

LETTER to the EDITOR

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Reflecting on the Influence of Anti-Tobacco Media Messages on Quit Behaviour in India

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Dear Editor

The recently published article by Sharma et al., “Are antismoking messages delivered through different mass-media channels effective in India? Results from GATS-II survey” [1] share interesting findings related to the association of media exposure with quit behavior. This is an important study, as the second Global Adult Tobacco Survey (GATS 2) of India report provides limited information about respondents’ views on quitting after exposure to antitobacco messages, excluding health warnings on tobacco packages within the last 30 days of the survey. The following comments highlight a few dimensions of the research that may benefit from further discussion.

GATS-II is not the official name for the second Global Adult Tobacco Survey (GATS), which is formally referred to as GATS 2. Moreover, the GATS 2 report states that appropriate ethical clearance was obtained from the Ethics Review Committee, Institutional Review Board (IRB) of the Tata Institute of Social Sciences (TISS), and the study was conducted with technical support from the Centers for Disease Control and Prevention (CDC), USA, the World Health Organization (WHO), and Research Triangle Institute (RTI) International. However, the authors stated that ethical approval was obtained from both the TISS, Mumbai, and the CDC, Atlanta. The authors also reported that all participants who were 18 years and older provided their consent, and for those aged 15–17 years, a parent or guardian provided consent [1]. However, the GATS 2 report specifies that for minor respondents, interviewers were required to obtain consent from both the parent or guardian and the minor themselves [2]. These inconsistencies between the GATS 2 report and the manuscript may require further clarification.

The dependent variable ‘thoughts to quit following exposure to anti-tobacco messages in the past 30 days’ was directly assessed from items for smoking tobacco (GG1) and smokeless tobacco (GG2) in the GATS 2 questionnaire [2], making it straightforward to analyse and interpret. However, there are no similar questions in GATS questionnaire to directly associate exposure to media with past quit attempts. Therefore, relating the quit attempts made in the past 12 months to exposure to media in the past 30 days seems rather irrational and contradicts the logic of temporality in causal relationships. Furthermore, the article uses several composite dependent and independent variables derived from multiple items

in the GATS 2 questionnaire [1]. The article would have been more useful for other researchers to replicate the study by including the steps taken in calculating these composite variables.

Tobacco dependence is an important confounder of quitting behaviour [3]. The regression analysis presented in this study excludes tobacco dependence, thus compromising the strength of interpretation. We found limited justification for the use of GATS weights to analyse a subsample of tobacco users’ individual quit behavior. The GATS sample weights reflect the number of population members each respondent represents and are essential for estimating population metrics, such as smoking rates and their variance [4]. In GATS 2, a multistage, geographically clustered sampling method was employed to ensure that the data were representative of each Indian state and union territory. A nationally representative probability sample was used to provide estimates at both the national and regional levels, with further breakdowns by urban and rural residences, gender, and individual states by gender [2]. Therefore, the use of GATS weights makes a respondent representative of population members within these strata. However, other aspects, including stratification, cluster sampling, and without-replacement selection, are also important for accurately estimating variance [4].

While weights play a critical role in descriptive analysis, regional rate comparisons, and regression modelling, one should be cautious not to rely solely on weights, as this decreases the robustness of variance estimates and may compromise conclusions. Although we understand that the use of GATS weights could make a respondent representative of population members, we remain uncertain whether the applied weight can accurately represent individual human behavior, which is unique to each person.

In conclusion, while the article by Sharma et al. provides unique and important insights into the role of mass media in influencing quit intentions in India, it also underscores the need for more comprehensive studies. Addressing the limitations of the current study will be crucial for developing more effective tobacco control strategies in the future.

