Mobile technology has become increasingly prevalent in the workplace. Smart phones, tablets, and other forms of personal digital assistant have particular appeal for professionals seeking tools to enhance productivity. Research in particular requires the capacity to collect and process data in an efficient and cost-effective manner. Investigators are increasingly turning to mobile devices for solutions as programs and data handling capabilities become more sophisticated. With these developments, however, arises the need to contemplate and address ethical considerations relevant to mobile technology use in the research context.

There are many reports describing use of mobile devices as part of the research process. Examples include remote field data collection, observational data collection, survey administration, and patient data diaries. Mobile devices also have the potential to improve the feasibility of conducting research in poor and underserved areas of the world where this is much needed. In addition to facilitating data collection and/or the administration of study instruments, mobile technology can be used to enhance the methodological quality of a study.

While investigators may be excited by the potential for mobile technology to improve the research process, Research Ethics Boards (REBs) and Institutional Review Boards (IRBs) may be hesitant. The role of the REB/IRB is to ensure that research is conducted in an ethical manner and in accordance with institutional policies and jurisdictional laws. Research involving human subjects must adhere to the basic ethical principles, including respect for persons, beneficence, and justice.

Of particular relevance to research protocols incorporating mobile technology are considerations related to participant privacy, confidentiality and data handling.

While the considerations related to data handling may be obvious, there are additional aspects of mobile device use in research that may raise ethical questions. When a minimal risk survey study of health care providers was recently proposed to the REB of the author’s institution, concerns were raised about the impact of mobile device use on the voluntariness of study participation. The proposed protocol involved use of a tablet-based information and consent form followed by a tablet-based survey. In this case, the stamp of approval of the REB could be displayed on the tablet, and an associated signature box permitted eligible participants to sign the tablet-based consent form with their finger if they elected to participate. The tablet was to be offered to potential participants by a Research Assistant knowledgeable about the study and available to answer any questions prior to handling the tablet and/or prior to signing the consent. From a process perspective, the proposed sequence of events was very similar to that which occurs with use of a paper-based consent, where the medium would simply be a tablet rather than paper. The advantages of use of a tablet-based information and consent process are that this eliminates the costs related to printing information and consent forms, the need for the research assistant to carry these, and the need to securely store signed consent forms for the required period.

The REB chair rejected our proposed use of a tablet-based information and consent process on the basis that this did not provide eligible participants sufficient time to consider whether they wished to participate in the study or not. The ethical principle of concern related to the voluntariness of participation due to the immediacy of tablet-based survey. Instead, the REB mandated use of a paper-based information and consent process.
consent sheet in conjunction with the tablet-based survey, although participants were still recruited through direct approach by a Research Assistant. Interestingly, the same REB deemed acceptable the recruitment of survey participants via email, where the email inviting study participation contained a hyperlink to a Survey Monkey version of the survey and an electronic version of the information and consent sheet was simply provided as an email attachment which participants were under no obligated to review. Additionally, no signature was required from participants completing the Survey Monkey version of the survey as the REB interpreted the decision to click on the survey hyperlink as a positive indication of consent. The REB apparently considered the email invitation/web-based survey hyperlink process more autonomous, given that eligible subjects could read the email invitation in privacy and return to it at a later time if they wished.

Some of the considerations relating to data privacy, confidentiality, and security have been previously reported. In Canada, some institutional REBs are showing increasing disapproval of traditionally accepted survey programs (Survey Monkey) that involve web-based data collection and storage due to data privacy, confidentiality, and security concerns. Investigators planning to submit for ethics review a protocol involving the use of mobile technology should expect their REB to scrutinize procedures related to data collection, storage and security, as well as any potential threat to the privacy and confidentiality of participants. One way to avoid potential delays is to contact the REB directly regarding a study proposal prior to submitting a formal application. In the example provided, all correspondence was handled via email following an advance inquiry regarding the acceptability of the proposed process. REBs are typically open to such communication and this can save investigators time by identifying potential concerns early.

Mobile technology is an exciting development for investigators that allows for many creative research applications. While the technology or proposed use may be unfamiliar to an REB, the same basic ethical principals in judging the appropriateness of its use will be applied. Up front inquiries can ensure clarity and help avoid delays in obtaining protocol approval.

References


Letter to the Editor


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