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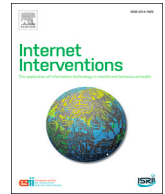
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Challenges faced by mental health providers and patients during the coronavirus 2019 pandemic due to technological barriers



ABSTRACT

Background: The novel coronavirus, SARS-CoV-2, has been responsible for the devastation of hundreds of thousands of lives directly and has caused disruptions globally. Vulnerable populations, specifically those suffering from serious mental illness and homelessness, are at higher risk of contracting COVID-19 infection resulting in medical complications and psychiatric destabilization. In addition, mental health has become increasingly relevant throughout the country given the psychological distress people have been facing due to the spread of COVID-19 and the toll of a more restricted way of living. Although the healthcare industry has quickly integrated novel ways of treating patients with mental illness with technological advances, these technologies are not applicable to different populations equally. There is a clear disparity that is represented within the public county health systems, which leads to a widening gap between those who receive adequate treatment for mental illness and those who do not.

Aims: The aims of this paper were to provide a commentary on the benefits of technology-based psychiatric and psychological interventions based off experience in a public health system and based off a relevant, thorough literature review. In addition, we aim to highlight the importance of accessibility of these interventions for vulnerable populations and provide recommendations for integrating these services expeditiously.

Methods: Literature review was conducted using MEDLINE, PubMed and Google Scholar.

Conclusions: Based off data collected from experience in a public health system and literature review, we conclude that although the COVID-19 pandemic has initiated significant innovation to integrate technology for psychiatric care, this innovation is not equally accessible for vulnerable populations suffering from mental health disorders. Within a public county health system, there are barriers with providing mental healthcare to vulnerable populations. These barriers, which are applicable throughout the United States, serve as a rationale for the need of innovative solutions for the integration of these services in not only emergency situations such as the COVID-19 pandemic, but also in daily non-emergent operations to sufficiently address the needs for those needing mental healthcare.

1. Introduction

The unprecedented outbreak of the COVID-19 pandemic has been a catalyst for an overnight transition to telehealth services across health care systems. While people across demographics have needed increased health services, most health systems, particularly those dealing with underserved populations, are technologically ill-equipped. Patients with severe mental illness die earlier, have more medical illnesses, and receive worse medical care than those in the general population (Viron and Stern, 2010). This healthcare disparity is accentuated in the area of mental health services, where the clinical systems lack technological sophistication to meet the challenges of the pandemic. Social isolation and psychological stress related to the pandemic can lead to anxiety, fear and depression. In addition, mentally ill patients, particularly the homeless, socially disadvantaged, drug addicted or patients in long-term facilities are at the highest risk of contracting the infection resulting in medical complications and psychiatric decompensation. Given the potential and documented benefits of integrating technology-based health interventions within psychiatry, we aim to explore the different interventions and make recommendations to utilize them in an equitable way.

2. State of telehealth and digital mental healthcare in U.S.

Communication-based technologies, which includes telephone communication, interactive audio and video interfaces, text messages

and remote monitoring of patient data comprise of the wide range of telemedicine or telehealth (Klein and Busis, 2020). Telepsychiatry, or telemedicine interventions for psychiatry, can include psychiatric evaluations, therapy, patient education and medication management. Telepsychiatry is highly efficient and clinically acceptable, with 80% of clinically stable patients, particularly with a known psychiatric disorder, able to be managed with teleconsultation alone (Malathesh et al., 2020). Some of these interventions can include direct, real-time interaction between a psychiatrist and patient (e.g. videoconferencing). Other types of digital or tele-based mental health interventions, which can complement telepsychiatry, include online mental health surveys, telephone-based hotlines, online mental health educational materials and psychological counseling services (Shuai et al., 2020). These complementary interventions, particularly those involving smartphone applications, have shown to have a moderate positive effect on some mental health disorders, such as depression (Firth et al., 2017).

