Professional E-Therapy in a Low Budget Setting

Jan-Olof Karlsson[1], Birgitta Johanson[2]

[1] University West, Gustava Melins Gata 2, 461 32 Trollhättan, Sweden. jan-olof.karlsson@hv.se

[2] Department of Clinical Neuroscience and Rehabilitation, Institute of Neuroscience and Physiology, The Sahlgrenska Academy, University of Gothenburg, Blå Stråket 7, 1tr, 413 45 Gothenburg, Sweden. birgitta.johansson@neuro.gu.se

Abstract.
Mindfulness based stress reduction was mediated as e-therapy to a group of patients suffering from mental fatigue. The e-therapy was arranged using standard video conferencing software and web cameras without any studio capacity. During sessions all interaction with participants was handled by psychology professionals. This study shows that it is possible for non-technical specialists to arrange an advanced e-therapy using a low budget setting.
Keywords: E-therapy, MBSR, Mental fatigue, Mindfulness.

1 Introduction

Mindfulness based stress reduction (MBSR) meditation is rapidly becoming a popular method to promote various aspects of well-being. For some people it can be used as a general method to relax, for others it can take a large place in life and be the fundament of living [1].

MBSR aims to a focus on the present-moment rather than stressful reactions to other situations in life. This makes it useful as a treatment for some medical disorders. Among many studies where MBSR has been found effective is among breast cancer survivors [2] where it has been shown to increase the physiological and psychological health; similar findings are that psychological health can be increased for people suffering from anxiety disorders [3].

MSBR requires a persistent practicing of meditation to be effective. This practice is initiated by an eight-week meditation course.

Mental fatigue is a medical condition that can cause a rapid increase of a deep exhaustion after what for other people would be ordinary activities. Such mental fatigue may become a long-lasting problem, interfering considerably with the ability to work and lead a normal life including social activities with family and friends. For people suffering from mental fatigue, e-therapy on internet can be a possibility to participate in an MBSR course, when attending a physical meeting would be too exhausting [4].

The circumstances for arranging e-therapy has changed rapidly in recent years. The common use of computers and access to internet has provided new opportunities for e-therapy without the need for special video-conferencing equipment or studios.

Mindfulness programs have been delivered on the Internet in studies about anxiety disorder [5], stress [6; 7; 8] and irritable bowel syndrome [9]. These studies included mindfulness interventions with self-guided programs. However, MBSR is performed in groups, and the group environment is considered to be important for sharing experiences with others and learning from group dialogue [10].

The therapeutic results of a study where MBSR therapy in a group mediated as a live e-therapy has been described by Johansson et al. [3; 11]. The same study is in this paper examined from the perspective of e-therapy and how e-therapy used in a simple setting, using standard software and equipment can be effective.

2 MBSR

MBSR, mindfulness based stress reduction is a highly structured meditation program developed by Kabat-Zinn [1]. The program consists of a set of meditations and yoga exercises which is much more comprehensive than ordinary stress reduction techniques. The program consists of eight weekly 2.5-hour long group sessions, one day-long silent retreat. Participants are doing 45 minutes' meditations and additional home practices, 6 days a week.

In a workshop, a group of participants are guided by a certified MBSR instructor. Becoming a certified instructor requires year-long regular personal practices of the different aspects of the MBSR program. Also it is required to co-practice during several MBSR courses with a certified mentor [12].

MBSR has proven effective in a number of studies, particularly in reducing stress [13; 14]. In a study on breast cancer survivors MSBR showed an improved physiological and psychological state for patients [2].

Aucoin et al. [15] reports in a meta-analysis of studies where MBSR therapy has been used for patients having gastrointestinal disorders how MBSR intervention may be useful in improving patient symptoms, but there is a need for improved methodological quality in future studies.

There are very few studies on the combination of MBSR and e-therapy, one example is the study by Johansson et al [4; 11].

3 Mental fatigue

Mental fatigue is a long lasting brain and cognitive fatigue. It is different from the normal tiredness experienced by all people in some situations; typically, a pronounced and rapid mental exhaustion will occur even after slighter activities [16]. Mental fatigue can have different causes: traumatic brain injury, stroke, Multiple Sclerosis, brain inflammation and Parkinson's disease may frequently cause this syndrome [17; 18].

