# Reaching the Unreachable: The Promise of Telepsychiatry in India

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A 2005 study by the National Commission on Macroeconomics and Health indicated that at least 71 million people in India have a serious mental disorder. Despite this alarming statistic, infrastructure as well as manpower for mental health in the country is severely inadequate. Furthermore, 70% of the population lives in rural areas, far removed from the majority of mental health facilities. In light of the enormous treatment gap, wherein ahout 76–85% of serious cases of mental illness in less-developed countries are left untreated, telepsychiatry, defined as "the use of information and communication technology to provide or support psychiatric services across distances," is a promising delivery method to reach millions of individuals in rural India who are unable to access mental health services and whom the mental health system is currently underequipped to serve (Malhotra, Chakrabarty & Shah, 2013). Through an exploration of the history, applications, effectiveness, and challenges of telepsychiatry, this paper makes a case for the potential of telepsychiatry to narrow the treatment gap in India.

#### Introduction

Maya, a 27-year-old woman living in a small village in the Pudukkottai district of Tamil Nadu, India, was discovered chained to the cowshed of her family house. Her family members reported that she often spoke to herself and had a tendency to wander off. They worked in agricultural fields throughout the day and felt they had no choice but to keep her restrained for her own safety. Maya's symptoms were present for nine years, during which time her family spent all of their savings on a religious tantric<sup>1</sup> in an effort to cure her through traditional healing practices, but to no avail. They later took her to a psychiatrist located three bus rides away, but discontinued treatment as they could not afford the consultation costs and travel expenses. With no results, Maya's family ceased all her treatments and gave up hope for any recovery, keeping her chained for two years (SCARF, 2012).

Maya's plight is not an isolated case from Pudukkottai, but it illustrates the prevailing conditions in much of India, where more than 70% of the population lives in rural areas with limited access to mental health services (Prafulla, Murthy & Ramaprasad, 2010). Distance is only part of this problem; although about 6.5% of India's population lives with a serious mental illness, the country lacks the manpower to address their mental health needs (National Commission on Macroeconomics and Health, 2005). With a population of 1.1 billion people, India has only 0.03 social workers, 0.3 psychiatrists, and 0.47 psychologists for every 100,000 individuals (World Health Organization, 2011). Most of these mental health professionals are located in urban centers, leaving even fewer professionals to care for the needs of the mentally ill in rural India (Thara & Patel, 2010).

In an effort to address the issue of limited access to mental health care, the Indian government created the National Mental Health Programme in 1982 and the District Mental Health Programme in 1996, mandating that every district hospital in India have at least one psychiatrist (Thara, John & Rao, 2008). However, this order has shown to be impractical due to the shortage of trained mental health professionals. In response to this shortage, experts emphasized the importance of integrating mental health services into primary care and increasing the quality and quantity of mental health professionals and infrastructure (Malhotra, Chakrabarty & Shah, 2013). Nevertheless, given the logistic issues and length of time associated

<sup>&</sup>lt;sup>1</sup> Practitioner of tantra, a style of Hindu or Buddhist meditation and ritual that arose in India before the 5<sup>th</sup> century AD.

with implementation, it is crucial to seek alternative and innovative methods of effective mental healthcare delivery in low-resource settings such as rural India.

Telepsychiatry, defined as "the use of information and communication technology to provide or support psychiatric services across distances," allows for a unique opportunity to reach the millions of people living in rural India who, like Maya, would otherwise have limited or no access to mental health care (Malhotra et al., 2013, pg. 3). While telepsychiatry does not increase the number of mental health providers, it is a potential solution for their maldistribution and extends the reach of existing providers, resulting in increased access to care through improved efficiency in the delivery of mental health services. Through an exploration of the history, feasibility, and efficacy of telepsychiatry, this paper calls for much needed research into this modality, which has immense potential to narrow the treatment gap in India by providing underserved populations with mental health care through the use of interactive technology.

### State of Mental Health Care in Rural India

The number of people suffering from mental illness in India is predicted to rise significantly in the coming decades (Chatterjee, 2009; National Commission on Macroeconomics and Health, 2005). Despite this projected growth, there is a dearth of government resources devoted to mental health care, particularly with regard to manpower, infrastructure, and finances, deeming mental health services in rural areas grossly inadequate (World Health Organization, 2011). This is owed in part to the fact that politicians and government officials hardly acknowledge mental health as an important aspect of the healthcare system. For example, in 2011, the Indian government allocated only 0.06% of its health budget to mental health services (World Health Organization, 2011). While the formation of the country's first ever National Mental Health Policy in 2014 is evidence of a positive shift in the government's approach to mental health, plans to effectively implement systemic changes remain a key challenge.

