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ABSTRACT

Background: Outcome studies of the treatment of compulsive buying disorder (CBD) have rarely compared the effectiveness of differing active treatments. *Aims:* This study sought to compare the effectiveness of cognitive behavioural therapy (CBT) and person-centred/experiential therapy (PCE) in a cross-over design. *Method:* An ABC single case experimental design with extended follow-up with a female patient meeting diagnostic criteria for CBD. Checks indicated that both CBT and PCE were competently delivered. Ideographic CBD outcomes were intensively measured over a continuous 350-day time series. Following a one-month baseline assessment phase (A; 28 days; 3 sessions), CBT was delivered via thirteen outpatient sessions (B:160 days) and then PCE was delivered via six outpatient sessions (C:63 days). There was a 99-day follow-up period. *Results:* Frequency and duration of compulsive buying episodes decreased during active treatment. CBT and PCE were both highly effective compared to baseline for reducing shopping obsessions, excitement about shopping, compulsion to shop and improving self-esteem. When the PCE and CBT treatment phases were compared against each other, few differences were apparent in terms of outcome. There was no evidence of any relapse over the follow-up period. A reliable and clinically significant change on the primary nomothetic measure (i.e., Compulsive Buying Scale) was retained over time. *Conclusions:* The study suggests that both CBT and PCE can be effective for CBD. Methodological limitations and suggestions for future CBD outcome research are discussed.

Introduction

Compulsive buying disorder (CBD) is operationally defined as an impulsive control disorder (Robbins & Clark, 2015) characterized by the persistent, excessive and impulsive consumerism (Müller, Mitchell & de Zwaan, 2015). A prevalence meta-analysis has estimated a 4.9% pooled prevalence rate for CBD (Maraz, Griffiths & Demetrovics, 2015). Prevalence of CBD is also dependent on certain environmental factors; a market-based economy, easy access to a wide variety of goods, disposable income and consumerist values (Unger et al. 2014). Individuals with CBD describe a preoccupation with shopping, increasing levels of urges or anxiety before purchasing and a sense of relief after purchase completion (Black, 2007). Shopping is shaped by positive and negative reinforcement contingencies and is used as a maladaptive strategy to improve mood (Lejoyeux & Weinstein, 2010), cope with stress (Karim & Chaudhri, 2012), gain social approval/recognition (McQueen, Moulding, & Kyrios, 2014) and to improve poor self-image (Roberts, Manolis, & Pullig, 2014). The adverse consequences of CBD are large financial debts, legal issues, interpersonal difficulties, relationship problems and pronounced shame/guilt (McElroy, Keck & Phillips, 1995; Miltenberger et al., 2003; O'Guinn & Faber, 1989; Schlosser, Black, Repertinger & Freet, 1994).

Despite the impact of CBD being typically negative, attempts to stop compulsive buying without help unfortunately typically tend to fail (Konkolý Thege et al. 2015) and so treatment interventions have been developed. The current CBD treatment evidence base consists mainly of unscientific qualitative case reports, with a limited number of uncontrolled and controlled group designs. A range of modalities have been used to treat CBD including individual psychotherapy (Winestine, 1985; Krueger, 1988), family therapy (Park, Cho & Seo, 2006) and experiential therapy (Klontz, Bivens, Klontz, Wada & Kahler, 2008). The most tested approach to treating CBD is that of cognitive behaviour therapy (CBT) delivered

both individually and also in groups, with the group version implementing a manualised approach. Two qualitative case studies (Braquehais et al., 2012; Marčinko & Karlović, 2005) described the effectiveness of CBT when integrated with antidepressant treatment, with one further case report (Kellett & Bolton, 2009) describing the durability of an effective CBT intervention on CBD. Four studies have examined the effectiveness of group CBT for CBD and found evidence of significant improvements following treatment, across both uncontrolled and controlled methodologies (Mitchell, Burgard, Faber, Crosby & de Zwaan, 2006; Filomensky & Tavares, 2009; Mueller et al., 2008; Müller, Arikian, Zwaan, & Mitchell, 2013).

