Reviewer's report

Title: Correlates of STI-testing among vocational school students in the Netherlands

Version: 1 Date: 22 June 2010

Reviewer: Rebecca Swenson

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Peer Review for BMC Public Health “Correlates of STI-testing among vocational school students in the Netherlands”

This cross-sectional study examined psychosocial and environmental correlates of STI testing intention among a relatively large convenience sample of sexually experienced students at 5 of 39 vocational schools in the Netherlands. The majority of the sample was of non-Dutch ethnicity and represented diverse immigrant groups from South American, the Caribbean, West Africa, and North Africa. The topic has significant scientific importance given the high-risk sample and the potential of STI screening for reducing the transmission of infections and subsequent disease consequences. The methodology and study design was sound and the data analyses were adequate, however, the authors' descriptions of the outcome measure (testing intentions) raised some questions regarding the results and conclusions. (MC= Major Compulsory Revisions; ME= Minor Essential Revisions; DR= Discretionary Revisions).

Introduction

Overall, the introduction is well written. However, authors could provide a stronger rationale for examining testing intentions among vocational education students in the Netherlands. Further discussion of the high proportion of immigrant students enrolled in vocational schools, the rates of STIs/HIV from students' countries of origin, and especially the potential psychosocial reasons for low testing rates and intentions among these populations (as compared to students of Dutch origin) would be more compelling and interesting.

1. Authors do not clearly distinguish between past STI testing behavior and future intentions to be tested in the introduction. Past behavior does not necessarily equal future intentions. This distinction is important and should be discussed, as well as the author's rationale for examining both past behavior and future intentions. (MC)

2. The authors briefly discuss the Invention Mapping (IM) protocol implemented in vocational schools in Rotterdam, but do not provide much description of it. Do authors assess whether participants in the present study were exposed to an IM STI testing intervention prior to completing the survey? If so, what impact would this be expected to have on their testing intention? Can this be statistically controlled for? Why do authors propose that the current interventions are not working to increase testing rates (if this is indeed the case)? (MC)
3. Is the Precede-Procede Model being used by authors to guide the current study? If so, authors may wish to describe the Precede-Proceed Model in more detail. In general, the purpose of this paragraph is somewhat unclear to me. Do authors wish to highlight determinants of testing that have previously been examined or point out that current STI testing promotion interventions in the Netherlands may not contain important psychosocial determinants of testing behavior? (ME)

4. It is great to see that the authors based their study on a theoretical model. That said, the research question could be more clearly defined. Authors may wish to include a figure of the Integrative Model as it relates to their specific hypotheses. Authors’ hypotheses should specify expected directions of relationships between proposed factors and STI testing. (ME)

Method

1. Participants –
   a. What were the inclusion/exclusion criteria? Why were only 1st & 2nd year students selected? Table 1 indicates four levels of education in the sample of 501 sexually active participants. (ME)
   b. Can authors provide a source citation for data on the gender and ethnic distribution of the general student population? (ME)
   c. Authors state that 29% of students in the full sample of 756 were non-Dutch, but that 62% in the sexually experienced subset of 501 were non-Dutch. This is a large shift. Can authors explain why levels of sexual experience were so disparate across nationality? The distinction between Country of Origin and Ethnic Background is unclear in the methods section. A better distinction between these measures/constructs in the manuscript body (as opposed to in Table 1, only) is warranted. (ME)

2. Measures –
   a. I have some concerns about the measurement of behavioral intentions for STI testing in this study. In the Theory of Planned Behavior, intention is measured by asking participants if they intend to be tested in the future and in Stages of Change models, readiness to change is assessed by asking participants about testing now, in the near future, and in the more distal future (e.g., 1 month, 3 months, 6 months, etc.). In the present study, authors present hypothetical situations and then ask participants if they would get tested in a similar situation. It is not clear that this really measures intention to test or a different construct altogether. (MC)
   b. Several measures were developed by the authors for the present study and thus have unknown reliability/validity for this very diverse sample. For those measures that were previously developed, can authors provide internal consistency estimates among Dutch and (if available) the other ethnic populations sampled for the present study? If reliability/validity data are not available for the specific measures, authors should include this as a limitation. (ME)
c. Authors may also consider conducting factor analyses of the newly developed measures and testing for cultural invariance. (DR)

d. The measures section would be easier to read if authors had subheadings for each construct or construct category that mapped onto the Integrative Model. In addition, I would suggest putting the demographics first, followed by the outcome measure (testing intention), and then the predictors. (ME)

e. Did all participants receive the survey in the same language (Dutch) or were there different versions? (ME)

3. Procedure – The recruitment and assessment procedures are adequately described and scientifically sound. The authors pilot-tested the survey instrument to determine its appropriateness for the sample and conducted analyses to assess test-retest reliability. One question remains regarding incentive. Did participants receive course credit for their participation or another form of compensation (e.g., gift card, cash)? (ME)

4. Data analysis – How do data analyses map onto authors’ hypotheses? Stating the specific hypotheses either in the introduction or here, and describing the analyses used to test each hypothesis would clarify this question. As it is, the description is hard to follow in a sequential manner. (MC)

Results

1. Again, the results should map onto the hypotheses and proposed data analyses. Given that the main outcome measure appears to be behavioral intentions to test, this objective gets lost in the description of sexual behaviors and determinants of past STI testing. It is unclear at times if authors are referring to actual or intended testing. (MC)

2. Authors appear to have assessed behavioral characteristics of males and females separately. What is the rationale for doing so? Would it then make sense to conduct the regression analyses for intention to test separately by gender, rather than simply controlling for gender? (ME)

3. I would also be interested in seeing comparisons across country of origin, in particular, Dutch-born versus immigrants or Dutch nationality versus non-Dutch nationality. (DR)

4. Given that test site characteristics are a significant determinant of testing intentions, authors might consider spending more time discussing this in the introduction so readers are not surprised to find this measure in the analyses. (DR)

Discussion

1. The conclusions are clear and appear to be supported by the data. However, it is not clear from the discussion what new findings the present study adds to the STI testing literature. Authors could do better at highlighting the differences between this study and others. (MC)

2. A particular strength would be a greater discussion of the uniqueness of the sample – a predominantly non-Dutch sample (62% non-Dutch and 31%
immigrant) enrolled in vocational schools. What impact might being a first-generation or immigrant adolescent in the Netherlands have on sexual behavior and awareness of or access to sexual health services? What is the prevalence of STIs in the countries of origins and are there assortive mating patterns among the teens (i.e., do non-Dutch adolescents date or have sex with Dutch adolescents or are STIs perpetuated more within minority ethnic groups)? Again, ethnic group or immigrant status analyses would allow for more discussion on this topic. (MC)

3. Authors do a nice job of discussing the health promotion implications.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

'I declare that I have no competing interests'