

Chapter VIII

Telepsychiatry Within European e-Health

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ABSTRACT

In this chapter the author gives the short review over wide range of telepsychiatry applications. Furthermore, describes completely new and innovative approach regarding assessment and/or treatment of asylum seekers, refugees and migrants in Europe. Experiences from both Danish telepsychiatry survey and the first international telepsychiatry collaboration in Europe ever, will be reviewed in this chapter. Numbers of benefits within mental health care systems all over the European Union can be achieved by establishing of an International European Telepsychiatry Network. The chapter ends by suggestions for future development within mental health services in EU.

INTRODUCTION

The term “telepsychiatry” in this chapter refers to audio-video conferencing in real time. Telepsychiatry connects patients and mental health professionals, permitting effective diagnosis, treatment, education, transfer of medical data and other activities related to mental health care.

Overall, studies confirm the notion that telepsychiatry assessments can produce reliable results, telepsychiatric services can lead to improved clinical status, and patients and clinicians are satisfied with treatment delivered via telepsychiatry (Simpson et al. 2001; Kopel et al., 2001; Bose et al., 2001; Bishop et al., 2002).

There are quite considerable possibilities that telepsychiatry presents to health care system,

practitioners and patients. There is a number of published surveys on wide range of telepsychiatry applications such as:

1. Assessment and/or treatment of diverse psychiatric disorders (Deitsch et al.2000; Hilty et al. 2000; Alessi 2002 ; Ruskin et al. 2004;)
2. Supervision and education of clinicians and staff (Gammon et al. 1998)
3. Forensic psychiatry (Zaylor et al. 2000; Brodey et al. 2000)
4. Psychology (Koocher et al. 2000: Capner, 2000)
5. Socialwork (McCarty et al. 2002)
6. Military psychiatry *
7. Geriatry (Tang et al. 2001; Yoshino et al. 2001)
8. Cultural psychiatry (Mucic, 2007)
9. Mental health service of individuals with hearing disabilities (Afrin et al. 1997)

Nevertheless, telepsychiatry can be cost-effective by reducing costs of transport for both clinicians/staff and the patient respectively (Hyler et al.2003).

However, the potential for 'linking' patients and clinicians by using video conferencing has not been explored in Europe in the same degree as in USA, Canada and Australia. The main explanation for minor telepsychiatry activities is higher accessibility to mental health services in Europe than in rural areas in Australia or Canada where telepsychiatry has been developed since 1959. European telepsychiatry pioneers are in Norway where rural areas' need for specialists' expertise has been partly satisfied via telepsychiatry. Aside from Norway, most recent telepsychiatry activities in Europe took/take place in England (McLaren et al. 2002),Finland (Sorvaniemi et al. 2005), Canary Islands (Cuevas C.et al. 2003), Sweden and Denmark (Mucic, 2007).

DANISH TELEPSYCHIATRY MODEL

Since early nineties, Denmark faced significant barriers in providing mental health care service towards refugees and migrants on their mother tongue. In the country with only few clinicians of other ethnic origin than Danish, the most of the treatment of refugees and migrants is provided via translators. Psychiatric Centre Little Prince in Copenhagen is the first and so far the only place in Denmark that use telepsychiatry in order to assess and/or treat asylum seekers, refugees and migrants via their own mother tongue (www.denlilleprins.org).

The first telepsychiatry project in Denmark initiated and realized by clinicians affiliated to the Centre increased the access to appropriate cross-cultural clinical, educational and consultation service. The project started in 2004. runs over three years and is supposed to grow in to a sustainable telepsychiatry service. The survey so far involved 60 patients from 8 countries speaking 6 different languages. There were 100% admission to both assessment and continuously treatment under the survey period. All patients were asked to complete the 10-items questionnaire after end of the telepsychiatry-contact in order to determine satisfactory level, advantages and disadvantages by using telepsychiatry.

Patients' response to telepsychiatry in Danish survey has been very positive regardless degree of mental illness. Key predictor of patient satisfaction in the survey was possibility to communicate on mother tongue. Both, participants with or without previous experience by translator provided mental health care prefer remote contact on mother tongue rather than contact via translator.

Several publications and international presentations followed the developing of the survey (see www.denlilleprins.org). Furthermore, the methodology, guidelines and clinical experiences have been developed in order to improve mental

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health service towards asylum seekers, refugees and migrants in Denmark.

Encouraged by the success, Psychiatric Centre Little Prince expanded the activities across the boundaries of Denmark. Not so far away, in Malmö, Sweden, the first international telepsychiatry collaboration in Europe was initiated in spring 2006. Sweden is a country with much longer immigrating tradition than Denmark and consequently far more clinicians of other ethnic origin than we could find in Denmark. It was obvious to try built the bridge and “borrow” the resources from neighbour country. Consequently, the clinicians that speak Arabic, Polish, Kurdish and ex-Yugoslavian languages are now placed in Sweden while the patients are in Denmark.

