Author's response to reviews

Title: Modeling Predictors of Drug Use among Male Street Laborers in Urban Vietnam

Authors:

Huy V Nguyen Dr. (nvanhuy@yahoo.com)

Version: 3 Date: 10 December 2012

Author's response to reviews: see over
Dear Editors and Reviewers,

Thank you very much for your comments and providing reviewers’ comments. We have modified the manuscript in response to the comments and suggestions.

I. Revised according to editor’s comments
   1. Had a native English speaker edit the paper.

II. Revised according to the comments of reviewer 1: Colleen Fisher

Introduction
   1. Page 4, para 2: The manuscript states that information and motivation work through behavioral skills to influence behavior in the IMB model, but it is not stated that both information and motivation are posited to have a direct impact on behavior, as well. [Minor Essential Revision]
      Yes, I added this point.

2. Page 5, para 1: Following the sentence describing the study purpose, it would be helpful to have a sentence explaining the hypothesized relationships between factors in the modified model. [Discretionary Revision]
      Yes, added the sentence at the end of the Introduction section: “It was hypothesized that male street laborers who have better HIV prevention and motivation and less psychosocial stress are less likely to uptake drug.”

Methods

Measures sub-section:
   1. Consider using sub-headings to identify the measures for the original IMB model constructs versus those being added [Discretionary Revision]
      Yes, I added a table of measures detailing how each construct was formed with clear sub-headings. The table was added also based on the other reviewer’s comments.

   2. The source is listed for some measures but not others; if these were created for this specific study, please briefly describe how and why this was done. Additionally, it would be very helpful if the question format (or example question) and response set was included for each instrument. [Minor Essential Revision]
      Yes, I revised. The sources were added such as WHO (2002) for alcohol use, and Misovich et al. (2008) for drug use patterns.

Findings sub-section:
   3. Page 10, para 3: Further detail is needed to help readers interpret what a 3 on a 5-point scale for sharing injection equipment means. [Minor Essential Revision]
      Yes, I detailed this information: “Sharing injecting equipment among participants was common with mean score of around 3 of the 0-5 point scale ranging from never to always sharing...”
equipment. The frequency of buying and keeping needles and syringes available as well as persuading peers not to share injecting equipment was inconsistent (~2 of the 0-4 point scale, ranging from never to always practice”).

4. Page 10, para 4: Does “high” attitude, norm and intention mean “positive?” Also, it would be helpful to use either the mean symbol or full word rather than M in the parentheses that follow. [Discretionary Revision] Yes, I replaced “high” with “positive”, “M” with “ mean ”.

5. Page 11, para 3: Can you elaborate on why the relationship between behavioral skills and behavior is notable (e.g., is this because the strength increased over the original IMB model)? [Discretionary Revision] Yes, I revised. In particular, the last sentence of such a paragraph explains that because behavior skill was a complete mediator between information, motivation and behavior.

Discussion
1. Page 13, para 1: The first sentence states that respondents displayed fairly high behavioral skills, but actual skills do not appear to have been assessed in this study (rather, self-efficacy for enacting the behavioral skills). [Minor Essential Revision] Yes, the behavioral skills or self-efficacy was used consistently.

2. Page 13, para 2: I believe “behavioral control” should be replaced with “behavioral skills” to maintain consistency with the language used in the IMB model. [Minor Essential Revision] Yes, “behavioral control” was be replaced with “behavioral skills” to maintain consistency with the language used in the IMB model.

3. Page 14, para 2 (bottom): In your recommendation that HIV prevention programs should target motivation (among other things), might you discuss the specific motivational elements (i.e., attitudes, norms, and intentions) as intervention targets instead? [Discretionary Revision] Yes, I discussed a bit more on attitudes, norms, and intentions.

4. Page 15, para 1: Are there other broader social (or structural) aspects that you would suggest need to be examined still? [Discretionary Revision] Yes, I discussed a little bit more on broader social structural aspects that might need further investigation.

