Supplemental material

BMJ Publishing Group Limited (BMJ) disclaims all liability and responsibility arising from any reliance placed on this supplemental material which has been supplied by the author(s)

BMJ Open

Supplementary material

Qualitative interviews- topic guide

University of Bath
Department of Psychology
Tel: 01225 38 3251
Ben Ainsworth b.ainsworth@bath.ac.uk
Charlotte Dack c.n.dack@bath.ac.uk

UNIVERSITY OF BATH

Topic Guide

Introduction and confirmation of consent

First of all, I would like to thank you for taking the time to talk to me today. As you know, I am interested in hearing about your experiences of using digital healthcare tools within your practice.

With your permission I will record the interview so that I am able to transcribe all that was said. If you want to stop the interview or recording at any time, you are free to do so. Once the interview is transcribed, all names and identifying information will be removed to ensure anonymity.

Also, if it is okay with you, I would like to take some brief notes during the interview.

Are you happy to consent to take part in the study and for the interview to be recorded?

Before we begin do you have any final questions about the study?

Before we start, I want to stress that there are no right or wrong answers – I want to hear about *your* experiences.

1. Could you tell me how long you have worked at the practice?

2. What do you think is the purpose of digital healthcare tools?
   Prompt: What are they there to provide?
   Prompt: Benefits vs. disadvantages

3. Could you tell me a bit about any digital healthcare tools that you use/recommend?
   Prompt: What are the different kind of tools (if any) that you use? How do you use them? Who do you use them with? Could you tell me about any tools you like or dislike? What about them do you like or dislike?

4. Can you tell me about the ways that digital healthcare tools affect patient experiences?
   Prompt: some patients more than others

5. 5. Can you tell me about how digital healthcare tools affect your day-to-day work?
   Prompt: time saving / demands on time?

6. What are some of the issues you have experienced when using digital healthcare tools?
   Prompt: Usability; Internet assess; Digital Divide; Digital literacy; Reach everybody?

7. What are your thoughts on the current plans for the NHS 'digital transformation'?
   Prompt: Short/long term benefits/drawbacks

8. What are your thoughts on existing training for using digital tools?
   Prompt: Any unmet training needs? Any additional areas to target?

Supplemental material

BMJ Publishing Group Limited (BMJ) disclaims all liability and responsibility arising from any reliance placed on this supplemental material which has been supplied by the author(s)

BMJ Open

Online Survey

1. What is your job title?

2. In general, how frequently do you use the following types of digital tools as a healthcare professional in your practice? Please complete each item. (Multiple choice from: Never, Daily, Once a week, Once a month)

    a. Online Appointment system

    b. Skype/ Teams consultations

    c. Remote monitoring technology

    d. Digital note taking

    e. Apps

    f. Text SMS system

    g. Online self-management tools

    h. Other (with free text)

3. What would prevent you from using digital healthcare tools? - Selected Choice

4. What would prevent you from using digital healthcare tools? - Other (Free text)

5. In you practice, how would you describe the patient demographics that you care for? (Age, types of conditions) (Free text)

6. To what extent do you agree with the following statement? - Digital self-management tools benefit me as a healthcare professional in my practice. (Multiple choice, select from: Strongly Disagree, Disagree, Somewhat disagree, Neither agree nor disagree, Somewhat Agree, Agree, Strongly Agree)

    a. Please explain your rating for the question on to what extent do you agree with the statement: 'Digital self-management tools benefit me as a healthcare professional in my practice'   (Free text)

7. To what extent do you agree with the following statement? - Digital self-management tools benefit the patient in my practice. (Multiple choice, select from: Strongly Disagree, Disagree, Somewhat disagree, Neither agree nor disagree, Somewhat Agree, Agree, Strongly Agree)

    a. Please explain your rating for the question on to what extent do you agree with the statement: 'Digital self-management tools benefit the patient in my practice?' (Free text)

8. Do you think patients using self-management digital tools affect their ability to take ownership of their own healthcare needs? (Yes/No)

    a. Please explain why. (Free text)

9. To what extent do you agree with the following statement? - Digital self-management tools benefit my relationship with patients in my practice. (Multiple choice, select from: Strongly Disagree, Disagree, Somewhat disagree, Neither agree nor disagree, Somewhat Agree, Agree, Strongly Agree)

10. How do you feel about giving patients more responsibility for their own healthcare by using digital self-management tools? (Free text)

11. Do you think using digital self-management tools in your practice affect the interaction between you and your patients? (Yes/No)

    a. If yes, how? (Free text)

12. Can you describe any experiences where digital tools have created conflicts between you and your patients? (Free text)

13. Has the COVID19 pandemic changed your use of digital tools in your clinical practice? (Yes/No)

    a. Can you describe what these changes are? (Free text)

14. Has there been any barriers to using digital tools in clinical practice during COVID19 Pandemic? (Yes/No)

    a. Please explain why. (Free text)

15. To what extent do you agree with the following statements with regards to using digital tools before COVID19 pandemic? - Digital tools benefited me in my practice. (Multiple choice, select from: Strongly Disagree, Disagree, Somewhat disagree, Neither agree nor disagree, Somewhat Agree, Agree, Strongly Agree)