IT network in Sweden is compatible and as well developed as in Denmark. The same equipment was used and the results of the trial were as positive as in Danish survey.

Technical Set Up

Video-conferencing equipment connect Psychiatric centre Little Prince in Copenhagen with two hospitals, one asylum seekers centre, and

one social institution. The distance from Psychiatric Centre Little Prince is from 145-200 km, respectively.

Dansk Telemedicin A/S provided technical support (www.telemed.dk). Wherever possible, commercial off-the-shelf equipment was used. Different systems were tested before deciding on standalone medium-level video conferencing units connected to LCD TV-screens. Using a medium-level system resulted in a better image and sound quality than the cheaper entry-level systems available. Stand-alone (TV-based) units proved user-friendlier and more stable than Windows computer based system. The equipment had built-in support for AES encryption (Advanced Encryption Standard). All installations used Pan-Tilt-Zoom cameras, allowing the psychiatrists to remote control patient-side cameras. Until recently, ISDN (H.320) has been the video-conference technology of choice in both Europe and the rest of the world where telepsychiatry services have been established. There are, however, certain disadvantages to using ISDN. These include limited bandwidth, high installation costs, high traffic costs and limited availability. To overcome these issues, IP-based units were

Figure 1. Videoconferencing in real-time enables psychiatric assessment without translators



used (H.323/H.264). In Denmark the clinics were connected by 2 Mbit/s SHDSL connections (Symmetric high-speed digital subscriber line). Even though symmetric lines were used, the bandwidth was limited by the upstream speed. Available bandwidth was often substantially lower, typically in the 768-1.500 kBit/s range.

In Sweden 10 Mbit/s fibre connections were used, as high-speed connections are cheaper and more readily available in Sweden. Due to the packet-based nature of IP data traffic, IP-based videoconference (H.323) systems are more sensitive to network delays than circuit based ISDN solutions. The latency (network delay) was low, generally less than 100 ms. This resulted in an acceptable quality, with less than 1% dropped frames.

RECENT CHALLENGES IN EUROPE - INNOVATIVE THINKING

According to international published researches there was only one international telepsychiatry trial between Australia and New Zealand (Samuels A., 1999). Such trial has never been done in Europe before. Results and experiences from the first European telepsychiatry collaboration raise some interesting questions regarding future development of mental health care within EU.

The enlargement of the European Union brings together a diverse group of new members. Free movement of EU citizens increases the claims towards mental health care systems in each European country. At the same time, the number of refugees from Africa, Middle east and Balkan is already growing problem in mental health care systems all over the Europe. Shortages of resources with cross cultural expertise and “cross-cultural background” make psychiatric assessment and/or treatment more time consuming and expensive. There is a number of research describing difficulties in dealing with cross-cultural patients. The most of patients speak only mother tongue, which makes the use of translators unavoidable. The use of a third person in per definition confidential relationship may affect patients’ compliance.

One solution to this growing problem in Europe is to bring “cultural expertise” to the patient by using telepsychiatry.

In a field such as assessment and treatment of migrants/refugees, often torture survivors, who are significantly underserved on their own language, telepsychiatry enables access to appropriate speciality service. There are no doubts that direct contact with the patient is preferable in almost all settings within psychiatry/psychology/psychotherapy. However, the Danish survey confirms the postulate that the patients prioritize telepsychiatry- provided contact via mother

Table 1.

POTENTIAL TELEPSYCHIATRY SYSTEM APPLICATIONS
<ul style="list-style-type: none">• Conduct treatment team with select skills- sign language and many foreign languages staff• Acute psychiatric assessments• Discharge planning• Follow up service• Access to child, adult, geriatric, forensic and deaf services specialty staff• Second opinion service between mental health professionals and GP’s• Distance supervision and staff consultation• Psycho education of family members• Distance learning via case conferencing and best practice demonstration• Consultations to other countries within EU

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tongue rather than direct contact via translator. The results of the survey may contribute to positive changes in policy and routines within mental health service, not only in Denmark but also hopefully all over Europe.

At the same time, telepsychiatry provide opportunities for participation of other individuals involved in work with the patient (family members, social worker, GP, staff on psychiatric department etc.).

A “second opinion service” toward GP’s provided via telepsychiatry, can decrease the number of inappropriate admissions, long stays and readmissions into the acute sector. In near future, we may incorporate telepsychiatry in chronic disease management and support patient self-management. This means that the equipment may be installed at patients’ own homes with possibility to access the psychiatric expertise whenever it is needed.

