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## Telepsychiatry in Denmark

### Mental health care in rural and remote areas

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**Abstract**—“Telepsychiatry” refers to use of telecommunication technologies in order to provide mental health care from distance. This paper describes telepsychiatry application as potential solution regarding mental health care of asylum seekers, refugees and migrants via mother tongue, everywhere where resources are limited. Furthermore, telepsychiatry can be used in treatment of domestic patient population as well, when resources are short e.g. in rural and/or remote areas.

Denmark faced “cross-cultural” resource shortage in early nineties when large number of refugees from Middle East, Ex-Yugoslavia and Africa came to the country. Ever since then it was difficult to establish mental health service toward such specific patient group via their own mother tongue. Resource shortage increased within last decade and resulted in great difficulties with recruiting specialists to outlying areas. Consequently, this results in longer waiting lists for both refugees and migrants but also indigenous population.

One solution to this problem is telepsychiatry (audio-video conference in real time), which can increase access to mental health specialists. As a part of Danish Telepsychiatry Project, 4 sites have been established during the project period (2004-2007). Furthermore, the videoconference equipment has been installed in Sweden in April 2006 and connected to these 4 stations in Denmark. By this way the first international telepsychiatry collaboration ever made in Europe was established.

45 participants have been involved in the project until January 2007. Clinicians involved in the project have other ethnic background than Danish. That make possible to assess and/or treat asylum seekers, refugees and migrants on their own mother tongue, without using translators.

All participants answered questionnaire after the end of Telepsychiatry contact. They all reported a high level of acceptance and satisfaction with telepsychiatry regardless their ethnicity or educational level. The most of participants said that they would prefer telepsychiatry rather than contact via translator. Reduced transport- and translator expenses presented economic benefits of the method.

**Index Terms**— telepsychiatry; remote areas; resource shortage; asylum seekers, refugees and migrants

#### I. INTRODUCTION

“Telepsychiatry” refers to the use of telecommunication technologies with the aim of providing psychiatric services from a distance [1]. Videoconferencing is the

most advanced form of telepsychiatry. In practice it means that the patient and the therapist can see and hear each other at the same time, like via direct TV-transmission.

Telepsychiatry connects patients and mental health professionals, permitting effective diagnosis, treatment, education, transfer of medical data and other activities related to mental health care. Several studies demonstrated high reliability and patients’ acceptance of telepsychiatry [2, 3, 4, 5,6, 7]. Limited access to relevant, professional mental health care occurs most often in rural and remote areas. Geographical distance increase by cultural distances and barriers which consequently make assessment and/or treatment more time-consuming and expensive can furthermore extend. It is no secret that mental health care system in Denmark did face (and still does) significant barriers in providing appropriate service towards asylum seekers, refugees and migrants on their mother tongue.

Psychiatric treatment of asylum seekers, refugees and migrants in Denmark is concentrated to several centers around the country where the treatment provides mostly via translators.

There are only few “ethnic psychiatrists” in a country where 8.2 % of population consists of persons with other ethnic origin than Danish [8]. Limited access to clinicians that speak their language and have similar cultural and ethnic background can have an influence on speed and accuracy of diagnosis and treatment. Mental health care provided via translators is per definition time-consuming and affected by high risk of lack of confidence. Consequently, it can affect patients’ compliance and make treatment less effective and more expensive.

Furthermore, shortage of resources especially in outlying, remote areas affects access to mental health care for Danish patient population as well. One solution to these problems is to increase access to psychiatric expertise by using telepsychiatry (videoconference in real time).

Psychiatric Centre Little Prince in Copenhagen employs clinicians that aside from Danish speak their patients’ respective languages (www.denlilleprins.org). It can be time-consuming to travel from distant part of the

country and meet the doctor in Copenhagen, despite the fact that "Denmark is a little land". Of that reason, mental health professionals from ex-Yugoslavia, Middle East, East Europe and Africa use telepsychiatry in order to provide psychiatric care on patients' mother tongue all around the country. Telepsychiatry has been developed and used in the centre since 2001. This paper describes recent telepsychiatry project started in summer 2004.

