

Telepsychiatry- Prevention and Treatment in the Outskirt Areas, A Shared-Care Model within a Danish Context

Davor Mucic and
Monika Jokumsen

Psychiatric Centre Little Prince, Copenhagen, Denmark

Abstract

This article reports on a project running over 24 months from July 2010 until July 2012, conducted by The Little Prince Psychiatric Centre in Copenhagen in cooperation with three general practitioner's clinics on the outskirts of Denmark. The article outlines the conceptual shared care model, in which psychiatrists and psychologists collaborate with general physicians in the assessment, diagnosis and treatment of mental health patients in the context of the general physician's office by use of telepsychiatry service. A formal evaluation of the project was conducted and outcomes are discussed along with issues related to the requirements for sustaining the service over time and broadening its applicability. The results has shown that collaboration via use of videoconferencing across levels of health care sectors can be a useful alternative that offers learning, leads to continuity, reduces costs and improves the quality of care. Telepsychiatry, in the form of video conferencing, has been well received by patients (n=27) and general practitioners (n=3) as a method reducing waiting time and bridging the distance between patients and specialized psychiatric care.

Keywords: Telepsychiatry; Psychiatric; Mental health; Health care

Corresponding author: Davor Mucic

✉ info@denlilleprins.org

Psychiatric Centre Little Prince, Copenhagen, Denmark.

Tel: 4526243274

Fax: 464064444 65

Citation: Mucic D, Jokumsen M.

Telepsychiatry- Prevention and Treatment in the Outskirt Areas, A Shared-Care Model within a Danish Context. *J Intensive & Crit Care* 2017, 3:2.

Received: March 17, 2017; **Accepted:** March 24, 2017; **Published:** March 31, 2017

Introduction

Within Danish mental health care there has for some time been the widespread perception among both service providers and mental health clients that services are inaccessible and/or overloaded, resulting in excessive waiting lists and problems with recruiting psychiatrists on the outskirts of Denmark. Patients that suffer from depression, anxiety or phobias, which in many cases keep them off the labor market for longer time, usually first look for help at their local general practitioners, who are not provided by equal access to psychiatric supervision and expertise. The necessity of sending patients onwards in the system often ends with long waiting periods during which patients are usually not given any help and their state worsens.

The Little Prince Psychiatric Centre in Copenhagen, that has developed and since year 2000 practiced cross-cultural expertise in telepsychiatry as the only place in Denmark [1], was in charge of a project which offered an alternative to this problem by applying telepsychiatry provided shared care model.

This meant that general physicians on the outskirts of Denmark, that often are the first and only health care providers that patients meet, were assisted in the care responsibility by psychiatrists and psychologists from the centre in Copenhagen. The project

recognized the necessity of supporting general physicians with professional mental health collaboration.

A variety of shared care models exist that successfully integrate and link mental health services with primary care [2,3]. The spectrum of shared care models includes community-based mental health teams, liaison attachment schemes and targeted or disorder-specific programs [4,5]. Each has its own service delivery characteristics. Telemedicine has become a great part of the shared care model thanks to its wide applicability possibilities across geographical challenges [6].

The telepsychiatry shared care model refers to the provision of mental health care from a distance using videoconferencing and includes clinical work with the patient, as well as educational and administrative activities related to mental health-care delivery within the primary sector. Using it, general practitioners and specialists discuss patient treatment, which increases the information and knowledge available to each participant. Therefore, videoconferencing has the ability to support continuously collaborative work and follow the treatment trajectory of the patient. A higher quality of health care services presupposes knowledge exchange and learning [7,8]. On top of the positive outcomes of the cooperation between sectors, several studies have demonstrated high reliability of telepsychiatry and patients' acceptance of telepsychiatry.

Telepsychiatry has shown an influence on reducing hospitalization and stigma on patients [9]. Clients have reported reduced travel time, less lost work time, shorter waiting times and greater patient control. At the same time the method has good effect on reducing cost of service and improving the quality of the treatment. [10,11].