5. Page 15, para 2: I would suggest revising the sentence 6 to clarify that this is the first study to examine the fit of the IMB model with *this* under-researched population as there have been other studies examining the model with other under-researched populations. [Discretionary Revision] Yes, I revised sentence 6 to clarify that this is the first study to examine the fit of the IMB model with *this* under-researched population….

6. Page 15, para 2: The authors may consider revising the sentence regarding instrument reliability as alphas of .55, .60, etc. may be considered rather low. [Discretionary Revision] Yes, I revised this sentence regarding instrument reliability.

Miscellaneous
1. There are many writing and grammatical errors throughout the manuscript; language editing is necessary. [Major Compulsory Revision]  
Yes, I had a native speaker of English edit writing and grammatical errors.

2. Figure 1: The word “skills” is missing from the Behavioral Skills box in the diagram [Minor Essential Revision]  
Yes, I added the missing word “skills”.

3. Figure 2: this figure is very useful, but the dotted pattern inside the boxes makes it difficult to read. [Discretionary Revision]  
Yes, the dotted pattern inside the boxes was replaced with the line or connected pattern.

III. Revised according to the comments of reviewer 2: Thach Tran  
Major Compulsory Revisions:

1. The author needs to include several probable confounders within the modified model in addition to ‘psychosocial stress’. Firstly, the education level could influence all of the elements in the models. With the mean of 8 years, education levels of the participants could range from no education to year 12 completion. Secondly, venues (urban/rural) and types of work (construction/market/transportation) could relate to the accessibility to drugs, which, in turn, may affect drug use as the author in a previous study found. Finally, migration is also a probable confounder.  
I examined all these factors such as education, urban/rural and type of work but did not find a significant change in the model. The migration was not added because it has already been reflected by mobility index, one of the psychosocial stress construct.

2. The author states that the majority of variables included in the Structural Equation Modeling (SEM) were relatively normally distributed therefore the Maximum Likelihood method was used. However, the primary outcome (drug use) was skewed because 82.89% of the participants did not use drug. The author needs to consider this in the model analyses.  
This variable was transferred into the standardized one which was a bit more of normal distribution. It’s acceptable to this limitation because it’s difficult to meet all the requirements.

3. The author tests the pathway from behavioral skills to drug use in the models. However, the relationship could be happened in the opposite direction. Non drug-users tend to choose positive answers for the questions within behavioral skills like “How hard would it be for you to separate syringes and needles when injecting drug with your friends” because they have no experience in the possible difficulties of this situation. Therefore, the opposite direction should be included in the model. Both directions could be tested in SEM simultaneously.  
The opposite direction is essential, but theoretically, the original IMB model doesn’t show the opposite direction. The IMB model indicate one way path from Info to Behavior skills and behavior; from Motivation to Behavioral skills and behavior; and two-way between Info and Motivation.

4. Table 2. Among 450 participants, the drug use level could not have a mean of 2.81 due to the lifetime drug use of 17.11%. Therefore, there is a concern about the numbers of participants involved in the analyses in Table 2 as well as in the models.
Because of this, the “bootstrap” option was ticked when analyzing data in order to increase iterations for participants as drug users in the model.

**Minor Compulsory Revisions:**

**Introduction:**
1. Provide further review of literature on the determinants of drug use in Vietnam as well as in similar settings.
   
   *Yes, I added a further review of literature on the determinants of drug use in similar settings.*

**Methods**
2. Because interviews were conducted in various places which were not private, the avoidance of other presences was impossible during the interviews. The strategies to control this problem or discuss the effect on the results in the Limitations needs to be stated.
   
   *Yes, I added this info near the end of the survey procedure section: “To control the effect of other presences, interviews were conducted either in participants’ resident homes, in the home of researchers or a nearby place convenient to participants. For those interviewed at worksites or on streets, we asked for participants’ permission to interview each of them separately. Because interviewers were well trained and because many of them interviewed many participants at the same time, we were also able to reduce the effect of outside environment”.*

3. In the Measures, ‘Access to HIV Prevention’ included is information and prevention. There is other Information below. Are they the same or different? If different, it seems that “Access to HIV Prevention” was not used in any analyses.
   
