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Implementation of digital outreach for obtaining skills and resources (DOORS) to improve the well-being and functional outcomes in adults with serious mental illnesses

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Thesis

IMPLEMENTATION OF DIGITAL OUTREACH FOR OBTAINING SKILLS AND RESOURCES (DOORS) TO IMPROVE THE WELL-BEING AND FUNCTIONAL OUTCOMES IN ADULTS WITH SERIOUS MENTAL ILLNESSES

by

SARAH GRACE PERRET

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Approved by

First Reader

C. James McKnight, Ph.D.
Associate Provost and Dean of Graduate Medical Sciences
Associate Professor of Pharmacology, Physiology & Biophysics

Second Reader

John B. Torous, M.D., M.B.I.
Director of the Division of Digital Psychiatry
Department of Psychiatry, Beth Israel Deaconess Medical Center
Harvard University School of Medicine

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IMPLEMENTATION OF DIGITAL OUTREACH FOR OBTAINING SKILLS AND RESOURCES (DOORS) TO IMPROVE THE WELL-BEING AND FUNCTIONAL OUTCOMES IN ADULTS WITH SERIOUS MENTAL ILLNESSES

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ABSTRACT

Background

New technologies have risen to meet the demands of mental health care. With new technology, digital inclusion and equity become increasingly crucial to healthcare. Despite its importance, many still lack the essential digital skills needed to function in today's society. To meet this need, Digital Outreach for Obtaining Skills and Resources (DOORS), a community-based group was developed to educate participants on digital skills and how to utilize technology to improve their well-being.

Objective

The objective of this thesis is to summarize the improvements to and implementation of a digital skills program for adults with serious mental illnesses. This program aims to improve smartphone skills and the overall health of participants.

Methods

There were four phases: (1) development of surveys, (2) accessibility improvement, (3) implementation of the program in two locations, (4) and qualitative feedback on the program. The surveys were created by building upon the United Kingdom's Essential Digital Skill framework and were updated to ensure all skills that were assessed were covered by the curriculum. The accessibility of the program was improved by creating handouts, translating materials into Spanish, and focusing on basic digital skills. DOORS was implemented in two locations, and after the last session, semi-structured interviews were conducted. Thematic analysis using NVivo was used to analyze the interviews.

Results

Improvements to this program included an updated curriculum, patient-facing education handouts, translation into Spanish, and re-designed surveys. Participants reported improved confidence on 72% of the digital skills that were taught during the 8-week intervention. Thematic analysis of semi-structured interviews results in three overall themes: awareness of divide, patient-centered design, and expanded skills and confidence.

Discussion

This thesis evaluates the improvement and implementation of DOORS. The updated curriculum focuses on skills that are used in daily life and has the potential to be used to improve the participant's health. This iteration of DOORS shows that the program can improve participants' skills and confidence. While this program had a positive impact on participants, it still can be improved. Overall, the findings illustrate that programs like DOORS can mitigate the second digital divide and increase technology accessibility and usability for participants.

Conclusion

DOORS is a digital literacy program that aims to bridge the second digital divide and promote access to digital health resources. With recent updates and adaptations, DOORS

is better equipped to be an accessible program that can positively impact participants through education.

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LIST OF ABBREVIATIONS

ACP	Affordable Connectivity Program
Apps	Applications
DOORS	Digital Outreach for Obtaining Resources and Skills
eHEALS	eHealth Literacy Scale
FCC	Federal Communications Commission
SPIDER	Skills and Proficiency in Digital Essential Requirements

INTRODUCTION

A serious mental illness is a mental or emotional disorder that causes severe functional impairment and disrupts daily activities (National Institute of Mental Health (NIMH), 2022). Serious mental illnesses commonly include schizophrenia, bipolar disorder, major depressive disorder, but they can include other behavioral disorders if there is a large degree of functional impairment. According to the National Institute of Mental Health, an estimated of 14.2 million adults in the United States suffered from a serious mental illness in 2020; this is about 5.6% of the population (National Institute of Mental Health (NIMH), 2022). Despite these striking numbers, many people with a serious mental illness do not receive treatment (National Alliance on Mental Illness (NAMI), 2022). Of those who do not receive treatment, self-reported barriers to not receiving care include affordability, access, and availability (Coombs et al., 2021).

These barriers to mental health treatment have only become more exacerbated in light of the COVID-19 pandemic. Since the pandemic, over half of adults in the United States have reported delaying mental health services and the level of people receiving mental health care are even lower than pre-pandemic levels (Rosanwo, 2021). These results suggest that there now exists even a larger barrier to access mental health care than before COVID-19.

The Substance Abuse and Mental Health Services Association (SAMSHA), the agency that leads public health policy on behavioral health, recently released a report in 2020 that stated 4 million new clinicians would be needed to close the treatment and access gap (Substance Abuse and Mental Health Services Association (SAMHSA), 2020).

POTENTIAL AND PITFALLS OF DIGITAL INTERVENTIONS

While employing 4 million new clinicians is not a feasible option to close the treatment gap, digital mental health tools have arisen as an accessible, affordable, and scalable solution (The Lancet Digital Health, 2021). While telehealth has not dramatically increased access to care (Rosanwo, 2021), it has shifted mental health services to increasingly rely on technology. Technology has expanded not only mental health care, but health care as a whole. Tool such as patient portals, health apps, and remote monitoring devices have been shown to increase patient engagement, give patients support outside of clinician visits, and even improve outcomes (Alessa et al., 2018; Cahn et al., 2018; Whitehead & Seaton, 2016). Technology has the potential to expand and improve care, while also increasing accessibility and affordability.

In addition to its prevalence in health care, technology and its usage has become necessary to operate in the world today. Technology dominates modern society, however, not everyone has the same level of access. The "digital divide" refers to a lack of access and ownership of technology in underserved and minority communities (Saeed & Masters, 2021). While technology provides a hope for more accessible care, the digital divide needs to first be closed before the full potential of technology is realized. Government efforts have begone to help close with gap; Project Lifeline offers a free smartphone and data plan for eligible U.S citizens and the Affordable Connectivity Program (ACP) from the Federal Communications Commission (FCC) offers households broadband service at an affordable price (Federal Communication Commission, 2023). Increasing access to technology should be a top concern due to technology's prevalence in both healthcare and daily life. In fact, internet connectivity and digital literacy have been named super determinants of health because they address all other social determinants of health (Sieck et al., 2021). Figure 1 depicts how digital literacy and access interact with all other social determinants. For example, accessing health information is now commonly done via patient portals, as shown below. It might be difficult or even impossible for some individuals to access a patient portal, which in turn could repercussions on their health.

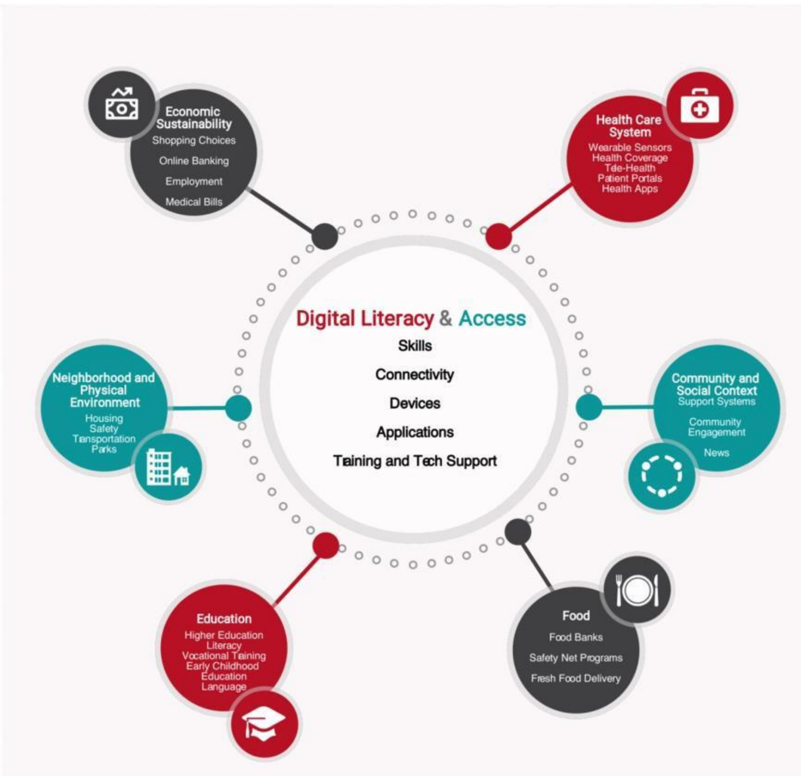


Figure 1. Digital Literacy and Access. This model summarizes the connections between social determinants and digital literacy and access. From "Digital Inclusion as a Social Determinant" by C. Sieck et al., 2021, *NPJ Digital Medicine,* 4 (52). CC BY 4.0.

DIGITAL LITERACY AND ITS IMPORTANCE

In the discussion of increasing both access and digital literacy to improve the health of the population it is first necessary to define these terms. Narrowing the definitely of digital literacy is difficult as it has been defined in a variety of ways. The standard operational definition of digital literacy refers to the concrete skills that one must know in order to use the internet and modern technology (Knobel & Lankshear, 2008). Access to technology refers to the ability to own and utilize the internet and digital resources. As previously mentioned, the digital divide refers to lack of access and ownership of technology. In addition to the first digital divide, there exists a second digital divide: the lack of digital literacy. This second divide is defined by the lack of skills, knowledge, and comfort in completing digital skills. Despite the prevalence of technology, digital literacy is limited among the population. A recent survey found that Americans have a low level of knowledge about technology and technology-related issues (Vogels & Anderson, 2019). While limited digital literacy can impact anyone, it is especially important to consider underserved populations. Recent studies have shown extremely low rates of adults with sufficient digital skills necessary for daily life among those with a serious mental illness (Spanakis et al., 2021), older adults (Zoorob et al., 2022), and those of a lower socioeconomic background (Uscher-Pines et al., 2020).

SMARTPHONES OWNERSHIP AND POSSIBILITIES

To tackle both the digital divides, efforts to provide individuals with both devices and the knowledge to use them are critical. Additionally, it is important to recognize the community's current level of both access and skills in order to tailor programs to fit their needs (Sieck et al., 2021). While the digital divide and its consequences still continue to persist, smartphone ownership has become increasingly more widespread. A recent report from the Pew Research Center states that smartphone ownership has reached a near ubiquitous level in the United States (Pew Research Center, 2021). This report offers an area to develop a program that fits a generalized population- those who own a smartphone.

In addition to the high levels of ownership, smartphones offer a unique set of resources that can benefit one's mental health. Both the native functions of a smartphone, and additional commercially available apps can provide benefits. Before downloading an app, it is important to first consider the potential benefit of utilizing a phone's native apps. Apps that are already installed on a smartphone, such as the "notes" app or "photos" app can offer mental health benefits without any privacy and security concerns that might come with a commercial app. For example, one could create a suicide safety plan in the notes app or create albums of pictures that might improve mood in the photos app (Alon et al., 2023). Beyond the native smartphone apps, mental health apps have the potential to improve symptoms and overall well-being (Gál et al., 2021; Wang et al., 2018).

TEACHING DIGITAL LITERACY

For smartphones to improve the mental health and well-being of individuals, there need to be programs in place for both obtaining a smartphone and teaching an individual how to use it. One such program, Digital Outreach for Obtaining Skills and Resources (DOORS), founded by the Division of Digital Psychiatry Lab at Beth Israel Deaconess

Medical Center has been offered for five years to local clubhouses for adults with serious mental illnesses and to a first-episode psychosis center. While this program has been piloted in adults with a serious mental illness, the program has general modules that would benefit anyone interested in learning digital skills. From its conception, DOORS has aimed to connect individuals with technology, teach them how to use it, and foster self-efficacy. The program was founded upon the principles of self-determination theory, which are defined by the three "psychological needs: autonomy, competence, and relatedness" (Hoffman et al., 2020; Ryan & Deci, 2000). A figure depicting the original framework for this program is shown in Figure 2.

