

Exposure Therapy for Problem Gambling via Videoconferencing: A Case Report

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Abstract This case report of a 31 year old woman who described her main problem as an uncontrollable urge to gamble on electronic gaming machines describes the application of exposure therapy (ET) by videoconferencing and the use of a clinical therapy assistant in the treatment of pathological gambling. The case study is used to demonstrate the effectiveness of this treatment with six sessions of therapy and 4 year follow up. The use of videoconferencing is discussed in relation to treatment effectiveness, ongoing follow up for the client and education and support for a community mental health nurse, therapy assistant, in a rural setting in South Australia. The implications of using this modality for the treatment of rural patients with problem gambling is discussed.

Keywords Pathological gambling · Video-conferencing · Cognitive behaviour therapy · Exposure therapy · Rural and remote

Introduction

It is estimated that 2.3% of the adult Australian population has significant adverse outcomes as a result of their gambling (Productivity Commission 1999), with devastating effects on individuals and families (Crockford and el-Guebaly 1998). Access to effective treatment services for these people is strictly limited and this is even more so for those living in rural areas (Livingstone 1999a). One approach to bridge this gap in services for rural clients has been the advent of video conferencing as a treatment delivery system for mental health problems (Baigent et al. 1997; Yellowlees and Kennedy 1997). However studies investigating the use of videoconferencing are still limited in number (Ohinmaa and

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Hailey 2002) and there are no studies reporting the use of this treatment modality for problem gambling.

Video conferencing is a means to provide a clinical service across two or more sites with a central bridge linking these sites. During a clinical session, document cameras can be used to display written or visual materials and these sessions can be video taped for review at a later date (Livingstone 1999). This technology can help to improve some of the inequities in access to health services related to distance and the availability of qualified and experienced staff (Hawker et al. 1998). Videoconferencing has now become an important part of the South Australian Rural and Remote Mental Health Service and has become one of only a few psychiatric videoconferencing services world wide which is a part of routine clinical practice (Hawker et al. 1998).

A study by Baigent et al. (1997), compared interviews by psychiatrists in face to face interviews and those performed by videoconference with the same patients and showed that diagnosis was reliable for both settings.

Videoconferencing can also be used to ensure clinical workers in rural and remote areas have adequate supervision and support to implement specific therapeutic tasks. A clinical supervisor has the ability to observe a client being interviewed by the less experienced clinician and similarly the supervisor can be observed interviewing clients to demonstrate skills, techniques, or the use of protocols and resource materials such as assessment and monitoring instruments. Joint interviews can also be conducted to discuss cases and other clinical or professional matters. This offers a more accessible and cheaper medium than face-to-face supervision when clients live in more remote locations. It is also possible to connect simultaneously to multiple sites for group supervision and support (Livingstone 1999). The benefits of videoconferencing are further enhanced by cost savings related to travel either by clients or specialist therapists. Limitations to videoconferencing are related to eye distortions and the minor delay between sending and receiving both audio and visual transmissions (Livingstone 1999). There is a reduced quality of engagement which occurs for both clients and therapists.

In Australia there is a lack of trained mental health professionals from all disciplines in rural and remote areas. It would make economic and practical sense that with appropriate training and ongoing supervision, if local mental health workers could be trained in cognitive behavioural psychotherapy (CBT) to treat clients with problem gambling or other psychological disorders (Tolchard and Battersby 2000). CBT is clinically proven as an effective treatment for most of the major mental health disorders but many clients are disadvantaged by not having access to this treatment (Andrews and Hunt 1998). Delivery models of CBT need to be reviewed to make it more accessible and cost effective so as to provide a service to the many people who could benefit from this therapy (Lovell and Richards 2000).

Theoretical Framework for the Intervention

Research shows that both arousal relating to the urge associated with gambling and erroneous beliefs about gambling are often precipitants of gambling behaviours for problem gamblers (Parke and Griffiths 2004). Within a gambling setting there are many stimuli which make the environment rewarding due to the excitement, arousal and tension they create in the individual. This basic proposition is that gambling behaviour is reinforced through the development of a psycho-physiological urge by the psychology of the near miss combined with the winning and losing sequences within this operant

conditioning paradigm. This structural characteristic has the capacity to greatly influence the addictive qualities of the machine (Parke and Griffiths 2004). As these behavioural, cognitive, emotional and psycho-physiological responses can be learnt they can therefore be unlearnt or extinguished.

