

Title: 10-Step Guide to Digital Survey Research

ABSTRACT

The use of digital surveys for research in clinical settings is increasing, particularly during the COVID-19 pandemic when much data collection planned to be done in-person is now occurring digitally. Successfully preparing and conducting a digital survey can be challenging for even the most experienced researcher, given the number of platforms available to choose from, intricacies of designing an effective and user-friendly tool, and factors affecting participant response rates. Over time, our clinician-led research team has developed a standard process and tools for conducting digital survey research. Clinician researchers, trainees, students, and others conducting health research may find our process and resources helpful to inform their work. In this article, we present a practical, step-by-step guide. Specific considerations and recommendations unique to digital surveys are included to guide the novice or experienced researcher from protocol development through to data collection and knowledge dissemination. Our communication templates and tools are provided (see Appendices).

MAIN TEXT

Introduction

Surveys are a common data collection tool in family medicine research.(1–3) They are often administered for trainee and student research projects. Modes of administration include interviewer-based, paper-based, and digital. Use of digital surveys is increasing, as they offer an efficient, low-cost method of data collection from large samples and technology advances have improved accessibility.(4–6) When developing a digital survey, there are unique issues researchers must address.(2,5,7) Choosing the “right” platform, building the survey, and recruiting participants are critical steps that can be challenging without clear direction. Below is a ten-step guide to conducting digital survey research. This can be used for surveys of any length and sample size. The principles of co-design and integrated knowledge translation should be incorporated into each step.

1. Develop the research protocol

A research protocol is the blueprint for the project.(8) The following should be clearly defined: research question, objectives, timeline, population, languages of distribution, sampling frame and sample size, recruitment strategy, distribution workflow, ethics, consent process, data storage, and analysis plan.(9,4,10,11,2) Researchers should determine at the onset whether the study population has the digital literacy and access to devices needed to complete the survey. It may be necessary to use multiple modes of administration to ensure accessibility for all participants; individuals without internet access may need to participate over the phone or on paper. Excluding such participants may bias the results.(11)

2. Find/create the survey

Researchers should seek existing surveys that have been assessed for validity, reliability, and usability which can be used or adapted to answer their research question.(12–14) If none exist, researchers can develop their own. They should be careful to only include questions necessary to answer the research question. Inclusion of additional questions may affect survey length and clarity, leading to low response rate.(7) Carefully consider the experience and/or knowledge of the study population and ensure questions only ask for information they can reasonably provide. Refer to survey development guidelines for best practices related to question content, structure, and layout.(4,7,9,12,13,15,16) Draft the survey in a word processor to simplify editing.

With the survey, develop distribution material, e.g., text for recruitment email, consent form, reminders, and survey preamble (Appendices A, B, and C). With certified translators, prepare translations for each language in which the survey will be distributed.

3. Choose a platform

With over 300 survey platforms to choose from, including Hosted in Canada Surveys, Survey Monkey, and REDCap, there is one to suit any study.(2,7) To choose a platform, the researcher should consider cost, security and encryption, location of data storage, Research Ethics Board (REB) requirements/restrictions, ease of use, and advanced capabilities needed. These may include ability to create a multilingual survey, upload media files, and use complex question formats.

4. Submit for ethics review

The Tri-Council Policy Statement 2 (TCPS2) Article 2.5 provides guidance on the distinction between quality improvement studies and research.(17) Your institution’s REB can also provide guidance. Prepare the appropriate application and submit it for review. Include the protocol, survey, and distribution material.

5. Upload the survey

Once the survey is developed, upload it to the chosen platform. This can be a complicated and timely process. Many platforms have free online tutorials.

6. Pilot test

Surveys should be piloted before being sent to participants.(4,7,9,12) Pilot testing can identify issues such as poor device compatibility, trouble with advanced features, or stylistic choices that affect usability.(3,7,9) Pilot the survey using different devices and web browsers (see coordination tools in Appendices D and E). Send the designated pilot testers the survey and a pilot testing form (a questionnaire to gather information about functionality, navigation, and readability) (Appendices F and G). First test within your project team, and then include other members of the study population. Address any issues and repeat as needed. Pilot the survey in each language.

7. Administer the survey

Activate the survey once REB approval is obtained and pilot testing is complete. Distribute the survey following the protocol, and only use the distribution material approved by the project team and REB. Keep track of who the survey links were sent to and when.(4)

8. Send reminders

Send the appropriate individuals and/or groups reminders one to four weeks after sending the survey. The interval between the initial contact and reminders, as well as number of reminders, will vary across surveys.(9) We usually send two. This should be determined in the protocol and approved by the REB.