In addition to limited government support, there are a number of cultural and socioeconomic barriers to seeking mental health services in rural areas of India. The literacy rate among the rural Indian population is as low as 68.9%, leading to a lack of awareness and recognition of mental illness and often causing marginalization of and discrimination against mentally ill individuals (Census of India, 2011; Raguram, Weiss, Channabasavanna & Devins, 1996). Consequently, many communities espouse traditional healing beliefs, seeking care from religious leaders or indigenous faith healers as opposed to mental health professionals (Sax, 2014). Furthermore, more than 75% of those living below the poverty line in India reside in rural areas (Census of India, 2011). According to the Indian Human Development Survey, the average annual income per capita in rural India in 2005 was estimated to be as low ₹7,101 (approximately \$114), highlighting the economic barriers to seeking mental health care in this context (Desai, Dubey & Joshi, 2010).

In light of these challenges, it is important for practitioners and policy makers to recognize the limitations of mental health resources in India. Exploring new and inventive methods of delivering mental health care, such as telepsychiatry, is necessary in order to reach the millions of people whom the mental health system is currently underequipped to serve.

## **Applications of Telemedicine and Telepsychiatry**

The first wave of organized telemedicine programs began in the United States in the late 1950s, covering a range of medical disciplines including radiology, dermatology, and ophthalmology (Bashshur & Shannon, 2009). By the early 1960s, researchers and practitioners in the U.S. pioneered the use of telecommunications technology to connect mentally ill patients with healthcare providers. At its inception, telepsychiatry provided services to military troops on the front lines and personnel on ships and oil rigs, demonstrating early on its utility and crucial role in facilitating access to care (Daughten & Grainer, 2013; Grady, 2012).

Health providers in India began implementing telemedicine in 2000 (Dutta, 2000). The initial applications of telemedicine were in medical fields that are heavily dependent on image-based diagnoses (Sood, 2002). Soon, its application spread to the field of psychiatry. Today, its use in this field remains in its nascent stages, leading to a dearth of available literature regarding the use and impact of telepsychiatry units in India (Thara et al., 2008).

In addition to video conferencing, telepsychiatry increasingly incorporates telephone, e-mail, and other modes of internet communication to facilitate mental health care (Hilty, Yellowlees, Cobb, Bourgeois, Neufeld & Nesbitt, 2006). Mental health professionals in the United States use videoconferencing to deliver treatments such as cognitive behavioral therapy and group therapy for mood and anxiety disorders (Griffiths, Blignault & Yellowlees, 2006; García-Lizana & Muñoz-Mayorga, 2010). Moreover, crisis interventions for people with suicidal ideations have been conducted through online counseling, instant messaging, and chat groups (Barak, 2007). Telepsychiatry can also be used to facilitate home health visits in social work practice, potentially saving a significant amount of time that would otherwise be spent on traveling. One program, launched by the Schizophrenia Research Foundation of India (SCARF), has been particularly well documented and deserves attention for its multifaceted model of mental health care delivery through telepsychiatry.

### The SCARF Model

Just when Maya's family gave up hope for her recovery, treatment came to them. Sitting inside a little green bus, Maya interacted with a psychiatrist located 240 miles away in Chennai through Skype, who diagnosed her with schizophrenia, provided psychoeducation, and prescribed medications that she collected free of cost at the rear of the bus. Today, Maya is successfully integrated into her family and immediate community, lives at home, and actively takes on household responsibilities (SCARF, 2012).

The service she received, SCARF Telepsychiatry in Pudukkottai (STEP), is an initiative of SCARF, a non-governmental organization based in Chennai, India that conducts research and provides rehabilitation and mental health services to individuals with severe mental illnesses. The STEP program has several components: consultation, medication management, psychoeducation, and awareness creation. Patients in villages use a consultation area located inside a bus to communicate with a psychiatrist based in Chennai through a television screen and a high-resolution camera over a wireless Internet connection (Thara & John, 2013). Often, the consultation concludes with a recommended prescription, dispensed immediately from the on-board pharmacy, free of cost. This is an important component of the program given most patients' financial constraints and the rare availability of psychiatric drugs in rural pharmacies (Thara & John, 2013). Mental health professionals also schedule follow-up appointments with patients. Additionally, community health workers, who are trained and supervised by urban-based mental health professionals through video conferencing, provide psychoeducation to families and caregivers. The program also raises awareness about mental illness through street plays, distribution of pamphlets, and screening of psychoeducational films broadcasted on a TV screen at the rear of the bus (Thara & John, 2013).

