

Fraudulent participants in qualitative child health research: identifying and reducing bot activity

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Dear Editor,

We are researchers working within paediatric health sciences across the UK. We would like to raise our concerns about a novel, seemingly growing issue within participant recruitment for qualitative research in child health; fraudulent participants, 'bots', also known as malicious automated software, and 'human bots', people paid by third parties to undermine studies [1]. We want to raise awareness of the impact that this is having at all levels; to young people who are genuinely impacted by a condition, public understanding of health, integrity of scientific research, development of evidence-based child health practice and policy, and ourselves as researchers.

Although there is literature on this topic, this has focused on questionnaire studies, where ineligible individuals complete online research to profit from incentives [2]. Individually, we have all experienced something different; fraudulent individuals posing as young people and caregivers completing screening questionnaires and committing to joining online focus groups or interviews. Said participants have attempted to bypass screening measures designed to prevent such activity (e.g. asking specific questions to check for genuine, consistent responses; a known method of detecting fraudulent participants or 'bots'). It must be noted that in all studies, recruitment occurred across numerous social media platforms (including Twitter, Facebook, and Instagram), with voucher payments offered as reimbursement in most studies (ranging from £20-40).

What we are experiencing is bizarre and concerning; the sophistication of the messages received goes beyond recognised language of automated software, mirroring human communication and referencing study details. This has the potential to undermine the integrity of key data, and compromises researcher and genuine participant safety, should these fraudulent individuals end up in research settings. One of us had over 150 fraudulent

expressions of interest in less than 24 hours. This wastes time and takes up valuable, often scarce resources. Furthermore, the fabrication of serious health conditions (in our experience; cancer, gastrointestinal conditions, and eating disorders) is worrying. This is not a new phenomenon, but using this to influence major research studies may be. We should also highlight that all of the affected researchers are young females, another factor which may influence the type of research targeted in this way.

Below, we highlight a series of 'red flags' to support identification of fraudulent participants in child health research (Table 1). These are based on our experiences and are not all-encompassing. We propose that a single 'red flag' is not enough to identify a fraudulent participant, but instead, may raise suspicion, prompting further follow-up. Our attempts to address these have included further screening with participants via questionnaires, video or phone calls. Out of 483 expressions of interest, we identified at least 385 fraudulent participants using enhanced screening (80%). Our experiences highlight the importance of rigorous screening, prior to informed consent, to support the rigour of qualitative child health research. Financial incentives can increase the rate of response from participants [3], but may also motivate ineligible participants to deceive about their eligibility for study enrolment to secure payment [4]. To mitigate the risk of fraudulent activity, we recommend that any financial incentives are omitted from advertisements shared on social media.

Table 1.

Red Flag	Example
<p>Pre-study communications with research team</p>	<p>Emails/contact from potential participants which do not include a preamble. Participants typically describe their reasons for interest in the study (e.g. <i>"I/My child was diagnosed with [condition] in 2016, and I saw information about this research project..."</i>). When a preamble is not provided, a red flag may be raised (e.g. simply stating <i>"I want to take part in the study."</i>)</p> <p>Correspondence that are lacking in pertinent details about the participant (e.g. <i>"I am a carer and would like to take part in the survey"</i>).</p> <p>Correspondence that appears overly formal and generic, with no mention of the specific study (e.g. <i>"Good morning researcher, I am emailing you to express my interest and eligibility in a focus group you are conducting."</i>).</p> <p>Correspondence that does not include salutations and or valedictions, or that don't address the researcher by name (e.g. <i>"I am indicating my interest in your study"</i> or <i>"I am eligible for your study"</i>).</p>
<p>Details around health conditions that appear implausible.</p>	<p>Being a carer for multiple children with a rare disease, or being diagnosed with a disease far outside the usual age-range for that condition.</p>

	Reporting the diagnosis of a condition in later years, that is typically diagnosed in early childhood (e.g. in a paediatric cancer that is almost always diagnosed at age <5, reporting diagnosis at age 17).
Details around medical support appear vague, incorrect, or are falsified.	When asked for the hospital that a young person received treatment at, responding with “ <i>private clinic</i> ”, a hospital that does not exist (in the UK or worldwide), or in the case of rare diseases, a hospital that is not known for treating the condition.
Email addresses and communications appear to follow a generic format across multiple enquiries.	There may be [no title] in the description of the email/messaging, a direct copy of the entire study advert in the title of the email, or email addresses that appear unlikely or are very similar/the same as the name of another ‘participant’.
Provision of a phone number that is unobtainable.	Contact numbers that do not exist, redirect to an incorrect number, or are unanswerable.

Yours sincerely,

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References

1. Dupuis, M., Meier, E., & Cuneo, F. (2019). Detecting computer-generated random responding in questionnaire-based data: A comparison of seven indices. *Behavior Research Methods*, 51(5), 2228–2237. <https://doi.org/10.3758/s13428-018-1103-y>
2. Teitcher, J. E. F., Bockting, W. O., Bauermeister, J. A., Hofer, C. J., Miner, M. H., & Klitzman, R. L. (2015). Detecting, preventing, and responding to “fraudsters” in internet research: ethics and tradeoffs. *The Journal of Law, Medicine & Ethics : A Journal of the American Society of Law, Medicine & Ethics*, 43(1), 116–133. <https://doi.org/10.1111/jlme.12200>
3. Abdelazeem, B., Abbas, K. S., Amin, M. A., El-Shahat, N. A., Malik, B., Kalantary, A., & Eltobgy, M. (2022). The effectiveness of incentives for research participation: A systematic review and meta-analysis of randomized controlled trials. *PLOS ONE*, 17(4), e0267534. <https://doi.org/10.1371/journal.pone.0267534>
4. Fernandez Lynch, H., Joffe, S., Thirumurthy, H., Xie, D., & Largent, E. A. (2019). Association Between Financial Incentives and Participant Deception About Study

Eligibility. *JAMA Network Open*, 2(1), e187355.

<https://doi.org/10.1001/jamanetworkopen.2018.7355>