4 e-therapy

E-therapy can be defined in different ways. One definition is where a health care professional provides therapy via any electronic channel such as video conferencing, virtual reality, chat technology or any combination of these [19].

In the community of psychologists there in an ongoing debate on the advantages and shortcomings of e-therapy [20]. Amichai et al. [20] describes how therapists argue that the remoteness impedes a close relation during the therapy and causes a larger number of drop-outs. On the other hand, internet can provide a safe environment where trust increases. The availability regardless of physical place is by some argued as a great advantage.

The novel use of e-therapy has introduced many new aspects and qualities in the therapeutic situation. There are reports how e-therapy attract other groups than face-to-face therapy, how the mental and physical barriers to therapy are decreased but also how over time these differences have become smaller [21].

In a therapy an important factor is the relationship between the therapist and the patients. In a systematic review of e-therapy, Sucala et al. [22] report that e-therapy is at least equivalent to face-to-face therapy in terms of therapeutic alliance. The study also shows, that there is a relationship between the therapeutic alliance and the e-therapy outcome.

E-therapy has been proven effective in other situations apart from MBSR: Studies of e-therapy use in CBT (Cognitive Behaviour Therapy) [23] and Problem drinkers [21] both show positive effects.

5 Method

5.1 MBSR therapy

Participants were recruited from an advertisement in a local daily paper and from information presented on the website of the department of Department of Clinical Neuroscience and Rehabilitation. Persons suffering from mental fatigue syndrome were invited to participate. An initial screening of potential participants was conducted via a telephone conversation. Selected and interested participants were later interviewed by a neurologist and a neuropsychologist to ascertain their acquired brain injury. The inclusion criteria were as follows: men and women between 20 and 65 years of age; had been employed prior to suffering a stroke or traumatic brain injury (TBI); had recovered from neurological and neuropsychological symptoms and suffering from pathological mental fatigue for at least 6 months before inclusion in the study. The exclusion criteria were: psychiatric or neurological disorders; a history of alcohol or drug abuse; significant cognitive impairment; and having previously attended an MBSR program.

In total there were two e-therapy groups with 13 and 7 participants respectively. The average age was 47 years and the groups had 75 % female participants [4]. In a larger

study face-to-face MBSR sessions and control groups (weekly active walking in a group in the nature) were included [16].

The MBSR therapy was conducted during an eight-week period which is the set time for an MBSR program [1]. Sessions are for 2.5 hours, except for one session which is for a whole silent day.

During the therapy sessions, there were two psychologists present, one certified MBSR-teacher leading the session and one handling the internet platform and the contact with participants.

5.2 e-therapy setting

The locality for the e-therapy sessions were chosen to be an ordinary home (Fig. 1). There were several reasons for this: by avoiding a hospital or institution environment it was presumed that a more relaxed atmosphere would be achieved. Also, there were economical and practical advantages in the sense of travel distance and costs.

Internet connection was ADSL 8 Mbit download and 1 Mbit upload, this being a very moderate capacity.

The communication platform was Adobe Connect Meeting. In this platform the participants were using web-cams and microphones to communicate with each other and the psychologists. For the session leader a separate web-cam on a tripod was used to provide a good view.

Fig. 1. MBSR meditation during a session

5.3 Interview

The psychologist responsible for the contact with participants was interviewed to capture different aspects and experiences of e-therapy. This interview used open-ended questions (Appendix).

5.4 Questionnaire

A questionnaire was sent to participants with the aim to evaluate the effectiveness of the mindfulness therapy. Even though the questionnaire primarily was not aimed to evaluate the technical aspects of the e-therapy, open questions made it possible to obtain information about the total experience (Appendix).

6 Result

6.1 e-therapy setting

Adobe Connect provides a relatively low resolution video with some issues in lip-synchronization. However, this did not impair the therapy situation as reported both by psychologists and participants.

It was found that the low internet capacity was sufficient to perform a therapy session. In this setting the voice is considered the most important factor; however, the possibility for the participants to both see the therapist and the other participants are important and this was possible in a sufficient way.

6.1.1 Technical handling of the therapy sessions

The psychologist handling Adobe Connect and guiding participants had only basic previous experiences from the platform. Despite this, she had few problems setting up the system and establishing connection using audio and video with the participants. It should be noted that Adobe Connect runs as a plug-in in the web-browser, making audio and video usage more difficult than other conferencing system running as native applications, e.g. Skype.