Currently, this mobile service covers 156 villages with a total population of about 300,000 (Thara & John, 2013). It is predicted that over the next three years, an estimated 1,000 people will benefit from this service (2013). While the STEP program illustrates one possible model of mental health service delivery through telecommunication, it is crucial to examine whether programs like these have been effective, to what degree, and in what kind of contexts.

## **Effectiveness of Telepsychiatry**

Existing literature on the effectiveness of telepsychiatry has focused on the reliability of assessments, satisfaction, and clinical outcomes. However, there are few randomized controlled studies that directly compare telepsychiatry with in-person care along these measures (Hailey, Roine & Ohinmaa, 2008).

Studies focusing on the reliability of clinical assessments have demonstrated varied outcomes, depending on the population being examined. Results from cognitive assessments of individuals with a history of alcohol abuse indicated that tele-consultations produced similar results when compared with in-person sessions (Jones, Johnston, Reboussin & McCall, 2001). On the other hand, reliability analyses with geriatric patients indicated that the accuracy of telepsychiatry assessments that require visual observation of behavior were consistently lower than those that require only self-report (Yoshino, Shigemura, Kobayashi, Nomura, Shishikura, Den, Wakisaka, Kamata & Ashida, 2001). Moreover, a study examining the use of videoconferencing to conduct psychiatric interviews with patients with schizophrenia found that reliability of this modality was heavily dependent on the bandwidth of the equipment (Kirkwood, Peck & Bennie, 2001). There is a need for more studies that employ standardized structured interviews, examine inter-rater reliability, and determine the reliability of telepsychiatry with regard to specific populations.

Systematic reviews assessing satisfaction have concluded that overall satisfaction with telepsychiatry is high, and various studies have found no significant difference in patient satisfaction with videoconferencing to deliver mental health services as compared with face-to-face encounters (García et al., 2010; Bishop, O'Reilly, Maddox & Hutchinson, 2002). Thus far, patients have cited reduced traveling time, fewer absences from work, and reduced wait time as reasons for high satisfaction with telepsychiatry (Hailey, Roine & Ohinmaa, 2002; Doze, Simpson, Hailey & Jacobs, 1999; Mair & Whitten, 2000). Other potential predictors of patient satisfaction included demographic factors, cost, satisfaction with and availability of local services, provider qualities, and video quality (Jones & Ruskin, 2001; Hilty, Nesbitt, Hales, Anders & Callahan, 2000; Malagodi & Smith, 1999). However, provider satisfaction with telepsychiatry remains less thoroughly evaluated (Hilty, Marks, Urness, Yellowlees & Nesbitt, 2004).

Studies assessing clinical outcomes are far fewer in number than those examining reliability of and satisfaction with telepsychiatry (Monnier, Knapp & Frueh, 2003). In one randomized controlled trial of telepsychiatry for adults, 119 U.S. veterans with depression were randomly assigned to six months of outpatient treatment in person or through telepsychiatry, wherein they received medications, psychoeducation, and supportive counseling (Ruskin et al., 2004). Between groups, no differences were observed in depressive symptoms or adherence to treatment. Several other studies have also found no statistically significant differences in clinical outcomes between patients seen via telepsychiatry and those seen in person (Zaylor, 1999; Nelson, Barnard & Cain, 2003).

While preliminary data suggest that telepsychiatry appears effective, randomized controlled trials would significantly strengthen the evidence for non-inferiority of telepsychiatry over in-person care. Studies that show which psychiatric-mental health interventions best serve specific populations would also be useful. Additionally, since most studies that address effectiveness of telepsychiatry have been conducted in Western countries, findings may not be generalizable to the Indian context, underscoring the need for culturally relevant research.

