# Special Article

# Implementing Telepsychiatry in Thailand Benefits and Challenges

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*In many developed countries, telepsychiatry has become facilitating technology in mental health care system especially in underserved areas. In a developing country like Thailand, telepsychiatry is a novel technology in which mental health care personnel should understand both administrative and clinical issues. In this article, the author has reviewed benefits and challenges of implementing telepsychiatry in Thailand. Benefits of telepsychiatry include reducing costs, improving accessibility and reducing psychiatric stigmas while challenges can be classified as man, machine and environment challenges. The author concludes that telepsychiatry in Thailand needs further studies, especially in feasibility and cost-efficiency domains in the hope that this technology will improve quality of mental health care in near future.*

***Keywords:*** *Telepsychiatry, Telemedicine, Thailand, Technology*

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Information and Communication Technology (ICT) are widespread in our everyday life through various electronic devices such as personal computer, tablet and smart phone. Telemedicine can take advantage of these fruitful technologies in care delivery process. According to American Telemedicine Association (ATA), telemedicine is defined as "The use of medical information exchanged from one site to another via electronic communications to improve a patient's clinical health status"[1]. Generally, care providers including doctors are familiar with simple phone consultation, but telemedicine extend this limit. Thanks to greater bandwidth and decreasing cost of technology, telemedicine plays an important role in current clinical practice. According to a WHO report[2], the common forms of telemedicine were teleradiology, telepathology, teledermatology and telepsychiatry. Telepsychiatry or telemental health is the application of telemedicine in mental health and is widely used in United States, especially underserved area[3]. Telepsychiatry was first launched at the Nebraska Psychiatric Institute in 1959 to improve psychiatric accessibility in remote areas. Since 2000's, telepsychiatry has become more popular because of increase accessibility of high speed network and new reimbursement model in United States[4].

There were several studies showing benefits of telepsychiatry in real clinical practice in the United States. To compare benefits between telepsychiatry and face-to-face interaction for mental health care, studies have shown that both care delivery methods were equal[5-7]. Telepsychiatry was feasible in a wide age range and different ethnic groups[8]. Younger groups prefer telepsychiatry more than traditional way because they are familiar with video technology[4]. Following previous article by Hilty et al[9], author summarizes advantages and disadvantages of telepsychiatry in Table 1.

Telepsychiatry can be briefly classified as synchronous and asynchronous form. Synchronous telepsychiatry is a two-way interactive communication between patients and care providers from distance. They can connect by videoconference, simple phone call or online messenger program[10,11]. On the other hand, asynchronous telepsychiatry is a non-real time or store-and-forward interaction which both parties do not need to present at the same time. This method is appropriate in psychiatric consultation liaison. There were some studies about telemedicine in Thailand[12-15], but none of which were relating with telepsychiatry. From author understanding, this is the first article describing the current telepsychiatry situation in Thailand. The author will review international literature and discuss benefits and

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**Table 1.** Advantages and disadvantages of telepsychiatry

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|---|
| Advantages |
| Decrease travel time |
| Increase mutual gaze, which may help with understanding |
| Better nonverbal cues than telephone |
| Support collaborated patient care |
| Increase care accessibility |
| Less anxiety provoking from psychiatric interview |
| Improve care in disability and elderly population |
| Disadvantages |
| Fewer nonverbal cues than face-to-face method |
| Costly infrastructure setup |
| Increase time to communicate compare to face-to-face method |
| Users need training to use technology in care delivery |
| Hardware, software and connection problems |
| Require more collaboration and coordination between participants |

Applied from Hilty DM, Nesbitt TS, Marks SL, Callahan EJ. *Prim Psychiatry.* Vol 9, No. 9. 2002

challenges of implementing telepsychiatry in Thailand.

***Benefits***

Most healthcare personnels realize that if patients are pleased with care, they are likely to follow-up treatment process to gain better quality of life[16]. Therefore, the goal of telemedicine is to improve satisfaction of care. The author will classify the benefit of telepsychiatry into three broad categories: reducing costs, improving accessibility, and reducing psychiatric stigmas.