Adobe Connect has a possibility to record meetings. Here recorded sessions were made available for the participants afterwards. This was as a back-up in case of technical difficulties and an option for participants who could not attend the whole session.

6.1.2 Technical skills

The psychologist reports that most of the participants could be considered as normal internet users without any special technical skills. However, some of them suffered heavily from mental fatigue, making many every-day tasks difficult, included handling computers. “I believe that our patients are using internet in a way many people today do, they are certainly not technical experts”.

The psychologist handling contacts with participants has had a shorter training in Adobe Connect provided by University of Gothenburg.

6.1.3 Questionnaire responses

In total there were 16 persons responding to the questionnaire.

1. **How did you manage participating in the MBSR course?**
   All but one participant claims that it worked well. This person says he/she had problems with the technique without stating the cause.
2. **How did it work for you, learning the MBSR curriculum?**
   Almost all participants state positive answers: “Very well, no problems to understand instructions”. “The visual part gives me good learning”. One states: “I had technical problems”. Other comments concern the personal situation and about not having enough time for practice.
3. **What have you learned from the MBSR course?**
4. **What did you gain from the MBSR course?**
   Answers on these two question mix and are treated together. They concern mostly the effectiveness of the MBSR therapy. Many states a greater calmness and gaining new tools to handle the symptoms of mental fatigue. One participant: “Learned how to unwind and how to be present here and now, to live a calmer life, to find balance within”.
5. **Which elements have been difficult?**
   Answers here often relate to group dynamics such as not having interest in other peoples’ problems. A technical issue that is mentioned is the differing levels of sound from different participants: “Keeping the focus throughout the session (is hard), to absorb everything, the noise levels of the microphones”. For some the total amount of noise is tiresome.
6. **How did you manage the full-day retreat (if you participated)?**
   Most participants talk about a day in rest and a very positive experience. Here no technical issues are mentioned.
7. **Have close relatives or friends noticed any change in you?**
   A majority states “yes”. Mostly comments like “I feel calmer”, “more alert”, “happier”.
8. **Would you recommend this program to others who suffers from mental fatigue?**
   All answers state yes with different phrasings. “Should be mandatory in rehabilitation”.

6.1.4 Therapy sessions

During therapy sessions the major part of the time is spent where the session leader instructs the participants. The session leader is shown in a large video, but the central part is the audio instructions. In the end of the session there is a round table discussion about the experiences of the therapy. These meetings have worked with only few technical problems: participants have had too old computers for running video conferencing, connecting microphone has in few cases been troublesome. All

participants have been able to attend and no one has been forced to drop out for technical reasons.

6.1.5 Group sessions

The psychologists report how a trust and a feeling of group membership gradually was developed among participants. “The part where the participants meet in a video session after the MBSR class and sharing common experiences is creating an important social dimension”.

6.1.6 Side effects

Several of the participants have reported to the psychologists that they would not have attended if this had been a face-to-face meeting. For some it would require many hours of travel to reach the session. With the handicap of mental fatigue, this is not a possibility. Some participants live in distant parts of the country, for them this has been a great opportunity to attend a therapy.

Other participants report that the possibility to just quietly leave the session when tiredness gets too heavy, has been a great advantage of MSBR as e-therapy.

6.1.7 Medical effects

The medical results are described by Johansson et al. [11]. The authors conclude that the e-therapy program has led to significantly reduced mental fatigue and cognitive improvement in attention compared to the control group.

7 Discussion

Studies assessing the use of e-therapy in CBT (Cognitive Behaviour Therapy) suggest that e-therapy causes limitations in the availability due to the cost of equipment and skills in using computers [23]. Our study shows how persons with common skills in computer usage and are in their middle ages mange well to attend the e-therapy sessions. We believe one reason for this that during the last years the technical infrastructure has made high-speed internet available to a large majority of the population. Sweden ranking as world number two in internet connection speed and the rest of the world follow the same increasing trend [24]. The almost population-wide availability of internet has created interesting opportunities for usages in e-therapy that previously have not been possible [21]. In our study about three forth of the participants are women having an average age of 47 years. The psychologist’s statement that participants are people without special technical skills, but rather having impaired functions also suggests that the techniques used are suitable for large parts of the population.