9. Export and clean the data

Deactivate the survey on the pre-determined closing date, export survey responses, and clean the data. Data cleaning is the process of identifying and correcting invalid data points in a dataset, including missing data.(16)

10. Analyze and share the results

Analyze the data as determined in the protocol. Once the data is analyzed, summarize and circulate the results to interested audiences via a report, presentation(s), infographic(s), and/or a manuscript. Follow reporting guidelines.(4,18)

Conclusion

Digital surveys are a useful data collection tool in clinical settings. However, there are specific considerations and challenges unique to this mode of administration. This article serves as a practical reference document to aid researchers in conducting digital survey research.

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APPENDIX A: SAMPLE TEXT FOR SURVEY INVITATION BY EMAIL

Subject: [Insert a clear subject line that indicates this is a survey invitation and the subject matter]

Sent on behalf of [insert name, if needed].

Dear [insert name],

[Insert 1-2 sentences that introduce the context/reason for the survey.]

In order to [insert objective(s)], we are asking for your help in completing a brief [insert time in minutes] survey about [insert subject, such as “your experience as a primary care provider”, “your clinic’s current referral practices”, etc.].

[Insert description of any potential benefits or harm resulting from participation.]

Please click on the link below to access the survey. This link is uniquely tied to this survey and your email address. Please do not forward this message.

Link to Survey: [Insert link. This is automatically generated by some survey platforms.]

If you have any problems accessing the survey, please contact [insert your name/name of staff member] at [insert email] or by phone at [insert phone number].

If you have any questions about the survey or your participation in it, you may contact [insert name of principal investigator/senior person] at [insert email].

We thank you for taking the time to help us [insert intended result].

Sincerely,

[Insert your name or name of principal investigator/senior person, as appropriate.]

If you do not want to participate in this survey and do not want to receive any more invitations, please click the following link: [Insert link. This is automatically generated by some survey platforms.]

APPENDIX B: SAMPLE TEXT FOR SURVEY INVITATION REMINDERS

Reminder Email #1

Subject: Reminder: [Insert same subject as in initial email]

Sent on behalf of [insert name, if needed].

Dear [insert name],

Recently, we sent you a survey link to gather your opinion on [insert subject]. [Insert why their response is important and/or how it will be used.]

In order to [insert objective(s)], we are asking for your help in completing a brief [insert time in minutes] survey about [insert same statement as in initial email].

Please click on the link below to access the survey. This link is uniquely tied to this survey and your email address. Please do not forward this message.

Link to Survey: [Insert link. This is automatically generated by some survey platforms.]

If you have any problems accessing the survey, please contact [insert your name/name of staff member] at [insert email] or by phone at [insert phone number].

If you have any questions about the survey or your participation in it, you may contact [insert name of principal investigator/senior person] at [insert email].

We thank you for taking the time to help us [insert intended result].

Sincerely,

[Insert your name or name of principal investigator/senior person, as appropriate.]

If you do not want to participate in this survey and do not want to receive any more invitations, please click the following link: [Insert link. This is automatically generated by some survey platforms.]

Reminder Email #2

Subject: Survey Closes Next Week: [insert title] – Don't forget!

Use the same text as that used for Reminder Email #1.

Before the sign off, include: "This is the final reminder about this survey. The survey will close on [insert deadline to respond]."

APPENDIX C: SAMPLE TEXT FOR LANDING PAGE OF SURVEY

Thank you for agreeing to complete this survey about [insert subject]. [Insert brief description about how the survey responses will be used or what they will inform].

This survey is entirely voluntary and will take [insert time in minutes] to complete. [If anonymous: “The survey is anonymous.”] [If not anonymous: “The information you provide will be confidential.”] You will not be identified in any report or publication arising from this survey. If you would like to receive the aggregate results of this survey, please contact [insert name] at [insert email].

[Insert description of any potential benefits or harm resulting from participation.]

You are free to stop completing the survey at any time, but once you have submitted your responses, they cannot be deleted. There will be no way of linking the information to you. You may complete the survey any time before [insert end date].

If you have any questions about the survey or your participation in it, you may contact [insert name of principal investigator/senior person] at [insert email]. If you have any technical issues, please contact [insert your name/name of staff member] at [insert phone number] or by email, [insert email address].