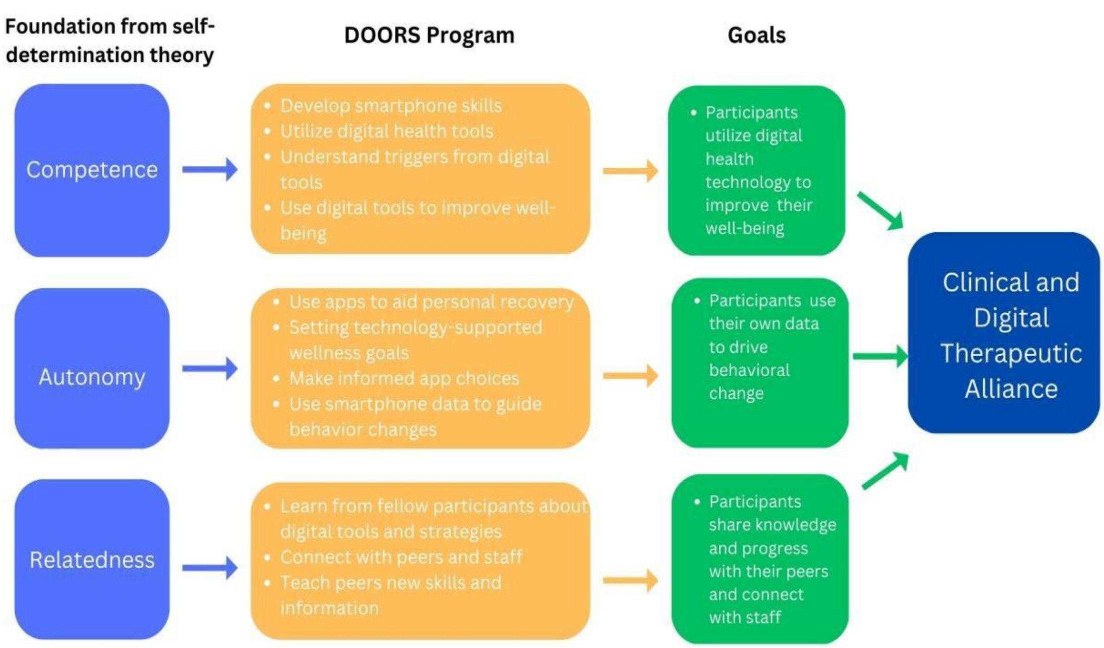


Figure 2. DOORS Framework. This figure summaries "Digital Opportunities for Outcomes in Recovery Services (DOORS): A Pragmatic Hands-On Group Approach Toward Increasing Digital Health and Smartphone Competencies, Autonomy, Relatedness, and Alliance for Those With Serious Mental Illness" by L. Hoffman et al.

DOORS 1.0

In its first iteration, DOORS was split into two groups and the program was modified to fit the needs of each group. Both groups were held at local clubhouses in Massachusetts that support those with a serious mental illness by offering employment, training, recovery, and training support services; these clubhouses serve over 15,000 residents (*About the Massachusetts Clubhouse Coalition*, n.d.). The chronic phase schizophrenia group focused on competency, while the first episode of psychosis group focused more on autonomy (Hoffman et al., 2020). These two focal points address two of three aspects of the theoretical foundations as seen in Figure 2. Competency refers to the motivation towards skills and knowledge; autonomy refers to motivation towards agency (Ryan & Deci, 2000). To tie in the third need, relatedness, the curriculum focused on how to use technology to connect with both care providers and peers (Hoffman et al., 2020).

In both locations, the group was 4 weeks with 1.5-hour long sessions each week. The sessions focused on the 8 dimensions of wellness (social, emotional, spiritual, occupational, financial, environmental, physical, and intellectual) and how to use technology in order to foster wellness. (Hoffman et al., 2020; Swarbrick, 2006). In addition, the sessions covered basic digital skills such as how to connect to WIFI, how to identify digital resources, and app evaluation. Participants took the eHealth Literacy Scale (eHEALS), which is a survey aimed at capturing users' knowledge, comfort and skills with digital health information (Hoffman et al., 2020; Norman & Skinner, 2006), during the first week and survey at the end of the fourth week. The survey is shown in Figure 3.

1. How **useful** do you feel the Internet is in helping you in making decisions about your health?

❑1	❑2	❑3	❑4	❑5
Not useful at all	Not useful	Unsure	Useful	Very Useful

2. How **important** is it for you to be able to access health resources on the Internet?

❑1	❑2	❑3	❑4	❑5
Not important at all	Not important	Unsure	Important	Very important

3. I know **what** health resources are available on the Internet

1) ❑ Strongly Disagree
2) ❑ Disagree
3) ❑ Undecided
4) ❑ Agree
5) ❑ Strongly Agree

4. I know **where** to find helpful health resources on the Internet

1) ❑ Strongly Disagree
2) ❑ Disagree
3) ❑ Undecided
4) ❑ Agree
5) ❑ Strongly Agree

5. I know **how** to find helpful health resources on the Internet

1) ❑ Strongly Disagree
2) ❑ Disagree
3) ❑ Undecided
4) ❑ Agree
5) ❑ Strongly Agree

6. I know **how to use** the Internet to answer my questions about health

1) ❑ Strongly Disagree
2) ❑ Disagree
3) ❑ Undecided
4) ❑ Agree
5) ❑ Strongly Agree

7. I know how to use **the health information** I find on the Internet to help me

1) ☐ Strongly Disagree
2) ☐ Disagree
3) ☐ Undecided
4) ☐ Agree
5) ☐ Strongly Agree

8. I have the skills I need to **evaluate** the health resources I find on the Internet

1) ☐ Strongly Disagree
2) ☐ Disagree
3) ☐ Undecided
4) ☐ Agree
5) ☐ Strongly Agree

9. I can tell **high quality** health resources from **low quality** health resources on the Internet

1) ☐ Strongly Disagree
2) ☐ Disagree
3) ☐ Undecided
4) ☐ Agree
5) ☐ Strongly Agree

10. I feel **confident** in using information from the Internet to make health decisions

1) ☐ Strongly Disagree
2) ☐ Disagree
3) ☐ Undecided
4) ☐ Agree
5) ☐ Strongly Agree

Figure 3. eHEALS Scale. From "eHEALS: The eHealth Literacy Scale " by C. Normal and H. Skinner et al., 2006, *J Med Internet Res,* 8 (4). CC BY 2.0.

The results, shown in Table 1, indicate that participants improved on the self-report measures of the eHEALS scale. Moreover, these results illustrate that the first iteration of DOORS was successful and provides evidence for the potential of digital literacy programs to bridge the second divide

Question	Pre-Session Average Score (Scale of 1-5)	Post-Session Average Score (Scale of 1-5)
How important is it for you to be able to access health resources on your smartphone?	3.5	4.4
How useful do you feel your smartphone is in helping you make decisions about your health?	2.9	4.0
I feel confident in using information from my smartphone to make health decisions	2.6	3.4
I find on my smartphone I can tell high quality health resources from low quality resources	2.4	3.4
I have the skills I need to evaluate the health resources	2.6	3.4
I know how to find helpful health resources on my smartphone	2.3	3.5
I know how to use my smartphone to answer questions about health	1.5	3.0
I know how to use the health information I find on my smartphone to help me	2.4	3.5
I know what health resources are available on my smartphone	2.5	3.5
I know where to find helpful health resources on my smartphone	2.3	3.4

Table 1. DOORS Improvements. Summarizes data from "Digital Opportunities for Outcomes in Recovery Services (DOORS): A Pragmatic Hands-On Group Approach Toward Increasing Digital Health and Smartphone Competencies, Autonomy, Relatedness, and Alliance for Those With Serious Mental Illness" by L. Hoffman et al.

DOORS 2.0

While this first version of DOORS had success, there were several improvements to be made. The second iteration of DOORS sought to further expand on previous results and demonstrate its effectiveness on improving digital knowledge and skills.

Additionally, participants expressed that instead of focusing on the domains of wellness, they wanted to focus on simply learning the digital skills (Rodriguez-Villa et al., 2021). To address this need, the DOORS program expanded to eight weeks, adapted to become more functionally focused, and aimed to teach participants the digital skills that they would need for daily life (Rodriguez-Villa et al., 2021). The new curriculum was based on prior use of smartphones in clinical settings and included 2-3 themes per session (Camacho et al., 2020; Rodriguez-Villa et al., 2020, 2021). The outline of sessions is depicted in Table 2.

Session #	Topic	Discussion	Key Skills
1	Establishing Core Smartphone Skills	What are smartphones? How can we use them?	1.Connecting to Wifi 2.Checking the Weather
2	Building Wellness Habits	How can we use smartphones to stay healthy?	1.Tracking Step Count 2. Using a guided meditation app
3	Managing Responsibilities	How can our smartphones help us stay organized?	1.Adding Calendar Events 2.Getting directions on a maps app
4	Staying Connected	How can we use our smartphones to connect with people?	1.Sending a text message 2.Finding a job opportunity on LinkedIn
5	Keeping Informed	What information can our smartphones help us find?	1.Finding today's news headlines 2.Answering a question using Google
6	Expanding Your Knowledge	How can our smartphones help us learn new skills?	1.Watching a Youtube video to learn a new skill 2.Translating a sentence from one language to another
7	Navigating Safely	What choices can we make on our smartphone to stay safe?	1.Finding an app's privacy policy 2. Reading app reviews and ratings
8	Enjoying Downtime	What can we do on our smartphones for fun?	1.Creating an account on music streaming platform 2.Downloading a game

Table 2. DOORS Core Competencies. From "Psychiatric rehabilitation through teaching smartphone skills to improve functional outcomes in serious mental illness" by E. Rodriguez-Villa et al., 2021, *Internet Interventions,* 23. CC BY-NC-ND 4.0.

Another improvement from the previous version was the measurement tools. In order to reflect the new curriculum, surveys were modified to reflect self-confidence in functional skills (Rodriguez-Villa et al., 2021). In addition to aligning better with the new lessons, functional outcomes aimed to measure the efficacy of treatment and predict success of living alone. The University of California, San Diego Performance-Based Skills Assessment (UPSA) is a functional scale to measure overall functionality in persons with a mental illness based on a set of skills. (Mausbach et al., 2007). While this scale would not capture the skills taught by the DOORS program, the survey adopted a similar model: the survey was 5-7 statements such as "Adding An appointment to my calendar" to which a participant would mark his/her confidence with that skill from 1-5, 1 being "I cannot do it on my own" and 5 being "I can do it and teach someone else" (Rodriguez-Villa et al., 2021). As the number of participants varied per session, each participant took the same survey before and after each session. 45 out of 104 participants improved, and of the 45 that improved, 33 showed improvement in at least one other skill (Rodriguez-Villa et al., 2021). While a modest proportion improved, these results do show a potential for participants to improve on functional digital skills to a point where they are comfortable doing it on their own.

DOORS 3.0

These results were expanded upon in the next version of DOORS by including a measure of how the program impacted clinical results. As previously mentioned, smartphones can be a key tool that can enable recovery and rehabilitation for mental health (Tal & Torous, 2017). Additionally, smartphones are crucial for daily living, so teaching participants how to use their smartphones is empowering and fosters self- sufficiency. In order to investigate whether the DOORS program had an effective on clinical outcomes such as mood, as well as functional outcomes (i.e., do participants feel confidence connecting to WIFI), the surveys were modified to include mental health clinical changes (Camacho & Torous, 2022). The clinical questions were adapted from a single-intervention for anxiety and depression (Schleider et al., 2019), and included questions to capture transdiagnostic improvements related to feelings of anxiety, control, mood and problem-solving. The functional questions were similar to the previous iteration (Rodriguez-Villa et al., 2021). The improvements made to this version of DOORS centered up capturing the impact of digital literacy training on not only functional skills, but also clinical outcomes. Additionally, due to the COVID-19 pandemic, DOORS was expanded to an online platform (skills.digitalpsych.org).(Camacho & Torous, 2022). Figure 4 below depicts the user view of the online platform. Users have access to eleven different sessions with instructional videos for both androids and Iphones for each skill.

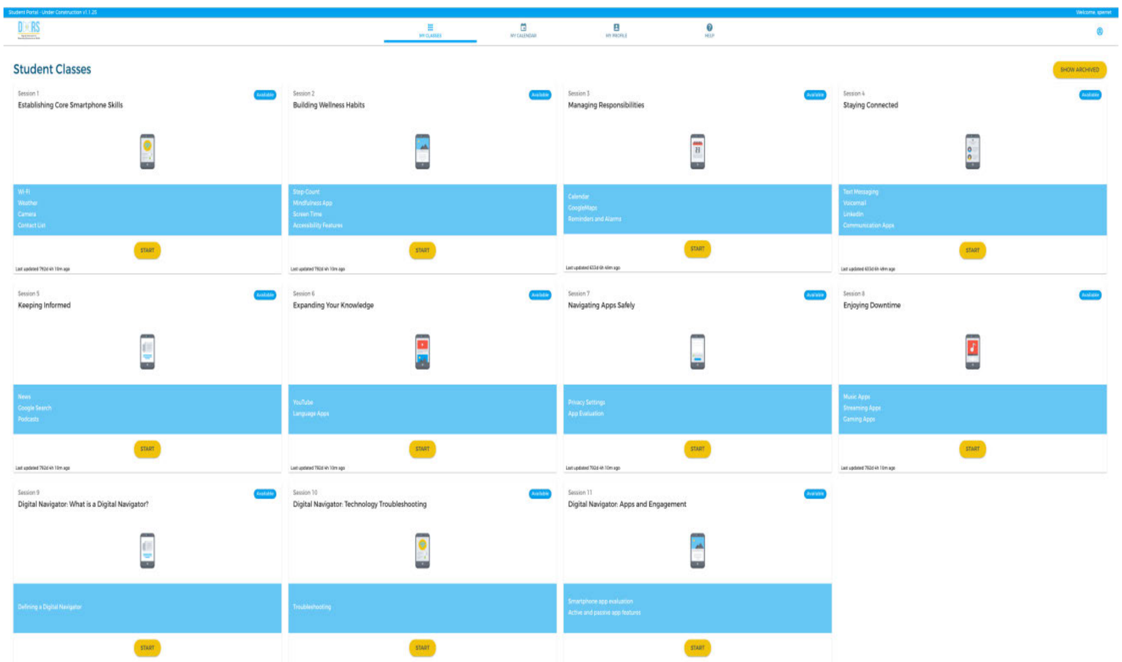


Figure 4. User Interface of DOORS Online Platform.

