DECO3500 Social & Mobile Computing

Digital health for well being

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Domain

The domain of the project should be focused on the application of digital technology to bring well-being for users in healthcare. There are many things that technologies could do for people in this area, e.g., mental healthcare, weight control, health status monitoring, data sharing, etc.

A particular technology, which is called Online Social Networks (OSNs), could be the technical support that potentially aids to realise these functions. Take an example, there are many people suffering from mental illnesses globally, which leads them to catch physical illnesses. It has a negative impact on their life quality, hence, most of them are searching for a solution to fight against the sad feeling to jump back to their normal life.

Our project aims to solve this problem – it provides a communication platform that is developed based on OSNs, which allows people to share experiences of fighting against negative emotion online. Meanwhile, with the application of OSNs, user data could be transformed among devices.

Meanwhile, there are also drawbacks to applying OSNs. Firstly, it is not familiar with us like machine learning or artificial intelligence, before it is applied, we need to do sufficient research to make sure it is built properly. Secondly, the difficulties of the coding work could be another problem, it might be time costing. Thirdly, the effect of applying OSNs is uncertain - most users might not be satisfied with the function it builds, or there exists an easier way to realise this function rather than OSNs. Before the project is started, we need to identify those challenges that we are likely to face.

Critique

Liyin Qin

1. Derboven, J., Voorend, R., Tartarisco, G., Marino, F., Pioggia, G., Nucera, S., & Van der Gucht, K. (2018). mhealth and psycho-physical well-being. Proceedings of the 10th Nordic Conference on Human-Computer Interaction, 952–955. ACM. https://doi.org/10.1145/3240167.3240261

Abstract: “Both in academia and in industry, mHealth applications have started to address mental health, as well as physical health. Apart from monitoring physical parameters to help patients to manage their conditions themselves, an increasing number of mHealth apps include dedicated sections for mental health based on cognitive behavioural approaches and mindfulness. Nevertheless, the combination of mental health support with specific self-management paradigms poses particular challenges for the design of the technology. While health monitoring apps should efficiently provide information and encourage users to achieve goals, constant access to detailed health data can be overwhelming and induce additional stress and anxiety. This workshop zooms in on mHealth technology that integrates these mental well-being concerns. Specifically, the focus is on design challenges related to the combination of self-management of conditions on the one hand and mental well-being and mindfulness on the other.”

Critique: After reading this paper, I understand that with the continued advances of digital health, more and more healthcare systems have been developed in this decade, which aims to provide better patient-centred healthcare services, improves the efficiency of telehealth services, and bring well-being for users. Hence, I feel that applying mobile technology and its related technology to the healthcare domain is very potential.

Firstly, according to this paper, in the healthcare domain and its related areas, new technology could be applied to monitor the physical status, i.e., the blood sugar level, eye condition, heart rate, etc. Secondly, benefited from mobile technology, e.g., cloud storage and real-time data exchange, it provides a social network for users.

These findings inspire me that our project could provide a server, to offer people control to monitor their physical health status anytime anywhere, which means it provides them more opportunities to have self-health management. Also, it should offer a health data transmission function, to enable their clinicians to check their health status without the time and distance limitation to early intervene in avoidable critical illness. To sum up, it lets me that it is potential to apply new technologies in the healthcare domain, for bringing people well-being in many aspects.

Meanwhile, there are also drawbacks to this article. Firstly, it is too general. It only introduces what can technologies do in the healthcare domain, but it does not mention how do they function. It should be explained more detailly. Secondly, there is a lack of case studies. It would be better to introduce one or two specific technologies that are helpful for healthcare.