In the United States, the repertoire of tools used within telemedicine were primarily reserved for physician-patient interactions where distance was the major barrier. While these tools have been used for decades, there are multiple legal and policy-related reasons why they have not been integrated widely (Klein and Busis, 2020). Telehealth has been implemented in a painstaking fashion, and though substantial effort has gone into scaling telehealth services, less than 1% of individuals living in rural areas (where telehealth services are primarily catered towards) have experienced such services (Smith et al., 2020). During the COVID-19 pandemic, to avoid community spread and allow

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easy access to patients, Centers for Medicare & Medicaid Services have temporarily expanded the reach of telehealth services under the 1135 waiver ([Centers for Medicare and Medicaid Services, 2020](#)). Medicare initiated paying for office, hospital, and other visits furnished via telehealth across the country, including in patients' residences. Besides doctors, a range of other providers including nurse practitioners, clinical psychologists, and licensed clinical social workers, can offer telehealth to their patients ([Centers for Medicare and Medicaid Services, 2020](#)). Many medical insurance companies have similarly allowed the expansion of telehealth services. However, the public health system was not prepared for such a vast expansion leading to many challenges faced by healthcare providers and patients.

3. Effects of COVID-19 on mental health services globally

With the advent of COVID-19, there has been a significant increase in the rates of stress, anxiety and depression globally ([Yanping et al., 2020](#)). However, the full impact of the pandemic on global mental health cannot be fully appreciated as the pandemic is ongoing and there is a scarcity of published data. But, information can be derived from previous experiences with coronavirus infections ([Torales et al., 2020](#)). For example, during the 2015 Middle East respiratory syndrome coronavirus (MERS-CoV) outbreak in Korea, one of the institutions had several patients on hemodialysis and staff caring for them had to be quarantined for 17 days. All hemodialysis patients and medical staff experienced extreme physical and mental stress due to isolation and fear of infection ([Yanping et al., 2020](#); [Kim et al., 2019](#)). Similarly, during the 2003 SARS-CoV outbreak in Taiwan, most of the staff in the emergency department and in the psychiatric ward developed post-traumatic stress disorder ([Yanping et al., 2020](#); [Lin et al., 2007](#)). In the current pandemic, medical workers in Wuhan have faced enormous pressure, including a high risk of infection and inadequate protection from contamination, frustration, discrimination, isolation, a lack of contact with their families, and exhaustion. The severe situation is causing mental health problems such as stress, anxiety, depressive symptoms, insomnia, denial, anger, and fear ([Yanping et al., 2020](#)).

To mitigate the psychological distress, several types of online mental health services have been implemented widely during the China outbreak. These include online surveys to enable health authorities to allocate health resources and develop appropriate treatments and online mental health education via electronic platforms such as WeChat, Weibo, and TikTok, that have been widely used by the medical staff and public. In addition, several books on COVID-19 prevention, control, and mental health education have been swiftly published and free electronic copies have been provided for the public. Finally, online psychological counseling services (e.g., WeChat-based resources) have been widely established ([Yao et al., 2020a](#)).

In Australia, the effects of COVID-19 on mental healthcare provisioning sought to balance preventive measures to "flatten the curve" with providing care to mentally ill patients ([Kavoor et al., 2020](#)). Strategies included administering screening questionnaires via telephone, reviewing and triaging appointments based on urgency, clinical and risk parameters and placing emergency arrangements (e.g. contacting next of kin) in advance ([Kavoor et al., 2020](#)).

Telepsychiatry has become essential in the pandemic because individuals with mental illness are more susceptible to infections, have more difficulty with accessing timely health services, have increased predisposition to stress leading to worsening mental health and lack of regular follow-up ([Yao et al., 2020b](#)). Hospitals across the United States, including our public hospital, have implemented several programs to provide online support services to the staff. To address staff's distress and compassion fatigue, our hospital has started a mental health awareness campaign with advertising of self-care techniques and mental health resources and helplines. The hospital has implemented a weekly virtual support group and frequent town hall meetings with the hospital leadership via Skype to address staff's questions and concerns.

Additionally, a COVID-19 wellness web page has been created to provide staff resources including virtual counseling, mindfulness resources, free online yoga classes and information regarding various other community and hospital programs.