Both shared care model and telepsychiatry have earlier been applied within the Danish mental health system, but as a variation this project particularly focused on ethnic matching, which is a new concept in Denmark. Telepsychiatry has made ethnic matching possible by providing patients service through the use of psychiatrists and psychologists similar to them in terms of ethnicity and cultural background [12-15]. The enhanced cultural competency and cultural sensitivity of the mental health care providers emerges as a useful strategy to address the specific needs of cross-cultural patient population [16,17].

The Model in Practice

The organization of the shared care model application required consideration of a number of factors. First of these was the recruitment of general practitioners that would be interested in taking part in the project. The areas on the outskirts of Denmark where a lot of refugees and foreigners live were taken into consideration.

3 general practitioners' clinics in Nakskov, Grindsted and later in Brande, all cities with less than 15.000 inhabitants, agreed on collaboration. General practitioners (n=3) were introduced to the project objectives and the equipment was installed. Importantly, within each clinic a person responsible for using the equipment was given the proper training. Afterwards coordinators (a secretary or nurse) were chosen whose role was to handle the communication between all the parties involved. Following all documentation regarding agreements, contacts, journals, medicine ordination, evaluation and questionnaires were set up.

Methods

Over 17 months (2011-2012) 27 patients referred by general practitioners received the consultation via the telepsychiatry service. The general practitioner had the initial responsibility of identifying those patients in need of mental health intervention. Identification of such patients was typically based on patients themselves presenting symptoms or problems that were of a psychological nature. All patients, including both Danish and foreign, were given the choice between face-to-face consultation, usually with a long waiting list or telepsychiatry. The patients that chose telepsychiatry received a consultation during which psychiatrists made the assessment and suggested the treatment possibilities, but it was the general practitioner who prescribed the medication. After 3 months patients had a follow-up meeting with the psychiatrists.

On top of the psychiatric consultation, 5 patients (3 Danish and 2 foreign) were offered help in their mother tongue by psychologists via the telepsychiatry service of which 60% got 6 sessions, 20% 12 sessions and 20% 14 sessions.

Both the psychiatry and psychology service were provided in patient's mother tongue.

All patients that took part in the project received written and spoken information that was translated into their respective languages about the telepsychiatry service, after which the consent to participate in the study was sought. The survey did not require approval from an ethics committee.

After the end of the telepsychiatry service both patients and general practitioners were asked to complete a satisfaction questionnaire. These questionnaires were specifically designed to survey participant experiences in the project and assess how the effectiveness of the shared care consultation model was perceived. All participants were literate so they fulfilled written questionnaires without assistance.

All participating in the evaluation were informed of the purpose of the evaluation and provided written consent for their participation.

Video conferencing equipment connected the department of the Little Prince Psychiatric Centre in Copenhagen with three general practitioners' clinics in Nakskov, Grindsted and Brande (located from 170-280 km from Copenhagen). Separate Internet lines were provided for improved security and avoiding disturbance from the clinic's normal use. The patient and the practitioner communicated through a TV-screen and an advanced camera (model Lifesize) through the Internet. The stations were connected by 12/2 Mbit/s sHDSL connections (encrypted symmetric high-speed digital subscriber line).

Results

Patient sample consisted of 12 Danish (6 males and 6 females) and 15 foreigners with refugee status (6 males and 9 females). The mean age of the Danish males was 39.7 years and of the females 44.7 years. The mean age of the foreign males was 44.7 and of the foreign females 39.7. The patients' education, origin and language are presented in **Table 1**. 10 Danish patients (83%) had previous experience of the mental health system. 2 foreign patients (13%) had received treatment in their respective home countries, whereas 13 foreign patients (87%) had had no contact

Table 1 Patient's education, origin and language.

	Danish (n=12)	Foreigner (n=15)
Education		
0-4 years	-	1 (7%)
5-8 years	1 (8%)	4 (27%)
9-12 years	10 (83%)	10 (67%)
12+ years	1 (8%)	-
Ethnicity (Country of origin)		
Afghanistan	-	1 (7%)
Serbia	-	1 (7%)
Bosnia Herzegovina	-	13 (87%)
Denmark	12 (100%)	-
Language		
Dari	-	1 (7%)
Serbian	-	2 (13%)
Bosnian	-	12 (80%)
Danish	12 (100%)	-

with the mental health system prior to their arrival in Denmark. Likewise 13 (87%) foreign patients had former been in psychiatric treatment in Denmark and 2 (13%) had had no contact before.