The in-person group was held at the same clubhouses as previous iterations and in the Beth Israel Deaconess Medical Center in-patient psychiatric unit. The clubhouse version was an eight week program, while the in-patient unit version featured one lesson that was repeated weekly due to the high rates of patient discharges and patient turnover

(Camacho & Torous, 2022). Like the previous iteration, surveys in the clubhouse version were given before and after each session.

The surveys from both groups and all sessions were analyzed through descriptive statistics and two-tailed t-tests were performed (Camacho & Torous, 2022). While there was not a statistically significantly difference of pre- and post- survey clinical outcomes in either the clubhouse nor in-patient groups, participants did report feeling more optimistic and motivated to use their smartphones after the sessions (Camacho & Torous, 2022). Of the functional survey questions, participants improved upon 27 out of 29 questions with statistically significant improvement ($p<0.05$) on seven of the questions (Camacho & Torous, 2022).

While these results are modest, the t-tests were performed on group averages, rather than individual pre- and post- scores, which did not allow for the analysis to capture an individual's clinical and functional improvements. In order to adequately capture an individual's improvement, future iterations should keep pre- and post- surveys together, while still maintaining the anonymity of the survey. An important result was that pre-session surveys of the clubhouse participants displayed deficiencies in 83% of the functional skills taught, which demonstrates how the importance of teaching digital skills (Camacho & Torous, 2022). The DOORS program has shown promising results in improving functional digital skills and has the potential to also improve the well-being of participants.

OBJECTIVE

The previous versions of DOORS have laid the foundation for an effective, beneficial, and flexible community-based program that can improve smartphone skills, daily functioning, and the overall health of participants. While this program in its previous iterations has improved the digital skills of many participants throughout its history, it is important that the program adapts and meets the current needs of the population it serves. In particular, it is extremely important to receive and listen to feedback by the primary stakeholders: the participants of DOORS. To build an effective program, participant feedback should be central to get direct opinions on what is working well and what needs improvement. Moreover, it is vital to keep improve the accessibility of our program to make it useful in a variety of settings and populations.

Additionally, one challenge to investigate the efficacy of the DOORS program has been the limitations of using only self-report scales. There is the possibility of response bias in self-report data (Rosenman et al., 2011). Also, there is not one widely used smartphone skills survey that assesses basic digital skills, so it not feasible to use an already existing scale.

To this end, this thesis presents an updated version of the DOORS program in which accessibility is expanded, participants give qualitative feedback, and surveys are adapted to reflect both self-report and objective measures. In addition to the changes to the curriculum, two groups were run over eight weeks to investigate the effectiveness of the new model.

METHODS

OVERVIEW

There were four phases of this thesis research: (1) designed new surveys that capture both self-report and objective measures (2) improved the accessibility of the program (3) implemented new surveys and ran DOORS group in two locations (4) obtained qualitative feedback on the program. A fellow research assistant at the Digital Psych Lab at Beth Israel Deaconess Medical Center, Noy Alon, aided me in development of surveys, implementation, and collection of qualitative feedback.

PHASE I: DEVELOPMENT OF SURVEYS

While the importance of digital literacy for health is widely recognized (E.-H. Lee et al., 2016; Sieck et al., 2021), and is becoming increasingly popular in research, there is currently not a validated digital literacy scale that is widely applicable and assesses basic digital skills. The first challenge in choosing a digital literacy scale is choosing one that is well-researched and has been validated in different populations. Due to the nascency of the field, digital literary scales are relatively new so less data is available on the various measures. A recent review found that there were only seven eHealth (electronic health) literacy scales available in the literature (J. Lee et al., 2021). Additionally, the review analyzed the quality of evidence for content validity and found that six of seven scales had low quality evidence (J. Lee et al., 2021). While more research needs to be done to assess these digital literacy scales, the eHealth Literacy Scale (eHEALS) stood out for its application in a wide range of languages and populations. The eHEALS scale is digital literacy scale that focuses on "the ability to seek, find, understand, and appraise health information from electronic sources and apply the knowledge gained to addressing or solving a health problem" (Norman & Skinner, 2006). The eHEALS scale was considered, however, the scale largely focuses on the ability to find health information through the internet and neglects both smartphones and social media. Another new scale, the 3-item Measure of Digital Health Care Literacy, which asks six self-report confidence questions such as "I can install applications/programs (like Zoom) on my cell phone, computer, or another electronic device on my own (without asking for help from someone else)" (Nelson et al., 2022) was considered. Due to its brevity, this scale is more well-suited for a brief clinical assessment rather than to determine if an individual has a sufficient level of digital literacy. The 3-item Measure of Digital Health Care Literacy is shown in Figure 5.

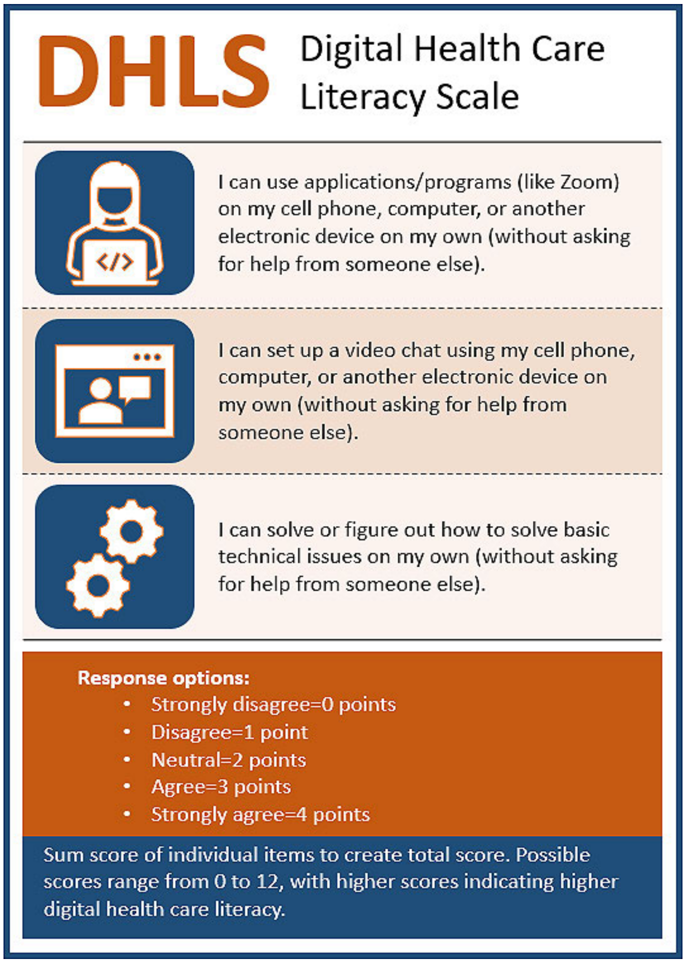


Figure 5. From "A 3-Item Measure of Digital Health Care Literacy: Development and Validation Study " by L. Nelson et al., 2022, *JMIR Formative Research*, 6 (4). CC BY 4.0.

Given the lack of relevant scales, we decided to create our own. We decided to build upon the Skills and Proficiency in Digital Essential Requirements (SPIDER) measurement which has been piloted in adults with serious mental illnesses (Spanakis et al., 2021). The SPIDER measurement tool is based on the United Kingdom's Essential Digital Skills (EDS) framework, which defines essential skills as those that adults need to benefit and participate in the world (Department of Education, 2018). The framework includes three main categories: foundation skills, skills for life, and skills for work (Department of Education, 2018). Foundation skills refers to basic digital skills such as how to connect to WIFI, while skills for life and skills for work pertain to digital skills needed in everyday life and the work setting. A sample set of questions from the SPIDER tool is shown in Table 3.

7.3 Here are some skills that make it easier to use digital devices in general. You can answer these questions brining in mind any digital device that you might be using (a mobile phone, laptop, tablet, desktop computer or a combination of these).

	Yes	No, and interested in learning more	No, and not interested in learning more
7.3a I can turn on a device (e.g. phone, tablet or laptop).			
7.3b I can connect my device to a safe and secure Wi-Fi network (e.g. I can connect to Wi-Fi in my house).			
7.3c I can update and change my password when prompted to do so (e.g. I can change my Netflix password).			
7.3d I can interact with the home screen on my device (e.g. I can locate text messages).			
7.3e I can open the Internet to find and use websites.			
7.3f I can use the controls on a device (e.g. turn up the volume).			
7.3g I make sure that my passwords and personal information are kept safely as they have a value to others (e.g. I don't write my passwords down or tell them to anyone else)			
7.3h I can change setting on my device to make it easier to use (e.g. increase font size or adjust screen brightness).			

Table 3. From "Measuring the digital divide among people with severe mental ill health using the essential digital skills framework" by P. Spanakis et al., 2022, *Perspectives in Public Health,* 0 (0). CC BY-NC 4.0.

Through previous iterations, we have established that the population we serve lacks digital skills, so we decided to build upon the Foundation Skills section. Since DOORS is a smartphone-based skills group, the relevant sections of the EDS were selected. The updated version of the survey included self-report confidence questions and objective functional questions such as "circle the button that you would press to connect to WIFI" that were based on the EDS. Each self-report confidence question was scored on a scale of 1-10, with 1 referring to lowest confidence and 10 referring to highest level of confidence. Each question was scored individually and captured one digital skill, such as "I can make a phone call." Functional-based questions were scored either as a "0" if an answer was incorrect or as "1" if the question was correct. More than one functional question referred to a digital skill category. For example, there are two questions that capture the skills needed to create a playlist. In totaling surveys, question scores are averaged across digital skill categories, so if a participant gets one out of two questions for one category right then he/she would receive a 0.5 for that category. Additionally, the survey includes clinical outcomes like the previous iterations of DOORS. Moreover, surveys were also designed specifically for each individual session, treating each time as a separate intervention. A copy of the survey for sessions is included in Appendix 1. In addition, the curriculum was updated to ensure all skills that are assessed were also covered by the curriculum. The EDS framework drove the process of adapting curriculum, however, the program already reflected many of the same skills as the EDS. Figure 6 below depicts a summary of the eight sessions of DOORS.