2. Pendse, S., Karusala, N., Siddarth, D., Gonsalves, P., Mehrotra, S., Naslund, J., … Sharma, A. (2019). Mental health in the global south. Proceedings of the 2nd ACM SIGCAS Conference on Computing and Sustainable Societies, 22–36. ACM. https://doi.org/10.1145/3314344.3332483

Abstract: “Mental illness is rapidly gaining recognition as a serious global challenge. Recent human-computer interaction (HCI) research has investigated mental health as a domain of concern, but is yet to venture into the Global South, where the problem exhibits a more complex, intersectional nature. In this paper, we review work on mental health in the Global South and present a case for HCI for Development (HCI4D) to look at mental health-both because it is an inarguably important area of concern in itself, and also because it impacts the efficacy of HCI4D interventions in other domains. We consider the role of cultural and resource-based interactions towards accessibility challenges and continuing stigma around mental health. We also identify participants' mental health as a constant consideration for HCI4D and present best practices for measuring and incorporating it. As an example, we demonstrate how both the process and the lens of aspirations-based design, a recently proposed approach for HCI4D research and design, may benefit from the consideration of mental health concerns. Our paper thus recommends a path forward for considering mental health in HCI4D, potentially leading to new research directions in addition to enriching existing ones.”

Critique: This article focuses on one aspect in the digital healthcare domain, mental health. It shows that mental illness is recently being recognized as a serious global problem and new

technology, e.g., human-computer interaction (HCI) has gradually been used and integrated into the healthcare system for mental healthcare services.

What is more, it illustrates the way that how HCI technology is used in mental healthcare practice in the global south. In the clinic, the level of experiencing mental distress can be expressed by the somatic language. When symptoms of mental distress are expressed in physiological ways, e.g., the unusual feeling of nerves beating, abnormal body temperature, gastrointestinal problems, body tremors, headaches, etc., HCI-based technology aids to detect these physical changes and visualizes these symptoms or abnormal behaviours in a digital way.

According to these, I have an idea to use digital technologies to allow clinicians to monitor patient's mental health status, to know if they feel stress, and to analyse these distress expressions. Also, if there is a need to test the effect to use our project for mental healthcare, HCI technologies can be used at multiple stages throughout the whole research duration e.g., collect data in different stages (before, during and after using our system) to make a comparison of respondent's health status, which helps to explore the design of our system. Overall, this article raises my awareness that mental health is an issue and encourages me that we could do small things in this area.

Despite these benefits to applying technologies in the clinic, it is hard for students like us to realise these functions for the course project. Meanwhile, this article does not show experiments or figures to show the change of patient's health status to emphasize the importance of applying HCI technologies. Its conclusions are based on interview results, it is too subjective.

3. Ma, X., Chen, G., & Xiao, J. (2010). Analysis of an online health social network. Proceedings of the 1st ACM International Health Informatics Symposium, 297–306. ACM. https://doi.org/10.1145/1882992.1883035

Abstract: “With the continued advances of Web 2.0, health-centered Online Social Networks (OSNs) are emerging to provide knowledge and support for those interested in managing their own health. Despite the success of the OSNs for better connecting the users through sharing statuses, photos, blogs, and so on, it is unclear how the users are willing to share health related information and whether these specialpurpose OSNs can actually change the users' health behaviors to become more healthy.

This paper provides an empirical analysis of a health OSN, which allows its users to record their foods and exercises, to track their diet progress towards weight-change goals, and to socialize and group with each other for community support. Based on about five month data collected from more than 107,000 users, we studied their weigh-in behaviors and tracked their weight-change progress. We found that the users' weight changes correlated positively with the number of their friends and their friends' weight-change performance. We also show that the users' weight changes have rippling effects in the OSN due to the social influence. The strength of such online influence and its propagation distance appear to be greater than those in the real-world social network. To the best of our knowledge, this is the first detailed study of a large-scale modern health OSN.”

Critique: This article introduces one current used mobile technology in a special aspect in healthcare - weight control. The core mobile technology is called online social networks (OSNs) and is used in many applications or systems to aid users to manage their weight. This essay focuses on those functions that are supported by OSNs. Firstly, health OSNs could be applied to mobile-based APPs and wearable devices, which enables people to acquire health knowledge, to form better health behaviours, and to track their health records in daily life more easily. Secondly, the online social network enables users to record their diet and daily workout whenever and wherever, which allows them more control of weight management. Thirdly, it provides them social function to form groups with people having the same goals, which could motivate them towards the goal. Fourthly, the online social network is also applied to devices, e.g., wearable fitness activity trackers, Internet-connected weight scales, fitness mobile applications, etc.