The telepsychiatry provided assessment disclosed a variety of psychiatric diagnoses that were not given prior to inclusion in the project, as shown in **Figures 1 and 2**, respectively for the two groups of patients. The expected waiting time was decreased and as a result the patients talked to the psychologist/psychiatrist within 1-3 weeks; of the Danish patients 42% waited up to 1 week, 33% up to 2 weeks and 25% up to 3 weeks. Of foreigners 47% had waiting time up to 1 week, 27% up to 2 weeks and 27% up to 3 weeks.

Patient satisfaction with sound and picture quality was very high and the participants reported that the information about telepsychiatry was easy to understand. Participants also reported that they were able to achieve their goal and express everything they wanted through the videoconference. All participants stated that they would recommend telepsychiatry to others and most would prefer this type of contact if needed in the future, rather than an interpreter-provided service. The fact that the participants were able to access the treatment they needed in their mother tongue without travelling was reported as a significant advantage of the service. Patient satisfaction results are shown in **Tables 2 and 3**.

Ethnicity, years of education or previous experience with the mental health care system did not appear to be associated with the participants' attitudes towards telepsychiatry.

The five patients that were offered sessions with psychologists have been pleased with the way the technology functioned (i.e., picture, sound). They felt secure even though they had never tried telepsychology treatment before. Some of them had been attending treatment face to face before. Improvement variables and associated responses are shown in **Table 4**. Participants indicated that the treatment improved their ability to cope in general and better understand their problems, but the outcome varied regarding improvement within family life, mental state and interest in different activities.

Noteworthy on the replies from the general practitioners is that all answers were positive, either excellent or good and that

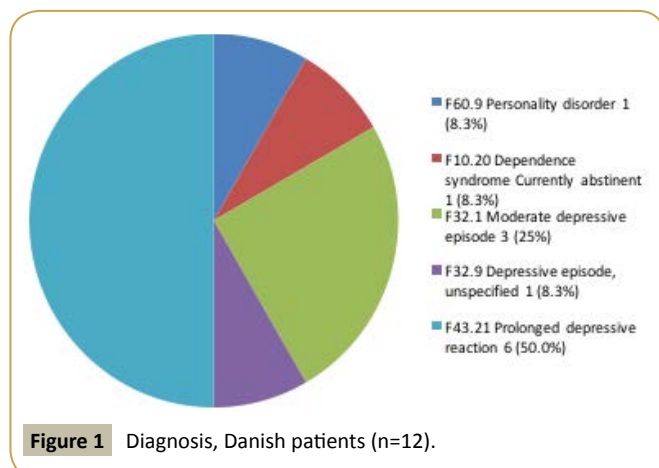


Figure 1 Diagnosis, Danish patients (n=12).

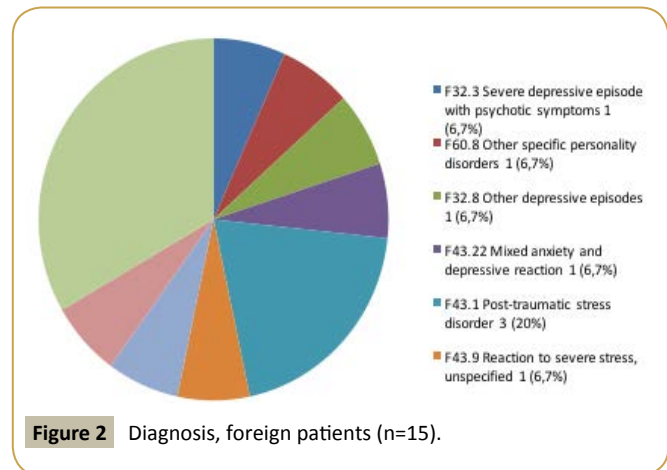


Figure 2 Diagnosis, foreign patients (n=15).

specifically the idea of continuing working with telepsychiatry received 100% support. General practitioners were satisfied with the practical issues regarded the collaboration, such as introduction to the project and equipment and coordination of the project. They also reported that they benefited from shared care cooperation (**Table 5**).