Hague, Hall and Kellett (2016) reviewed the CBD treatment evidence base to conclude the majority of studies were of methodological poor quality, lacked active comparator conditions, inconsistently used standardised CBD outcome measures and generated high dropout rates. Hague et al. (2016) suggested that the integrity of the CBD outcome evidence base could be improved by completing better methodologically designed studies of routine practice. Therefore, the current study utilised single case experimental design (SCED; Barlow, Nock & Hersen, 2009) conducted in routine clinical practice. As clinical dilemmas arise from implementing methodologically rigorous but ethically suspect withdrawal designs (Barlow et al. 2009), this study rather sought to implement an alternating treatment design (Manolov & Onghena, 2018), with cognitive behaviour therapy (CBT) and person-centred experiential counselling (PCE) as treatment comparators. No previous SCEDs of the treatment of CBD have been completed, despite the calls for such research (Lourenço Leite, Pereira, Nardi & Silva, 2014). The study hypotheses were: (1) both CBT and PCE would be effective compared to baseline on ideographic measures, (2) CBT and PCE will be equally clinically effective on ideographic measures, (3) reliable and clinically significant reductions would occur on nomothetic outcome measures and (4) no relapse would occur.

Method

Design

Ethical approval for the conduct of the study was achieved (ref 029105). The current study utilised a cross-over ABC plus extended follow-up SCED. The duration of the baseline "A" phase was 4 weeks (N=28 daily measurements), comprising three assessment sessions. The "B" phase consisted of thirteen 50-minute CBT outpatient sessions that lasted for 23-weeks (N=160 daily measurements). The "C" phase entailed six 50-minute PCE outpatient sessions that lasted for 9-weeks (N = 63 daily measurements). The follow-up phase lasted for 14 weeks and there was a single session completed at the end of this phase (N = 99 daily measurements). There was no therapeutic contact during three-month follow-up.

Diagnosis

The patient was assessed using the Minnesota Impulsive Disorders Interview (MIDI; Christenson, Faber & de Zwann, 1994) as there is clinical consensus that an accurate diagnosis of CBD requires direct clinical assessment (Black, 2011). For CBD, the questions on the MIDI reflect the impulse control disorder criteria of increasing tension before shopping, followed by relief after purchase and then evaluates related distress and impairment. The patient's MIDI screen was positive for CBD, but no other impulse control disorder. To ensure the validity of CBD diagnosis, three other clinical measurements were used: the CBD criteria developed by McElroy et al. (1994), the Compulsive Buying Scale (CBS; Faber & O'Guinn, 1992) and the Compulsive Acquisition Scale (CAS; Frost et al., 1998). At assessment, the patient scored in the caseness range on the CBS and the CAS-buy (see Table 3) and met the McElroy (1994) diagnostic criteria, due to describing shopping as being (a) uncontrollable, (b) time-consuming and resulting in forensic and financial difficulties and (c) not occurring only in the context of hypomanic or manic symptoms.

Participant

The patient was 40-year old married women, who was seeking psychological help with CBD due to forensic problems. The patient had created a complex scam in which clothes would be purchased at a discount and returned at a full refund. The companies involved had become aware of this and the patient was arrested and charged by the police, and also banned from her local shopping mall. The patient reported a great sense of shame in relation to the arrest and ban and this was the prompt for seeking psychological help. The patient had not received any prior psychological interventions and was not prescribed any medication throughout the course of the study. The patient was employed in a full-time position in retail banking.

The patient was brought up in a nuclear family and had one identical twin sister and two other sisters. She denied any major attachment issues with her parents or developmental trauma. The patient stated however that there was a *"family culture"* of shopping and that shopping had always been modelled to her as a desirable and pleasant activity. The patient reported a sense of dependency and merger with her twin, which had been apparent across her life. The focus of this merger was particularly in relation to shopping and buying clothes. The patient stated that this was the *"glue"* in the relationship with the sister, and that they would frequently shop together and compulsively buy for each other. Boundy (2000) defined the sub-criteria of 'co-dependent compulsive buying,' with excessive shopping being driven by the desire to buy for others, in the effort to win approval, love and also to avoid possible imagined rejection.