Gambling also occurs in response to internal cues: anxiety, depression, boredom or living in an unsatisfactory relationship can all become triggers and associated with a conditioned gambling urge in response to amelioration of the negative affects associated with those conditions through tension relief conditioning (Blaszczynski and McConaghy 1989). Exposure therapy (ET) uses exposure to gambling triggers, and response prevention to achieve habituation of the gambling urge. It aims to directly break the two-way maintenance relationship between gambling and external triggers and such factors such as boredom, isolation, relationship problems and financial difficulties.

The use of exposure therapy has been established as the treatment of choice for anxiety disorders (Andrews and Hunt 1998). Marks (1987) described behavioural treatments as being effective to reduce a morbid state of anxiety by providing continued exposure that evokes an anxious state until the discomfort reduces. Repeated presentations of a specific stimulus will habituate and extinguish normal innate and acquired fear. Many controlled studies have shown the value of exposure in the treatment of agoraphobia, social phobia, specific phobias and obsessive compulsive disorders. Foa and Kozak (1986) described two types of therapeutic interventions necessary for the reduction of fear. The first component is to make the fear relevant information available in a way that the fear is activated. The second component is to allow information to be made available that is incompatible with the fear structure thereby producing a new memory. Behavioural treatments are designed to provide the subject with information that is incompatible with their fear structure.

The link between problem gambling and anxiety disorders is psycho-physiological arousal mediated through the sympathetic nervous system. In anxiety disorders this takes the form of anxiety and in problem gambling, the urge to gamble. Similar psycho-physiological phenomena are described in other addictions such as alcohol (Drummond et al. 1990) and opiates (Strang et al. 1997).

McConaghy et al. (1983) described how compulsive drives are motivated by behaviour completion processes in response to either environmental or mental cues. If this act is not followed through with, an uncomfortable state of tension develops with high levels of arousal. This will produce an increased level of compulsive drive. At this time if these compulsive behaviours such as gambling are avoided, feelings of tension and irritability will develop. A preoccupation to complete the behaviour such as gambling will continue until the person engages in the behaviour. Once the behaviour has occurred a reduction in both physiological and autonomic arousal will occur. This experience acts as a negative reinforcer for the cycle to continue. The subject has learnt that the behaviour will reduce tension and levels of discomfort experienced before the behaviour was completed (McConaghy et al. 1983).

The following studies have used a behavioural component of treatment in an attempt to weaken the association between the gambling cues and gambling desire. McConaghy et al. 1991 conducted a five-armed study with a 9 year follow up. This study was a continuation of a previous study (McConaghy et al. 1983). The subjects in this previous study were included in the 1991 study of 120 pathological gamblers who were consecutively admitted to a program over a two to 9 year period. Subjects were randomly allocated into five groups. Imaginal desensitisation (ID) $n = 60$ provided descriptions of four scenes stimulating the subjects to gamble but did not gamble. Subjects were trained in brief progressive relaxation to use during their visualisation of behavioural activities related to gambling. A

total of 60 subjects received behavioural techniques. These included aversive therapy involving unpleasant (not painful) shocks after reading gambling phrases related to their gambling. Phrases related to going home were not followed by a shock. Other interventions included imaginal relaxation which involved subjects being trained to relax and to visualise images which were relaxing and not related to gambling. Brief in-vivo exposure required the subject to attend their usual gambling situation with their therapist and remain for 20 min and not gamble, and prolonged in-vivo exposure was similar to brief exposure except sessions were three times longer. Over a follow up period which ranged from 2 to 7 years a total of 63 subjects were contacted. A total of 26 of the 33 subjects who received ID reported controlled gambling or cessation of gambling in comparison to the 16 of the 30 who received other behavioural therapies. The authors concluded that ID had a specific effect in addition to the behavioural therapies (McConaghy et al. 1991).