APPENDIX D: PILOT TESTING TRACKING TABLE

First Name	Last Name	Email	Device	Web browser
Jane	Doe	JDoe@email.org	iPhone	Safari

APPENDIX E: DEVICE TRACKING TABLE

	Google Chrome	Mozilla Firefox	Safari	Internet explorer	Other
Laptop Computer					
Microsoft Windows	X				
Apple					
Android					
Tablet					
Microsoft Windows		X			
Apple					
Android					
Desktop Computer					
Microsoft Windows					
Apple					
Android					
Phone					
Microsoft Windows					
Apple					
Android					

APPENDIX F: PILOT TESTING FEEDBACK FORM

Pilot Testing Feedback Form: [insert project name]

Instructions:

Please review this form prior to testing the survey. In this form, you will be asked to answer questions about survey functionality, navigation, readability, and the time you spent completing the survey.

As you complete the survey, test survey functionalities such as a) ability to leave and return to the survey to complete your responses, b) ability to type responses into text fields, c) ability to navigate to earlier pages, and d) those specific to particular questions (ex. ability to choose multiple options or only choose one, when appropriate).

Testing Survey: [insert project name]

Name of respondent:

Date:

Section A: Respondent Device Information

1. Which device did you use to complete the survey?

Device	Please type an X below to indicate which device you used
Laptop computer	
Tablet	
Desktop computer	
Cellphone	
Other (please specify):	

2. Which web browser did you use to complete the survey?

Web Browser	Please type an X below to indicate the browser you used	Version
Internet explorer		
Mozilla Firefox		
Chrome		
Safari		
Other (please specify):		

3. Which operating system did you use to complete the survey?

Operating System	Please type an X below to indicate the system you used	Version
Microsoft Windows		
Apple		
Android		
Other (please specify):		

Section B: Survey Navigation and Functionality

1. Did the survey link work? **Please type “Yes” or “No”**
2. Did you find the instructions to the survey easy to follow? **Please type “Yes” or “No”**
 - a. If no, what instructions did you have trouble with and why?
3. What did you think about the visual layout of the survey (font sizes, colours, format, tables, etc.)? Was it easy to read?
4. How long did it take you to do the entire survey?
5. Did you have any trouble typing in your answers? **Please type “Yes” or “No”**
6. Test leaving the survey with it partially complete and returning to it later.
 - a. Were you able to access the survey without any problems? **Please type “Yes” or “No”**
 - b. Were all of your answers still there? **Please type “Yes” or “No”**
7. Was it easy to navigate back to earlier pages? **Please type “Yes” or “No”**
8. If you navigated back to an earlier page were your answers on the later page(s) saved? **Please type “Yes” or “No”**
9. Did the survey website ever crash while you were navigating through it? **Please type “Yes” or “No”**
10. Were there any problems with connection speeds or time to load any of the pages? **Please type “Yes” or “No”**
11. Do you have any other comments or concerns? **If yes, please type them below.**

APPENDIX G: SAMPLE EMAIL TO PILOT TESTERS

Example 1: Survey Pilot Link Copied into Email (e.g., Survey Monkey)

Subject: Request to Pilot Test [insert name] Survey by [insert deadline]

Hi [insert pilot tester name],

The [insert name of survey] Survey is now ready for pilot testing on [insert platform]. Please use the below link and attached form to provide feedback on the survey's functionality. Please pilot test the survey on your [insert device type(s)]. It will take approximately [insert time in minutes] to complete.

The attached feedback form has additional instructions for pilot testing. Please review it prior to starting the survey.

As a reminder, the objective of this survey is to [insert objectives]. The target respondents are [insert respondent type].

Please return your completed feedback form to me by [insert deadline].

Link to survey:

Sincerely,

[Insert your name or name of principal investigator/senior person, as appropriate.]

Example 2: Survey Pilot Link Sent Separately from the Platform (e.g., Hosted In Canada Surveys)

Subject: Request to Pilot Test [insert name] Survey by [insert deadline]

Hi [insert pilot tester name],

The [insert name of survey] Survey is now ready for pilot testing on [insert platform]. A link to complete the survey will be sent to you by email from [insert survey platform name]. Please pilot test the survey on your [insert device type(s)]. It will take approximately [insert time in minutes] to complete.

Please use the attached form to provide feedback on the survey's functionality. The form has additional instructions for pilot testing. Please review it prior to starting the survey.

As a reminder, the objective of this survey is to [insert objectives]. The target respondents are [insert respondent type].

Please return your completed feedback form to me by [insert deadline].

Sincerely,

[Insert your name or name of principal investigator/senior person, as appropriate.]