***Reducing costs***

Costs are considered as both direct costs such as service fee and medication costs and indirect cost such as transportation and opportunity cost from work absent. Both costs need to be considered in cost-beneficial analysis in telepsychiatry. In addition, burden cost cannot be ruled out in untreated psychiatric patients since they may lead to unexpected problems and burden of caregiver costs. Fortunately, telemedicine can reduce costs by improving care accessibility. For example, patients can go to local hospital to talk with distant psychiatrists with the help of teleconference. The less time and money they spend on transportation, the more time they spend at work thereby reducing opportunity costs. Early accessibility leads to early detection and treatment which reduce further cost that might result from untreated psychiatric patients. Moreover, well-treated patients can go back to work earlier and gain more income.

Telepsychiatry can reduce referral costs by allowing community doctor to do consultation call with psychiatrist in either synchronous or asynchronous way. Therefore, they can deal with psychiatric manifestation confidently with online supervision and reduce referral costs. Spaulding et al found that using telepsychiatry reduces spending by more than 70 percent[17] in line with another study which demonstrated that establishing high speed telemedicine system can reduce monthly telecommunication costs by 67 percent[18]. Lastly, telepsychiatry does not only save patients' costs, it also saves hospital costs by sharing psychiatric consultation with other hospitals. For example, a psychiatrist who is on emergency duty can do telepsychiatry consultation with many hospitals in the same duty period. Therefore, hospitals in the same network can share payment for doctor duty wages.

***Improving accessibility***

A growing body of literature supports increasing access to mental health services in rural areas by telepsychiatry[19-22]. Accessibility to psychiatric care faces a major obstacle in Thai mental health system since most psychiatrists prefer to work in Bangkok metropolitan area. Underserved areas especially Pattani, Yala and Narathiwat provinces had serious shortage due to political instability. Fortunately, telepsychiatry can assists these areas affected by manmade or natural disaster[23]. For example, an underserved hospital can schedule patients to meet with real time psychiatrist or record interviewing sessions and forward them later for treatment recommendation. This benefit can be bought to prison system in which telepsychiatry

eliminate the need for prisoner transportation from incarceration to health care facilities[24-26]. In near future, due to nourishing language translation programs, people speaking different languages can connect to psychiatrist by telepsychiatry with voice translation platform such as Google translate™. This can reduce barriers to psychiatric care among minority groups, especially illegal immigrants in Thailand. Psychiatric intervention which requires several sessions such as cognitive behavioral therapy or interpersonal psychotherapy can use telemedicine platform to increase therapy adherence. Telepsychiatry is therefore a feasible option in improving psychiatric accessibility[10].

***Reducing psychiatric stigmas***

Stigma associated with being psychiatric patient is pervasive in Thailand. It causes patients to seek non-medical care such as superstitious or religious ritual which can leave the disease untreated[27,28]. In Asian culture including Thai, people view the psychiatric clinic as insanity clinic and this stigmatize people visiting the clinic as individuals with insanity which hinders psychiatric accessibility[29]. Many people drop out of treatment once they are referred to psychiatric institution due to fear of being stigmatized as insanity. Moreover, they might misunderstand that they are forced to be admitted to hospital without consent. Then, both synchronous and asynchronous telepsychiatry can solve this problem by improving access at community level[30]. Psychiatrists can interview patients directly or provide psychiatric consultation with primary care physicians so that they can monitor symptoms and drug compliance. Moreover, this can be extended to trauma- related disorder such as post-traumatic stress disorder which patients may have hyperarousal symptoms and are not ready to have an in-person psychiatric interview. Psychiatrists who have the gender opposite to raped victim are able to do an assessment from distance without being concerned their personal physical boundary which may aggravates the symptoms[31]. Lastly, psychiatrists can also connect with patients' family to evaluate their perception of having a family member diagnosed with a psychiatric disorder. Family attitude is necessary to psychiatric stigma issue[32,33] and can lead to negative consequences such as loss to appointment and poor medication compliance.