The patient described a lifelong pre-occupation with shopping and buying. The patient reported that she tended to spend most of her spare-time shopping, that she tended to shop on a daily basis (i.e. *"it's a way of life"*) and that shopping was her sole hobby (i.e. described as *"all consuming"*). The patient would spend long periods of time buying online,

trying on clothes and returning them. The patient tended to also minimise and hide her buying at other times and would shamefully sneak purchased clothes and objects into the home and hide them from her husband. The patient reported using shopping as a means to control her emotions, and as a *"tonic"* if she were feeling depressed or anxious. She stated that she experienced a climbing sense of tension (with associated feelings of physiological arousal) whilst shopping, urges to buy and a sense of a buzz on the point of purchase (and an associated change in her physiological arousal; stated as *"a massive rush"*). She would at times buy multiple versions of the same item to experience the arousal state in the same shopping trip. When shopping for long periods, the participant stated that she would enter a dissociated state and would walk around *"as if in a daze."* The patient stated that she often spent significant amounts of her income on clothes and that she had large credit card debts. She stated that she felt helpless in the face of the overwhelming impulse to buy. She stated that shopping was a source of esteem from others, as others would relate to her as an *"expert shopper"* and so would also be sent shopping to buy for her family and friends. She stated that the shopping had fused with her identity stating that "*shopping is a big part of who I am."*

Treatment; descriptions and competency assessments

The opportunity to create an alternating treatment ABC SCED arose because the patient was waiting for the court hearing in relation to the alleged crime, and wanted to continue to access psychological support up to that point. Therefore, this provided the opportunity to change the treatment from CBT to PCE in order to provide support (but also change modality), with the follow-up phase being in the post-court period. The thirteen sessions of CBT were based on the CBT treatment manual for CBD (Mitchell, 2011). The first unit (CBD psychoeducation) was replaced by an idiosyncratic case formulation based on the Kellett & Bolton (2009)

model, which was able to therefore formulate the role of the co-dependency (see figure 3 in the online supplementary materials). The remaining units comprised (2) problem buying consequences, (3) cue awareness, (4) cash management, (5) responses in terms of thoughts, feelings and behaviour, (6) cognitive restructuring, (7) cues and chains (8) self-esteem (9) exposure and (10) relapse prevention. The endings unit was not completed due to the patient progressing onto PCE. The sessions all started with creating a collaborative agenda, had the formulation visible, had a change method related to the unit and had homework exercises based on session content. The PCE (Elliott, Greenberg, Watson, Timulak, & Freire, 2013) was based on Rogerian concepts and therefore concerned the application of being congruent with the client, the therapist providing the client with unconditional positive regard, showing empathetic understanding and enabling depth emotional processing. Homework stopped during the PCE. Six sessions of PCE were delivered until the court hearing. Each active treatment phase was supervised by a different supervisor (i.e. a CBT supervisor supervised the CBT phase and a counsellor supervised the PCE phase). CBT treatment competency was assessed using the Cognitive Therapy Scale-Revised (Blackburn et al. 2001). One session was rated by the supervisor and was graded as competent (scored as 44/77). PCE competency was assessed via the Person-Centred and Experiential Psychotherapy Scale-10 (PCEP-10; Elliott & Westwell, 2012). One session was rated by the supervisor and was scored as competent (scored as 41/60).

Ideographic measures and analysis strategy

Seven ideographic measures were collected via a daily diary. The first three measures concerned behavioural indices of compulsive buying: (1) amount of money spent that day compulsively shopping, (2) duration of time that day spent compulsively shopping, and (3) duration of time that day spent talking about shopping with sister. The remaining four

ideographic measures (scored on a 1 *not at all* to 9 *all the time* point Likert scales) regarded compulsive buying cognitions and emotions. Item 4 was a measure of shopping obsessions *('shopping has been on my mind today')*, item 5 was a measure of affective excitement *('whilst shopping or thinking about shopping today, I felt a buzz')* and item 6 was a measure of strength of shopping compulsions *('I felt compelled to shop today')* and item 7 measured CBD fusion with self-esteem *('shopping or thinking about shopping made me feel good about me').*