An important aspect of a therapy is to provide a safe environment where participants can engage in the activities with comfort. Prabhakar [25] reports about how e-therapy

attracted patients that otherwise would not have sought face-to-face therapy. The therapists report in this study of a growing trust and a feeling of belonging to a group. In our setting, using web-cameras and voice may have promoted this common trust.

This group of people suffering from mental fatigue syndrome is a small and fairly unknown group which is possibly underdiagnosed [16]. E-therapy has shown to be a great possibility for treatment in this group since therapy resources are not widely available throughout the country. This is a common reported advantage of e-therapy for example when minority groups are seeking relevant therapy [20].

The cost of a therapy session was in an e-therapy program reduced by 50% compared to conventional therapy [25]. Economy is an important factor in medical treatment which most likely further will promote e-therapy. Interesting in our study is how the cost of technical setup can be lowered drastically. By using standard conferencing software and inexpensive video equipment, the technical costs were very low.

Several factors have made this low cost but effective e-therapy setting possible: the high availability of computers and high-speed internet connections, the high level in the population of computer experience, the availability inexpensive hardware and software. This made it possible for non-IT personnel such as psychologists to manage e-therapy sessions with only little special training.

8 Conclusion

This study shows that it is possible for non-technical specialists to arrange an advanced and greatly functional e-therapy to a low cost using standard techniques. The participants report that the e-therapy sessions have worked well. Johansson et al. [11] report of reduced mental fatigue and cognitive improvements in the same study. Several factors contribute to this: availability of high-speed internet, suitable standard software and hardware and a general high IT-competence allowing non-specialists to utilize advanced techniques.

9 References

1. Kabat-Zinn, J. (2001). Full catastrophe living: How to cope with stress, pain and illness using mindfulness meditation. London, 15th ed.: Piatkus Books.

2. Matchim, Y., Armer, J. and Stewart, B. (2001). Effects of MindfulnessBased Stress Reduction (MBSR) on Health Among Breast Cancer Survivors. Western Journal of Nursing Research 33(8) 996 –1016.

3. Goldin, P. and Gross, J. (2010) Effects of Mindfulness-Based Stress Reduction (MBSR) on Emotion Regulation in Social Anxiety Disorder. Emotion, Vol. 10, No. 1, 83–91.

4. Johansson, B. and Bjuhr, H. (2016). Teaching Mindfulness-Based Stress Reduction (MBSR) Live Online to Individuals Suffering from Mental Fatigue - A Qualitative Evaluation. International Journal of Social Science Studies.

5. Boettcher, J., Åström, V., Påhlsson, D., Schenström, O., Andersson, G., & Carlbring, P. (2014). Internet-Based Mindfulness Treatment for Anxiety Disorders: A Randomized Controlled Trial Behavior Theraphy, 45, 241-253.

6. Glück, T. M., & Maercker, A. (2011). A randomized controlled pilot study of a brief web-based mindfulness training. BioMedCentral Psychiatry, 11(175), 1-12. doi: doi:10.1186/1471-244X-11-175

7. Krusche, A., Cyhlarova, E., King, S., & Williams, J. M. G. (2012). Mindfulness online: a preliminary evaluation of the feasibility of a web-based mindfulness course and the impact on stress. BioMedJournal Open. doi: doi:10.1136/bmjopen-2011-000803

8. Morledge, T. J., Allexandre, D., Fox, E., Fu, A. Z., Higashi, M. K., Kruzikas, D. T., Reese, P. R. (2013). Feasibility of an Online Mindfulness Program for Stress Management—A Randomized, Controlled Trial. Annals of Behavioral Medicine. doi: 10.1007/s12160-013-9490-x

9. Ljótsson, B., Falk, L., Wibron Vesterlund, A., Hedman, E., Lindfors, P., Rück, C., Andersson, G. (2010). Internet-delivered exposure and mindfulness based therapy for irritable bowel syndrome – A randomized controlled trial. Behaviour Research and Therapy, 48(6), 531-539.

10. McCown, D., Reibel, D., & Micozzi, M. S. (2011). Teaching mindfulness. A practical guide for clinicians and educators. New York: Springer.