Discussion

Apart from the overall success of this collaborative mental health care endeavour and the satisfaction of all participant parties, much has been learned about how the model works in practice.

The project has shown to be a time and money saver both for patients and health care service. Lack of access to psychiatric help on the outskirts of Denmark and the expensive alternatives are problems that can be successfully solved by using the telepsychiatry service. This would mean a more efficient use of scarce resources and related cost efficiencies, which is supported by the fact that the Danish Health and Medicines Authority recommends that the cooperation between the general physicians and the psychiatry should be developed in the shared-care direction, in order to more efficiently use the existing capacities [12].

In this case patients do not have to suffer either from discontinuity of treatment nor long waiting time to be seen by a specialist. Access was one of the project indicators and as the outcome show, waiting time was reduced, which led to increased patient satisfaction.

Some practical issues need be taken into consideration as well. The lack of specially prepared rooms within the general practitioners office adapted only for telepsychiatry service sessions gave rise to some practical problems, such as prolonging the waiting time to more than two weeks in a few cases. Also a lesson learned was how important the role in the shared care model is played by the coordinator and without such a person communication cannot function satisfactory. Time invested in providing training for such a person compensates for future inconveniences, as clear and fluent communication without errors gives the best results and cuts down on frustrations from all sides. Finally a

Table 2 Danish patient satisfaction questionnaire n=12.

	Yes, in high degree n (%)	Yes, in some degree n (%)	No, only in less degree n (%)	No, not at all n (%)	Don't know n (%)
1. Did you get enough information about telepsychiatry?	8 (67)	4 (33)	-	-	-
2. Do you perceive 'contact via TV' as comfortable?	10 (83)	2 (17)	-	-	-
3. Did you feel safe under telepsychiatry contact?	11 (92)	1 (8)	-	-	-
4. Were you satisfied with the sound quality?	9 (75)	3 (25)	-	-	-
5. Were you satisfied with the picture quality?	7 (58)	5 (42)	-	-	-
6. Did you achieve your goal via telepsychiatry/could you express everything you wanted to?	5 (42)	7 (58)	-	-	-
7. Would you recommend telepsychiatry to others?	10 (83)	2 (17)	-	-	-

Table 3 Foreign patient satisfaction questionnaire n=15.

	Yes, in high degree n (%)	Yes, in some degree n (%)	No, only in less n degree n (%)	No, not at all n (%)	Don't know n (%)
1. Did you get enough information about telepsychiatry?	9 (57)	5 (36)	1 (7)	-	-
2. Do you perceive 'contact via TV' as comfortable?	13 (86)	2 (14)	-	-	-
3. Did you feel safe under telepsychiatry contact?	13 (86)	2 (14)	-	-	-
4. Were you satisfied with the sound quality?	15 (100)	-	-	-	-
5. Were you satisfied with the picture quality?	15 (100)	-	-	-	-
6. Did you achieve your goal via telepsychiatry/ could you express everything you wanted to?	14 (92)	1 (8)	-	-	-
7. Would you recommend telepsychiatry to others?	12 (79)	3 (21)	-	-	-
8. Would you prefer contact via a translator in future?	-	-	2 (14)	12 (79)	1 (7)

good introduction to the technological issues makes it easier for all to use the service and reduces the scepticism.

Stigma connected to mental disorder is a well-known phenomenon and it stops some patients from getting the necessary help. The possibility of meeting the specialist via telepsychiatry service at the general practitioner's office makes it easier for many patients to agree to treatment, as they do not have to be seen by others entering a psychiatric department or a psychologist's office. This was mentioned as an important factor within the decision making process. Furthermore this gave possibility for the psychiatrist to work on the perception of stigma with proper psycho-education and explanations which were possible after the alliance was built.

