? Evidence from a clustered randomized controlled trial in rural Bangladesh

Section S1: Difference-in-difference analysis

A difference-in-difference (DID) estimator with the following ordinary least squares (OLS) linear regression specification was used to assess the impact of the intervention:

$$Tobacco\ Expenditure = \beta_0 + (\beta_1 \times Time) + (\beta_2 \times Intervention) + (\beta_3 \times Time \times Intervention) + \left(\beta_{(i+3)} \times Control\ Variables_i\right) + \varepsilon$$

The coefficient β_1 is the coefficient of time trend (pre- and post- intervention), β_2 is the difference of the pre-intervention control and treatment groups, and β_3 is the difference in changes between the control and treatment groups over time due to the intervention. The coefficient β_3 will indicate whether there exists a statistically significant impact of the intervention.

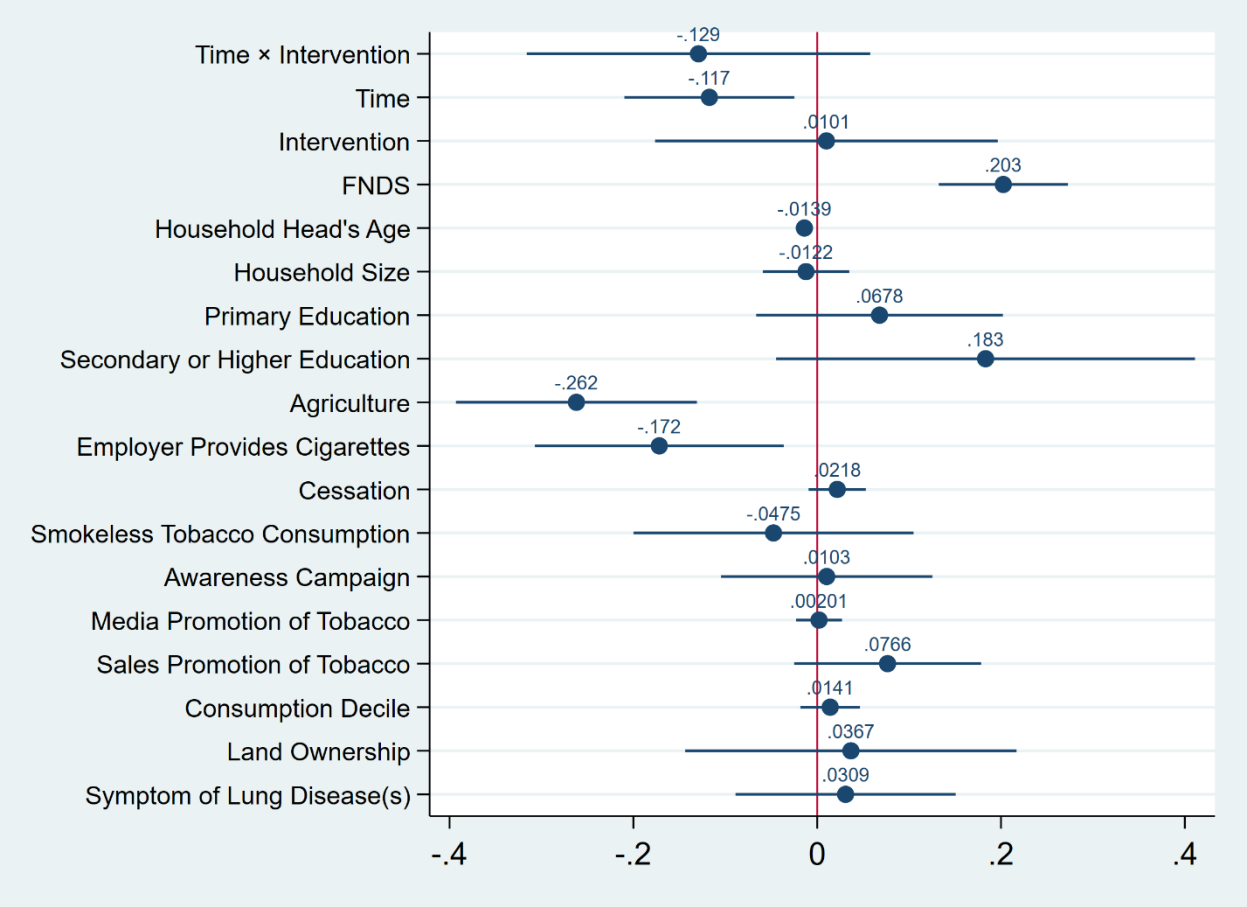
In order for the DID estimator to yield unbiased impact estimation, several assumptions needed to be satisfied. The first two identifying assumptions were: (1) that the outcome did not motivate the treatment, and (2) that both the control and treatment groups would have had the same outcomes provided the treatment was not administered. We satisfied these two assumptions via the two-stage random sampling across *chars* of similar socioeconomic backgrounds detailed above (in section 2.1). The third assumption required that the sample composition of treatment and control groups remain stable over the repeated cross-sections. This was met by selecting 8 clusters for each group and by performing the baseline and follow-up surveys within a short time span. The final assumption was to ensure that there were no spillover effects from and/or across the treatment groups. We satisfied this by focusing on *chars* as our study area, which are, by nature, geographically separate from each other thereby minimizing chances of spillover.