***Challenges***

How to implement new technology such as telepsychiatry is not easy. Then, the author summarizes three key challenges for implementing telepsychiatry in Thailand following Man-Machine-Environment System Engineering (MMESE) model[34]. Man refers to people in workplace. Machine refers to any objects controlled by man. Environment refers to productive conditions for man and machine[34]. The key objective of MMESE is to establish safety, efficiency and economy. The author will describe this concept as man, machine and environment challenges respectively.

***Man challenges***

How to alter conservative perception of mental health care providers is very challenging, especially older generation psychiatrists. They might view technology as obstacles instead of facilitators and prefer traditional face-to-face consultation rather than telepsychiatry. It will take time to make them feel familiar with new things. Therefore, training workshop[35] to develop toolkits in telepsychiatry with support from IT specialists can solve this generation gap problem. In addition, telepsychiatry cannot replace all therapeutic process conducted by psychiatrists during an in-person session (i.e., therapist cannot hand a napkin when a depressed client cry). Therapists sometimes cannot develop rapport effectively through teleconference which might influence doctor-patient relationship[36]. A study shows disadvantages of doctor-patient relationship in telepsychiatry compared with face-to-face technique[9].

Nonverbal language such as eye contact is another issue because psychiatrist cannot observe overall behavior from one screen. However, this drawback can be overcome by setting cameras to see different views, so that therapists can evaluate body signals during session and can record video if necessary[31]. In addition, sensory limitation through telepsychiatry can hinder physical examination ability[31]. For instance, in intoxicated patients, psychiatrists could not evaluate important finding such as alcohol smell. Then, they should notify patient site staff to detect this sign. It is still questionable to recommend telepsychiatry to patients with a specific delusion theme about having an idea of reference or delusion involving technology[37], then psychiatrists should consider whether telepsychiatry might aggravate their psychosis symptoms.

***Machine challenges***

Telepsychiatry cannot be used by simple teleconference only, indeed, it needs other support

systems such as electronic health records, medical decision support tools, cloud storage device and effective infrastructure to facilitate the process. It's costly to set up infrastructure such as hardware, software and network[16] at the beginning, especially in community hospital. Fixed costs also include rental cost of lines, salary and administrative expenses. Transmission costs, services fees, equipments upgrade and maintenance need to be included[38]. Then, cost-beneficial analysis is necessary to find out that telemedicine will fulfill real community need. Studies showed that at least seven sessions a week are necessary to make telepsychiatry cost-beneficial[39, 40]. Another study found that telepsychiatry sessions must be held more than 249 sessions a year to reach cost-beneficial level[11]. As a result, conducting cost-beneficial analysis is crucial before implementing telepsychiatry in Thailand.

Another machine challenge is video-conferencing software due to its privacy, confidentiality and security reasons[10]. In the United States, videoconferencing software must be encrypted and complied to Health Insurance Portability and Accountability Act (HIPAA)[41]. Examples of HIPAA compliance software are Fruit Street™, WeCounsel™, SnapMD™. Therefore, collaboration between Thai government and ICT public sectors is crucial to create software that complies with medical record regulation in Thailand. Amount of transferred data or bandwidth is another IT concern. Acceptable bandwidth is more than 384 kilobytes per second[42] which are useful in psychiatric assessment[43]. Psychiatrist should recognize that most video conferencing sessions have small but perceptible delays and adjust their style of interview to overcome patient distant feelings by telepsychiatry[31].

***Environment challenges***

Supporting environment is a key to sustainability telepsychiatry. Research showed that three key factors of discontinuous telepsychiatry were: no financial support, shift of telepsychiatry needs and lack of long term planning[44]. Supporting environment does not include only comfortable place, it also include strategy, policy, legal issue and management system to reach satisfying results. There was a publicity available resource from ATA for setting up telemedicine center[42] which telepsychiatry stakeholders in Thailand should use as a guideline. It includes important administrative and clinical components which can be applied in Thai context including cultural aspect.