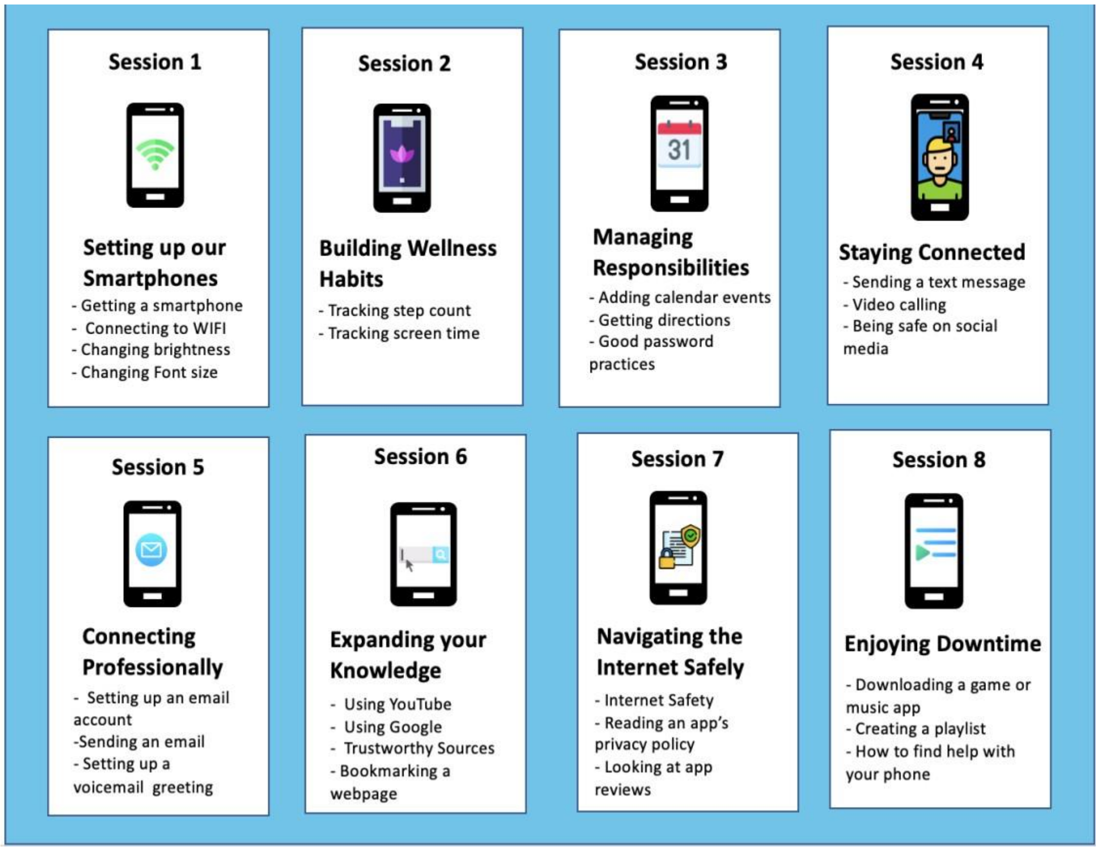


Figure 6. Digital Outreach for Obtaining Resources and Skills Curriculum Overview

PHASE II: IMPROVING ACCESSIBILITY

In addition to re-designing the surveys, improving the accessibility of DOORS was a large focus of this project. Those who attend DOORs at Massachusetts clubhouses are a largely underserved population consisting of individuals with have a serious mental illness, are of lower socioeconomic status, and have low levels of literacy. Adults who have a disability, including those with a serious mental illnesses experience more health disparities and tend to experience digital exclusion, meaning they do not or cannot experience the benefits of technology on health (Middle & Welch, 2022). A recent study found that in the United Kingdom, adults with a serious mental illness were twice as likely as the general population to lack foundational digital skills (Spanakis et al., 2021). While the need for foundational digital skills is clear, and the DOORS program has been ongoing for the past five years to close this gap between need and knowledge, it is important to consider and listen to the population that DOORS is serving.

Feedback from previous iterations was gathered, and in response, the first session was dedicated to accessibility and setting up smartphones. In addition, to meet the needs of participants, both Android and iPhone examples were given during the sessions and the PowerPoint figures and text were made larger. The first session taught participants how to change accessibility features on their devices on their phone to benefit their needs such as lowering the brightness level, nightshift mode, and how to make the phone text larger. The first session also went over how to receive a free smartphone and data plan from the ACP Lifeline program. To streamline the process of helping eligible participants sign up, handouts were created to summarize the requirements and process. A copy of the Lifeline handout is included in Appendix 2.

Another element of improving the accessibility of the program was adapting to the needs of the participants during the program. During the first session of the newest version of DOORS, one participant expressed that while she could complete the skills taught during the session, she would forget them as soon as she got home. In response, handouts with large text and step-by-step instructions for each skill were created for all eight sessions. Handouts were created for both Androids and iPhones, and a copy of the session handout 1 for Androids is included in Appendix 3.

The last two elements of accessibility addressed were availability of the program materials and including a Spanish translation. Handouts and surveys were translated into Spanish and a Spanish-speaking volunteer was recruited to help with live translations. Additionally, an instructor manual was created with all the necessary materials to conduct the program: course PowerPoints, handouts, and surveys. All DOORS materials are freely available upon request to both participants and other organizations if they wish to conduct a similar program.

PHASE III: IMPLEMENTATION

Following these changes, two DOORS groups were conducted at Center Clubhouse in Boston, MA and Atlantic Clubhouse in Quincy, MA. Both groups received eight weeks of sessions and were taught the same skills. Before and after each session, a survey such as the one included in Appendix 1 was distributed to the participants by Noy and me. Beth Israel Deaconess Medical Center's Institutional Review Board approved data collection and verbal consent was provided prior to the survey completion. In order to measure individual improvement but keep surveys anonymous, matching stickers were placed on a participant's pre- and post- surveys. Each session skill session lasted for two hours and was taught via in-person instruction with PowerPoints as a visual aid. All sessions were taught by Noy and me. Every session featured 2-3 skills that were relevant to the theme of each session. After a skill was presented visually with screenshots of steps for both Android and iPhones, Noy and I would walk around to answer questions and provide one-on-one assistance. We would then come back together as a group to answer any questions on the skill before moving onto the next skill. For reference, a PowerPoint from Session 1 is included in Appendix 4.

PHASE IV: QUALITATIVE INTERVIEWS

After the last session, semi-structured interviews were conducted to understand participants' opinions, experiences, and feelings during the DOORS program. Beth Israel Deaconess Medical Center's Institutional Review Board approved data collection and verbal consent was provided prior to each interview. Noy Alon, a fellow research assistant, and I conducted interviews. The interviews were about 30 minutes and were done in a private room. Additionally, questions were excluded if the participant did not feel comfortable answering. The questions were pre-determined before the interviews but were flexible to adapt to participants' responses. The questions focused on smartphone usage, their feelings during the DOORS program, and how the program impacted their usage and views towards smartphones. A copy of the interview questions is included in Appendix 5. The audio of the interviews was recorded and then I later transcribed verbatim and listened to twice to ensure accuracy. I then analyzed the transcript was then analyzed using NVivo, in accordance with the thematic analysis framework (Braun & Clarke, 2006). In NVivo transcripts were fully coded and initial themes were aggregated to generate overall themes.

ACCESSIBILITY IMPROVEMENTS

The improvements to the DOORS program are summarized in Figure 7. These updates include modified surveys, patient-facing handouts, Spanish translations, a full instructor manual, and consolidation of all materials into a single bundle that is available to be sent in either in a print or electronic package. Also shown in Figure 7 is the existing online platform that was developed during the pandemic. The goal of these updates was to improve the accessibility and offer material for other groups to implement this digital literacy program in diverse populations.

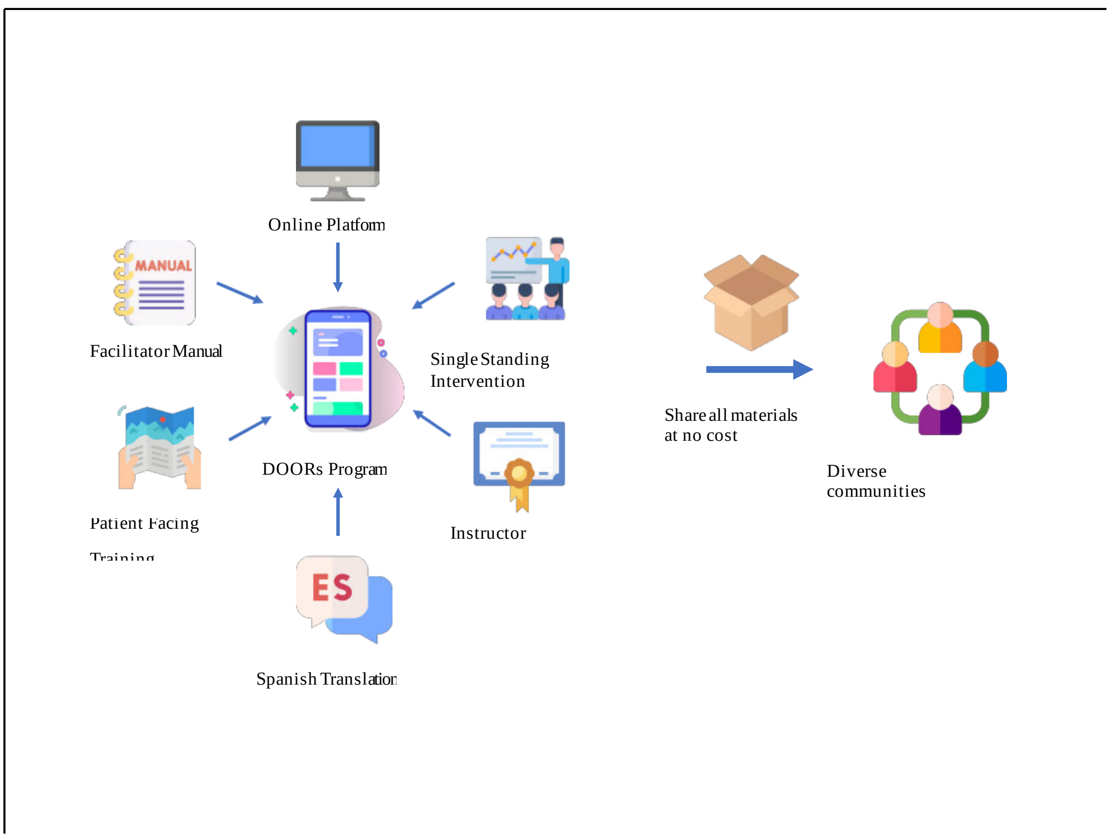


Figure 7. Summary of DOORS updates

OVERVIEW

IMPLEMENTATION

Across the two groups, one at Center Club in Boston, MA and another at Atlantic Clubhouse in Quincy, MA, 105 pre-session surveys were collected, and 92-post session surveys were collected. The final dataset included 92-unique pre- and post-session surveys as surveys that did not have both pre- and post- versions were excluded from data analysis. Objective functional-based questions such as "circle the icon that you would press in order to make a phone call" were scored as either (0) for an incorrect answer or (1) for a correct answer. The self-report measures were on a scale from 1-10, with 1 referring to lowest confidence and 10 referring to highest level of confidence. Data was imported into excel. Functional questions that covered similar content were averaged. This was done only with functional questions that addressed the same skill. Pre- and post-surveys for each participant were marked with a sticker so that a participant's survey scores could be compared without compromising the participants identity. Paired t-tests were done for each digital skill to determine statistical significance and individual improvement.

FUNCTIONAL-BASED CHANGES

Figure 8 depicts the functional-based changes of participants' digital literacy. Individual participant scores were averaged and compared across functional-based questions that measured the same skill. For example, if there were three questions pertaining to how to connect to WIFI and a participant got one question correct, then their averaged score for this skill was 0.33. This score was compared to their post-session survey. Figure 9 shows the functional based skill score changes from before the session to after the session that are statistically significant ($p < 0.05$). One skill, creating a playlist, saw a decrease in average score. As seen in Figure 9, seven skills (of twenty- nine) had significant changes. Participants improved the most in session 1; three of four skills in session 1 improved.

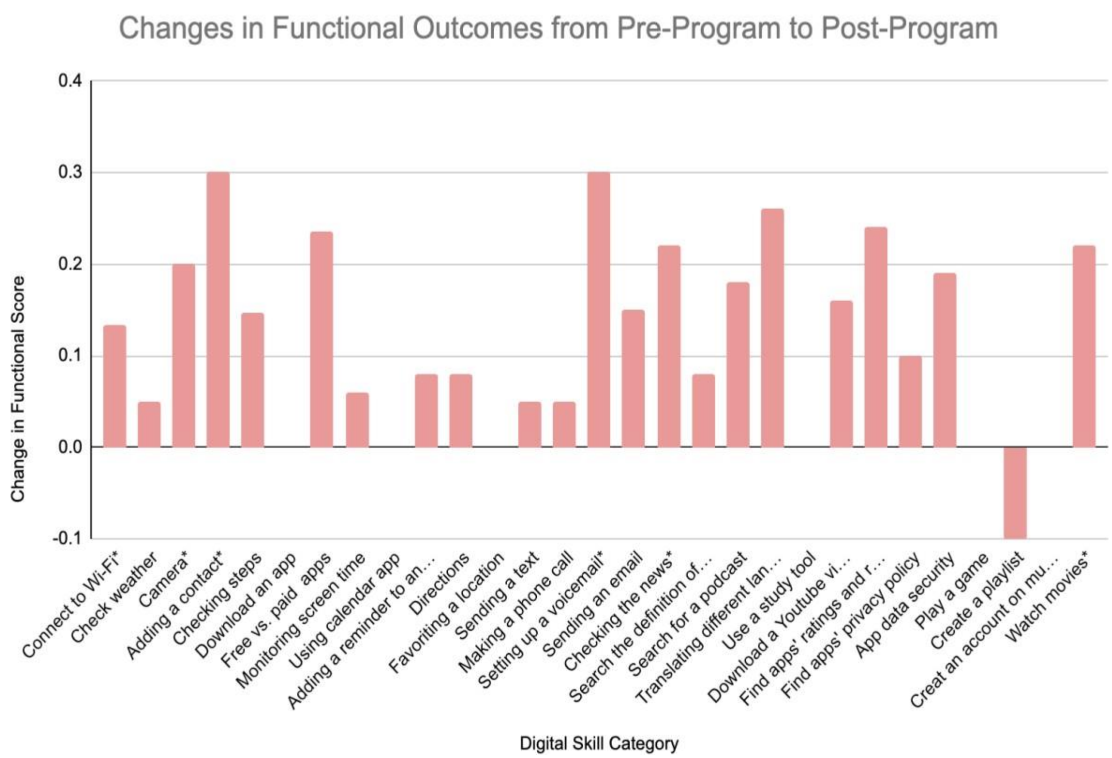


Figure 8. Changes in Functional Outcomes averaged across participants.