16. To what extent do you agree with the following statements with regards to using digital tools before COVID19 pandemic? - Digital tools benefited my patients in my practice. (Multiple choice, select from: Strongly Disagree, Disagree, Somewhat disagree, Neither agree nor disagree, Somewhat Agree, Agree, Strongly Agree)

17. To what extent do you agree with the following statements with regards to using digital tools before COVID19 pandemic? - Digital tools allow my patients to take responsibility for their own healthcare. (Multiple choice, select from: Strongly Disagree, Disagree, Somewhat disagree, Neither agree nor disagree, Somewhat Agree, Agree, Strongly Agree)

18. To what extent do you agree with the following statements with regards to using digital tools before COVID19 pandemic? - As a clinician I feel more comfortable giving my patients more responsibility for their own healthcare. (Multiple choice, select from: Strongly Disagree, Disagree, Somewhat disagree, Neither agree nor disagree, Somewhat Agree, Agree, Strongly Agree)

Supplemental material

BMJ Publishing Group Limited (BMJ) disclaims all liability and responsibility arising from any reliance placed on this supplemental material which has been supplied by the author(s)

BMJ Open

19. To what extent do you agree with the following statements with regards to using digital tools during COVID19 pandemic? - Digital tools benefited me in my practice. (Multiple choice, select from: Strongly Disagree, Disagree, Somewhat disagree, Neither agree nor disagree, Somewhat Agree, Agree, Strongly Agree)

20. To what extent do you agree with the following statements with regards to using digital tools during COVID19 pandemic? - Digital tools benefited my patients in my practice. (Multiple choice, select from: Strongly Disagree, Disagree, Somewhat disagree, Neither agree nor disagree, Somewhat Agree, Agree, Strongly Agree)

21. To what extent do you agree with the following statements with regards to using digital tools during COVID19 pandemic? - Digital tools allow my patients to take responsibility for their own healthcare. (Multiple choice, select from: Strongly Disagree, Disagree, Somewhat disagree, Neither agree nor disagree, Somewhat Agree, Agree, Strongly Agree)

22. To what extent do you agree with the following statements with regards to using digital tools during COVID19 pandemic? - As a clinician I feel more comfortable giving my patients more responsibility for their own healthcare. (Multiple choice, select from: Strongly Disagree, Disagree, Somewhat disagree, Neither agree nor disagree, Somewhat Agree, Agree, Strongly Agree)

23. During COVID19 pandemic, in what ways have you accommodated the patients who do not have access to the digital tools that you used in your clinical practice? (Free text)

24. Age:

25. Gender:

26. Ethnicity - Selected Choice
    a. Ethnicity - Other ethnic group, please specify - Text

27. What are your professional qualifications? (Masters degree, nursing degree, doctor of medicine, QCF level, etc)

28. How long have you been working in your current role? (Year, Month)

29. What is your practice postcode? (Please enter the first half of the postcode: eg. if M33 7AE - then enter M33)

Coding tree

Name	Description	Files	References
Changes in access to and use of DHTs during the pandemic		0	0
Barriers to uptake during COVID		0	0

Supplemental material

BMJ Publishing Group Limited (BMJ) disclaims all liability and responsibility arising from any reliance placed on this supplemental material which has been supplied by the author(s)

BMJ Open

Name	Description	Files	References
Barriers to access for patients		0	0
COVID led tech uptake leaving some groups behind	e.g. elderly/ digitally isolated	1	1
Not having the necessary equipment		1	4
Not knowing how to use or wanting to use tech		1	3
Patients digital not suitable for	During covid	1	1
Barriers to use for HCPs		0	0
Financial barriers		1	1
Issues with confidentiality		1	2
Knowing what tech to use and recommend		1	1
Managing the huge change		1	2
New systems not supported correctly		1	1
Technical issues with new tech reliance		1	1
Tech not working properly		1	3
Challenges with tech only care	e.g. issues with diagnostics etc.	1	2
Managing relationship in consultation		1	2
Showing patients things		1	1
COVID led to change in perception of tech		1	1
COVID led to change in practice for HCP		1	12
COVID limiting access to support		1	3
COVID prompted increase in tech use		2	9

Name	Description	Files	References
Patients more accepting of tech		1	1
Support to overcome issues		1	7
Providing access to equipment		1	1
Providing Alternative contact for health information or services		1	2
Providing face to face appointments		1	6
Levels of access to DHTs	Different levels where decisions about access to DHTs are made	0	0
Clinician's decisions-making about who DHTs are appropriate for		0	0
Deciding who is suitable for DHTs		5	8
Lack of digital literacy means prioritised for face-to face appointment		3	4
Only recommend DHTs that are credible and approved		0	0
Can only provide access to recommended DHTs		1	1
Determining which sources are credible to share		5	9
Perceptions of who is excluded from tech		0	0
Age based assumptions about digital literacy		13	18
Assess patients' access to digital tech		3	3
DHTs exclude certain patients		1	1
Digital literacy affects self-care		6	8