The key aim of the project is to provide psychiatric service on patients' mother tongue there where the accesses to ethnic clinicians are limited. Furthermore, the project is designed to serve outlying areas with resource shortage in order to provide mental health service toward domestic population.

## II. MATERIAL AND METHODS

The main part of the work in this project was providing diagnostic assessment with subsequent treatment suggestions. In some cases, continuously telepsychiatry-provided psychotherapy supported by relevant medication was established.

Clinicians involved in the project are affiliated to Psychiatric Centre Little Prince in Copenhagen. The Centre is specialized in treatment of asylum seekers, refugees and migrants via their respective mother tongue.

Participants involved in the project are mentally ill asylum seekers, refugees and migrants and their family members. Only one Danish patient has been involved in the project so far. Furthermore, staff involved in patient contact contributed in coordination of professional efforts within the project. Total number of participants involved in the survey until January 2007 was 45 (14 women and 31 men). Mean age for males was 41.6 years and 46.4 years for females. Countries of participants' origin are as shown in Table I.

The project period is 3 years (July 2004- December 2007).

TABLE I  
COUNTRIES OF ORIGIN

| Homeland      | No. of patients | Percent |
|---------------|-----------------|---------|
| Denmark       | 1               | 2       |
| Ex-Yugoslavia | 23              | 51      |
| Iraq          | 10              | 22      |
| Somalia       | 5               | 11      |
| Lebanon       | 2               | 4       |
| Syria         | 1               | 2       |
| Poland        | 1               | 2       |
| Iran          | 1               | 2       |
| Morocco       | 1               | 2       |
| Total         | 45              | 100,00  |

Duration of participants' education was as followed: 0-4 years (18%); 5-8 years (27 %); 9-12 years (39 %) and over 12 years (16 %).

Most of participants (82%) did not have any contact to mental health system before arrival to Denmark. 61% of participants were in contact either with psychiatrist and/or psychologist in Denmark before being involved in the project.

The mean number of sessions (by 45-60 min) completed for all 45 subjects was six (6).

Five (5) participants had at least one face-to face contact. The rest of the sample received only remote service.

All participants in the project received written information about telepsychiatry. They all undersigned consent before or after the first telepsychiatry session. They 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 (Table II). There were 5 possible ways to answer: "Yes, in high degree"; "Yes, in some degree", "No, only in less degree", "Not at all" and "Don't know". The last two questions needed descriptive answers.

TABLE II  
QUESTIONNAIRE

|   |
|---|
| 1. Did you get enough information about telepsychiatry?                                       |
| 2. Do you perceive "contact via TV" as uncomfortable?   |
| 3. Did you feel safe under telepsychiatry contact?  |
| 4. Have you been satisfied with sound quality?  |
| 5. Have you been satisfied with picture quality?  |
| 6. Did you achieve your goal via telepsychiatry / could you express everything you wanted to? |
| 7. Would you recommend telepsychiatry to others?  |
| 8. Would you prefer contact via translator in future?   |
| 9. What were you most satisfied with during the telepsychiatry contact?                       |
| 10. What were you most unsatisfied with during the telepsychiatry contact?                    |

### Technical set-up

Dansk Telemedicin A/S provided technical support ([www.telemed.dk](http://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. The videoconferencing system links Psychiatric Centre Little Prince in Copenhagen with 4 sites around the country (two Psychiatric departments; one activity centre and one asylum-seekers centre). These 4 sites are approximately 150-250 km away from Copenhagen. In Denmark the sites 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.