Seven time-series graphs with baseline median trend lines fitted across the treatment and follow-up phases were created for the idiographic measures. Effectiveness of the CBT and PCE on ideographic outcomes was assessed using a range of non-overlap statistics: the percentage of data points exceeding the median (PEM; Ma, 2006), the percentage of all non-overlapping data (PAND; Parker, Hagan-Burke & Vannest, 2007) and non-overlap of all pairs (NAP; Parker & Vannest 2009). Outcomes from the CBT, PCE and follow-up phases were combined and compared to baseline and PCE and CBT were also compared against each other. Nonoverlap outcomes were interpreted as <70% (questionable/ineffective treatment), 70-90% (moderately effective treatment) and >90% (highly effective treatment; Wendt, 2009). Tau-U statistics were also used to assess difference between baseline and prospective phases. Tau-U refers to a family of statistics based on Kendall's non-parametric, rank order coefficient (Brossart, Laird & Armstrong, 2018). Tau statistics were calculated for baseline trend, the difference between two phases (τ^{AvsB} provides a p-value identical to a Mann Whitney test) and $\tau^{(AvsB)\text{-}Atrend}$ that compares phases whilst adjusting for baseline trend. If the baseline trend is not significant, then τ^{AvsB} should be used over $\tau^{(AvsB)\text{-}Atrend}$ (Brossart, Laird & Armstrong, 2018). Nonoverlap statistics, tau-U and scatter plots were all performed using the *Single Case Analysis* plug-in (SCAN; Wilbert & Lueke, 2019) through R (R Core Team, 2019). If baseline phases on ideographic outcomes were stable, then τ^{AvsB} is a

better index of outcome, as opposed to $\tau^{(AvsB)-Atrend}$. Binary logistic regression was also used to predict incidences of compulsive buying.

Nomothetic measures and analysis strategy

Five measures (two CBD and three generic outcome) were completed at baseline, end of CBT, end PCE and end of follow-up. *Compulsive Buying Scale (CBS;* Faber & O'Guinn, 1992). The CBS is a 7-item valid and reliable clinical screen for CBD and scores of <-1.34 index presence of compulsive buying (Faber & O'Guinn, 1992). *Compulsive Acquisition Scale (CAS;* Frost et al., 1998*).* The CAS is an 18-item measure of acquisition compulsions consisting of two subscales; compulsions to buy items and acquire free items. The CAS has been found to be both valid and reliable (Faraci, Perdighe, Monte & Saliani, 2018; Frost, Steketee & Williams, 2002). *Beck Depression Inventory-II (BDI-II;* Beck, Steer, Ball & Ranieri, 1996*)* The BDI-II is a 21-item valid and reliable measure of the severity and intensity of depressive symptoms with scores coded as follows (Beck, Steer, & Brown, 1996); minimal depression (0 – 13), mild depression (14-19), moderate depression (20-28) and severe depression (29-63). *Inventory of Interpersonal Problems-32 (IIP-32;* Barkham, Hardy & Startup, 1996*)* The IIP-32 is a measure of interpersonal functioning producing eight subscales (four that are done 'too much' and four that are 'difficult to do'). The IIP-32 has good psychometric reliability and validity (Hughes & Barkham, 2005). *Brief Symptom Inventory (BSI;* Derogatis, 1993) is a 53-item measure of psychological distress incorporating three global indices; global severity index (GSI), positive symptom distress index (PSDI) and positive symptom total (PST). The BSI has good internal and test-retest reliability, convergent, construct and discriminant validity (Derogatis, 1993).

Nomothetic outcomes were evaluated using the Jacobson and Truax (1991) index of reliable and clinically significant change. The reliable change index (RCI) tests for the degree

of change necessary in an outcome score for that change to be considered reliable, rather than that expected by chance. Change is classed as being clinically significant when outcomes shift from 'caseness' to 'non-caseness'. Concurrent reliable and clinically significant change is classified as evidence of 'recovery' in practice based contexts (Barkham, Stiles, Connell & Mellor-Clark, 2012). RCI calculations could not be conducted on the CBS due to the lack of sufficient psychometric information (i.e. specifically, lack of any test-retest evidence). The CBS was the primary nomothetic outcome measure for the study, due to this measure being commonly used to evaluate CBD outcomes in the treatment literature.