After reading this paper, I re-confirmed that there is a need to potentially apply digital solutions in healthcare. There are many people worrying about their weight globally, hence, there are possibilities to gain a lot of users if this system is well designed. Also, with a healthier body, people feel more confident and happier, it is also an indirect way to build mental health - which has a connection to the mental health area that I want to research. Moreover, I have learnt OSNs provide a social function, which allows users to share their weight-loss experience share among each other - it offers fun for people towards the same weight management goal. What is more, carriers of OSNs are flexible, if my project is changed the direction, from a mobile application to a wearable product, it still could be applied to the new device.

However, this article does not mention the challenges to applying OSNs in a mobile-based application or a wearable device, and there is a lack of an explanation of how to apply OSNs to devices. Hence, I still have no clue of how to build the project with OSNs, I could only know there are many functions that could be developed based on OSNs.

4. Colm Sweeney, C. P., Edel Ennis, Raymond Bond, Maurice D. Mulvenna, Siobhan O'neill, Martin Malcolm, Lauri Kuosmanen, Catrine Kostenius, Alex Vakaloudis, Gavin Mcconvey, Robin Turkington, David Hanna, Heidi Nieminen, Anna-Kaisa Vartiainen, Alison Robertson, Michael F. Mctear. (2021). Can Chatbots Help Support a Person's Mental Health? Perceptions and Views from Mental Healthcare Professionals and Experts. ACM. https://dl.acm.org/doi/10.1145/3453175

Abstract: "The objective of this study was to understand the attitudes of professionals who work in mental health regarding the use of conversational user interfaces, or chatbots, to support people's mental health and wellbeing. This study involves an online survey to measure the awareness and attitudes of mental healthcare professionals and experts. The findings from this survey show that more than half of the participants in the survey agreed that there are benefits associated with mental healthcare chatbots (65%, $p < 0.01$). The perceived importance of chatbots was also relatively high (74%, $p < 0.01$), with more than three-quarters (79%, $p < 0.01$) of respondents agreeing that mental healthcare chatbots could help their clients better manage their own health, yet chatbots are overwhelmingly perceived as not adequately understanding or displaying human emotion (86%, $p < 0.01$). Even though the level of personal experience with chatbots among professionals and experts in mental health has been quite low, this study shows that where they have been used, the

experience has been mostly satisfactory. This study has found that as years of experience increased, there was a corresponding increase in the belief that healthcare chatbots could help clients better manage their own mental health."

Critique: This article introduces one technological attempt to aid clinicians to deliver mental healthcare and to bring people well-being - chatbots. Firstly, it shows an online survey that over 70% of the respondents think there is a need to use chatbots in clinical practice. Also, approximate 75% of the experts feel the robot is likely to help their patients to manage their own health. Secondly, it introduces the most two popular types of chatbots in clinical trials, voice-based chatbots and text-based chatbots. The voice-based chatbot is the most used one in the current clinical practice to support mental health and wellbeing. Both types of chatbots are developed based on machine learning and artificial intelligence to imitate human communication.

According to these, I feel that interesting technology products could bring fun to mental health therapy, e.g., chatbots. Our project could be built in an interesting form to win users. It is an impressive way to gain well-being. Also, the two technologies mentioned above to build the chatbots - machine learning and artificial intelligence, are familiar to me because I took relevant courses before. It inspired me that I could use skills I gained from past courses to design a meaningful project if possible.

On the other hand, this essay does not explain how the way of chatbots influences people's emotions, it just tells that they can significantly reduce symptoms during the therapy process. It should provide evidence in detail. Also, it does not identify risks to use chatbots. Although chatbots are attractive, their building process could be tough. It is time-consuming and expensive, which means it is not the optimal choice for my project.

5. Stewart, C., Rashid, Z., Ranjan, Y., Sun, S., Dobson, R., & Folarin, A. (2018). RADAR-base. Proceedings of the 2018 ACM International Joint Conference and 2018 International Symposium on Pervasive and Ubiquitous Computing and Wearable Computers, 1735–1743. ACM. https://doi.org/10.1145/3267305.3267540

Abstract: "Emerging mobile health (mHealth) and eHealth technology could provide opportunities for remote monitoring and interventions for people with mental health and neurological disorders. RADAR-base is a modern mHealth data collection platform built around Confluent and Apache Kafka. Here we report progress on studies into two brain disorders: major depressive disorder and epilepsy. For depression an ambulatory study is being conducted with patients recruited to three sites and for epilepsy an in-hospital study is being carried out at two sites. Initial results show smartphones and wearable devices have potential to improve care for patients with depression and epilepsy."