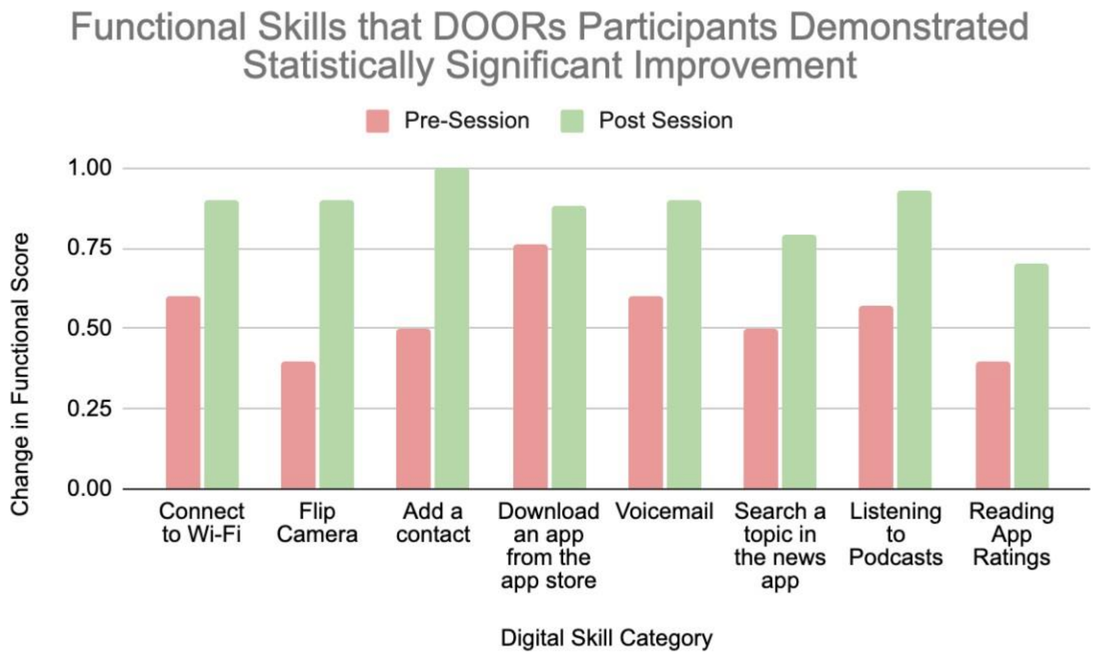


Figure 9. Statistically Significant Changes from Pre- to Post Sessions

CONFIDENCE-BASED CHANGES

Questions that were self-report confidence questions were scored on a 1-10 scale. Figure 10 shows the confidence-based changes for each skill. For example, if a participant rated their confidence on being able to connect to WIFI as a 6 out 10 for the pre-session survey, and then rated their confidence for the same skill on post-session survey as a 9 out of 10, then the score change would be a 3. Twenty-one of twenty-nine skills demonstrated a statistically significant improvement. Figure 11 depicts the changes in the statistically significant skills.

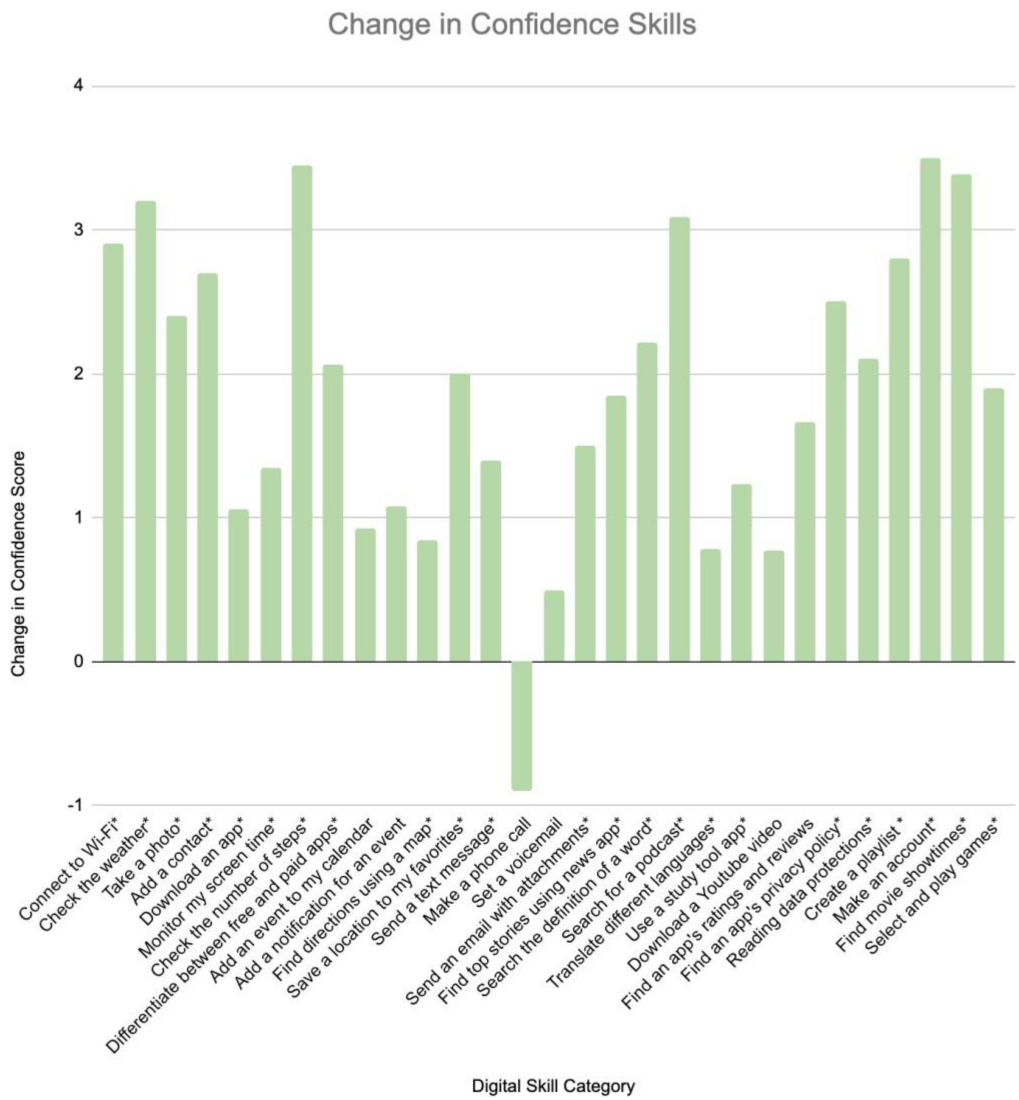


Figure 10. Change in Confidence-based Questions.

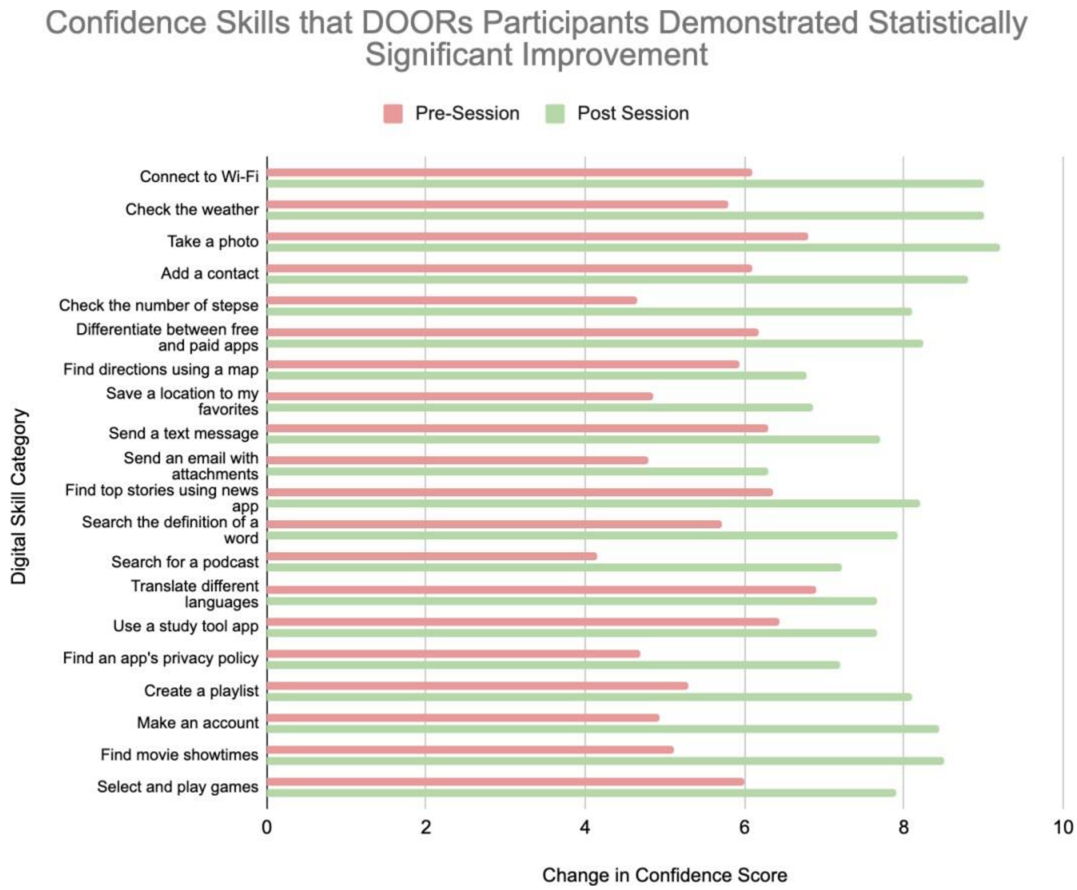


Figure 11. Statically Significant Improvements of Confidence-based questions.

QUALITATIVE RESULTS

Seven participants opted to participant in the semi-structured interview. Each participant was interviewed separately and in a private room. Verbal consent was obtained before the interview. After analyzing the transcript in NVivo, three main themes were seen: awareness of limited knowledge, patient-centered design, and expanded skills and confidence. Themes and sample quotes for each theme from the transcript are included in Table 4.

Under the theme of awareness of limited knowledge, participants reported that they knew they lacked basic digital skills. Despite reporting limited skills, participants stated that they relied on their phones for everyday tasks and called it their "lifeline". Participants also reported feeling excited and motivated to learn more digital skills.

Under the theme of patient-centered design, participants reported enjoying the program, praising the instructors' kindness, and reporting wanting to come back for every session. They also reported some content areas such as app evaluation were too difficult and requested additional instruction on sessions they found challenging for the next iteration.

Under the theme of expanded skills and confidence, participants reported an assortment of newly learned skills. Participants also expressed new types of smartphone usage including healthcare utilization, service utilization, and listening to music. Some participants reported interest in getting a smartphone.

Theme	Quote
Awareness of divide	"I probably wouldn't have gotten a new cellphone. I would have kept my flip phone. Flip phones don't do a lot do they? You can just call out and call in. I've had one since they came out and I never thought about getting another phone because I said to myself, I don't know how to use a smartphone and now that I went through this program, I know how to use it."
	"There were few of us who did not know much of anything just the breadth of it just getting an overview was interesting."
Patient-Centered design	"I would tell anybody who takes part in the group come in with an open mind because there is very receptive staff here that can work with you and work on your level so that you don't get stressed out or anything so that you are picking up the stuff with ease."
	"I think it was important that we have the handouts – that's the only way that I can learn if there is a printout of something"
Expanded skills and confidence	"I knew where to find things more. I know how to appropriately download an app. I feel safe with emailing and texting and talking on there"
	"now I feel really confident using the phone. I know there's still some other things that I can learn but overall I feel like I did pick up a lot of stuff because when I first had the thing with the apps I had like maybe 3 or 4 apps now I have all the different apps that I like to use and a lot of them like I said all of my doctors at different parts of the hospital all their numbers are in there and now I don't have to worry about having to have the nurse come in if I am having a crisis you know I could just press them and I'm talking directly to the hospital."

Table 4. Themes and Example Quotes from participants.

