

Mental Models of Placebo and Vaccine-Induced Seropositivity among MSM in India: Implications for Interventions to Counter Preventive Misconception among Prospective HIV Vaccine Trial Participants



Voices

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- Understanding of key HIV vaccine trial concepts (such as vaccine-induced seropositivity and use of placebo) is important to ensuring informed decisionmaking about participation.
- In order to prepare for future HIV vaccine trials among men who have sex with men (MSM) in India, we explored how mental models (simplified cognitive representations of complex concepts) may influence understanding of trial concepts, with the purpose of informing educational interventions.

METHODS

- From October 2013 to January 2014 we conducted:
- 40 in-depth interviews (IDIs) among a purposive sampling of diverse MSM from three community-based organizations in Chennai and Mumbai; and
- Six key informant interviews (KIIs) with healthcare providers and community leaders.
- Interviews were audio-recorded, transcribed and translated into English.
- We used techniques of frame/metaphor analysis (Kitzinger, 2007; Sopory, 2005) to identify and explore mental models relevant to HIV vaccine trials, including placebo-control group, use of placebo and vaccine-induced HIV seropositivity (VISP).
- In order to prepare for future HIV vaccine trials among men who have sex with men (MSM) in India, we explored how mental models (simplified cognitive representations of complex concepts) may influence understanding of trial concepts, with the purpose of informing educational interventions.

RESULTS

Sociodemographic characteristics

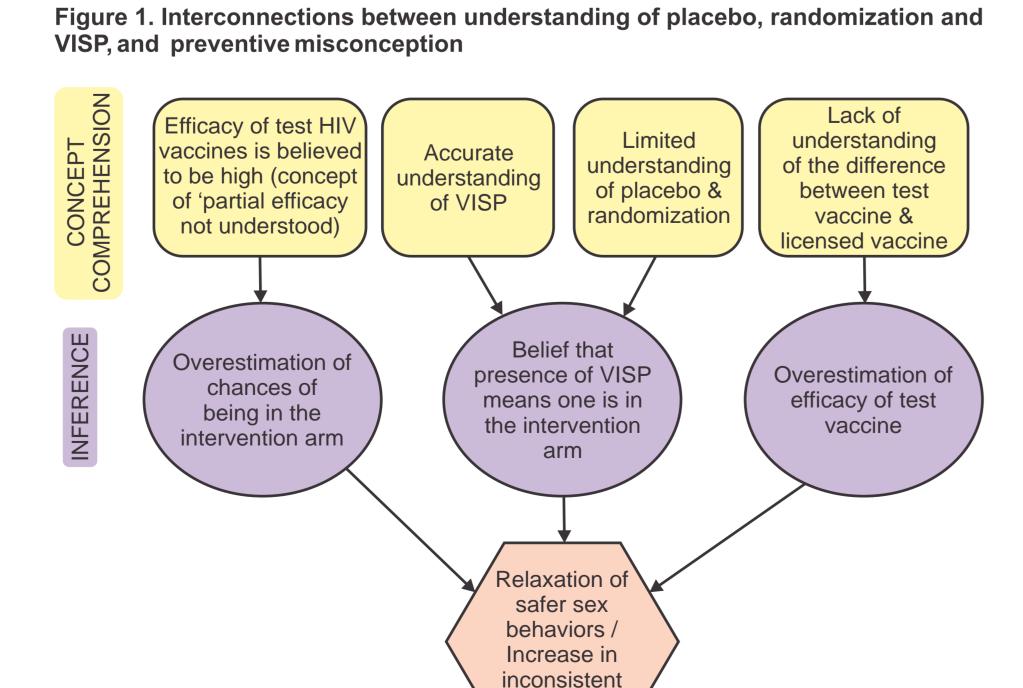
IDI participants (n=40)

- Mean age = 28.1
 - Self-reported identities included:
 - kothi (feminine/receptive) & double-decker (insertive and receptive) - 18% each)
 - panthi (masculine/ insertive) - 20%
 - gay and bisexual 23%
- 65% had completed college degree
- 23% were sex workers
- 10% were married

KII participants (n=6)

- Leaders of community agencies working with MSM = 4

Health care providers = 2



I. Understanding about vaccines

- Participants had a basic understanding of what vaccines are and for what they are used.
- Many participants (70%) correctly mentioned that vaccines are for prevention.
 - "Vaccine ... helps you not to get a particular disease....vaccination is better than cure."
- Many participants believed that vaccine will neutralize or kill germs. Some even believed that vaccine offers 100% protection against infections.
 - "[Vaccine] should prevent 100% [of the infections]. That is why they are giving vaccines in advance after doing a lot of research."

II. Understanding about Randomized Control Trials

- Many participants reported having heard of the term 'randomization', but the rationale behind randomized controlled trials was often misunderstood.
 - "Randomization means for example in the hotel industry whatever they do, they make groups... [they assign the role to all] you handle this [task]...others are asked to manage other tasks. In that way [groups are divided].'
- Participants largely understood "placebo," providing several examples such as "distilled water" and "fake product"
 - "Something else in 'kowdi' [fake] will be given, something else ... that is... a water like thing will be given".
- For some participants, placebos were seen as an excuse for researchers in the event a test vaccine is not efficacious.
 - "All the 10 participants would have signed this agreement. But only five individuals are given test vaccine. For other five only distilled water is given. It may be some other liquid. If those five contracted virus infection due to failure of the vaccine, doctor may escape by saying 'see, other five [who are in placebo] are not affected'..."
- Some described an imperative to unblind trial volunteers throughout, so appropriate 'precautions' (e.g., condom use) can be taken.
- Participants with greater understanding about placebo referred to media or advertisements that compare two products as their source of information.

"In [a movie], one person will be given an energy drink and other one will given a normal drink and both will be examined. The person who has taken energy drink will be shown as the better person. ... Similarly, [a health drink] advertisement with two groups - A and B is shown in TV."

III. Understanding about Vaccine-induced seropositivity (VISP)

- VISP was largely misinterpreted as actual HIV infection:
- due to vaccine itself
- 'live' HIV injection (that is, live HIV virus is believed to be injected), and
- use of unsterile needles in trials
 - "Maybe they might have used same injection (syringe & needle) for all the trial participants [which resulted in HIV infection]....".
- Understanding of "false-positive" HIV tests facilitated accurate conceptions of VISP.
- A variety of misconceptions supported not practicing safer sex, including belief in test vaccine efficacy, "helping" researchers determine efficacy, and using VISP to surmise one was "protected."
 - "At first, they will inject live virus (HIV virus)...later only they will give vaccine (test vaccine)... to test whether it works against HIV or not."

CONCLUSIONS

- Some mental models, based on participants' existing web of knowledge, facilitated understanding of key HIV vaccine trial concepts; but several others supported inaccuracies about trial rationales, risks, and fuelled preventive misconception.
- An evidence-informed mental models approach based on local understandings may complement traditional scientific literacy efforts (Sheridan et al., 2011) to support HIV vaccine trial preparedness among MSM in India. In addition, analogies/metaphors that are useful in improving participants' understanding of complex concepts in a simple way could also be useful (Galesic et al., 2013).

References:

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Acknowledgements:

This analysis is part of the research project supported by grants from the Canadian Institutes of Health Research (MOP-102512;THA-118570), the Canada Research Chairs program and the Canada Foundation for Innovation.