Critique: Radar is another successful technical attempt in mental healthcare. This paper introduced that in remote or rural areas, advanced mobile technology provides patients having mental health illnesses, brain disorders, or neurological disorders with mental healthcare by monitoring and intervening. It lists the advantages of applying radar in health data management and the Radar Central Nervous System, which is to collect data for treating major depressive disorder and epilepsy. Firstly, it supports collecting data remotely either in an active or passive way for hospitals. Secondly, it ensures privacy data conveyance. Thirdly, it is potentially a solution to data storage, management, and access. Fourthly, it

shows a case study of applying radar technology to wearable devices: seizure is significantly short and sparse, hence, the hardest issue for a system is to be capable of monitoring these extremely short ictal phases and ensure data accuracy. Radar-based passive applications enable to integrate into data sources by their plugins in quite a short time. These original data is recorded straightforwardly via Bluetooth radar which effectively avoids missing data.

According to these findings, I knew that the application of radar smoothly meets the demands to manage health illnesses. It reminds me that my project's functions should be designed to allow users to complete their UX goals and meet their needs. Meanwhile, I have never thought that radar could be used to do other things except for location services, though it appears frequently in my daily life. It reminds me that there are many technologies that could be applied to my project, and I should learn to discover them in daily life, to find an emerging technology that has the capability for mental health treatment.

However, this paper illustrates detailly the way of radar works in the clinic, the content is quite hard to understand for me as an IT student. It may lead to misunderstanding of the content for the audience. Also, there is a lack of an analysis of radar's future, as known, it is a relatively old technology, it might be replaced by other emerging technology in the future. For my project, I prefer to use sustainably developing technology to make sure the product is still useful and popular in the following years.

Xinkai Tang

6. Smith, A., Salas, K. d., Schüz, B., Ferguson, S. G., & Lewis, I. (2016). mHealth intervention design: creating mHealth interventions for behaviour change. Paper presented at the Proceedings of the 28th Australian Conference on Computer-Human Interaction, Launceston, Tasmania, Australia. https://doi.org/10.1145/3010915.3010986

Abstract: In this article, we propose a new intervention design process. This process is mainly conducive to finding evidence to help behavior change technology and user-centered design return to the process of assembling into the program. When we design any app for mobile health, this process can use theory and user feedback to help us correct the design direction in real time. The actual examples of snack applications provide us with a specific methodology to help us design better. It also confirms why we need to do mobile health content. At the same time, this study also proposes a plan for the future of mobile health design phases, including "called plastic research and predictive testing activities", "pilot testing" and "evaluation experiments". The results of these mobile health design phases are all helpful to improve future behavior change technology.

Critique: First of all, due to the rising mobile phone penetration rate, it further provides a highly available, context-aware and interactive platform for health practitioners. To improve such behaviours that cause diseases, mobile medical technologies have been widely used in commercial and research environments. But these still lack evidence-based behaviour change technologies. This article mainly proposes a process for the design of mobile medical technology interventions. This research can be used as a guide to help my team ensure the credibility of the design and the data support of related content in this design process. Form a good methodology.

From this paper, I mainly know through specific design cases at what stage I need to carry out some kind of test stage to ensure the feasibility and certainty of the process.

7. Zhang, R., Ringland, K. E., Paan, M., Mohr, D. C., & Reddy, M. (2021). Designing for Emotional Well-being: Integrating Persuasion and Customization into Mental Health Technologies. In Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (pp. Article 542): Association for Computing Machinery.

Abstract: A growing body of work has emphasized the need for customizability and flexibility in mobile health technologies to increase support user autonomy. However, customization may be burdensome for people with motivational and cognitive challenges, such as those with mental illnesses, and the optimal level and type of customizability are unclear. Based on 32 interviews with people who experience symptoms of depression and anxiety, we examine how individuals use and customize mental health apps to manage their symptoms. Our findings suggest that participants' engagement with the apps is affected by their level of energy and motivation, depending on the severity of symptoms. Customization is deemed desirable when the required user effort does not exceed users' mental and motivational capacity and when ample resources are available. We discuss how customizable systems can increase autonomy without overburdening users in the context of mental health.