Echeburua et al. (1996) conducted a four-armed study ($n = 64$) to compare the effectiveness of three therapeutic modalities including: (1) individual stimulus control with exposure and response prevention, (2) group cognitive restructuring therapy, (3) combined therapy and (4) a wait list control group to evaluate natural recovery. The treatment was conducted over a 6 week period. Exposure therapy was conducted using gradual in-vivo exposure with response prevention. This approach involved the subjects experiencing a desire to gamble and resisting this desire until the cues and situations of risk lost their power to induce an urge to gamble. After a 12 month period it was reported that stimulus control and exposure with response prevention had a higher success rate than the group therapy or the combined therapy. The three modalities used in this study were effective in stopping the gambling behaviour in the short but not in the long term (Echeburua et al. 1996).

Symes and Nicki (1997) used cue exposure and response prevention for the treatment of two subjects. Participants were exposed to environmental, cognitive, behavioural and physiological cues involving difficult gambling situations with out obtaining financial rewards. The authors described how this would extinguish the urge to gamble by weakening the link between the cues to gamble and the gambling behaviour. For both cases the rate of gambling behaviour decreased with an abstinence period of one month as the final outcome measure (Symes and Nicki 1997).

Petry et al. (2006) randomly assigned 231 subjects to either Gamblers Anonymous (GA), GA plus use of a cognitive behavioural work book or GA and 8 sessions of individual cognitive behavioural therapy. Behavioural therapy taught subjects how to cope with urges to gamble including assertiveness training and refusal skills. Exposure was not used. The gambling and related problems were assessed at baseline, one month later, at post treatment and at follow up periods of 6 months and 12 months. Both individual cognitive behavioural therapy plus GA and workbook plus GA reduced gambling relative to GA alone during the time treatment was provided and resulted in clinically significant improvements being maintained into follow up. Attendance at GA and number of cognitive behaviour therapy sessions or workbook exercises completed were associated with gambling abstinence. The authors suggested cognitive behavioural therapy was effective (Petry et al. 2006). A review of treatment for pathological gamblers has concluded that cognitive behavioural therapies are potentially the most useful modalities but further research is needed to develop these treatment approaches (Toneatto and Ladouceur 2003).

This paper describes the use of video conferencing to assess and treat a person with pathological gambling using exposure therapy (ET) aimed at urge extinction. The focus of exposure and response prevention used in this case study has evolved from that used in the McConaghy et al. (1988) study to include imaginal exposure as part of the grading process,

a flexible time of each exposure session for the individual, the elimination of relaxation and elimination of therapist assisted exposure. The paper also describes the process of training a local community mental health nurse in the basic concepts of ET as a therapy assistant and the conjoint treatment of the patient.

Case History

This case study describes a 31-year-old woman, 'Julie' (not her real name) who lived with her husband and two young children in a rural town in South Australia. Julie worked part time in a local hotel as a barmaid and her husband was unemployed. Julie presented to the local community health nurse with problems related to gambling on electronic gaming machines. Julie was referred for assessment to the Flinders Therapy Service for Problem Gambling, Adelaide, South Australia. The initial assessment was conducted via video conferencing. Julie received a clinical psychiatric assessment and a behavioural assessment by a mental health nurse trained at masters level in mental health assessment including DSM-IV diagnosis and treatment using cognitive behaviour therapy (<http://www.flinders.edu.au/courses/postgrad/mentalhs.htm>.)

Julie's main problem was an uncontrollable urge to gamble on the electronic gaming machines whenever she was alone and had money available to her. Prior to gambling she described feeling tense with an increased heart rate. Julie felt this experience was similar to an "adrenaline rush". This tension was relieved when gambling and Julie described feeling "great" in the gambling environment. Once her money had been lost to gambling Julie felt guilty and angry with herself for engaging in this behaviour. Julie usually gambled four times a week late at night after finishing her shift in the hotel or whenever she had someone to care for her children. The main internal cues to gamble were loneliness, depression and stressors in her life. The external cues triggering her urge were receiving bills, having money, being in or near a gaming venue and the sounds of gaming machine music. Julie worked as a gaming room attendant which was associated with a multitude of external cues.