Section S2: Constructing the Fagerstrom Nicotine Dependency Scale (FNDS)

Using (1) the CO level, (2) number of cigarettes or *bidi* consumed per day, and (3) the time taken to consume the first smoking tobacco of the day after waking up. It is important to note that FNDS does not rely solely on self-reported smoking tobacco consumption of the respondent, which can be under-reported due to recall bias. The concentration of CO was formulated in 7 different stages, where 0-6 ppm represented the safest level of concentration, 7-10 ppm represented low concentration level, 11-15 ppm, 16-20 ppm, 21-25 ppm and 26-30 ppm represented high concentration levels, and 31+ ppm represented very high levels of concentration.

Table S1: Variable Description		
Variable Code	**Variable Description**	**Variable Type**
Log of tobacco expenditure	Log of daily tobacco expenditure	Continuous
FNDS	Fagerstrom Nicotine Dependency Scale	Discrete
Household Head's Age	Age in years	Continuous
Household Size	Household Size	Discrete
Primary Education	Has the household head completed primary education?	Binary
Secondary Education	Has the household head completed secondary education or more?	Binary
Agriculture	Is the household head an agricultural worker?	Binary
Employer Provides Cigarette	Does the employer provide the respondent with cigarettes or bidi?	Binary
Cessation	Cessation period if the respondent tried to quit	Continuous
SLT	Does the individual consume smokeless tobacco?	Binary
Awareness Campaign	Did exposure to media campaign lead the respondent to think of quitting?	Binary
Media Promotion of Tobacco	To what extent has the respondent seen advertisement promotions of cigarettes?	Discrete
Sales Promotion of Tobacco	To what extent has the respondent faced any sales promotion of cigarettes?	Discrete
Consumption Quintile	Consumption Quintile	Discrete
Land Holdings	Does the respondent own land?	Binary
Symptom of Lung Disease(s)	Does the respondent have any symptom of lung disease(s)?	Binary
$Time$	Time dummy (pre-treatment and post-treatment)	Binary
$Intervention$	Treatment group dummy	Binary
$Time \times Intervention$	Interaction of time and treatment group	Binary

