Incorporating digital interventions into mental health clinical practice: a national survey of how use patterns, barriers, and opportunities shifted in the COVID-19 pandemic

Supplementary Materials Brief Description:
The following document provides the complete survey given to participants in our study. Participants were provided with a link to the online survey, which was completed on Qualtrics software.

Please read the information below. If you agree to participate in this research, please take the survey. Thank you!

DESCRIPTION: The study protocol was submitted to the [name removed for integrity of review process] and approved by the IRB. This research study does not necessarily represent the opinions of [name removed for integrity of review process]. The research study is designed and carried out by the authors as part of an independent research project.

TIME INVOLVEMENT: The survey should take less than 10 minutes to complete.

RISKS AND BENEFITS: There are no apparent risks associated with this study. We expect this study will lend insight into how we can best use technology in clinical care and guide changes in future practice. We cannot and do not guarantee or promise that you will receive any benefits from this study. Your decision whether or not to participate in this study will not affect you; the study is voluntary and survey responses will be kept anonymous.

PAYMENTS: There is no compensation for participation.

PARTICIPANT'S RIGHTS: If you have read this information and decide to participate in this project, please understand your participation is voluntary and you have the right to withdraw your consent or discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled. The alternative is not to participate. You have the right to refuse to answer particular questions. Your individual privacy will be maintained in all published and written data resulting from the study.

CONTACT INFORMATION: If you have any questions, concerns, or complaints about this research, its procedures, risks, and benefits, contact the Protocol Director, [name removed for integrity of review process], at [number removed for integrity of review process].

Independent Contact: If you are not satisfied with how this study is being conducted, or if you have any concerns, complaints, or general questions about the research or your rights as a participant, please contact the [name removed for integrity of review process] Institutional Review Board (IRB) to speak to someone independent of the research team at [number removed for integrity of review process]. You can also write to the IRB, [address removed for integrity of review process].

Q1 Prior to the COVID19 pandemic, did you ever use telephone or video visits for full patient appointments, in lieu of an in person visit?

○ Yes

○ No

Q2 Compared to your clinical practice before COVID19, how often do you use these technologies for patient care now?

	I am using this technology with fewer patients now	No change in use	I am using this technology with more of my patients now	I am using this technology with almost all of my patients now
Telephone visits	○	○	○	○
Video visits	○	○	○	○

Q3 Prior to the COVID19 pandemic, did you ever use these technologies in patient care or recommend them to patients? Please select all that apply.

- [ ] I never used these technologies in patient care or recommended them to patients

- [ ] Digital platforms for mindfulness and meditation

- [ ] Digital therapy programs (CBT, DBT, groups)

- [ ] Text therapy, asynchronous messaging

- [ ] Digital peer support (e.g. 1:1, groups)

- [ ] Digital applications for mood tracking, mood diary, recording symptoms

- [ ] Digital applications using artificial intelligence/machine learning (e.g., chatbots, voice analytics, decision support tools)

- [ ] Other emerging technologies (e.g., digital phenotyping, digital therapeutics, augmented reality, virtual reality)

Q4 Compared to your clinical practice before COVID19, how often do you recommend these technologies to patients now?

	I am recommending this technology to fewer patients now	No change in how often I recommend this technology	I am recommending this technology to more patients now	I am recommending this technology to almost all of my patients now
Digital platforms for mindfulness and meditation	○	○	○	○
Digital therapy programs (CBT, DBT, groups)	○	○	○	○
Text therapy, asynchronous messaging	○	○	○	○
Digital peer support (e.g. 1:1, groups)	○	○	○	○
Digital applications for mood tracking, mood diary, recording symptoms	○	○	○	○
Digital applications using artificial intelligence/machine learning (e.g., chatbots, voice analytics, decision support tools)	○	○	○	○
Other emerging technologies (e.g., digital phenotyping, digital therapeutics, augmented reality, virtual reality)	○	○	○	○

Q5 How much did each of these factors influence why you are using more technology in your clinical practice?

	No influence	Minimal influence	Moderate influence	Strong influence
I wanted to protect my health by limiting in-person contact	○	○	○	○
I learned about these technologies and now feel more comfortable using them	○	○	○	○
It is now more convenient for me to use these technologies	○	○	○	○
I feel that it is now more widely acceptable to use these technologies	○	○	○	○
My patients requested limiting in-person contact to protect their health	○	○	○	○
Insurance will now reimburse for tele visits	○	○	○	○
Companies have offered specials and discounts to make technology options more affordable	○	○	○	○
I received training on how to use technology in patient care	○	○	○	○
My work place facilitated incorporating technology into my existing practice	○	○	○	○

Q6 How has the use of technology (tele visits, digital therapy, apps, etc.) impacted your overall clinical experience?