DISCUSSION

Results of this study on the implementation of a community-based digital literacy program suggest both challenges as well as potential. The quantitative results found promising changes to participants' digital skills measured by both functional and confidence-based questions. Additionally, the improvements to the program increased the accessibility availability of the program.

As the presence of digital technologies in healthcare systems continues to proliferate, there is a growing demand for digital literacy programs like DOORs. To enhance the program's accessibility and availability, our team modified the curriculum, developed more reliable measures to gauge its effectiveness, and sought feedback from participants. These steps will help DOORs expand its impact and improve its ability to serve more individuals.

The updated curriculum for DOORs now reflects the latest changes in technology and emphasizes essential digital skills that can have a positive impact on a participant's health, such as signing up for a patient portal or setting medication reminders. In addition to focusing on these important skills, the updated curriculum also takes accessibility into consideration by including skills such as increasing the font size and activating night mode, making it easier for participants to engage with digital technologies. To ensure that the program is inclusive and accessible to all, the first session of DOORs provides detailed instructions on how to obtain a smartphone through the Lifeline government program. The Lifeline program offers a free smartphone and data plan to low-income individuals, thus working to mitigate the divide digital and can ensure that all can participate in DOORS. Other changes to the program included an updated manual, patient-facing handouts, and Spanish translation. The goal of these changes was to make changes based on feedback from the community we serve. All of the updated materials were also consolidated into a ready to send box in either digital or print form so that other groups could employ the DOORS model. These changes reflect DOORS' commitment to serving the community by providing accessible and effective digital literacy training.

In addition to the improvements to the curriculum, the updated surveys using the EDS framework were piloted in this iteration of DOORS. Survey results suggest that the updated curriculum of DOORS can improve the digital literacy level of participants. The most significant improvements of both functional and confidence-based questions occurred in the first session. This result demonstrates how crucial basic digital skills are, which is also reflected in the literature (Spanakis et al., 2021). It is clear that there is a need in the community for digital literacy programs. While this result is clear, other results cannot be interpreted as easily. On two skills, making a phone call and creating a playlist, participants reported worse scores. One skill (making a phone call) decreased in a confidence-based question, while the other (creating a playlist) score declined in a functional question. For the confidence-based question, it is plausible that participants overestimated their ability to make a phone call before the skill was taught in the session. For the functionally assessed skill, there could be many reasons for this result including that the session was not clear enough or the question was difficult to understand. Overall, participants improved on the digital literacy skills that were taught and reported feeling more comfortable with technology. The results of the semi-structured interviews corroborate the qualitive results; participants reported more confidence and increased usage of their smartphones after the program. The DOORS program has the potential to keep closing both the first and second digital divides, thus making technology more accessible and usable for participants.

IMPLEMENTATION EXAMPLES

While the results of the implementation demonstrate both quantitative and qualitative improvements to participants' digital literacy, it does not capture the full potential of the DOORS program. In order to fully illustrate the impact of the DOORS program, four case studies from participants are presented below. The first two case studies represent participants that have a low baseline digital literacy, while the latter two cases illustrate participants that have a higher baseline literacy level.

Case Study 1: Taking and Looking at pictures

One participant shared that she felt happier when she looks at pictures of animals.
After Session 1, she asked me if I could show her how to open the photos app and take pictures with her phone's camera. The next session she came back and showed me that she had put her cat as her phone's background, and that whenever she felt sad and she wasn't home with her cat, she would unlock her phone and look at pictures of her cat or even just look down at her wallpaper.

This case study highlights the potential benefits of utilizing native smartphone apps to improve one's mood and overall mental health. Simple activities like taking or looking at photos can help individuals manage their emotional well-being. By engaging in digital activities like taking photos, individuals can experience relaxation and alleviation of negative emotions. Overall, this case study illustrates how impactful a basic digital skill can be on an individual's mental health and wellness.

Case Study 2: Calling a loved one

Session 4 focuses on maintaining connections, which can have a significant impact on an individual's mental health. During this session, participants learn about different ways to stay connected to other using technology, including texting, calling, and social media. By providing this information, DOORS aims to empower participants to utilize technology to build and maintain interpersonal relationships.

The following week after this session, one participant expressed her excitement about now being able to Facetime her loved ones. This participant, who lives alone, shared that this new skill helped her cope with feelings of isolation and loneliness over the past week. This case study is an example of how digital tools such as Facetime can foster relationships and provide essential support for those that might be experiencing feelings of loneliness. The ability to connect with loved ones through technology provides an opportunity for social engagement and can help promote the overall wellbeing of an individual.

Case Study 3: Utilizing a Patient Portal

Session 2 instructs participants on how to use technology to better their health.

The skills in this session are how to track steps, check screen time, and how to sign up for a patient portal. The patient portal, in particular, is a valuable digital tool that empower individuals to manage their own health. Patient portals allow individuals to contact their doctor, schedule appointment, and manage their medications all in one place. This can be especially beneficial for individuals with chronic conditions who require ongoing care and several medications.

At the end of Session 2, we directly help participants sign up for their patient portal if they wish to. One participant came back the following week and shared his successful use of his patient portal to schedule an appointment with his doctor. This example demonstrates the effectiveness of empowering individuals with digital tools. Helping one participant sign up for a patient portal resulted in him receiving the care he needed. Teaching participants how to use digital healthcare tools can improve both the health and engagement of participants.

Case Study 4: Downloading a Meditation App

Session 7 is designed to help participate stay safe on the internet and to help them evaluate apps. This session focuses on keeping passwords safe, what not to post online, how to download apps, and how to read an app's privacy policy. These skills are essential in society today and can allow participants to find apps that fit their own specific needs. During this session, one participant asked which meditation app he should download. After asking him what type of mediation he likes to do and how he would like to use the app, I helped him find an app that suited his needs. We went over the privacy policy of the app together to ensure that he was downloading a safe app. In the following session, I followed up and asked him how he was enjoyed the app. He reported that he used it several times over the past week and that it helped him relax before bed. This advanced use of digital skills illustrates the capabilities of mental health apps on an individual's well-being. Mental health apps have become increasing popular and can have many potential benefits. In order to fully utilize the benefits of mental health apps, it is important to teach participants how to choose a safe app that is right for them.

LIMITATIONS

While the DOORS program has many strengths, it is important to consider the limitations in order to improve the program in the future. While this version expanded the program to included Spanish translations, the program needs to expand and be translated in other languages. Additionally, the lack of validated scales that assess digital literacy for smartphones makes quantifying the impact of DOORS difficult. Making our own measurement tool has given our team a way to quantify the results, however, it is not a validated scale. In the future, it would be beneficial to validate the DOORS scale so that our study could be more generalizable. Another aspect of this study that limits the significance of our results is the lack of a control group. A control group was attempted, but we were limited by the number of participants that wanted to fill out a survey without attending a session. While the results of this iteration have been promising, using a validated scale and a control group would allow us to better assess the efficacy of this program.

NEXT STEPS

The DOORS program has been successfully educating the community on digital skills for the past five years. Improvements have been made each iteration, and we hope this program will continue to expand. Next steps for this project include implementation in other locations, validating a digital literacy scale for smartphones, and including a control group. In order to expand this program to other locations, it is important to include the participants themselves. As there are currently only two leaders of DOORS, Noy and I, it is important to employ a "train the trainers" model, where advanced participants could lead future groups. In addition to solving the limitations of our workforce, peer workers have the potential to offer a unique type of support through using their lived experience to guide their peers (Myrick & del Vecchio, 2016).

CONCLUSION

Digital Outreach for Obtaining Resources and Skills (DOORS) is a digital literacy program aimed at mitigating the second digital divide. As the prevalence of technology continues to expand, programs like DOORs are well-positioned to promote access and equity around digital health resources. With the ability to use digital health resources effectively, individuals can better manage their health and well-being. With its recent updates and adaptations, DOORS is even better equipped to have a positive impact on individuals and communities, ensuring that everyone has access to the digital resources.

APPENDIX 1: SURVEY 1

Digital Skills Training Survey - Session 1

How old are you? ________________

I am feeling nervous, anxious, or on edge.

Strongly disagree 1 2 3 4 5 6 7 8 9 10 *Strongly agree*

I don't enjoy anything at all.

Strongly disagree 1 2 3 4 5 6 7 8 9 10 *Strongly agree*

I can usually find something good to like, even in a bad situation.

Strongly disagree 1 2 3 4 5 6 7 8 9 10 *Strongly agree*

Right now, I feel like things are out of my control.

Strongly disagree 1 2 3 4 5 6 7 8 9 10 *Strongly agree*

To what extent are you able to solve the problems facing you right now?

Not at all 1 2 3 4 5 6 7 8 9 10 *A lot*

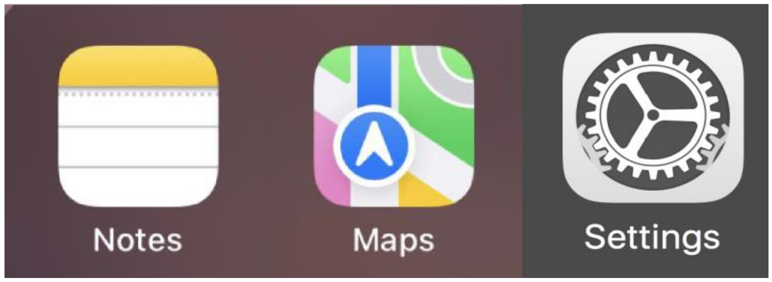
I can turn on a device (e.g., phone, tablet, or laptop).

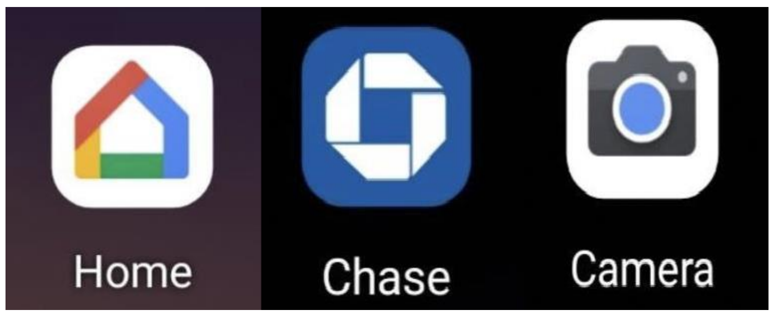
Strongly disagree 1 2 3 4 5 6 7 8 9 10 *Strongly agree*

I can use the controls on a device (e.g., turn on my phone).

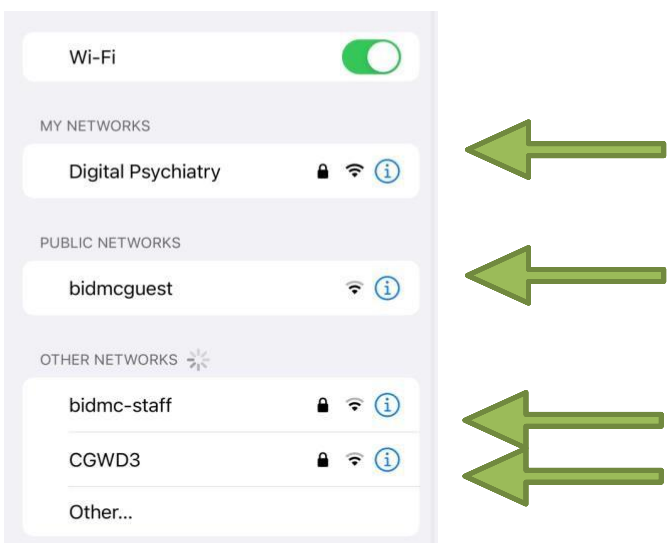
Strongly disagree 1 2 3 4 5 6 7 8 9 10 *Strongly agree*

Circle the app you would select to get you to connect to Wi-Fi.





Circle the arrow pointing to the Wi-Fi network that does NOT require a password.



Circle the universal symbol for Wi-Fi.

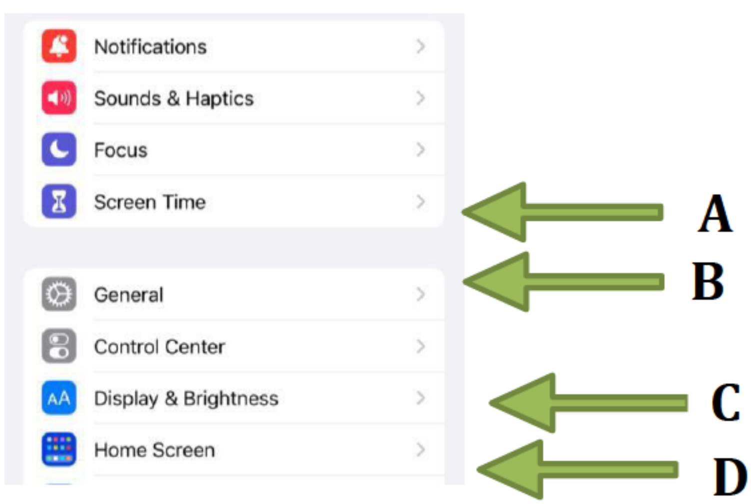
I can connect my device to a safe and secure Wi-Fi network (e.g., I can connect to Wi-Fi in my house).