11. Johansson, B., Bjuhr, H., Karlsson, M., Karlsson, J-O., and Rönnbäck, L. (2015). Mindfulness-Based Stress Reduction (MBSR) Delivered Live on the Internet to Individuals Suffering from Mental Fatigue After an Acquired Brain Injury. Mindfulness, 6, 1356-1365.

12. MBSR Training, M.B.L.S. Training Certification. <http://www.mbsrtraining.com/mindfulness-training-certification/> [Acquired: 2016-04-05].

13. Bassam, K., Lecomte T., Fortin, G., Masse, M., Therien, P., Bouchard, V., Chapleau, M-A., Paquin, K.,Hofmann, S. (2013). Mindfulness-based therapy: A comprehensive meta-analysis. Clinical Psychology Review 33:763-771.

14. Bazzano, A., Wolfe, C., Zylowska, L., Wang, S., Schuster, E., Barrett, C., Lehrer, D. (2013). Mindfulness Based Stress Reduction (MBSR) for Parents and Caregivers of Individuals with Developmental Disabilities: A Community-Based Approach. Journal of Child and Family Studies 24:298–308.

15. Aucoin, M., Lalonde-Parsi, M-J., and Cooley, K (2014). Mindfulness-Based Therapies in the Treatment of Functional Gastrointestinal Disorders: A Meta-Analysis. Evidence-Based Complementary and Alternative Medicine vol 2014.

16. Johansson, B., Bjuhr, H., Karlsson, and Rönnbäck, L (2012). Mindfulness-based stress reduction (MBSR) improves long-term mental fatigue after stroke or traumatic brain injury. Brain Injury, 26(13–14).

17. Belmont, A., Agar, N., Hugeron, C., Gallais, B., & Azouvi, P. (2006). Fatigue and traumatic brain injury. Annales de Réadaptation et de Médecine Physique, 49, 283.

18. Staub, F., and Bogousslavsky, J. (2001). Fatigue after stroke: a major but neglected issue. Cerebrovascular Diseases, 12, 75.

19. Manhal-Baugus (2001). E-therapy: Practical, ethical and legal issues. Cyberpsychology and Behavior, 4(5), 551–563.

20. Amichai-Hamburger, Y., Klomek, A., Friedman, D., Zuckerman, O., and Shani-Sherman, T. (2014). The future of online therapy. Computers in Human Behavior 41 (2014) 288–294.

21. Postel, M., Haan, H., D. ter Huurne, E, Becker, E., and de Jong, C (2011). Characteristics of Problem Drinkers in E-therapy versus Face-to-Face Treatment. The American Journal of Drug and Alcohol Abuse, 37:537–542, 2011.

22. Sucala, M., Schnur, J., Constantino, J., Miller, S., Brackman, E. and Montgomery, G. (2012). Therapeutic Relationship in E-Therapy for Mental Health: A Systematic Review. Journal of Medical Internet Research. Jul-Aug; 14(4): e110.

23. Lawlor-Savage, L., Prentice, J., and Drapeau, M. (2014). Digital Cognitive Behaviour Therapy (CBT) in Canada: Ethical Considerations. Canadian Psychology/Psychologie Canadienne 55.4: 231-239.

24. Akamai's [state of the internet] Q4 2015 executive review. <https://www.stateoftheinternet.com/downloads/pdfs/Q4-2015-SOTI-Connectivity-Executive-Summary.pdf/> [Acquired: 2016-04-05].

25. Prabhakar, E. (2013). E-Therapy: Ethical Considerations of a Changing Healthcare Communication Environment. Pastoral Psychology 62:211–218.

10 Appendix

Open questions in questionnaire to participants:

1. How did you manage participating in the MBSR course?
2. How did it work for you, learning the MBSR curriculum?
3. What have you learned from the MBSR course?
4. What did you gain from the MBSR course?
5. Which elements have been difficult?
6. How did you manage the full-day retreat (if you participated)?
7. Have close relatives or friends noticed any change in you?
8. Would you recommend this program to others who suffers from mental fatigue?

Interview questions to psychologist:

- Describe your previous experiences with video conferencing.
- How have you experienced the participants' technical skills?
- How can the video conferencing sessions be described from a technical perspective?
- How can the video conferencing sessions be described from a therapeutical perspective?
- Can you see any special advantages or disadvantages training MBSR using e-therapy for this group of patients?