The onset of her gambling problems began 18 months before presentation after her close girl friend left the local community. Prior to this Julie rarely gambled except for an infrequent social gamble with friends in a hotel environment. Julie had a history of depression which dated back to 1993 when another close girl friend had died suddenly. Julie described feeling alone and found gambling offered her time out from this loneliness. Her gambling behaviours soon escalated into a significant problem affecting her relationships and self-esteem, causing significant financial problems and family distress. Julie described a series of rituals she would perform while gambling. These included rubbing her favourite icon on the gaming machine and placing coins in the gaming machine in a particular manner. These rituals were performed in the hope of increasing her chances to win more money. Her total gambling losses were estimated to be AU\$10,000.

A structured clinical interview using the DSM-IV criteria showed an Axis I diagnosis of pathological gambling. This diagnosis was supported by a score of 7 on the South Oaks Gambling screen, indicating that Julie was a probable pathological gambler (Lesieur and Blume 1987). At the time of the assessment, there was evidence of residual depressive symptoms after her general practitioner had prescribed citalopram 40 mg resulting in resolution of vegetative symptoms. Julie had no other past treatment for depression. The community mental health nurse who had initially assessed the client felt out of her depth in trying to support the client and a general counselling approach had had no effect. It was

agreed to trial the use of video-conferencing with the gambling service cognitive behaviour therapist (JO) and the mental health nurse present for each of the treatment sessions.

Training and Supervision

The treating therapist conducted each treatment session while the community mental health nurse sat beside the client in the interview room. At the completion of the sessions with the client, a supervisory session was provided for the mental health nurse. Julie was provided with an introduction and ongoing education regarding the application of ET principles to pathological gambling. This involved providing her with a copy of a handbook. This handbook was designed by the service to provide an overview of the treatment model for clients and therapists. It outlined the basic concepts of treatment and worksheets which accompanied each session. An explanatory paradigm was provided to help understand the treatment and rationale for ET using the document camera.

Clinical supervision involved discussing the principles of ET, to ensure that the client was able to habituate to her urges to gamble. The mental health nurse was shown how fine-tuning each task was essential to ensure habituation. Julie occasionally contacted the mental health nurse to clarify issues related to the treatment. This usually meant reinforcing the principles of exposure related to homework tasks set each week. Treatment was conducted by videoconference over a six-week period after the initial screening session.

The Principles of Treatment

Each time Julie experienced a trigger creating the urge to gamble the urge would increase until she gambled. This would result in the urge dropping after Julie lost money or left the venue. However the next time she experienced a trigger to gamble the urge returned and the whole cycle started again. Julie was shown that by resisting the urge to gamble once it had been triggered and continuing to resist, the urge eventually levelled off and in time, went away.

Habituation of the urge was based on the four principles of exposure with response prevention i.e. that the exposure is graded, repeated daily as homework, prolonged during a session to achieve habituation and the client is to remain focused on the urge. Julie's gambling urge was eliminated with the use of graded tasks. These tasks included imaginal exposure with props such as taped gaming machine music and pictures of a favourite machine. Eventually the tasks became more difficult but manageable as the client progressed through treatment. These tasks were repeated daily and eventually involved being in the venue alone with money and the gaming room environment to try to raise the urge to gamble.

A stepwise graded exposure programme is explained in Table 1. The grading of gambling cues allows the subject to habituate to tasks one at a time until their end of treatment goal is achieved. Each new task usually takes 5–7 days of repeated daily exposure for habituation to occur. These tasks are performed at least five times a week. Each task usually lasts from 30 min to one hour. This time reduces as habituation to the task is achieved.

