Reviewer's report

Title: Misconduct in research: A descriptive survey of attitudes, perceptions and associated factors in a developing country

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Reviewer: BC Martinson

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1) Using an adapted version of the Scientific Misconduct Questionnaire-Revised (SMQ-R), fielded in a convenience sample of researchers attending a conference in Nigeria, this article provides descriptive information about respondents’ perceptions and attitudes about research misconduct in this developing country. The manuscript is clearly written, analyses are carried out appropriately (though I have some reservations about the dichotomization of responses, discussed further below), and the data being presented were generated using a previously validated questionnaire. These strengths notwithstanding, I have several concerns about the paper as it stands that dampen my enthusiasm.

2) While it is true that the SMQ-R tool has been validated, this was done in a sample of research coordinators in the U.S.. And while it is one of the only such measures available, its suitability for use in other samples of researchers and in other countries and cultures remains unknown. Was the original translated from English for the study? While limitations of the SMQ-R are not directly the responsibility of the current authors, I still need to take issue with a couple of aspects of the SMQ-R that likely limit its value for their purposes. First, it’s concerning that the SMQ-R asks for responses to many of its question items in terms of the frequency of, for instance, observed misconduct. This seems a less than ideal metric for assessing misconduct, which in most discussions of the topic historically has been presumed to be a fairly rare event, and one that is typically hidden. Due to this somewhat odd framing of the metric, no time-frame is specified for the observation period. So those with longer exposures to either observe or to have engaged in undesirable behavior would presumably report higher levels, just due to differential exposure time. In some cases, the individual question items included are also problematic. In particular, one item highlighted in this manuscript asked respondents to indicate their level of agreement with the statement, “Dishonesty and misrepresentation of data is common in society and doesn’t really hurt any body.” This statement has three quite distinct components; 1) dishonesty, which is distinct from and much broader than 2) misrepresentation of data, both of which are distinct from the issue of 3) whether either of these is really harmful. That’s a triple-barreled question, making it impossible to know which part of the statement respondents are agreeing or disagreeing with. It’s a poorly framed question item that likely should never have found its way into the SMQ.

3) I am also somewhat skeptical of the reality behind such reports of observing or
perceiving undesirable behavior on the part of others in one's environment. There are well-established psychological principles that lead us to believe that most people will generally see the behaviors of “others” in a less flattering light than they will view their own behavior. So we naturally expect reports of others' behaviors to suggest higher levels of wrongdoing or undesirable behavior. The problem is, we don’t really know how much of what is being reported is based in reality versus that which is based on these psychological biases. So interpreting responses to such questions must always be done with a great deal of caution and skepticism.

4) I have a larger concern, however, about the sample of respondents themselves. The 2012 results published by these authors from this same sample suggest that these respondents may have an extremely high level of self-reported undesirable research-related behavior. Their 2012 article suggests that more than two-thirds of these respondents self-reported having engaged in one of eight types of undesirable research-related behavior about which they were queried (although, again, we don’t really know over what time-frame nor how frequently they may have done so), and more than 40% self-reported having engaged in misconduct that meets the U.S. federal definition promulgated by ORI. These are far higher prevalence estimates than others have observed and reported, and it’s not clear to what extent this is a function of how the respondents were asked to report about their own behaviors, and to what extent it’s a function of the respondent sample itself. For the sake of argument, however, let’s say that misconduct is truly this rampant among the researchers in this sample.

5) The authors note in their discussion “it might be argued that individuals might have a tendency to lower their moral threshold for committing an offence if it is perceived that everybody else is committing similar offences.” Indeed, there is a line of theory in criminology that predicts just this sort of outcome, with exposure to “deviant peers” and the development of deviant sub-cultures as being pre-conditions of deviant behavior on the part of an individual (see, e.g. Ben-Yehuda, N., 1986. DEVIANCE IN SCIENCE Towards the Criminology of Science. British Journal of Criminology, 26(1), pp.1–27. Also - Cloward, R.A. & Ohlin, L.E., 1960. Delinquency and opportunity, New York: Free Press. Also - Cohen, A.K., 1965. The sociology of the deviant act: Anomie theory and beyond. American Sociological Review, 30, pp.5–14.) This raises, however, some tricky questions about the direction of causality in the observed descriptive data. Are the reported perceptions of the prevalence of undesirable behavior due to the fact that it is, in fact, so prevalent in the population? Or is it because such a high proportion of the respondents may already be participants in a deviant sub-culture in which such behavior IS in fact more common, but may NOT be outside of that sub-culture? Difficult to know with cross-sectional data of the sort available.

6) Currently, the descriptive results do not distinguish the perceptions of those who also reported engaging in undesirable behavior themselves from those who did not. I think that, at minimum, for the descriptive data to be at all useful here,
the authors must stratify their analyses such that one can distinguish the perceptions of those who self-reported having engaged in misconduct from those who did not. It’s not perfect, but it would at least give a chance of partially sorting the extent to which the reported perceptions are being colored by one’s own participation in a deviant sub-culture.

7) Finally – since these analyses are predominantly descriptive anyway, why not present the results in Table 1 using the full original metric of the Likert items?

**Level of interest:** An article of limited interest

**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.