   *Yes, as I had a mistake with inclusion of this info, I deleted this unnecessary info.*

4. Please provide the interpretations of path coefficients in the Data Analysis because there are several types of path coefficients in SEM.
   
   *Yes, I added the interpretations of path coefficients in the data analysis.*

**Findings**
5. Please provide the refusal rate.
   
   *Yes, I added the refusal rate of 5%.*

6. Because the items 3, 4 and 5 in Drug Use Behavior were transferred into binary variables to construct the primary outcome, the results need to be reported besides means and SD
   
   *Item 3 was already binary (% lifetime drug injection). Item 4 was the average age at first injection. Item 5 was the level of injection. The drug use behavior was actually continuous variable so we did not transfer it into binary one.*

7. In the first sentence page 12, ‘P=.00’ should be changed to ‘P<0.01’
   
   *Yes, I revised as P<0.01.*

8. Indirect pathways can be tested and calculated directly in SEM.
   
   *Yes, I tested these indirect pathways.*

**Tables and Figures**
9. Table 1 should be restructured. Some ‘n’s should be ‘N’
1. Figures 3 and 4; Please add more notes for single-headed arrows, double-headed arrows, different types of path coefficients, and observed/latent variables. A figure should have enough information to stand alone. 
Yes, I added this info right under Figures 3 and 4.

IV. Revised according to the comments of reviewer 3: Karen Wynter

Major compulsory revisions:

1. The research question:
   The research question is not presented in the Abstract at all. Therefore the following sentence in the Results section of the Abstract makes no sense to the reader: “Contrary to the hypothesis, overall measures of fit via structural equation modelling (SEM) indicated that the study provides a better fit to the data when analyzed at the original IMB model than at the modified version.”

   The research question was used in the form of “if” clause sentence” This study aimed to test if the modified version of the Information-Motivation-Behavioral Skills (IMB) model is better than the original one to account for drug use among the above population.

   The research question is not clear. In the first sentence of the Abstract and the final sentence of the Introduction (p5), the author states that the paper is about modelling “predictors of drug use for HIV”. The reader may be forgiven for thinking this paper is about predicting the use of (medicinal) drugs for HIV, which is not the case. The aims of the study should be reworded to reflect the research question more accurately.

   Yes, I revised the aim of the study in the end of the Introduction section.

   Overall it needs to be clearer that this research tests two models, one of which (modified model) includes psychosocial factors. This needs to be explained in the Data Analysis section of Methods, as well as the aims of the study.

   Yes, this info was made clearer.

2. The section on Measures (Methods) (p.6 – 9) is lengthy and difficult to follow. I suggest that this be shortened, possibly even in a Table summarising each measure. It needs to be clear how each construct in the SEM models was derived.

   Yes, I added a table summarizing each measure and revised.

3. Reporting of validity and reliability of scales:
   Cronbach’s alpha confirms internal consistency of scale items, but it is only one form of reliability and validity assessment, and this should be acknowledged in the limitations (Discussion).

   Yes, I revised and acknowledged this limitation in the Discussion section: The construct validity of the variables in the model has been examined mainly based on correlation statistics.

   If there is evidence of construct validity (p.11), this needs to be presented – correlations between subscales does not constitute such evidence.