Table 1 Exposure hierarchy**Imaginal exposure—Cues**

A black and white picture of a favourite gaming machine

Coloured picture of a favourite gaming machine

Taped music of a gambling environment including gaming machines being played and winning

Combination of both gaming machine music and gambling machine picture

Imaginal exposure to a specific gambling scenario in a graded manner using principles of exposure

Live exposure—Cues

Subject sits in own car park without money

Subject sits in venue car park without money

Subject sits in venue without money

Subject sits at a gaming machine without money

Subject sits in venue with a low denomination note

Subject sits in front of a machine in a venue with a few coins in a gambling cup

The subject places a few coins in the gaming machine without gambling and removes all coins once the urge has reduced. The subject never gambles but resists the urge to gamble with coins in the machine. Once the urge to gamble has reduced the coins are all removed and changed back to the low denomination note

Treatment Progress and Procedures

Julie's depression improved partially after she commenced citalopram 40 mgs and this had preceded treatment. Despite use of anti depressants Julie's urge to gamble remained high. For example, during her first live exposure task, whilst sitting in her carport preparing to drive to the hotel, she described gambling urges as 8 out of 8. Exposure was re-graded to a less intense task of sitting inside her home looking at a black and white picture of her favourite machine with an urge which she rated as 4 out of 8. Julie repeated this task daily for 7 days until habituation occurred. Julie ceased antidepressant medication 8 weeks after treatment had started. Further improvement in depression followed improvement in Julie's control of her gambling. Julie repeated her tasks daily and she progressed quickly to achieve her end of treatment goal within 6 weeks. Her final task was to sit at her favourite gaming machine with credits and not gamble then remove the credits and leave the venue when her urge to gamble had reduced. As her urges to gamble reduced so did her erroneous beliefs about winning money by carrying out particular rituals.

Relapse prevention strategies included time management skills and problem solving strategies which were introduced in the third week of therapy. This provided Julie with skills to handle stress in her life and included increasing her social network to replace the friend who had moved away. Julie was assisted with basic budgeting skills so that the monthly bills were not so overwhelming. She joined a craft group and also took time out to go camping with her family.

Follow Up

Follow up was conducted at one, 3, 6, 12 months and yearly thereafter, for 4 years. The therapist and the mental health nurse attended each follow up session with Julie, using video conferencing. These follow up sessions involved regularly repeating the measures taken at assessment.

Outcome Measures

South Oaks Gambling Screen

This tool is a 20-item questionnaire based on DSM-III criteria for Pathological Gambling. It may be self administered or administered by a health professional or non-professional interviewer. Individuals scoring less than three are described as non-problem gamblers and those who score 3 and 4 are potential problem gamblers. A score of 5 or more indicates a probable pathological gambler (Lesieur and Blume 1987).

Work and Social Adjustment (WASA)

This generic measure of disability and handicap is a 5 item self-administered likert scale covering five areas of functioning; work, home management, private leisure, social leisure, and family relationships, on a scale of 0–8 where 8 is severe impact, (total of 40). The WSAS is a measure of impaired functioning that is simple, reliable and valid (Mundt et al. 2002).

Beck Depression Inventory (BDI)

This self-report questionnaire provides cut offs for depression into mild, moderate, and severe and is a validated and reliable measure of change over time. This 21 item self rating scale provides scores where less than 10 indicates no depression, 10–19 indicates mild depression, 20–25 indicates moderate depression and 26 or more indicates severe depression (Beck et al. 1961).

Beck Anxiety Inventory (BAI)

This self-report questionnaire provides severity cut offs for anxiety into mild, moderate, and severe and is a validated and reliable measure of change over time: 0–21 indicates low anxiety, 22–35 moderate anxiety and 36 and over indicates severe anxiety (Beck et al. 1985).

Problems and Goals

The aim of the problem and goal statement is for the client to describe as concisely as they are able what they perceive as their main problem and the specific and observable goals they wish to achieve in relation to the problem (Battersby et al. 2001).

Julies's problem and goal statements were:

Individual Problem Statement: When I have money I have an uncontrollable urge to gamble on the electronic gaming machines. My gambling results in financial and relationship problems, and avoidance of money, credit cards and time alone. *Rated 8 on how much now, the problem affected her daily activities: 8 = severe interference, 0 = no interference.*

Individual Goal Statement 1: To be able to sit alone in my favourite gaming venue for one hour twice a week, put \$20.00 in the machine and not gamble, to collect the money from the machine and leave without gambling. This end of treatment goal reflects the

client’s ability to master their urge to gamble. This provides the client with evidence that the urge to gamble has been extinguished. It is no longer necessary for these subjects to avoid gambling venues in an attempt to not gamble. Gambling is not part of this goal or the treatment program.