Critique:This article focuses on mobile medical intervention and treatment assistance for mental health problems such as depression and anxiety. By examining how individuals integrate mental health procedures into their daily lives, and how users use drinking tools to achieve personal goals, such as changing behaviour.

It tells a variety of ways: persuasion technology and behaviour change, adaptation and customizable health technology. In this article, the author mainly talks about how to conduct counselling and treatment for users' psychological problems through some existing methods, and observe users' behaviour through practical examples to think about it and rethink the existing technology in the context of mental health: persuasion technology. It is believed that the adoption of application suggestions should depend on the feasibility of the system. In traditional psychotherapy, the trust of visitors in the treatment will seriously affect the treatment effect, so trusted data intervention also plays an important role. From a design point of view, by providing information about the organization or experts behind the system, users can increase their trust in mental health technology. More importantly, this ensures the privacy of users and the transparency of policies.

Finally, it is emphasized that how to support the flexibility of adaptation and mobile medicine is becoming a key research issue, providing a sense of direction for our team in medical health research. It also inspires trust in the system. This is one of the reasons for the success of the system, and it is also the most important point.

8. Crooks, C., Feinberg, R., Ayala-Feliciangeli, T., Dhodapkar, K., Singh, S., & Arriaga, R. (2020). Design and Evaluation of Mobile Mental Health Resources for First Responders. Paper presented at the Proceedings of the 14th EAI International Conference on Pervasive Computing Technologies for Healthcare, Atlanta, GA, USA. https://doi-org.ezproxy.library.uq.edu.au/10.1145/3421937.3421968

Abstract: This project was completed in collaboration with a non- profit community mental health organization and first responders, to develop an app to better facilitate the process of navigating resources and finding them at any time and location. We completed preliminary digital resource repository evaluations, and two rounds of stakeholder focus groups with heuristic evaluations. This helped us identify four main domains to focus on: Resources, Around You, Information, and Programs. Focus group discussions were conducted to understand how stakeholders characterized mental health resources and evaluated the initial design. The design components have been explained in detail and future directions have been outlined in this paper.

Critique: This article mainly wants to find out through research how to describe the problems encountered by users when they need to find help from mental health counselling. The second point is to find out how tools can provide such information to them so as to facilitate users' use process.

This chapter describes why such tools are needed, as well as their importance and adaptability. They are categorized according to the available resources to understand the types of resources available and the target audience. The resources are evaluated. The research also mentions the difficulties and problems that users encounter when looking for resources and provides us with a direction that we can design. For example: 1. Being in a crisis situation, they may be in a dangerous or tense environment, which makes them unable to have more time to wait. The second type is inexperienced users. They can search for rich resources. But they cannot distinguish and do not know which one to choose for help. At the same time, it is also difficult for them to describe what symptoms they are experiencing. Because this is all information that doctors or therapists need to know accurately.

The paper does not give a specific solution but simply proposes the future research direction and conjecture. Whether it is possible to help users summarize and find resources by providing content similar to map navigation, so as to quickly help users solve problems. This also provides a healthy research direction for our team's research direction. It is not really to help users treat, to act as a therapist. Rather, it is to use existing resources and act as a tool. Professional treatment still requires more professional people to work.

9. Barry, M., Doherty, K., Belisario, J. M., Car, J., Morrison, C., & Doherty, G. (2017). mHealth for Maternal Mental Health: Everyday Wisdom in Ethical Design. In Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems (pp. 2708–2756): Association for Computing Machinery.