   Because of space limitation in the article, I did not add this dimension.
4. Please discuss possible reasons WHY men who are informed and motivated and have the necessary behavioural skills do not exhibit consistently safe drug use behaviour. This is particularly important given that the psychosocial aspects tested in the modified model were not significantly associated with drug use. The authors should suggest broader environmental and social factors (not within the individual) which may contribute, and recommend these as avenues for future research. *In this research, we found that men who are informed and motivated and have the necessary behavioural skills are less likely to exhibit risky drug use behaviour. Some explanation was added, especially I also added a suggestion for broader environmental and social factors that may contribute and recommend for further research.*

5. It is standard practice to avoid presenting significance as p=0.00, rather p<0.001. *Yes, I revised P=0.00 as P<0.001.*

**Minor Essential Revisions:**

6. A reference is needed for the term “social mapping” (p.5). Also, were field workers asked to estimate the number of participants, or potential participants/eligible men? *Yes, I added a reference (Cram, 2001) for social mapping method for sampling. Additionally, field workers were asked to estimate the number of participants, or potential/eligible participants.*

7. Not sure what is meant by “measuring levels of exposure to HIV/AIDS information and prevention” (p.6). Please clarify. *I had a mistake with this statement. I already deleted this info.*

8. The correct abbreviation for the Center for Epidemiologic Studies Depression Scale is the CES-D (p7). *Yes, I revised CES-D.*

9. It’s not clear how the description of Drug use behaviour on p.9 aligns with Table 1. Perhaps this would be clarified by using a different term instead of “Level of” in Table 1, for example “frequency of…” (What does Mean (SD) “Level of” refer to?) *Yes, I used “frequency”.*

10. Amos 18 is not the same as SPSS (as referenced on p.9), although both computer packages are licensed by the same company. *Yes, I added reference of Amos 18 instead of SPSS.*

11. I’m not sure why a mean score of 3 on a 0 – 5 scale means that the behaviour concerned is “common”, while a mean score of 2 on a 0 – 4 scales means the behaviour concerned is “inconsistent” (p.10). Some clarification is required. *Yes, some clarification was made.*
12. Consistency is required about whether statistical significance is indicated at P#.05 (p.9) or P<.05 (e.g. p.11).
Yes, P<0.05 was used consistently.

13. Please give prevalence data of existing studies when comparing study data with such studies (injection risk behaviours, Lurie et al; Deren et al.; Yang et al, p12).
Yes, I added prevalence data of existing studies such as of Deren et al; Yang et al….when comparing study data.

14. Please specify comparison group when stating “engaged in drug-taking behaviour at lower level of safety” (than whom?) and “scored to the ceiling for behavioural skills for HIV prevention, but practiced a higher level of drug use risk behaviour” (than whom?) (p.13).
Yes, I used high instead of higher, low instead of lower…. These terms were used to compare relatively between high and low which were assessed based on the score ranged for example from 0 (never) to 4 (very often or always).

15. Is the behaviour in question (outcome) using/taking up drugs, or using them /taking them up safely? (p.14). Please clarify.
Yes, I clarified the behavior as risky drug use behavior.

16. Minor but important language changes required to clarify meaning:
• SEM was conducted with 450 male laborers should read “SEM was conducted with data from 450 male laborers” (p.9)
Yes, I revised accordingly “SEM was conducted with data from 450 male laborers”

• Item “parcels” should read item “scales” / “clusters” / “groups” (depending on what the author means) (p.10)
Yes, I revised. I used sub-scales because under the scales, there are sub-scales.

• “addictive” should read “addicted” (p.12).
Yes, I revised “addictive” as “addicted”.

• “were understandable” should read “showed understanding of” or similar (p.12).
Yes, I revised “were understandable” as “showed understanding of…”

**Discretionary Revision**
17. Please clarify the data collection period for the study by Hien (2002) – between 15 October 1999 and when? (p.3)
Yes, I clarified by using “by” instead of “between” because when I looked at the literature, the correct time was “by”.

18. “Curiosity” may not be the correct term in the sentence “Men who had …experienced psychological issues such as curiosity, depression, fatalism, revenge, and family and social pressure…” (p.4). Please replace with the correct term.
Yes, I revised “curiosity, depression, fatalism, revenge, and family and social pressure…” as “tedium, boredom, depression, fatalism, revenge, and family and social pressure….”
19. Is it true to say that Cronbach’s alpha of most scales >0.70? (p.6)
Yes, it is. Please see Table of measures (Table 1) included that showed this clearly.

