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# Safeguarding online research integrity: concerns from recent experience

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Over recent decades there have been major advancements in the use of internet and digital technologies, which continue to shape our society, including the provision and delivery of healthcare services. These changes are evident within dermatology settings, as both asynchronous and synchronous methods of teledermatology have been widely embedded as part of routine service provision.<sup>1</sup> Other styles of remote consultations, via telephone and video-conferencing platforms, are also commonplace due to the SARS-CoV-2 pandemic.<sup>2</sup>

The research landscape has followed suit and is continually evolving to embrace new technologies.<sup>3</sup> This shift has come as no surprise given the many advantages associated with online research methods, including greater convenience for both investigators and participants, increased efficiency, reduced costs, and better access to international populations and target populations including typically 'hard-to-reach' groups (e.g. low-income families).<sup>3,4</sup>

However, internet-mediated research is not without its flaws. Common issues with online research include malfunctions with technology, security breaches, confidentiality and anonymity, as well as collecting, transferring, storing and processing data in line with General Data Protection Regulation. Some researchers have reported receiving abuse when carrying out research online,<sup>4</sup> and a reduced ability to build rapport with participants and detect nonverbal cues (body language and expressions) during online interviews.<sup>3</sup>

As online research methods increase, we are becoming more aware of the challenges of using digital media and the potential threat these pose to the core values of research integrity (i.e. honesty, accountability, rigour, care and respect, transparency and open communication) that were set out in the UK Concordat to Support Research Integrity.<sup>5</sup> For example, in the context of our ongoing research, recent experiences have highlighted some concerns with using the internet as a means of recruitment. We have launched two complementary studies – an online survey and a series of online group interviews – to determine the perceived acceptability of a new smartphone application to support the psychological health of adults living with skin conditions. We have relied heavily on social media and an online survey platform for recruitment.

During this process, we received several potentially fraudulent requests for participation, which were characterized by a quick succession of almost identical emails and completed online registration forms, including similar demographic information, from people using different names and email

addresses. The bot-like responses were sometimes followed up with emails querying financial compensation for participation even though no financial incentive was offered. Without a way to verify these identities, we realized that we had little if any control over who is engaging in our research, whether participants really met key eligibility criteria (e.g. age), or if survey responses were trustworthy or accurate. Ultimately, suspicious requests were ignored because we could not guarantee that fraudulent participants would respect the confidentiality of genuine participants during online group interviews.

Cases like this raise important questions regarding scientific integrity in quantitative and qualitative research, and particularly the safety of researchers and participants. The inability to verify the true identities of participants also challenges the authenticity of research findings – do results reflect the views, attitudes and lived experiences of people with dermatological conditions, or are responses fabricated by people, potentially those without dermatological conditions, who have ulterior motives for participating in research?

As internet and digital technologies continue to develop as research tools, dermatology researchers need to be vigilant and acknowledge possible issues associated with carrying out research online. While more robust identity screening procedures and comprehensive education and training on conducting online research methods, including ethical and legal issues, are needed long term,<sup>4</sup> researchers can and should be acting now to mitigate the risks of harm and maximize the benefit for all involved in the research process. Careful consideration of the potential pitfalls of using online methods from the outset is essential. Researchers should familiarize themselves with institutional procedures for escalating concerns and instances that occur, and refer to existing resources offering guidance on ethics<sup>6</sup> and current best practice for internet-mediated research.<sup>7</sup>

It is important to reflect on our own, and learn from others', experiences of conducting online research in the field of dermatology, plus the perspectives of the people who are involved and engaged in research.<sup>8</sup> Doing so could help to preserve the integrity of dermatology research and, ultimately, patients' faith and trust in the research community and process more generally.

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## 2 Perspectives

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