Strongly disagree 1 2 3 4 5 6 7 8 9 10 *Strongly agree*

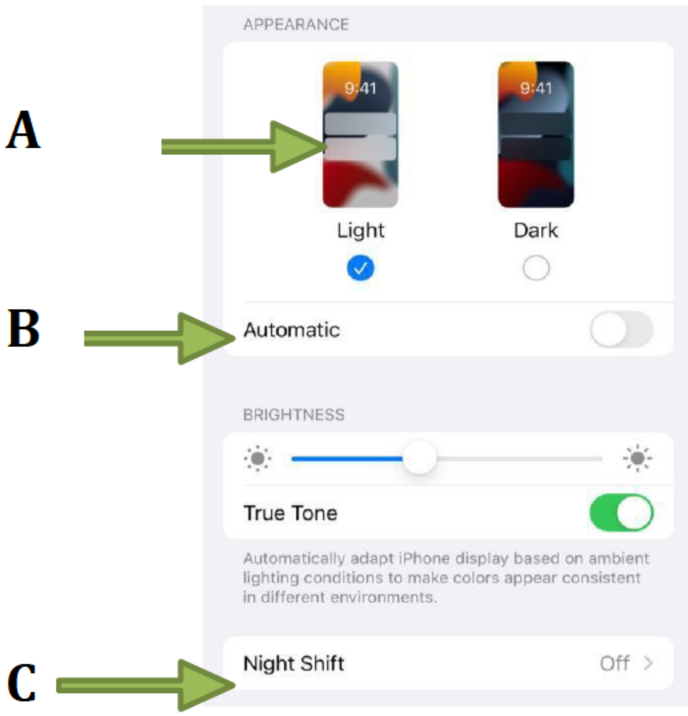
I can interact with the home screen on my device (e.g., I can locate the settings app).

Strongly disagree 1 2 3 4 5 6 7 8 9 10 *Strongly agree*

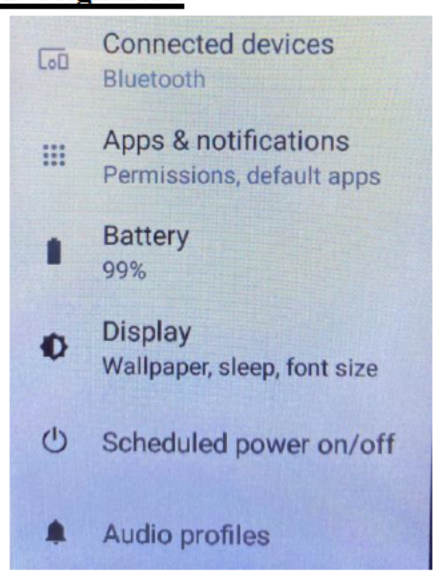
Circle the letter pointing to the button you would press to change your font size AND brightness level.



Using the screenshot below, circle the letter pointing to the button that will make my eyes feel better when using my phone in the evening.



Using the screenshot below, circle the option you would choose to change your font size AND brightness.



<u>I can change setting on my device to make it easier to use (e.g., increase font size or adjust screen brightness).</u>

Strongly disagree 1 2 3 4 5 6 7 8 9 10 *Strongly agree*

APPENDIX 2: LIFELINE HANDOUT

SIGN UP FOR A FREE PHONE

1. GO TO https://www.assurancewireless.com/

2. ENTER YOUR ZIP CODE

3. PRESS APPLY NOW

4. FILL OUT APPLICATION

WHAT DO YOU GET?

- FREE Android™ Smartphone
- Unlimited FREE Texts Each Month
- A minimum of 1000 FREE Voice Minutes Each Month*
- FREE Voicemail Account, Call Waiting and Caller ID
- FREE 911 Access, Unlimited Calls to 211 and Calls to Customer Care
- The Ability to Keep Your Current Home or Cell Phone Number

DOCUMENTS THAT YOU WILL NEED:

If you are applying with income, you need a copy of ONE of the following:

- Prior year's State or Federal income tax return
- Current income statement from employer
- Federal notice letter of participation in General Assistance
- Divorce decree or child support document containing income

OR

A copy of three consecutive months of ONE of these statements (from the previous 12 months):

- Current paycheck stub
- Social Security benefits statement
- Veterans Administration benefits statement
- Retirement/Pension benefits statement
- Unemployment or Workers' Compensation benefits statement

If you are applying with benefits, you need a copy of ONE of the following:

- Benefit ID Card with Name and either Expiration Date or Issue Date printed on card (for example: SNAP or MEDICAID Card).
  - The Issue date must be within the last 12 months, or the expiration date must be in the future. Cards with expiration dates in the past or issue dates more than a year old will not be accepted.
  - Benefit ID Cards without Name/Expiration Date/Issue Date WILL NOT BE ACCEPTED and will result in Application denial.
- Award or Notice Letter of Participation from an authorized government agency
  - Must include your name & address and be dated within the past 12 months

OR

Benefits Statement for qualifying program

- Must include your name & address and be dated within the past 12 months

APPENDIX 3: SESSION 1 HANDOUT

Session #1: What are smartphones and how can we use them?

For androids

Skill 1: Changing the Brightness

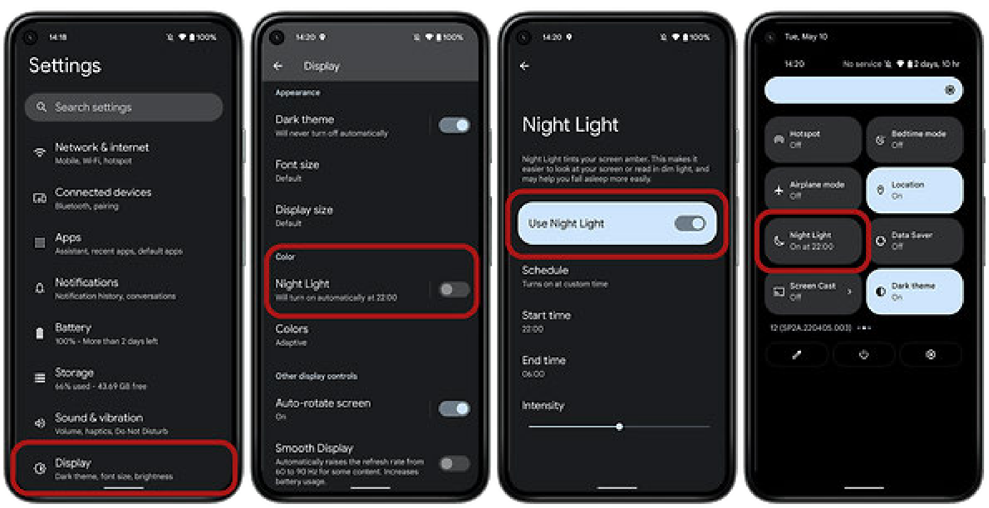
1. Unlock phone
2. Swipe up to see all apps and locate Settings app

3. Tap on settings app to open it
4. Tap on "display" and press "brightness
5. Move to left to darken
6. Move to right to brighten

Skill 2: Night shift

1. Unlock phone
2. Swipe up to see all apps and locate Setting App
3. Tap on settings to open it

4. Tap on "display and brightness"
5. Find "night light" and tap it to turn it on

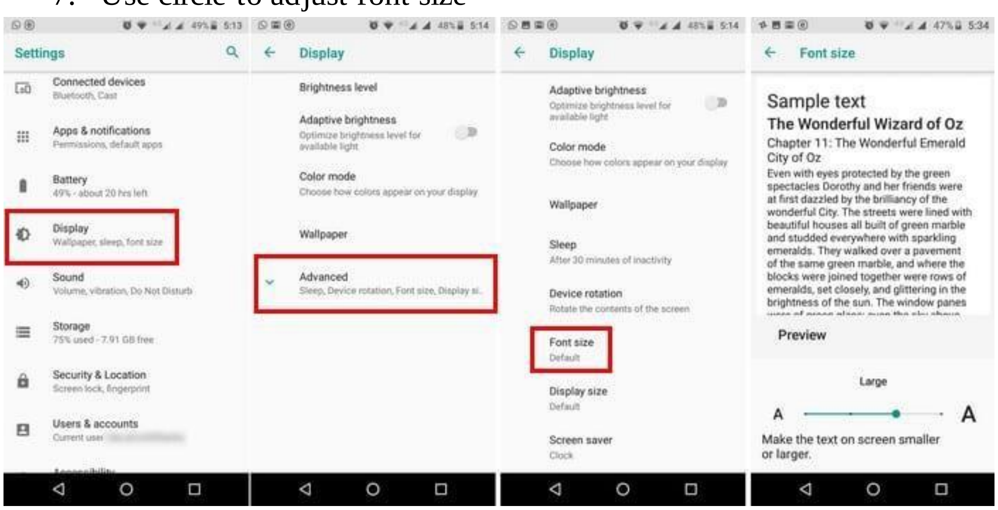


Skill 3: Increasing (or decreasing) Font Size

<u>For Androids</u>

1. Unlock phone
2. Swipe up to see all apps and locate Settings app
3. Tap on Settings app to open it

4. Tap on "display"
5. Tap on "advanced"
6. Tap on "font size"
7. Use circle to adjust font size



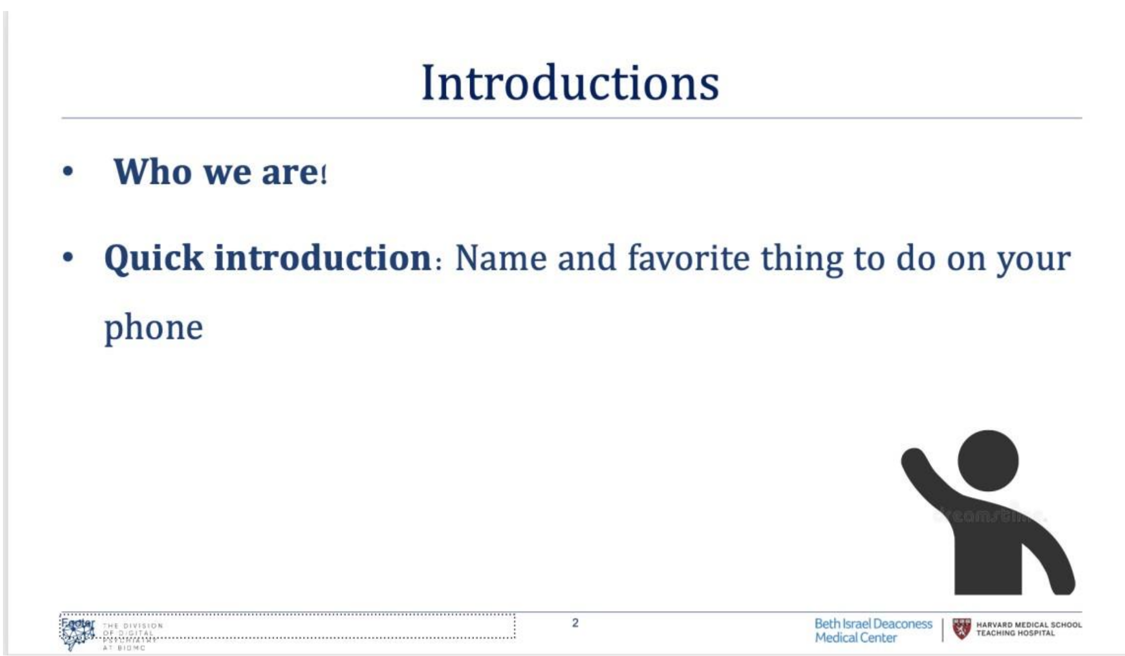
Skill 4: Connecting to Wi-Fi

<u>For Androids</u>

1. Unlock phone
2. Swipe up to see all apps and locate Settings app
3. Tap on Settings app to open it

4. Tap on settings app to open it
5. Click on "connections" or "networks"
6. Select a network and enter password if needed

APPENDIX 4: SESSION 1 POWERPOINT



SESSION #1
Setting up Our Smartphones

Skill of the week:
Connecting to WiFi

Agenda

- Smartphone Survey
- Curriculum Overview
- Core Smartphone Skills Discussion
- Skill Building
- Practice Activity