References

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Reply to the letter to the editor: Reflecting on the Influence of Anti-Tobacco Media Messages on Quit Behaviour in India:

Dear Editor

We are grateful for the opportunity to respond to the letter from Agarwal et al, regarding our article, “Are Anti-Tobacco Messages Delivered through Different Mass-Media Channels Effective in India? Results from GATS-II Survey.” We sincerely appreciate the authors for taking the time to go through our article and for generating such insightful discussions. We agree that the official citation of the second round of the Global Adult Tobacco Survey India, 2016-17 uses the term GATS 2, but using “GATS II” is not technically incorrect. In addition, some other studies have also used GATS II to represent the survey in their articles [1, 2]. We clarify that the appropriate ethical clearance was obtained from the Institutional Review Board (IRB) of the Tata Institute of Social Sciences (TISS) for the GATS 2 survey. The Centres for Disease Control and Prevention (CDC), USA designed the core questionnaire and the India-specific questionnaire for GATS 2 was approved by a questionnaire committee. The “Ethics Statement” at the end of the article details the ethical approvals and specifies that consent was obtained from all survey participants. Further, parent or guardian consent was also obtained for interviews of minors aged 15–17.

We understand that establishing a direct temporal relationship is challenging within the current cross-sectional design of the survey while measuring quit attempts. However, recognising the importance of evaluating quit behaviours as actions rather than just analysing the thoughts and perceptions, we used the

question, “Attempts to quit (smoking and smokeless tobacco) in the past 12 months” as a proxy measure to estimate this outcome variable. We have highlighted the study limitations in the discussion section and clarified that our study findings are correlational and for any direction of association to be estimated, we recommend longitudinal studies. However, it is always meaningful to do such analysis to get an understanding of the associations between the exposures and outcomes, which may inform the design of future longitudinal studies.

We understand that including detailed steps on calculations of the composite dependent and independent variables derived from the GATS 2 questionnaire would enhance the article’s utility for researchers aiming to replicate the study. We consider this as an opportunity to elaborate on the computations carried out in the study. We computed binary responses (Yes/No) for the dependent variables (Thoughts to quit and Attempts to quit) from the respective questions from the GATS 2 questionnaire. We additionally developed a comprehensive multiple media channel exposure index based on participants’ exposure to various media channels. For this, each media variable based on the exposure was converted into a binary format, with “yes exposure” represented as 1 and “no exposure” as 0. A new variable denoting the exposure to the different number of media channels was computed. For this, we assigned scores to represent exposure to different numbers of media channels: a score of 0 indicated exposure to no media channels, a score of 1 was assigned if any one media exposure was recorded, and scores continued up to 9, denoting exposure to all media channels. This scoring system was further combined and coded for analysis, such as exposure to no media channels (0), exposure to any one media channel (1), exposure to any two to three channels (2), exposure to any four to five channels (3), and exposure to any six or more channels (4).

We agree that tobacco dependence influences quit behaviours. Currently, in the GATS 2 questionnaire, there is no direct variable to measure the overall tobacco/nicotine dependence such as items in the Fagerstrom Test for Nicotine Dependence. The available question in the GATS 2 survey, “When did the tobacco users consume the first tobacco of the day” is only a proxy measure for tobacco dependence, therefore we decided not to include it in our analysis. As mentioned in the letter the use of GATS weights is essential for ensuring representativeness and accuracy in population studies. As GATS employs a complex sampling design, often involving multi-stage stratified sampling [3] we have done a standard weighted regression analysis to adjust for the sampling probabilities, ensuring that estimates accurately reflect the overall population. Additionally, we have computed the confidence intervals instead of reporting the p-value to present the variation range of each estimate.

The article highlights the limitations in the discussion section including the limitations of the cross-sectional data in establishing causality. The GATS 2 survey did not capture the survey participants’ exposure frequencies to media messages which precluded that analysis.

In conclusion, we greatly value the response to the article, which culminated in this discussion on critical

aspects of the research methods related to GATS data. The present study highlights how audience segmentation (types of tobacco users and gender) is important for planning anti-tobacco media campaigns. The study established that sufficient access to multiple and modern media channels delivering anti-tobacco information would be effective in raising thoughts about quitting and subsequent transition to quitting attempts among tobacco users. Additionally, the study highlights that females, both smokers and SLT users, have overall lesser exposure to mass media channels. This finding underscores the need for tobacco control measures that focus on increasing access to mass media channels and developing campaigns tailored to women's needs in the country.

Reference

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