4. Patient-facing technologies: barriers and potential solutions

The COVID-19 pandemic has increased the expeditious adoption of telemedicine, telepsychiatry and digital health interventions, but there are existing barriers to continue the utilization of these services. Telepsychiatry can be implemented in a cost-effective way but increasing awareness and creating "how-to" guides catered towards different populations is essential. For example, in the Los Angeles county, 47.5% of the population is Hispanic and/or Latino and 13.8% is Asian, and creating "how-to" guides in English, Spanish and different Asian languages would be helpful in ensuring each of these populations were able to understand how to access online mental health services.

Another important population to cater towards includes the elderly, with 13.6% of the Los Angeles population being 65 years and older. With this population, familiarity with the newest technology cannot be expected and many of these individuals rely on family members to assist. Given the sheer volume of patients that mental health professionals need to treat, it is important to be proactive in ensuring the elderly population is aware of how to use different telepsychiatry interventions. Some of the barriers that can prevent the elderly population from utilizing such services include lack of instructions or guidance, lack of confidence or knowledge, feeling a lack of social interaction and skepticism of the use of technology ([Vaportzis et al., 2017](#)). These barriers can be addressed positively and proactively by creating clear step-by-step instructions (with the option of changing font size and clear color differentiation), accompanied with picture representations. This can also be supplemented by a 24/7 service line to assist with technological difficulties. In addition, privacy and security is a crucial, but often overlooked issue, with many adults above 50 years old failing to take proactive steps to secure their data (only a little over half use a passcode on their phone or tablets and a third use two-factor authentication) ([Anderson and Kumar, 2019](#)). These instructions and personnel trained for assistance need to be updated in a timely fashion, as mobile applications regularly require updates and at times, re-learning of operations ([Dahlke et al., 2019](#)). Given that 50% of adults over 65 years feel they need assistance in learning and using a new technology device, solutions such as the ones listed above are critical for the long-term integration of online mental health services.

5. Provider-facing barriers and potential solutions

A major factor that plays into the slow uptake of telemedicine, which can be applied to the subset of telepsychiatry, is clinician unwillingness and lack of acceptance. However, along with clinician preparation and readiness, reimbursement is a key issue that needs to be addressed at the policy level. Prior to the COVID-19 pandemic, there has been a significant lack of funding for telehealth services, and even in the current pandemic, phone services have only recently been reimbursed ([Wicklund, 2020](#)).

The COVID-19 pandemic thrust healthcare providers into an untapped arena, where providers needed to become well-versed with the intricacies of telemedicine in an emergency situation. This transition was far from seamless within the Los Angeles (LAC) health system due to unavailability of telehealth technology and lack of physician familiarity with the telehealth services. In addition, each site within the LAC health system was not equipped with the right computers or accessories needed for impactful telehealth visits, such as web-based cameras or microphones. Staff, who are essential for creating a planned schedule for each clinician, now have the challenge of creating schedules based off revised telehealth requirements and the added difficulty of ensuring that patients are familiar with the online platform prior to their visit.

These serious problems with the integration of telemedicine and telepsychiatry services can be solved by ensuring healthcare providers are trained adequately in provisioning telemedicine services and are given scheduled time within their regular schedules to utilize these tools. The sporadic uptake of telemedicine is not sustainable, and the skills required for the provisioning of these services are different than treating patients in-person (Smith et al., 2020). In addition, having required training and certification for telemedicine will lead to a highly prepared future workforce to readily use telemedicine in everyday practice and emergency situations (Smith et al., 2020). Although the COVID-19 pandemic clearly undermines the logic for providing this type of reimbursement, and the March 2020 legislation reflected so, this policy change should be extended to providers outside of this pandemic.

6. Socioeconomic disparities in integrating healthcare and technology

Although the need for these services is clear, there are concerns within the Chinese population which can be applied to the United States. One of the major concerns is the digital divide that exists among socioeconomic classes. Individuals in need of mental health services coming from a lower socioeconomic status often have reduced accessibility to digital technologies, particularly those equipped with the applications which online mental health services rely on. This digital divide persists in China and in the United States. Based off research conducted by the Pew Research Center, 29% of adults with annual household incomes below \$30,000 do not own a smartphone, 44% don't have home broadband services and 46% do not own a computer. Comparing these results to households with an annual income of \$100,000 or more, these technologies, including tablets, are nearly ubiquitous (Anderson, 2017). This disparity is particularly relevant to the LAC health system, as a significant portion of the population includes those from a low socioeconomic status, including minority populations and the homeless.

