# Review of: "Immediate test-retest reliabilities of intention to quit smoking measures in current adult smokers"

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Potential competing interests: In the past three years, CR's employer, Russell Burnett Research & Consultancy Ltd, has received funding from e-cigarette/tobacco product manufacturers to conduct research on tobacco product use behaviours, use intentions, and perceptions, and research on the effects of e-cigarette use/vaping on tobacco product use transitions.

This study examines the immediate (in this case, seven minutes) test-retest reliability of two common measures of ITQ smoking, a question of central importance to evaluations of the effects of exposure to product labels, labelling, and marketing and communication materials on adult smokers' ITQ smoking and intentions to use new tobacco products in addition to or in place of cigarettes.

Despite the importance of demonstrating that adult smokers' ITQ smoking remain relatively stable over short periods of time, unaffected by momentary fluctuations in thought, mood, or environment, assessment of the immediate test-retest reliability of measures of ITQ smoking has been surprisingly rare in the literature. The study described in this manuscript is therefore novel and the results timely.

The test-retest reliability of the SOC and MTSS measures of ITQ are tested in an appropriately simple two-arm randomized design. The results are informative and increase confidence for concluding that ITQ smoking, assessed by two common instruments, remain largely stable over short time periods during which no intervention or stimulus is presented, and so changes in ITQ smoking that are observed pre versus post-exposure to an intervention or stimulus may be more reliably explained by exposure to an intervention/stimulus of interest.

Overall, the manuscript is well-written. The study rationale is concise yet thorough, and the study design is simply and clearly explained. The sample size is justified and the item scoring methods and subsequent statistical analyses are well-described. There is a reasonable possibility that, because the the timeframe between test and retest responses was sufficiently short and the filler task was insufficiently distracting, that participants' test responses may have been fresh in memory and simply reiterated at the retest. The authors acknowledge this possibility, but justify the very short timeframe given to participants between the test and retest measures as a timeframe approximating the length of time that a participant in a TPPI study may have to engage with a specimen of marketing or communication material in between giving 'test' and 'retest' responses to ITQ smoking measures.

Below, I identify several minor issues and suggest additions/clarifications that I believe would strengthen manuscript. I hope my comments can be of some use to the authors.

The authors state that ITQ smoking "is a prerequisite for initiating smoking cessation interventions" and provide a reference in support of this claim. Perhaps there has been an error in the referencing, as I can't see that Reference 6 reports any evidence in support of this claim. Reference 6 does, however, reference a 1992 article by Prochaska and colleagues in which ITQ smoking is ascribed a central role in the transtheoretical model of behavior change. However, the theoretical importance of ITQ smoking for subsequent quitting smoking is different from a person literally being required to have an ITQ smoking before one can engage with smoking cessation interventions and services, as is implied by the authors' claim. I would encourage the authors to either make clear that ITQ smoking is a prerequisite for initiating smoking cessation *according to the transtheoretical model of behavior change*, or provide references in support of the claim that ITQ smoking is a *literal* prerequisite for engaging with smoking cessation services.

A minor point: the authors' refer to The Smoking Toolkit Study (STS) in past tense, when in fact the STS is an ongoing population survey, conducted monthly, with the latest data available for September 2022. The authors may wish to refer to the STS in the present tense and reference more recent publications in addition to the seminal publication on study design and methods.

The external validity of the study findings is potentially, but not necessarily, undermined by two factors. First, study participants were a convenience sample of adult smokers who opted in to this study following their selection for invitation on the basis of their membership in an internet research panel. The authors do not address the extent to which the sampled adult smokers recruited from IRPs represent adult smokers who were invited but opted not to join the IRP and, more importantly, represent the general U.S. population of adult smokers on key demographic and tobacco use variables. Second, this sample was not recruited according to population-weighted quotas, and no weighting adjustment was applied to bring the demographic composition of the study sample into alignment with the general U.S. population of adult smokers. I would therefore encourage the authors to offer some comment on the extent to which the obtained study sample represents the general U.S. population of adult smokers in terms of demography, tobacco use, and other relevant variables.

A minor point: please provide a supporting reference(s) or rationale for the study definition of 'current smoker'.

The 'Study Design' sub-section would benefit from the addition or clarification of the following information:

1. Total number of email invitations sent, number who clicked through to the informed consent form, response rate, qualifying rate etc.
2. The randomization method: was the 56%:44% split between Condition A and Condition B deliberate and due to the randomization method or to another factor, e.g., a differential dropout rate? More information about the disposition of participants would aid understanding of how the final different group sizes were arrived at.

The authors note that "the two measures are not interchangeable and measure different concepts linked to ITQ." This

raises an important question that the authors may wish to address, given that TPPI study investigators may be likely to administer both measures as part of a TPPI study instead of just one of these measures: do both measures also have good test-retest reliability when completed in the context of one another?

Lastly, having discussed the importance and implications of assessing test-retest reliability of measures of intention to *quit* smoking, the authors may wish to offer some comment on the comparable importance of assessing, in a similar manner, the stability of potential consumers' intentions to start smoking or start using new tobacco products before and after a brief filler task. Evidence of the stability of product uptake intentions over very short periods of time in the absence of an intervention/stimulus would further help to understand the extent to which changes in tobacco users and non-users' intentions to initiate use a new tobacco product are attributable to exposure to an intervention/stimulus.