In the United States, reimbursement across states is a big concern in telepsychiatry, some states did not reimburse telemedicine session as in-person visit[4]. Another area of concern is duty of care when distant doctors provide care but does not officially work at the hospital. These rise to the question about "Who is the real care provider?" especially in the emergency situation. This dilemma can be addressed by identifying telemedicine center as consultant services rather than therapist services for which the consultant doctors do not take responsibility[10]. As a consequence, Thai government must set up a regulation about reimbursement and duty of care before launching telemedicine in order to prevent further problems. It's also a controversy whether doctor fees via telepsychiatry should be lesser, equal or higher than face-to-face visit. Lastly, conducting telepsychiatry studies in Thailand should be an initial step to show feasibility impression. Thai government must provide more research opportunities to find out sustainability factors of telepsychiatry services.

**Conclusion**

Even though there was a great deal of evidence-based research showing effectiveness of telepsychiatry internationally, it's still in a discussion whether it works in Thailand. The author believes that telepsychiatry will have a potential role in reorganizing mental health care system in Thailand by improving clinical outcomes, quality of life and adherence. Future research needs to evaluate its effectiveness, efficiency and cost-efficiency aspects before its implementation in public policy. At the beginning, hybrid model such as combining telepsychiatry and virtual visit might be a feasible option. In distant future, telepsychiatry will be beyond clinically supervised setting by connecting care providers with patients or families from their accommodation which will in turn escalate psychiatric service accessibility. Finally, teamwork is the most important key factor in implementing new technology in healthcare. Collaboration from policy makers, stakeholders to lay persons are necessary for success and sustainability of telepsychiatry in Thailand.

**What is already known on this topic?**

Telemedicine is well-known for its benefit in medicine. Telepsychiatry is a new and effective method to improve quality of care in developed countries and promising in developing countries including Thailand which had serious psychiatric accessibility problem from a shortage of psychiatrists.

**What this study adds?**

Implementing telepsychiatry in Thailand still needs further studies to evaluate its feasibility and cost-efficiency aspects before launching. Mental health personnel should understand this new technology in terms of benefits and challenges to gain the most valuable results.

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**Potential conflicts of interest**

None.

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# การประยุกต์ใช้จิตเวชทางไกลในประเทศไทย: ประโยชน์และอุปสรรค

ทรงภูมิ เบญญากร

ในประเทศพัฒนาแล้วหลายประเทศ จิตเวชทางไกลเป็นเทคโนโลยีที่ช่วยอำนวยความสะดวกในงานบริการสุขภาพจิต โดยเฉพาะอย่างยิ่งในพื้นที่ขาดแคลนจิตแพทย์ในประเทศกำลังพัฒนาเช่น ไทย จิตเวชทางไกลถือเป็นเทคนิคใหม่ที่บุคลากรทางสุขภาพจิตต้องเข้าใจการใช้งาน ไม่ว่าจะเป็นด้านการบริหารจัดการหรือด้านทางคลินิก บทความนี้จะกล่าวถึงประโยชน์และอุปสรรคของการใช้เทคโนโลยีจิตเวชทางไกลในประเทศไทย ประโยชน์ได้แก่ การลดค่าใช้จ่าย การเข้าถึงบริการสุขภาพจิต และการลดตราบาปทางจิตเวช ขณะที่อุปสรรคสามารถจำแนกออกเป็นสามประเด็นได้แก่ ด้านบุคลากร ด้านอุปกรณ์ และด้านสิ่งแวดล้อม ทั้งหมดนี้สามารถสรุปได้ว่างานจิตเวชทางไกลในประเทศไทยยังต้องการงานวิจัยอีกมาก โดยเฉพาะงานวิจัยด้านความเป็นไปได้และความคุ้มทุน โดยความหวังว่าเทคโนโลยีนี้จะช่วยพัฒนาคุณภาพของงานบริการสุขภาพจิตในอนาคตอันใกล้ได้