Abstract: Health and wellbeing applications increasingly raise ethical issues for design. User-centred and participatory design approaches, while grounded in everyday wisdom, cannot be expected to address ethical reflection consistently, as multiple value systems come into play. We explore the potential of phronesis, a concept from Aristotelian virtue ethics, for mHealth design. Phronesis describes wisdom and judgment garnered from practical experience of specific situations in context. Applied phronesis contributes everyday wisdom to challenging issues for vulnerable target users. Drawing on research into mHealth technologies for psychological wellbeing, we explore how phronesis can inform ethical design. Using a case study on an app for self-reporting symptoms of depression during pregnancy, we present a framework for incorporating a phronetic approach into design,

involving: (a) a wide feedback net to capture phronetic input early in design; (b) observing the order of feedback, which directly affects value priorities in design; (c) ethical pluralism recognising different coexisting value systems; (d) acknowledging subjectivity in the disclosure and recognition of individual researcher and participant values. We offer insights into how a phronetic approach can contribute everyday wisdom to designing mHealth technologies to help designers foster the values that promote human flourishing.

Critique: This research report is mainly tired of the design process of applications that support mental health during pregnancy. Through discussion and analysis of the opinions of pregnant women, four aspects can be identified that can help shape the voice approach. Explore how phonetics in design painting is generated, and illustrate how this input can inform the values that guide the design. The article describes the challenges of mobile medicine, the problems faced, and how to encourage and maintain user participation. The mobile medical design needs to strike a balance between the direct and indirect needs of customers and the clinical requirements of reports and indicators while maintaining customer participation. Many key factors need to be understood in the designed process, including diagnosis, treatment, personal data, and so on. These contents are more uniformly generated from voice knowledge. With the advice of the World Health Organization, mobile medical intervention designers for maternal and infant health should pay special attention to the culture, economy, etc. that may affect women's healthy behaviours. Analyze the impact of different obtained data on the design stage by targeting the specific environment of pregnancy. Pay more attention to how to solve the problem that traditional medical care often fails to satisfy people's mental health.

In the article, the author talks about their use of a method of applying phronesis in mobile medical technology to provide a reflective perspective based on the more deadly design process that can only be carried out on a daily basis. This article is more about telling us what is the main content of the construction method for mental health. Of course, this will change according to the target users of our product design. After all, each user needs different content and needs, and the tone is more people-oriented design.

10. Diethei, D., Singh, A., Wienert, J., Zeeb, H., Bayor, A., Meyer, J., . . . Schöning, J. (2020). Learning from mHealth Success Stories: Effective Interventions for Marginalised Populations. Paper presented at the 22nd International Conference on Human-Computer Interaction with Mobile Devices and Services, Oldenburg, Germany. https://doi-org.ezproxy.library.uq.edu.au/10.1145/3406324.3424653

Abstract: Health is multidimensional and “there is no health without mental health”. We document ongoing technology-enabled initiatives for enhancing mental health care in the state of Karnataka. Multi- disciplinary teams have collaborated on a set of four projects to design and deploy digital technologies across different parts of the healthcare continuum, addressing beneficiaries (patients and care- givers), different levels of mental health care providers (doctors, social workers, etc.,) and health administrators, alike. The vision is to define and develop a digital platform for mental health care and services within the state of Karnataka and scalable across India.

Critique: This article is based on the understanding of the region in Karnataka, India. It studies some factors that affect the mental health of users in the region. It understands from

government and private sector data that the impact of logic technology on mental health is relatively small, at least in the field of public health in India. It is hoped that through some measures to help Karnataka build health care services. It is clear in the study that continuity of information is very important for patients to move during treatment. Therefore, this time the content is mainly to solve related problems in clinical care. Achieve comprehensive clinical evaluation in the function of e-manas, so as to support patient mobility and achieve continuity of care at the same time. Because mental diseases can impose burdens on families or communities, patients still need a series of psychosocial interventions to lead a normal life. In Karnataka's systematic trials, it has been clear that simple interventions will produce meaningful results, so this system may be extended to all regions of the country and serve everyone. Through push-d, a guided autonomous application, mobile message reminders can be provided to Indian users, as well as relevant analysis of users. Used to help caregivers treat patients.

In my opinion, this provides a way for my research to clarify what problems I solve for users, whether it is based on users' data or to help them quickly to appease. The starting point of these two problems is different, and the information involved is also different. This article clarifies the seriousness of patient data because it can help nursing staff quickly understand the patient's past medical history and think of solutions to make corresponding actions.