The equipment has also been installed in Sweden in April 2006 and connected to stations in Denmark. 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

assessments disclosed wide range of psychiatric disorders (Fig.1). Participants' responses to telepsychiatry so far have been very positive regardless degree of mental illness. They reported a high level of acceptance and overall satisfaction with telepsychiatry regardless their ethnicity, educational level or previous experiences within mental health system (Fig.2). There were no difference in satisfaction rates between patients that received subsequent face-to-face consultations and the rest of the sample. Participants find telepsychiatry acceptable and useful cause of possibility to express their intimately emotional and existential problems on their motherhood



Fig. 1.

less than 100 ms. This resulted in an acceptable quality, with less than 1% dropped frames.

### III. RESULTS

All patients referred to telepsychiatry assessment and/or treatment agreed to participate in the survey. Diagnostic

DID YOU ACHIEVE YOUR GOAL / COULD YOU EXPRESS EVERYTHING YOU WANTED TO ?

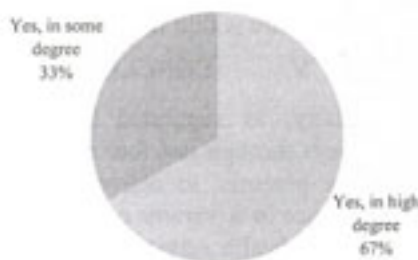


Fig. 2.

WOULD YOU RECOMMEND TELEPSYCHIATRY TO OTHERS ?

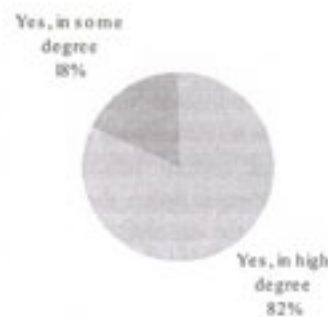


Fig. 3.

language. Furthermore, they mentioned reduced need for travel.

Participants responded positive when asked if they would recommend telepsychiatry to others (Fig. 3). The most of participants reported willingness to use telepsychiatry again as well as they would prefer help by

WOULD YOU PREFER CONTACT VIA TRANSLATOR IN FUTURE ?



Fig. 4.

telepsychiatry on mother tongue rather than face-to-face contact with the doctor via translator (Fig.4).

Staff supervision as well as psycho educational consultations with family members increase understanding for cross-cultural psychiatry and

knowledge about psychiatric disorders. Participants' family members got opportunity to discuss mental health issues that are taboos in their culture.

Few meetings between staff within social work, the patient and the psychiatrist have been established via telepsychiatry. Acute psychiatric assessment as well as discharge planning with follow up service was initiated during the project time.

#### IV. DISCUSSION

The project presented both assessment and treatment via telepsychiatry. In both situations the satisfactory level of participants was high. Basic information about telepsychiatry and assurance that the confidentiality will be sustained made patients' attitudes toward such new technology more positive. Key predictor of patient satisfaction with telepsychiatry in this survey was possibility to communicate on motherhood language. Both, participants with or without previous experience by translator provided mental health care prefer remote contact on mother tongue rather than contact via translator. Their willingness to receive psychiatric service on motherhood language via telepsychiatry rather than usual contact via translator can be understood as a natural need of confidential relation between the patient and the therapist. However, there were no difference in satisfaction level between participants who got subsequent face-to-face consultations and those who didn't. Of course, it is good idea, whenever possible, to introduce and inform the patient about telepsychiatry under face-to-face contact. On that way the risk for potential reluctance towards new and unknown technology may be diminished.

Our results indicate that participants' ethnicity, educational level and degree of illness had no influence in order to choose telepsychiatry versus mental health care provided via translator. This is in discrepancy with an earlier published survey, which indicates that individuals with better physical health and higher adaptive coping scores tended to be more willing to participate in telepsychiatry [9].