Patients that were offered psychological treatment expressed high satisfaction with the service and claimed that they would prefer videoconferencing instead of face to face meetings with a psychologist in the future. It was easier for the patients to express themselves from a distance and they actually felt more secure and could control the situation which resulted in them being more open. The patient always had the possibility to switch off the screen and finish the session. This goes against the general belief, where the lack of the direct face-to-face contact between patient and therapist in telepsychiatry often has been used as an argument against the use of it, even though international

research shows that patient satisfaction is just as high and the treatment at least as effective in telepsychiatry as in more conventional direct contact [13-15]. It is possible, however, that some patients will have worries regarding security in connection with telepsychiatry sessions.

General practitioners were satisfied with the project and regarded the service as a valuable and effective supplement to already existing practice. As a shared care project, this study involved only three general physicians, limited funding and a short time frame. Only limited conclusions can therefore be drawn about the efficacy and effectiveness of this approach, since it is based on such a small-scale collaboration, but in general there is a lack of practitioners and specifically expertise, in the outskirts of Denmark. Therefore these general practitioners are sometimes overburdened with patients and often isolated in terms of professional collegial contact and it is possible that because of these circumstances they all felt they benefitted from the professional support that consultants provided.

In the telepsychology area the size of the sample and the lack of a control group make it difficult to say anything conclusive about significant changes, but generally the replies were positive and have motivated the Little Prince Centre to consider continuing service within telepsychology. This area could primarily be

Table 4 Patient satisfaction with the telepsychology service.

	Yes, in high degree n (%)	Yes, in some degree n (%)	More or less n (%)	No, only in less n degree (%)	No, not at all n (%)	Don't know n (%)
1. Were you overall satisfied with the sessions via videoconference?	4 (80)	1 (20)	-	-	-	-
2. Did you experience any improvement in coping with everyday life?	2 (40)	-	2 (40)	1 (20)	-	-
3. Did you experience any improvement in your family relations?	2 (40)	1 (20)	1 (20)	-	1 (20)	-
4. Did you experience any improvement in your wellbeing in general?	2 (40)	-	2 (40)	1 (20)	-	-
5. Did you experience any improvement in your mental state due to treatment?	1 (20)	2 (40)	1 (20)	1 (20)	-	-
6. Did you achieve greater insight of your condition due to the treatment?	4 (80)	-	-	1 (20)	-	-
7. Did you experience any improvement in your activities in your spare time?	2 (40)	1 (20)	1 (20)	-	1 (20)	-
8. Did you experience the sessions as a safe and comfortable room to express your problems?	1 (20)	3 (60)	-	1 (20)	-	-
9. Would you have preferred face-to-face sessions?	-	-	2 (40)	2 (40)	1 (20)	-
10. Did you experience a good personal relation to the psychologist?	1 (20)	4 (80)	-	-	-	-
11. Did you find it easy to communicate through videoconferencing?	5 (100)	-	-	-	-	-

Table 5 General practitioners' satisfaction with the telepsychology service.

	Excellent n (%)	Good n (%)	Bad n (%)	Very Bad n (%)	Don't know n (%)
1. How would you evaluate the introduction given about the project?	1 (33)	2 (67)	-	-	-
2. How would you evaluate the user-friendliness of the telepsychiatry service?	1 (33)	2 (67)	-	-	-
3. How would you evaluate the telepsychiatrist's work on coordinating and following up on the cases?	3 (100)	-	-	-	-
4. How would you evaluate the possibilities to ask questions and/or getting information about the cases?	2 (67)	1 (33)	-	-	-
5. How would you evaluate the benefits you achieved during the project?	1 (33)	2 (67)	-	-	-
6. How would you evaluate the idea of continuing on using telepsychiatry service within your practice after the project is over?	3 (100)	-	-	-	-
7. How is your overall opinion of the project?	2 (67)	1 (33)	-	-	-

further developed with anxiety and phobia patients, where transportation sometimes can hinder the more traditional treatment.

In a Danish context it is also worth mentioning that some limitations are very natural: the clinics in the outskirts did not have any spare rooms dedicated to the project and as such there was only one day available per week in Nakskov and Grindsted and only 2 days per month in Brande.

Further limitations arose when the general practitioner in Grindsted stopped in the middle of the project (nøjagtig dato ville være super) due to personal problems and the general practitioner in Brande only referred patients, who came from Ex-

Yugoslavia. The clinics referred their first patients on respectively 29/1, 14/2 and 14/12 (all 2011) in Nakskov, Grindsted and Brande and all closed down for referrals from March 2012.

