Reviewer's report

Title: Socio-cultural and behavioural factors constraining latrine adoption in rural coastal Odisha: An exploratory qualitative study

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Reviewer: Dean Spears

Reviewer's report:

I am thrilled to see this paper. The data collection was clearly very thorough, and the paper is filled with facts and detail that illuminate thoroughly this very important topic. I would recommend publication in any event, but I strongly urge a revision that make implications more clear, reflects more, relates it to social science on culture in rural India, and relates it to recent studies on sanitation in rural India – in other words, do more to bring out the considerable value in these observations. Much of what is written here coheres with existing anthropological and sociological literature on rural India, and this should be highlighted.

I classify all of these suggestions as “discretionary” in the BMC system because I do not want to block this important paper in any way, but I do hope the authors will take opportunities to make this fantastic evidence even more useful.

More important points:

* CASTE.

I highly applaud the discussion of caste and casteism. This is the conversation that the Indian sanitation sector needs to have; it is what makes sanitation in rural India internationally uniquely challenging. I would encourage more drawing out of the implications of the facts listed. What does it tell us about latrine use in rural India and prospects for sanitation policy that there are so many associations between caste and sanitation behavior? This may be obvious in rural India, but won’t be to an international audience.

o “For those with latrines: Stepping over the squatting pan is considered chuan (i.e. getting impure) and the clothes get impure by that” appears terrifically important for sanitation programs.

o The discussion of the sacred thread – and specific rituals around latrine use – highlights the relationships among caste, purity, pollution, and defecation behavior.

* GENDER and AGE.

On page 7, the discussion of older mother-in-laws defecating in the open is very important, as is the discussion of daughters-in-law on page 8, although I note that the category of “mother-in-law” and “daughter-in-law” might not seem natural to an international audience and should be explained.

o Coffey, et al (2014a) similarly find that older women in rural north India are very
likely to defecate in the open. Relative to daughters-in-law, these older women have more freedom in the conduct of their lives. The fact that the women with the most freedom evidently choose to defecate in the open should be considered carefully, in light of sometimes simplistic discussions of gender and sanitation, or an assumed universal preference of females for latrine use.

o I am particularly struck by the observation about daughters-in-law: “Even being seen by men in the village is deemed problematic.” This coheres with the observation of Coffey, et al (2014b) that if daughters-in-law are particularly likely to use latrines, it may be not because of anything sanitation-specific, but as part of a general restriction on mobility.

o This is very, very important: “Males usually are in charge of safeguarding the privacy and safety of their daughter-in-laws, so they are often the instigators, feel the need to build a latrine for the women in the household, particularly for the protection of the newlywed daughter-in-law, rather than women themselves demanding it.” Young women in India choose very little of what they do, and their higher probability of using latrines cannot be interpreted naively as a preference.

* LATRINES and PITS.
Emic vs etic understandings of latrines. In the abstract, why do households call complete latrines “incomplete”? On page 13, is it your claim that latrines were poorly constructed, or that pits are small, or is that the participants' understanding? If the point is that these participants understand latrines in a different way than, say, the writers of JMP guidelines do, then this fact is useful and probably deserves attention.

o Are people objectively wrong about how long it takes latrine pits to fill, on average?

o Page 20 elaborates: “Among the study population of rural Odisha, however, we found people not using a GoI subsidized latrine even if complete (as per government guidelines) and functional but lacking a roof.”

* The question of water bears further scrutiny. Is water less available in this population than in other populations with less open defecation?

* Engage with the literature rural India; there is now a growing set of studies on this topic, showing important commonalities!

o I find the discussion of ideal types of household members excellent. The discussions of rural men defecating in the open in the early morning and of the very old and sick having different rules (including being able to defecate in the house) to cohere strikingly with Coffey et al (2014b).

o Consider interacting with literature about other countries, too. I believe that we learn about the special challenges in rural India by contrasting it with other contexts where open defecation is less common.

Small points:
* According to the discussion on the top of page 4, the sample was designed to exclude villages where most people had no latrine whatsoever (because sampling was based on latrine type). Because this is a majority of villages in Orissa, this choice should probably be discussed. Does this mean that this sample is something of a best case scenario for latrine adoption?

* “A majority (71%) of Indians without sanitation live in rural areas[1].” The 2011 Census of India finds a larger fraction than even this, I think.

* Especially because this is a paper discussing the fact that people do not use latrines that they own, it is probably misleading to describe people who defecate in the open as “Indians without sanitation.” Similarly, the third paragraph of the Background section refers to “access to sanitation,” which seems to similarly contradict the point of the paper.

* On the bottom of page 3: “Latrine coverage improved marginally between 2001 and 2011, with only 7% of HHs estimated to have gained a latrine facility during this period.” I think you mean that the fraction changed by 7 percentage points, not that 7 percent of households changed (the set of households is different).

* I’m surprised by the discussion of low mobility in the next to last paragraph of page 3 with no citations. Although permanent migration among rural men is indeed low in much of rural India (in international comparison), many people believe that short term migration is more common than some data sources are designed to identify. Migration may indeed be very rare in Puri, but a citation feels appropriate.

* “Tribal” at the bottom of page 4 should probably be defined for an international audience.

* The association of latrine use with disability also matches Coffey, et al (2014b)

* Very important: “Households also reported latrine use by most family member and despite the use, only one household reported of emptying the pit once. The rest had never been emptied, even if the latrine was 20 years old.” Households that use latrines make big pits that subjectively never need emptying.

Because the content of this paper is so important, and I hope it will be widely read, I note that the paper could likely benefit from the attention of a professional copy editor.

References:

**Level of interest:** An article of outstanding merit and interest in its field
Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I am Executive Director of r.i.c.e. (online at www.riceinstitute.org), a 501(c)(3) non-profit research organization that studies sanitation in rural India. This is my paid job, but there is no significant mechanism of important probability by which I or r.i.c.e. will receive more or less money due to this research paper. Therefore, I do not believe this constitutes a conflict of interest.