Individual Goal Statement 2: To pay \$50 a week off my bills and then towards a family holiday at the end of the year. At the beginning of treatment both goals were rated 8 on current progress towards achieving this goal; 8 = no progress, 0 = complete success.

Results

Julie’s measures at assessment and follow up over a four-year period are described in Figs. 1–4. The SOGS pre-treatment, post treatment scores and 4 year follow scores are presented in Fig. 1. These show clinically significant positive changes from a probable pathological gambler to a non pathological gambler.

Assessment of the Work and Social Adjustment Scale (Fig. 2) indicated that her initial impaired functioning on the five items had returned to normal at post treatment and remained stable at the 4 year follow up period.

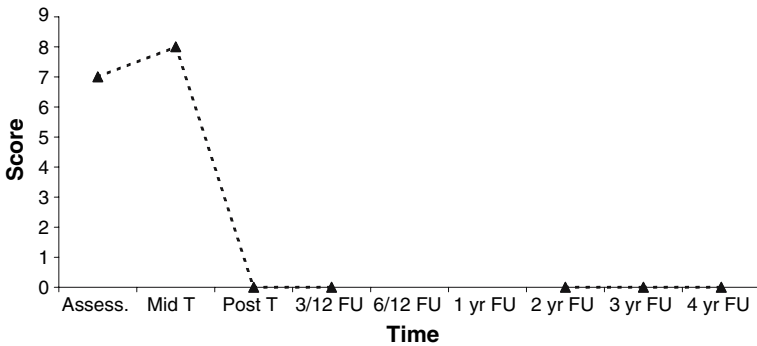


Fig. 1 South oaks gambling screen (SOGS) scores at pre-treatment, end of treatment and 4 year follow-up

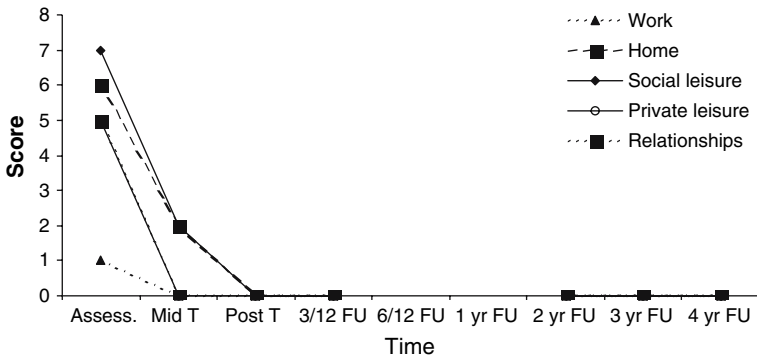


Fig. 2 Work and social adjustment scale (WSAS) scores at pre-treatment, end of treatment and 4 year follow-up

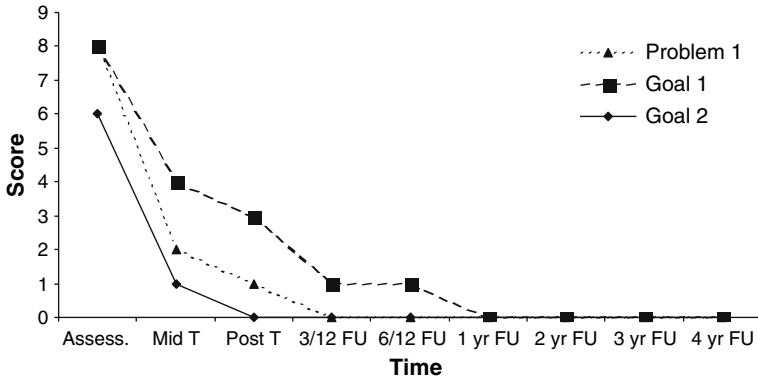


Fig. 3 Problem and goal statement scores at pre-treatment, end of treatment and 4 year follow-up