A control group was under consideration, but with very few patients (less than 10) and long waiting lists (up to 10 months) it made more sense to offer the help to the patients who came, instead of turning down every second patient.

In the whole period only one patient turned down the offer of receiving telepsychiatry. Therefore it would be wrong to say that the project ran for two full years and equally misleading to draw too many conclusions on diagnoses and outcome for patients.

Conclusion

What can be concluded, however, is the patients' and general practitioner's satisfaction and the possibility of bringing down the waiting lists, as well as making ethnic matching a possibility.

With these experiences, there appears to be a sufficient basis on which not only to continue the service but to expand it to include additional general practitioners and mental health professionals,

thereby enabling the service to reach more patients. However, the maintenance and any expansion of the service require secure and on-going funding. It seems only logic that opportunities like this must continue to be created regularly, in order to promote the development of more formal models of collaboration.

Acknowledgement

The work was funded by the Ministry of the Interior and Health.

References

- 1 Little Prince Psychiatric Centre. Telepsychiatry. Behandlingscenter Den Lille Prins, Denmark.
- 2 Gask L, Sibbald B, Creed F (1997) Evaluating models of working at the interface between mental health services and primary care. *Br J Psychiatry* 170: 6-11.
- 3 Bowers EJ, Wilson I (2004) GPs and psychiatrists working together: Literature review. Flinders Academic Commons, Australia.
- 4 Chomik TA (2005) A report on shared care (Part of the Primary Health Care Shared Care Network Development Initiative). Provincial Health Services Authority.
- 5 Craven MA, Bland R (2002) Models of sharing mental health care. *Can J Psychiatry* 47: 3.
- 6 McGinty KL, Saeed SA, Simmons SC, Yildirim Y (2006) Telepsychiatry and e-Mental health services: Potential for improving access to mental health care. *Psychiatry Q* 77: 335-342.
- 7 Nilsen LL (2011) Workplace learning among general practitioners and specialists: The use of videoconferencing as a tool. *J Workplace Learn* 23: 501-517.
- 8 Nilsen LL (2011) Collaborative work by using video conferencing: Opportunities for learning in daily medical practice. *Qual Health Res* 21: 1147-1158.
- 9 May C, Gask L, Ellis N, Atkinson T, Mair F, et al. (2000) Telepsychiatry evaluation in the northwest of England: preliminary results of a qualitative study. *J Telemed Telecare* 6: s20-s22.
- 10 Singh SP, Arya D, Peters T (2007) Accuracy of telepsychiatric assessment of new routine outpatient referrals. *BMC Psychiatry* 7: 55.
- 11 Urness D, Wass M, Gordon A, Tian E, Bulger T (2006) Client acceptability and quality of life telepsychiatry compared to in-person consultation. *J Telemed Telecare* 12: 251-254.
- 12 Sundhedsstyrelsen (2009) National strategi for psykiatri. Udgivet I, Denmark.
- 13 Ruskin PE, Silver-Aylaian M, Kling MA, Reed SA, Bradham DD, et al. (2004) Treatment outcomes in depression: Comparison of remote treatment through telepsychiatry to in-person treatment. *Am J Psychiatry* 161: 8.
- 14 O'Railly R, Bishop J, Maddox K, Hutchinson L, Fisman M, et al. (2007) Is telepsychiatry equivalent to face-to-face psychiatry? Results from a randomized controlled equivalence trial. *Psychiatr Serv* 58: 836-843.
- 15 Urness D, Wass M, Gordon A, Tian E, Bulger T (2006) Client acceptability and quality of life - telepsychiatry compared to in-person consultation. *J Telemed Telecare* 12: 251-254.
- 16 Ton H, Koike A, Hales ER (2005) A qualitative needs assessment for development of a cultural consultation service. *Transcult Psychiatry* 42: 491-504.
- 17 Jerrell JM (1998) Effect of ethnic matching of young clients and mental health staff. *Cult Divers Ment Health* 4: 297-302.