Temporary funding sources may be adequate to address emergencies such as this pandemic (Smith et al., 2020). This would provide funding for specific services or target vulnerable patient populations to mitigate high-risk, high-demand situations (Smith et al., 2020). The incorporation of telehealth services in a sustainable fashion requires a multi-level, interdisciplinary strategy. In order for telehealth services to be embedded in daily operations for healthcare providers, operational telehealth networks, policies and procedures as well as a solid, scalable infrastructure is required (Smith et al., 2020). Although the pandemic has been a catalyst to newly integrate these tools within various medical specialties, including psychiatry, it is critical to implement a solid foundation for these services, as it is unlikely that the impact of telemedicine will diminish and will likely need to be incorporated within normal operations (Klein and Busis, 2020). Looking towards the future, telepsychiatry is essential as mental health issues are at a peak during the pandemic but given the traumatizing nature of the COVID-19 pandemic, persistent psychiatric symptoms will likely also increase (Wen et al., 2020).

7. Recommendations for adopting telepsychiatry in Los Angeles County

Based off the supportive evidence for telemedicine, telepsychiatry, digital health interventions and experience in the LAC health system, we recommend the Los Angeles County Department of Mental Health (LACDMH) should be advanced technologically to encourage sustainable change. The pandemic should be an incentive to incorporate innovative ideas into mental health, in order to best treat our patients now and in the future. The LACDMH, with a budget of approximately \$2.4 billion, is the largest county-operated mental health department in the United States providing services to more than 250,000 County

residents of all ages annually. LACDMH directly operates programs in more than 85 sites and provides services through contract programs and LACDMH staff at approximately 300 sites co-located with other County departments, schools, courts and various organizations (Los Angeles County Department of Mental Health, n.d.-a). A portion of this budget should be allocated to consistent videoconferencing services, dedicated to outpatient psychiatric evaluations and follow-up appointments, and collaboration among healthcare and social work professionals. This should be accompanied by a 24/7 IT service line available to professionals and patients to ensure convenient access to this service and to enhance quality of care in a socially distant and safe environment.

For professionals, mandatory training should be implemented to utilize these services, in an effort to streamline the process and to allow for acclimatization to a different, but effective way of interacting with patients. This would allow for the team of professionals responsible for each patient's care to consistently care for each patient in real-time and collaborate for assessment and planning. Similarly, mental health legal services would benefit greatly from secure videoconferencing services, to help appropriately assess a patient and their status for grave disability, danger to self or danger to others.

Outreach and Engagement Services, a subset of the LACDMH, identifies, provides care and follows up with vulnerable populations, helping over 20,000 people annually (Los Angeles County Department of Mental Health, n.d.-b). This team can be helpful in following engagement with telepsychiatry interventions and can lead to a more longitudinal relationship between each patient and all of his or her providers. Identification remains a critical component of ensuring each patient who needs mental health care has adequate housing security and resources, which would include access to a computer, phone or tablet. This model can also be applied to people who require mental health services in underserved populations such as jails (James and Glaze, 2006). This has become more feasible with increased enforcement discretion for HIPAA privacy laws with the use of multiple videoconferencing platforms, such as Skype, Zoom for Healthcare and Doxy.me (HHS Office of the Secretary et al., 2020). While this enforcement discretion will likely be modified to incorporate a permanent legislation, moving forward, these services should be incorporated in order to increase accessibility for telepsychiatry.

8. Conclusion

In conclusion, the COVID-19 pandemic has been challenging globally and has forced many to consider different ways to approach their jobs. This is extremely relevant to healthcare professionals, many of whom are on the frontlines and selflessly treating patients. Mental health has risen to the forefront of many people's lives, and they are forced to confront the ephemeral predictions of shelter-in-place predictions and change their routines. Unfortunately, despite the increased awareness mental health has received, many patients with severe mental illness have fallen through the cracks. In order to best serve our patients today and prevent these problems from happening to future patients, those who desperately require appropriate treatment and planning and those who often lack sufficient support systems, we utilize the Los Angeles County Health System as a model to be a stimulus for enduring, positive change.

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