20. Rather than stating “there appeared to be no relationship between information and behavior” (p.11), would it be more accurate to say “there appeared to be no direct relationship…”?
Yes, I used “there appeared to be no direct relationship…” instead of “there appeared to be no relationship between information and behavior…”.

21. Model fit is evaluated using only one criterion for the original model (p.11), and 3 criteria for the modified model (p.12). These criteria could be presented more consistently.
Yes, I added this info for consistency “….although two other criteria of the fit were not met”

22. It would be preferable to avoid the term “street men” (p12).
Yes, I revised as “male street laborers” instead of “street men”.

V. Revised according to the comments of reviewer 4: Nathan Hansen
Major Compulsory Revisions:
1. First, a primary objective of the study is to compare a modified version of the IMB model to the original in an attempt to better contextualize risk behavior among the study population. However, no rationale for why a modified model is needed, or how the IMB model should be modified, is given until the discussion. This should be a central point in the introduction and should explain potential limitations of the IMB model, discuss alternatives (why not use another model altogether rather than just modifying the IMB model), and then discuss proposed modifications to the IMB model. This has implications for measurement, potentially for sampling, and for setting up the statistical analyses, and should be done in the intro. Then subsequent sections of the paper can build from this.
Yes, I revised as follows: the research objective and hypothesis were reformulated at the end of the Introduction section. I also added the rationale for why a modified model was needed (based on the limitations of this model), or how the IMB model should be modified to ensure there should be a central point in the introduction.

2. Second, I think more explanation is needed around the sampling strategy. The study used an elaborate social mapping strategy that appears to have been used to draw a sample that covers all of the districts of the city. However, it does not describe if there was a system to weigh venues or districts by size or demographic difference, or whether participants were selected from venues randomly or purposefully. I assume the aim was to draw a sample that is representative and can generalize to laborers throughout the city, but more information would help to determine if that was the case, and whether these attempts were adequate. It would also be interesting to know if there were venues or districts where injection drug use is over-represented and whether this is a factor that should be accounted for in analyses.
Yes, I revised as follows. More explanation was provided around the sampling strategy with an elaboration on this strategy. A system was briefly discussed on how to weigh venues or districts by size as well as how participants were selected.

**Minor Essential Revisions:**

3. While I appreciate the attempts in the discussion to tie the findings from this study into the larger literature, some of the comparisons made did not seem to make sense, or perhaps could have been handled better. I suppose I would suggest organizing this more around (1) similarities between injectors and injection (as far as can be determined in the current study) and injectors studies in other global regions, (2) differences, and (3) possible cultural and contextual features that may account for the differences.

*Yes, I revised just a little bit, because by reviewing the paper according to comments of different reviewers, we can partly address this suggestion.*

4. Finally, I do think that both research and clinical/applied implications of this study could be more developed and fit more to the context of Vietnam. How can these findings influence HIV prevention research and practice with injectors in Hanoi and Vietnam more broadly?

*Yes, I added some discussion on implication in Vietnam broadly at the end of the Discussion section.*

In summary, I think this is an impressive study. However, the write-up of the study presented here could be greatly improved with a reorganization of the information on the modification of the IMB model, more information on the intent and implementation of the sampling strategy, and more discussion of cultural and contextual features and implications of findings.

*Yes, the paper was edited and reorganization of some parts so it has been improved.*

We look forward to hearing from you soon.

Sincerely,

**The First, Correspondent Author**

Nguyen Van Huy  
Institute for Preventive Medicine and Public Health, Hanoi Medical University, Vietnam  
Tel: 844.38523798 (ext. 108) or Cell: +84.917363919  
Email: nvanhuy@yahoo.com  
Mailing address: Institute for Preventive Medicine and Public Health, Hanoi Medical University, 01 Ton That Tung Str, Dong Da Dist, Hanoi, Vietnam.