Figure S1: Outlier Analysis

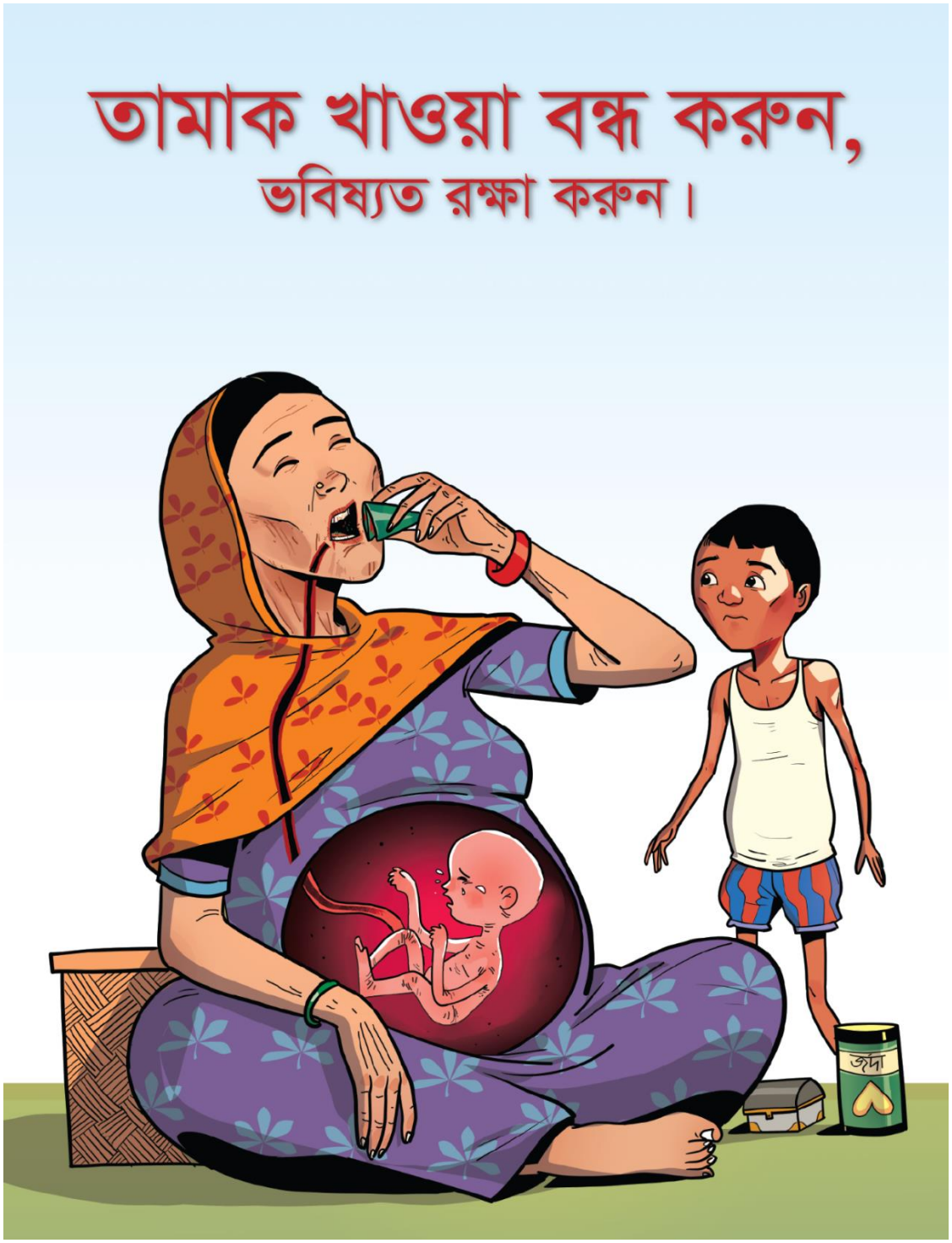


Difference-in-difference regressions results after removing outliers with high leverage. Coefficients plot with bars representing 95% confidence interval.

Figure S2: Poster Design 01 for Intervention

English translation of text: "Smoking is akin to taking poison, leaving your children helpless."

Figure S3: Poster Design 02 for Intervention



English translation of text: "Stop tobacco intake and protect your next generation."