Name	Description	Files	References
Disability		3	4
DT causes inequality depending complexity of healthcare needs		1	1
Lacking digital access		9	12
Language and culture barriers		2	3
Literacy affects accessing online tools		3	3
Most people have DT access		3	4
Not all patients can use tech	HCPs feel that not all patients can use and benefit from tech	3	3
Preference for DT challenges stereotypes		4	7
Tech access inequality - clinician bias and stereotypes		2	7
Tech access inequality - Literacy and digital literacy		12	17
Who DHTs work for	HCPs perceptions about who DHTs work for	5	6
Tech access inequality - SES		10	15
Technology complicated to explain		1	1
Clinician's Level of understanding and skill using DHTs		1	1
DHT uptake reliant on HCP digital skills		13	17
Tech too complicated to use by HCPs		1	1
HCPs don't know how to use tech		7	9
Age related assumptions about adoption of DHTs		3	4
HCP had perceptions challenged use of tech in their job		1	1

Name	Description	Files	References
Use of DHTs affected by trust and knowledge of features		0	0
HCPs don't trust tech		1	1
HCPs refuse to adopt tech		3	3
Takes time to adapt to new tech in their working practice	Takes clinicians time to learn about new features of tech and how to use it in their work.	3	3
Practice or organisational Level		0	0
All practices adopting tech differently		1	1
DHTs are or are not a priority to health service		2	3
Lack of promotion = poor patient adoption rate		2	2
Strategic decisions about DHT adoption		1	2
Training		0	0
DHT adoption related to peer support and training		12	21
Understanding of tech dependant on skills of people in practice		4	4
No time for DHT training		3	3
Tech training - individualised support and training		10	16
Role of DHTs	HCPs perspectives on the roles of digital health technologies	0	0
For practices in the management of patients		0	0
Adds to workload		10	17
DHT to improve communication between health services		0	0

Supplemental material

BMJ Publishing Group Limited (BMJ) disclaims all liability and responsibility arising from any reliance placed on this supplemental material which has been supplied by the author(s)

BMJ Open

Name	Description	Files	References
Better MDT communication amongst professionals		12	21
Challenges with referrals		1	1
Different systems are not compatible		12	23
NHS should be one unified system		7	8
Practices need to work together		1	1
DHTs lead to inappropriate appointments	Over sensitive algorithms and digital triage leads to inappropriate appointments	2	3
For planning and streamlining healthcare services	There was a perception from the HCPs that DHTs were useful for resource planning and for streamlining and standardizing practice.	0	0
Accuracy in record keeping		12	17
DT cannot resolve labour shortages		2	3
DT helps resource planning		2	3
DT perceived to be cost-saving measure		1	1
DT streamlines care system		3	3
Lacking control over referral and appointments		3	6
Online triaging mis-assesses clinical needs		5	7
DHTs lead to inappropriate appointments	Over sensitive algorithms and digital triage leads to inappropriate appointments	2	3
Referral tool cumbersome		1	1
Tech helps to make best use of clinicians' time		2	2
Tech provides safer and better governance		4	8

Name	Description	Files	References
Technology aids standardisation, data analysis, evaluation		10	14
Unreliable technology is a nightmare		16	26
Technology is not user friendly		10	13
In patient care		0	0
Digital information easier for patients to access		6	8
Ease of information sharing with patients		9	13
Faster and easier access to healthcare		4	7
Patients want results fast		1	1
Some patients hard to contact		2	3
Technology broadens clinical outreach		1	2
Finding the right information online	They talked about the importance of finding credible sources of info	0	0
Control of info vs finding the right resources	There was a conflict between HCPs feeling that patients having access to health information online was good, but that there was a lack of control over finding the right sources for the right people. Some HCPs described how access digital health tools could increase an individual's autonomy and engagement in their care. Others cited concerns about patients accessing information from unreliable sources.	11	17
Right information for the right people		5	6
Patient misunderstanding		5	9
Patients have greater responsibility towards own healthcare		9	17
Tech and info induce anxiety in patients		6	8

Name	Description	Files	References
Technology saves time in healthcare		12	23
in the interaction between patients and HCPs		0	0
Confidentiality and information security		11	21
Disparity and tension in patient and clinician need		1	2
Digital technology cannot replace the value of in person consultations		11	23
Detracts from human interaction		8	13
Not doing face-to-face means increased clinical risk		1	1
Online patient-clinician relationships are just as good as offline		1	1
Digital tool interferes with human consultation		3	5
How to use the data in consultations		5	6
Transparency conflicts with candidness		3	5
One way messaging-no patient response		6	9
One way communication cuts out patient response		6	7
Online screening and assessment useful		10	22
Information overload for clinicians		2	2
Use for shared decision making		4	11
Role for HCPs		0	0
Deskill the HCPs		3	4

Supplemental material

BMJ Publishing Group Limited (BMJ) disclaims all liability and responsibility arising from any reliance
placed on this supplemental material which has been supplied by the author(s)

BMJ Open

Name	Description	Files	References
HCPs can tailor systems to their needs		2	2
Technology improves staff training and knowledge		8	11