○ It has significantly improved

○ It has somewhat improved

○ There has not been a noticeable change

○ It has somewhat worsened

○ It has significantly worsened

○ I am not sure

Q7 We would love to hear examples of how incorporating technology has improved or worsened your clinical experience.

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Q8 How do you think the incorporation of technology (tele visits, digital therapy, apps, etc.) has impacted your patients' overall experiences?

○ It has significantly improved

○ It has somewhat improved

○ There has not been a noticeable change

○ It has somewhat worsened

○ It has significantly worsened

○ I am not sure

Q9 We would love to hear examples of how incorporating technology has improved or worsened the patients' experiences.

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Q10 Have you used digital interventions for your own mental health? Please select all that apply.

☐   I have not used any of these technologies

☐   Digital platforms for mindfulness and meditation

☐   Digital therapy programs (CBT, DBT, groups)

☐   Text therapy, asynchronous messaging

☐   Digital peer support (e.g. 1:1, groups)

☐   Digital applications for mood tracking, mood diary, recording symptoms

☐   Digital applications using artificial intelligence/machine learning (e.g., chatbots, voice analytics, decision support tools)

☐   Other emerging technologies (e.g., digital phenotyping, digital therapeutics, augmented reality, virtual reality)

People are exploring artificial intelligence (AI) as an emerging technology with potential for large-scale impact in mental health care. The following questions will help us learn about AI from your perspective as clinicians.

Q11 How would you describe your current understanding of how AI can be used in mental health care?

○ I have an expert level understanding of how AI can be used in mental health care

○ I have an intermediate level understanding of how AI can be used in mental health care

○ I have a beginner level understanding of how AI can be used in mental health care

○ I do not know how AI can be used in mental health care

Q12 If you could use artificial intelligence in risk management (e.g. to identify patients at highest risk for suicide), how likely would you be to use it in clinical practice?

○ I would definitely use this technology with my patients

○ I might use this technology with my patients

○ I would not use this technology with my patients

○ I do not know if I would use this technology

Q13 If you could use artificial intelligence in decision support (e.g. to choose a medication most likely to result in treatment response for a patient), how likely would you be to use it in clinical practice?

○ I would definitely use this technology with my patients

○ I might use this technology with my patients

○ I would not use this technology with my patients

○ I do not know if I would use this technology

Q14 If you could use artificial intelligence to support treatment (e.g. to provide talk therapy for a patient), how likely would you be to recommend it to patients?

○ I would definitely recommend this technology to my patients

○ I might recommend this technology to my patients

○ I would not recommend this technology to my patients

○ I do not know if I would recommend this technology

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Q15 How much do you consider each of these factors to be a barrier to implementing AI into clinical practice?

	Not a barrier	Minimal barrier	Moderate barrier	Strong barrier
I do not understand how AI can be used in patient care	○	○	○	○
I do not believe AI will be useful in patient care	○	○	○	○
AI may be useful but I do not have time to implement AI into patient care	○	○	○	○
I am concerned about the ethics of using AI in patient care, such as patient privacy	○	○	○	○
I am concerned about the efficacy of using AI in patient care	○	○	○	○
I am concerned about cost and issues with insurance reimbursement	○	○	○	○
My work place does not facilitate incorporation of new technology such as AI into patient care	○	○	○	○

Q16 What is your title?

○ Physician (please enter your specialty) _____

○ Psych Nurse Practitioner

○ Psychologist

○ Therapist/Counselor

○ Licensed Clinical Social Worker

○ Other (please specify) _____

Q17 Please select your primary practice environment.

○ Academic center

○ Non-academic affiliated hospital

○ Community clinic

○ Private practice
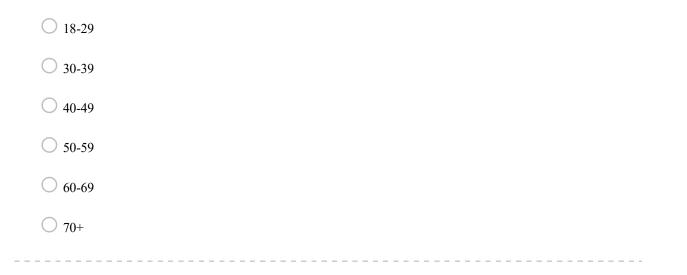
○ Outpatient group practice

○ Other (please specify) _____

Q18 How many years have you been providing mental health care to patients?

○ Less than 5

○ 5-10

○ 10-15

○ 15-20

○ >20

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Q19 What is your age?

○ 18-29

○ 30-39

○ 40-49

○ 50-59

○ 60-69

○ 70+

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Q20 Gender?

☐ Female

☐ Male

☐ Other (please specify) _____

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