INTRODUCTION

Risky health behavior such as smoking, drinking and risky sex are substantial contributors to US morbidity rates and healthcare costs. While individuals participating in these behaviors can be modeled as rational agents (Becker and Murphy 1988; Orphanides and Zervos 1995; Stigler and Becker 1977) a growing literature suggests that information constraints play an important role in unhealthy behaviors (Cheng 2011; Lee et al. 2010). Supporting this idea, a large health psychology literature demonstrates that theory-based interventions that focus heavily on changing attitudes, increasing motivation and training in behavioral skills, generally known as behavioral interventions can successfully modify risky health behaviors. In this study we empirically investigate the impact of a behavioral intervention on the perceived costs of obtaining a sexually transmitted infection (STI) to a cohort of justice-involved youth (Project MARS).

METHOD

Data used in this study were collected from questionnaires administered by Project MARS (Callahan et al. 2013), an ongoing sexual risk-reduction behavioral intervention designed specifically for justice-involved youth. Questionnaire data includes: demographics, sexual history, current sexual behavior, and measures relevant to the theoretical mediators of behavior change. The questionnaires included a series of contingent valuation (CV) survey questions eliciting subjects' maximum willingness to pay (WTP) to avoid three different categories of STIs (curable, incurable, and fatal). WTP questions were open-ended, and bounded between $0 and $100,000. WTP is estimated using a Tobit model to account for the censored outcome variable (Martinez-Paz and Perni 2011) using the following empirical specification:

\[ \ln(WTP_{ij}) = \beta_0 + \beta_1 \text{TIME} + \beta_2 \text{CAGE} + \beta_3 \text{EDUCATION} + \epsilon \]

Where \(\ln(WTP_{ij})\) is respondent i's log transformed latent maximum WTP to avoid STI j elicited prior to the intervention (t=0) and 3 months after receiving the intervention (t=1). To test the impact of the intervention on participants' WTP to avoid infections, and to test sensitivity to scope, median WTP estimates are calculated. First, to test if the intervention increased participants’ WTP the following null and alternative hypotheses are used:

\[ H_0: \text{WTP}_i = \text{WTP}_j \quad \text{and} \quad H_a: \text{WTP}_i > \text{WTP}_j \]

To test for sensitivity to scope the following null and alternative hypothesis are used

\[ H_0: \text{SENS}_{i,j} = \text{SENS}_{j,i} \quad \text{and} \quad H_a: \text{SENS}_{i,j} > \text{SENS}_{j,i} \]

RESULTS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Incurred</th>
<th>Full</th>
<th>Curable Treatment</th>
<th>Incurable Treatment</th>
<th>Fatal Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>WTP</td>
<td>0.45</td>
<td>0.39</td>
<td>0.39</td>
<td>0.39</td>
<td>0.39</td>
</tr>
<tr>
<td>Standard error</td>
<td>0.13</td>
<td>0.13</td>
<td>0.13</td>
<td>0.13</td>
<td>0.13</td>
</tr>
</tbody>
</table>

Overall, the results from the double bounded Tobit model show that all STI severity-treatment interaction parameters are significant (compared with the base group – curable) at the 1% level, except the INCURABLE parameter. In terms of other covariates, GENDER is not significant, WHITE is positive and significant at the 0.05 level and ABORTION is positive and significant at the 0.05 level.

WTP Changes: After the intervention was received, participants were WTP $243.30 more to avoid a curable infection (significant at the 10% level), WTP $2,169.86 more to avoid an incurable infection (significant at the 5% level) and WTP $4,926.81 more to avoid a fatal STI (significant at the 5% level). Thus, for each STI category participants were willing to pay significantly more after receiving the intervention.

Sensitivity to Scope: Prior to the intervention, respondents’ WTP to avoid incurable STI exceeds that of curable STI by $191.98 (not significant) and WTP to avoid fatal STI exceeds WTP to avoid incurable STI by $1,198.10. (significant at the 5% level). After the intervention was received the WTP to avoid incurable STI exceeds that of curable STI by $1,857.53 (significant at 5% level) and the WTP to avoid fatal STI exceeds the WTP to avoid incurable STI by $3,955.05 (at the 10% level).

Furthermore, the pre intervention WTP to avoid fatal STI exceeded WTP to avoid STI by $3,955.05 (at the 10% level).

SUMMARY

In this study we use CV methodology to evaluate the impact of Project MARS, a behavioral risk reduction intervention for justice involved youth on the perceived cost of obtaining a STI. We find that not only did this intervention increased participants’ WTP to avoid STI but also, after receiving this intervention MARS participants were sensitive to scope of severity. These preliminary findings contribute at the intersection of both the health economics and health psychology literatures. In terms of the health psychology, the fact that behavioral interventions for risky sexual behavior increase the perceived cost associated of obtaining an STI could be another important aspect in the relationship between beliefs and behavior. From an economic perspective, this study adds to a growing literature about how information (in this case, in terms of attitudes, social norms, self-efficacy and perceived control) can change perceived costs.

REFERENCES


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