Psychosocial aspects within mental health care of asylum seekers, refugees and migrants are extremely important as they may affect patients' compliance. Coordination of both psychiatric treatment and social efforts (such as attending language school and/or work-training etc.) is often necessary for achieving the final goal of specific mental health service. Meetings established under project period were necessary as the patient had no confidence in the translator and was "certain that everything would not be translated correctly". On the other hand, social worker noticed that the patient sabotaged every agreement. In such situation, the psychiatrist that speak patients' mother tongue and has confidential and trustful relationship with the patient, played the role of "the missing link". After few meetings

the patients' social situation was re-assessed and the coordination of different efforts resulted in positive changes.

The impact of telepsychiatry on local staff was expressed through supervision and exchange of information after each patient consultation. On this way both psychiatrist and staff members could present equal attitudes toward each patient and diminish the risk of splitting and misuse of resources.

Emergency service via telepsychiatry has been tested in two situations. Both times it was weekend and no translator was available when Bosnian refugees were hospitalized in acute psychotic condition. In these cases the nurse contacted the Bosnian speaking psychiatrist, which made acute psychiatric assessment and initiate antipsychotic medication via telepsychiatry.

Only one Danish participant has been involved in the project so far. The participant lives in outlying area (an island 156 km from Copenhagen) where shortage of resources results in long waiting lists. The participant expressed high level of satisfaction with the method because of no need for transportation and no waiting time.

Discharge planning with subsequent follow up consultations was established in few occasions. Telepsychiatry application in such situations has potential to spare time and resources. Still, there is a work to be done regarding changes in mental health policy and working routines. Promotion of advantages by using telepsychiatry may come from leading structures within mental health system. It will contribute too regarding faster and easier establishing of sustainable telepsychiatry- provided mental health service.

According to published researches there was only one international telepsychiatry trial, established between Australia and New Zealand [10]. Such trial has never been done in Europe until April 2006. Then the first international collaboration between Denmark and Sweden was established in order to find professionals with relevant ethnic background. The use of remote professional resources from neighbour country (Sweden) eliminated the use of translators and need for transport (for both patients and clinicians). Results and experiences from the first European telepsychiatry collaboration raise some interesting questions regarding future development of mental health care within EU.

#### V. CONCLUSIONS

Telepsychiatry, as suggested by large number of original surveys through last four decades, is a growing field with the potential to deliver high quality; much needed assistance in a variety of settings to persons in need of mental health services [11]. This is the first research on use of videoconference in order to provide mental health toward such specific patient population as asylum seekers, refugees and migrants. In a field such as assessment and treatment of asylum seekers, refugees and migrants, often torture survivors, who are significantly

underserved on their mother tongues, telepsychiatry enables access to appropriate speciality service. At the same time, telepsychiatry provides opportunities for participation of other individuals involved in work with the patient (family members, social worker, GP, staff on psychiatric department etc.).

"Psychiatric second opinion service" toward GP's should be the next step in developing of Danish telepsychiatry. Professional and when necessary cross-cultural mental health expertise support toward GP's, regarding assessment and/or treatment, may increase efficacy of the primary health care service.

So far, this pilot project has demonstrated high acceptance and usefulness of videoconferencing in order to increase accessibility to mental health services where geographical, linguistically and/or cultural distance/limitations occur.

Used as a supplement to existing mental health system, telepsychiatry brings professional mental health expertise to remote areas with resource shortage. Consequently, it is able to serve asylum seekers, refugees and migrants but also wide range of domestic patient population.

The enlargement of the European Union results in free movement of people. Some of them may have need for mental health care. Nevertheless, it is often difficult to find ethnic resources wherever they are needed. In such cases telepsychiatry can be used as a tool that may build the bridges over cross-cultural barriers in mental health service systems all over the Europe.

Next step in telepsychiatry developing may be establishing of an international European Telepsychiatry Network with capability to provide mental health care towards EU citizens via respective mother tongues. Clinical work should be followed by education and supervision of mental health professionals via videoconferencing. Furthermore, developing of National Telepsychiatry Networks all around the world will make

possible to exchange high needed expertise across the national borders.

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