A vision for the future may be developing of a *European Telepsychiatry Network* with capability to link clinicians and patients from different European countries and consequently maximize access to expert skill resources within EU. However, every National Telepsychiatry Network should develop own telepsychiatry applications as suggested in table 1. Developing of such national and especially international networks needs clear legal, regulatory, and ethical guidelines.

On the other hand, the advantages in potential European telepsychiatry network are many which may justify the future efforts in order to develop such network (Table 2.).

CONCLUSION

According to brief described results and experiences with telepsychiatry survey initiated in Denmark, one may see considerable possibilities in future developing within European mental e-health. Numbers of applications and reliable benefits are not negligible even for high-developed social societies such as Scandinavian. Mental health care towards asylum seekers, refugees and migrants is only one of many potential telepsychiatry applications. Threatening resource shortage in whole Scandinavia forces us to think innovative and use technology in order to reduce limitations within mental health service towards domestic population.

Used as a supplement to existing mental health care system, telepsychiatry brings professional mental health expertise to especially outlying areas with resource shortage but also to any other areas with limited access to relevant mental health care. Telepsychiatry is the tool for improvement of mental health care limitations such as cultural, educational, linguistically and nevertheless economical. Telepsychiatry can

Table 2.

ADVANTAGES IN POTENTIAL (EUROPEAN) TELEPSYCHIATRY NETWORK
<ul style="list-style-type: none">• Increase access to sign language and many foreign languages staff• Increase speed and accuracy of diagnosis and treatment• Increase access to child, adult, geriatric, forensic and deaf services specialty staff• Increase collaboration among GP’s, staff within primary care service and mental health service• Increase continuity of care and professional contact• Improve education• Increase efficiency and effectiveness through improved performance• Reduce staff costs: travel time, staff time• Decrease the number of inappropriate admissions and readmissions into the acute sector

increase the international exchange of resources and contribute to developing of European mental e-health by building the bridges over cross-cultural barriers in mental health service systems all over the EU.

Finally, the successful integration of telepsychiatry could improve the quality of mental health service towards domestic European citizens as well as asylum seekers, refugees and migrants within EU community.

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KEY TERMS

AES (Advanced Encryption Standard): Is a block cipher (a method for encrypting information) adopted as an encryption standard by the U.S. Government. AES has been analyzed extensively and is now used widely worldwide. In June 2003, the US Government announced that AES is secure enough to be used for classified, top secret information.

Encryption: Is the process of transforming information to make it unreadable to anyone ex-

cept those possessing a special key. Encryption has long been used by militaries and governments to facilitate secret communication. Encryption is now used in protecting information within many kinds of civilian systems, such as computers, networks, mobile telephones, and bank automatic teller machines.

European Telepsychiatry Network: Network based on telepsychiatry provided exchange of professional resources, clinical and theoretical psycho-education and supervision of clinicians and staff members. Furthermore, the network should be used in order to assess and/or treat wide range of psychiatric disorders in different patient population groups such as: asylum seekers, refugees and migrants; deaf individuals; individuals with diverse movement disabilities that results in transport limitations etc.

ISDN (Integrated Services Digital Network): Is a circuit-switched telephone network system, designed to allow digital transmission of voice and data over ordinary telephone copper wires, resulting in better quality and higher speeds than that is available with the PSTN system. More broadly, ISDN is a set of protocols for establishing and breaking circuit switched connections, and for advanced call features for the user. In a videoconference, ISDN provides simultaneous voice, video, and text transmission between individual desktop videoconferencing systems and group (room) videoconferencing systems.

Mental Health: The successful performance of mental function, resulting in productive activities, fulfilling relationships with other people and the ability to adapt to change and cope with adversity. Also the psychological state of someone who is functioning at a satisfactory level of emotional and behavioural adjustment

Mental Health Care: Individual or group care by credentialed or licensed psychiatrists, psychologists, social workers, or other counsellors related to the mental health of the individual.

SDSL (Symmetric Digital Subscriber Lineis): A network connection with data rates between 72 and 2320 kbit/s. It runs over one pair of copper wires, with a maximum range of about 3 kilometres. The main difference between ADSL and SDSL is that SDSL has the same upstream data transfer rate as downstream (symmetrical), whereas ADSL always has smaller upstream bandwidth (asymmetrical). However, unlike ADSL, it can't co-exist with a conventional voice service on the same pair as it takes over the entire bandwidth.

Telepsychiatry: The use of telecommunication technologies with the aim of providing psychiatric services from a distance (Brown, 1998). By "telecommunication technologies" means the use of radio, TV, e-mail and finally videoconferencing. The most advanced form of telepsychiatry is video conferencing in real time. This means that the patient and the psychiatrist can both see and hear each other at the same time. Videoconferencing can be provided either via ISDN or via broadband internet.