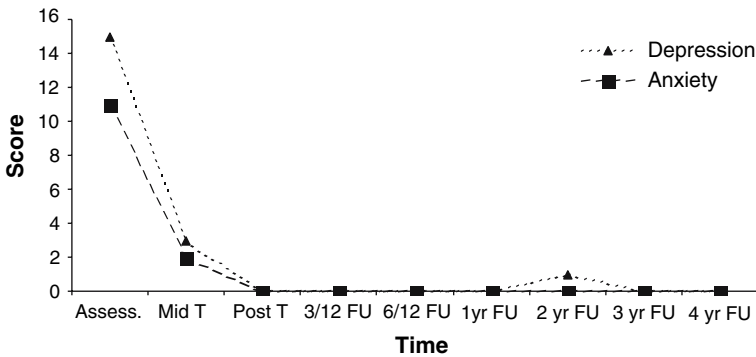


Fig. 4 Beck depression and Beck anxiety scores at pre-treatment, end of treatment and 4 year follow-up

Julie’s initial problem statement and end of treatment goals scores improved as shown in Fig. 3 indicating her individual end of treatment goals had been reached and maintained at the 4 year follow up.

Figure 4 showed that Julie’s Beck Depression and Anxiety Scores were in the non clinical range at the end of treatment and at follow up.

Discussion

This case demonstrates the importance of a detailed mental health and cognitive behavioural assessment in being able to deliver a comprehensive treatment program for pathological gambling. It illustrates the importance of ensuring all the principles of exposure are met and targeted to the individual. Prior to treatment even though Julie was exposed to gambling stimuli for long periods her urge did not habituate. It was not until the principles of exposure were adhered to explicitly and repeatedly that she was able to extinguish her urge to gamble. This case adds to the growing evidence of the efficacy of exposure based treatments in problem gambling with improvements maintained to 4 year follow up. It also highlights the potential importance of a powerful psycho-physiological

urge as the mediating factor in the development of compulsive and addictive gambling behaviour. Further research in randomised, controlled designs will be required to assess whether exposure alone or in combination with cognitive therapy has long lasting benefits in people with problem or pathological gambling. If the gambling urge is shown to have primacy in the provision of treatment programs, the implications are that therapists and counsellors will need to be trained in the assessment and treatment of the gambling urge.

Videoconferencing had the dual benefit of delivering an effective intervention for the client and providing education to a local mental health nurse. The client found videoconferencing of great benefit and did not find the process distressing or anxiety provoking. Rapport was easily established between the client, therapist and mental health nurse. The client appeared comfortable and able to express her emotions during the course of treatment that was not limited by the use of videoconferencing. After initial apprehension regarding the use of the videoconferencing equipment by the therapist and the mental health nurse it became easy to use with only minimal assistance from the technician. The client and mental health nurse both gave feedback that they found videoconferencing an easy mode of treatment to use.

This case study shows that videoconferencing can be used to provide regular on going clinical supervision for therapists in remote areas as well as therapy. Teleconferencing provided the mental health worker with the opportunity of live clinical supervision in the presence of their client which is a rather novel approach even in CBT. This is very compatible with the CBT model and principles which emphasises active user collaboration and involvement in planning their own treatment. Clinical supervision in CBT parallels the therapy model and principles. The model is also non-interpretive and emphasizes explicitness and sharing of a joint formulation between therapist and client. A misconception of CBT is that it is simplistic and technique driven rather than formulation driven. This can lead to unsupervised CBT being applied without adequate assessment, formulation and adherence to the model. Video conferencing can be utilized to ensure adherence to CBT principles and specificity of formulation, which is associated with better treatment outcomes. It is acknowledged that conclusions from this study are limited due to the limitations related to the generalizability of a single case study.

Conclusion

Videoconferencing enabled effective delivery of ET to a client with pathological gambling in a remote setting over six sessions. Four year follow up showed no evidence of gambling problems. It also enabled a local mental health nurse to assist in therapy and simultaneously receive education, training and clinical supervision from a specialist therapist. This enabling vehicle for treatment delivery should be considered more often to improve access to treatment for clients with pathological gambling who live in rural and remote areas. This case provides a model for providing exposure based therapy in both remote and city settings where access to specialist CBT is limited.

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