Overview

Our study of the ten articles can be roughly divided into several directions:

1. Specific design to a certain kind of app to help users quickly solve the problems they encountered. For example, when the user has initially perceived their psychological problems, you can contact the relevant counselling staff online through the app, through the dialogue to channel. This also provides a way to be able to target the patient in the usual life of psychological intervention and predict the problem in advance. Of course, there is also a second kind of app design.

2. For the user needs to quickly find the psychological clinic or local hospital, to make a navigation tool based on the user's current location to provide resources and locations, to avoid the user's time waste.

3. In addition, there will be some records of patient data, these contents are more to help caregivers or medical service staff to get to the user's past medical history of the system, when the user in the diagnosis may appear location shift or other conditions resulting in the diagnosis of the person is not the same situation. Guarantee that the user information they receive is the same, and it also saves the process of asking the user information again.

Similarly, these articles are actually aimed at different groups of people, and the characteristics of different regions will have different research content. For example, in the study of pregnant women, more attention is paid to the mental health of pregnant women during pregnancy and childbirth, through different behaviours, voice input to analyze whether users have mental health problems, make behavioural interventions in advance, and reduce the prevalence of users. Of course, there are also studies for remote areas, or refugees, which are different solutions that need to be made according to the specific characteristics of users. This will also be the content that we need to pay attention to in our

research. We need to determine whether the content of the study requires process intervention or counselling behaviour for users who are already sick. In addition, the determination of users will affect the focus of the design we make. These are the contents that need to be considered in the early stage of the design.

Poster

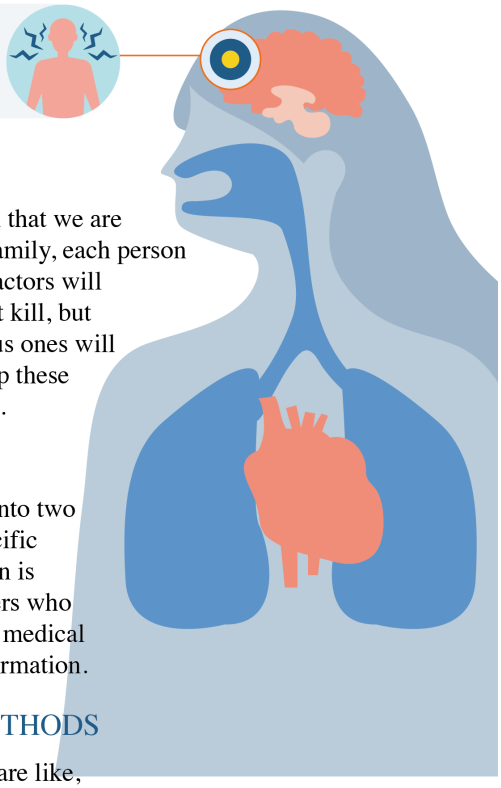
DIGITAL HEALTH

APPLICATION OF DIGITAL TECHNOLOGY
TO BRING PEOPLE WELL-BEING

DOMAIN

With the development of science and technology, the future content of the development of medical treatment in human life will need to be paid more attention, mainly to provide better medical services to improve the quality of human life. Therefore, in telemedicine, how to use existing technologies to intervene in the health problems of users in advance will be a problem worth thinking about in the future.

MENTAL HEALTH



A SPECIFIC ASPECT

There are actually many aspects involved in the e-health that we are concerned about. But in modern society, because each family, each person will have different pressures, long-term stress or other factors will cause the user's psychological illness. Mild ones will not kill, but they will lead to other physical diseases, and even serious ones will cause death. So we focus on people's mental health. Help these stakeholders through early intervention or late treatment.

A STATEMENT

The research through the paper can be roughly divided into two directions: 1. Do pre-psychological intervention for specific groups to reduce the risk of disease for users. This design is suitable foreach of us. 2. Do treatment assistance for users who are already sick. Provide resource information or record medical history to ensure the continuity and effectiveness of information.

AN OUTLINE FOR WHAT APPROACHES/METHODS

In my design, the initial focus will be on what my users are like, which will require me to study them very carefully. I will need to clarify their lifestyle and the different problems they may encounter. So I will need to use user interviews as much as possible to understand the problems they have already recognized. This will be the first problem I will solve. In addition, I still need to observe and discover details in the user's life that I cannot detect. This will require me to video so that I can reconfirm and review the problems at any time.