Skill of the week: Connecting to WiFi


Digital Skills Overview
Session #1
What are smartphones?
How can we use them?
Session #2
How can we use
smartphones to stay healthy?
Monday
5
Session #3
How can our smartphones
help us stay organized?
Session #4
Using our smartphones to
connect with friends
Session #5
Using our smartphones to
connect with professionals
Session #6
Learning new skills with the help of
our smartphones
Session #7
Staying safe and making smart
choices on our smartphones
Session #8
Enjoying downtime on our
smartphones
5
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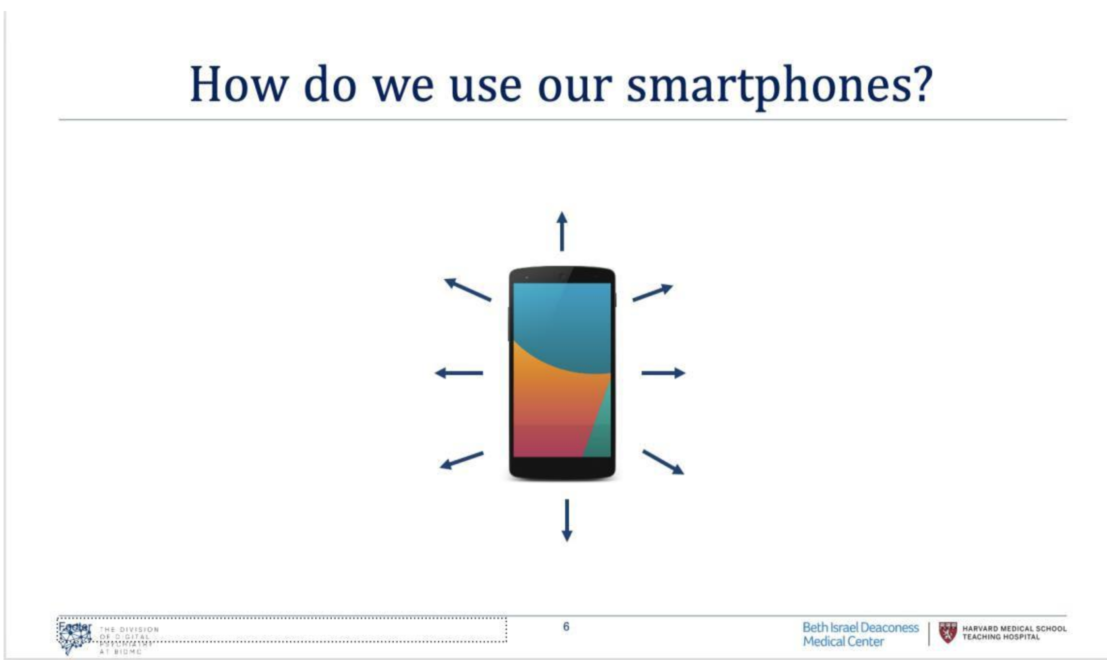
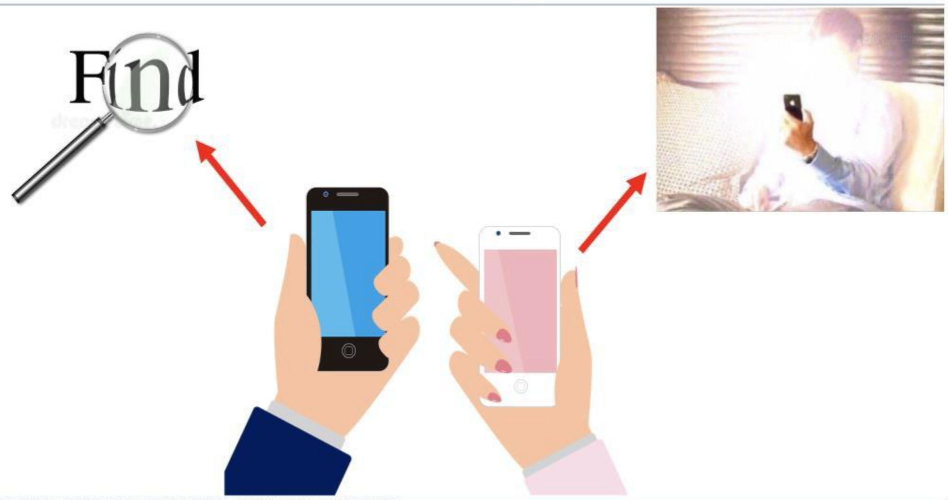
TEACHING HOSPITAL


How do we use our smartphones?
6
Beth Israel Deaconess
Medical Center
HARVARD MEDICAL SCHOOL
TEACHING HOSPITAL

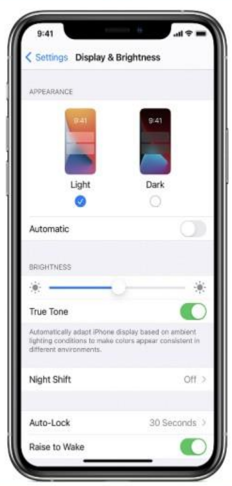
How can we make our smartphones easier to use?



Skill Building: Brightness

Apple

1. Settings
2. Display and Brightness
3. Under "brightness"
   a) Move to the left to darken
   b) Move to the right to lighten



Android

1. Settings
2. Display
3. Press "Brightness"
   a) Move to the left to darken
   b) Move to the right to lighten

Skill Building: Night Shift

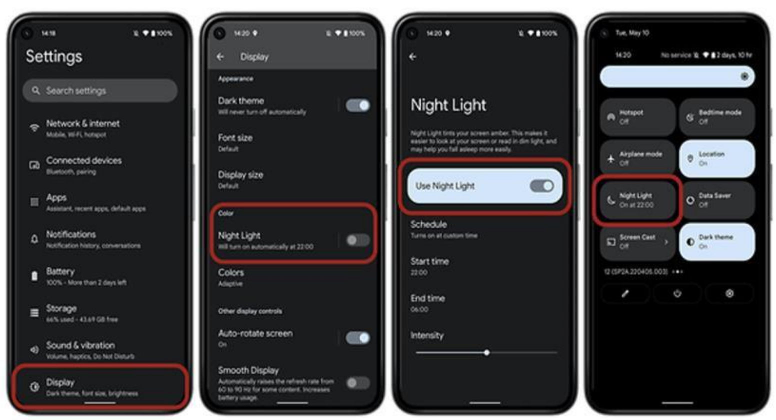
Apple

1. Settings
2. Display and Brightness
3. Find “Night Shift”
4. Turn on

Skill Building: Night Shift

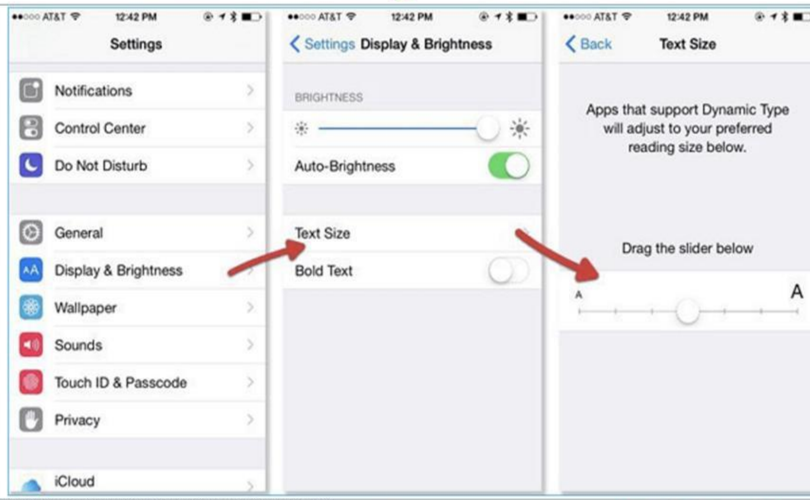
Android

1. Settings
2. Display and Brightness
3. Find “Night Light”
4. Turn on



Skill Building: Font Size

Apple



11

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Skill Building: WiFi

What is the difference between Wi-Fi and Data?

Wi-Fi
- Free
- Can't access everywhere
- Available at the library, Starbucks, Dunkin' Donuts, etc.

Data
- Costs money
- Can have pre-paid plans or contracts
- Usually need data to make calls

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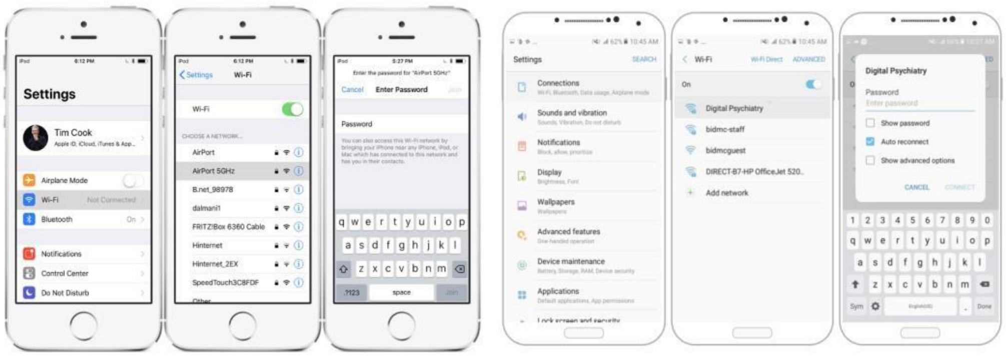
Practice: WiFi

Connect to WiFi



iPhone **Android**

Practice: WiFi

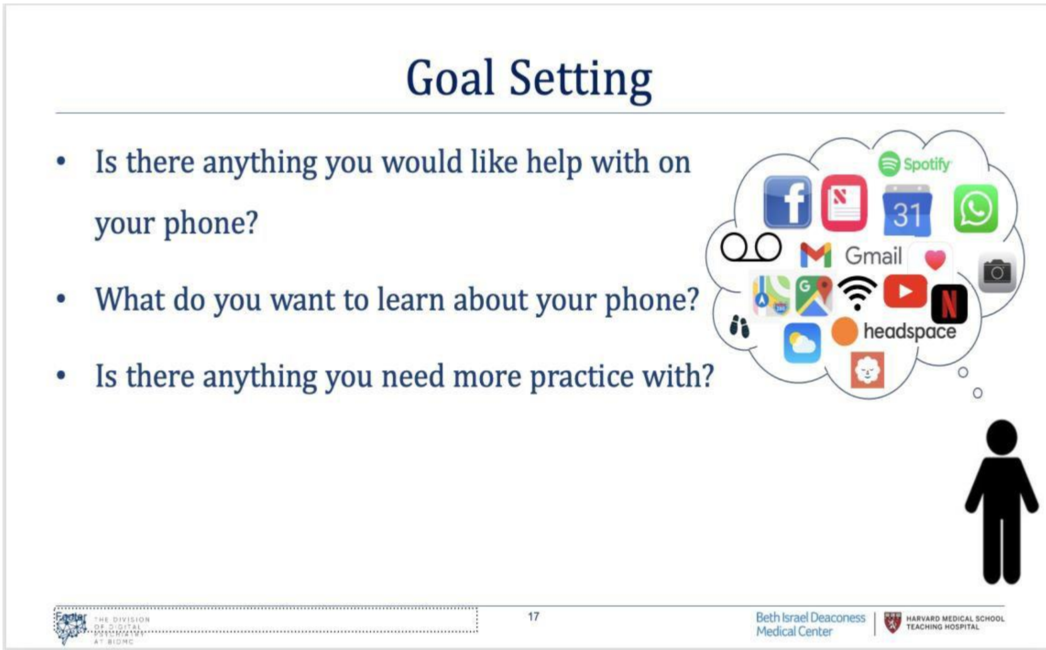
Connect to WiFi on iPhone

Step 1. Click on the ‘Settings’ app

Step 2. Click on ‘Wi-Fi’

Step 3. Select a network

Step 4. Enter password if needed


Goal Setting
• Is there anything you would like help with on your phone?
• What do you want to learn about your phone?
• Is there anything you need more practice with?
Spotify
Gmail
31
headspace
17
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APPENDIX 5: SEMI-STRUCTED INTERVIEW SCRIPT

STEP 1: SMARTPHONE USE PRIOR TO THE PROGRAM

- Prior to this program, describe how you would use your smartphone.
- How did you feel about your smartphone?

STEP 2: EXPERIENCE IN DOORS

- Describe your experience over the past eight weeks.
- Follow up: How did you feel coming to the group? What were the sessions about? What did you enjoy about DOORS? Any part that you think can be improved? Can you tell me what you learned if anything?
- If another member of the clubhouse were to ask what is the DOORs program, what would you say?

STEP 3: SMARTPHONE USE AFTER PROGRAM

- After this program, how do you use your smartphone?
- How are you likely to use your smartphone in the future?
- Has this program impacted you?
- If so, how?
- If not, why not?

STEP 4: CONCLUSION

- Is there anything else that you would like to share?

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