### **Challenges of Telepsychiatry**

A key concern amongst critics of telepsychiatry has been cost-effectiveness. It is important to evaluate whether the time and expenses saved on traveling justify the cost of the infrastructure and support staff required to set up a telepsychiatry unit. In a review of 12 studies that evaluated the cost-effectiveness of telepsychiatry based on cost analysis, direct comparison of costs of telepsychiatry and in-person care, cost feasibility, and cost surveys, seven studies deemed telepsychiatry as cost-effective. Others found it either financially unviable, comparable in cost to in-person care, or inconclusive due to an unclear business plan

(Hyler & Gangure, 2003). Another such study, which compared treatment delivery via telepsychiatry with face-to-face delivery in veterans with depression, found that telepsychiatry was more expensive per treatment session, but this difference disappeared if the costs of clinicians' travel to remote clinics were taken into account (Ruskin et al., 2004). Furthermore, a study conducted in the rural Michigan area determined that telepsychiatry was not financially viable for rural outpatients (Werner & Anderson, 1998). These varied conclusions are indicative of a need for more systematic studies using cost-benefit analyses, especially in the Indian context.

Ethical and legal challenges such as confidentiality and data security also arise when considering the use of telepsychiatry (Malhotra et al., 2013). Clinicians must ensure strict maintenance of privacy when patient records and other electronic information is stored, transferred, received, or destroyed (Stanberry, 2001). A regulatory mechanism or specific law dealing with the delivery of service through telemedicine should be enforced to deal with issues such as informed consent, confidentiality, and the process of conducting assessments through technology. In India, there is currently no legislation that singularly deals with the practice of telemedicine (Thara et al., 2008). In 2003, the Ministry of Communications and Information Technology issued a document called "Recommended Guidelines & Standards for Practice of Telemedicine in India," but as the name suggests, these guidelines are not legally binding. In order to mitigate some of the challenges associated with telepsychiatry and ensure its effective use, it is important for India to have a telemedicine legislation as well as a regulatory authority that will monitor and license practitioners (Thara et al., 2008).

### **Looking Forward**

The primary objectives of India's National Mental Health Programme are "to ensure the availability and accessibility of minimum mental healthcare for all in the foreseeable future, particularly to the most vulnerable and underprivileged sections of the population" and "to apply mental health knowledge in general health care and in social development" (National Mental Health Programme for India, 1982). Telepsychiatry holds promise to further these objectives and to disentangle the massive and complex issues of underdiagnosing and undertreating individuals with mental illness at a grassroots level (Malhotra et al., 2013). The STEP model not only proposes a practical model for mental health professionals to use as a guideline, but also demonstrates the potential that telepsychiatry has to alter the landscape of mental health in India.

The emerging field of global mental health, defined as "the area of study, research and practice that places a priority on improving mental health and achieving equity in mental health for all people worldwide," addresses some of the key issues discussed in this paper through its strong focus on the development of effective, appropriate, affordable, and equitable mental health systems in low-income countries (Patel & Prince, 2010, pg. 1976). Researchers in this field actively study the use of alternative and innovative methods of mental health service delivery to underserved populations like that of rural India. While global mental health has emerged as a significant field within public health, its presence in and penetration into social work is still in its infancy. As professionals who think beyond the medical model and embrace the unique role of identifying and addressing social inequities and structural issues, it is only fitting that social workers take on the responsibility of contributing to this emerging field by adopting a broad and international focus and addressing the issue of mental health delivery systems in low-income countries. One way this can be achieved is by having a stronger presence of global mental health courses in social work curriculums, as well as by forming strong collaborations between schools of social work and schools of public health.

Furthermore, a thorough evaluation of existing telepsychiatry programs is necessary to gather reliable data for use by policymakers, who are positioned to create and shape national telemedicine policies. A formal regulatory authority and telemedicine act that outlines procedural guidelines and recommendations while

addressing legal and ethical issues associated with its practice is essential to have in place in order to ensure consistent and effective implementation of telepsychiatry programs in India.

Finally, randomized controlled studies looking at diagnostic reliability, cost-effectiveness, patient and professional satisfaction, as well as clinical outcomes of existing telepsychiatry programs should be carried out in the Indian context (Malhotra et al., 2013). Much of the research in mental health today is focused on neuroscience and clinical research. While these areas are fundamental and remain crucial to study, it is important to understand that modalities of treatments under development cannot be delivered in the absence of functioning and strong mental health systems.

In light of the momentous mental health gap in India, wherein a large proportion of mentally ill individuals are being left untreated, practitioners and policy makers must recognize limitations in resources and take steps toward adopting innovative methods of healthcare delivery in order to reach the millions of individuals in need of mental health care. To this extent, it is imperative that we apprise ourselves with the current state of telepsychiatry, its existing developments and promise – as well as its challenges – and realize its potential to narrow India's mental health treatment gap.

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