Results

The results are divided into two sections. Section one describes the ideographic outcomes and section two details the nomothetic outcomes. Time series plots for the ideographic measures are clustered into behavioural (see figure 1) and cognitive/emotional (see figure 2). Table 1 provides the means and SDs for ideographic measures according to phase of the study, Table 2 contains the results from the non-overlap analyses and Table 3 the nomothetic outcomes.

Behavioural ideographic CBD outcomes

In terms of incidence of compulsive buying, this occurred on 39.29% of baseline days (i.e. 11/28 days), 16.88% of CBT phase days (i.e. 27/160 days), 15.87% of PCE phase days (i.e. 10/63 days) and 13.13% of follow-up days (i.e. 13/99 days). In terms of incidence of talking about shopping, this occurred on 42.85% of baseline days (i.e. 12/28 days), 19.38% of CBT phase days (i.e. 31/160 days), 6.35% of PCE phase days (i.e. 4/63 days), and 3.03% of follow-up days (i.e. 3/99 days). Time spent compulsive buying was approximately 40 minutes per episode during the baseline, which fell to 30 minutes per episode during the active treatment phases and approximately 20 minutes per episode during follow-up days.

The binary logistic regression that predicted compulsive buying incidence (i.e. whether compulsive buying occurred or not) from baseline compared to CBT, PCE and follow-up phases was significant, χ^2 (3) = 8.93, p = .03, with the Nagelkerke pseudo R^2 (indicating the goodness of fit of the logistic regression model) being .042 (i.e. explaining 42% of the variance in incidents of compulsive buying). The model correctly predicted 82.60% of incidents of compulsive buying. CBT had a significant effect on reduced incidence of compulsive buying (Wald χ^2 (1) = 6.92, p = .009), as did PCE (Wald χ^2 (1) = 5.65, p = .017) and follow-up (Wald χ^2 (1) = 8.87, p = .003). The odds in favour of not compulsively buying were .31 times higher during CBT, .29 times higher during PCE and .23 times higher during follow-up.

Baseline phases for behavioural ideographic CBD outcomes were stable in terms of money spent (τ = -.042, p = .752), shopping duration (τ = .037, p = .782) and time spent talking about shopping (τ = -.138, p = .304). PAND and some NAP results illustrated that CBT and PCE were a highly effective in reducing the money spent compulsively, the time spent shopping and also the time spent talking about shopping. When the follow-up phase was compared to baseline on these behavioural indices, then there was evidence of a highly effective intervention. The Tau[a-b] results between baseline and all other phases was significant for reduced money spent (τ = -.227, p = .046) and reduced time spent talking about shopping (τ = -.339, p = .003), but not for time actually spent compulsively shopping (τ = -.1.54, p = .176). When the PCE and the CBT phases were compared on behavioural ideographic outcomes, there were few apparent differences on the non-overlap results.

Cognitive and emotional ideographic CBD outcomes

There were stable baselines with regards to shopping obsessions (τ = .138, p = .304), shopping excitement (τ = -.048, p = .722), shopping compulsions (τ = .013, p = .921) and the sense of CBD fusion (τ = .037, p = .782). NAP, PEM and PAND results illustrate that CBT

and PCE were moderate to highly effective interventions for reducing shopping obsessions, shopping compulsions, excitement about shopping and sense of fusion with shopping. When the follow-up phase was compared to baseline, then a moderately to highly effective intervention had taken place. Tau[a-b] statistics between baseline and all other phases were significant for reduced shopping obsessions (τ = -.718, p = <.001), shopping compulsions (τ = -.601, p = <.001), shopping excitement (τ = -.705, p = <.001) and shopping fusion (τ = -.6.51, p = <.001). When the PCE and the CBT phases were compared, there were again few differences on the ideographic non-overlap results. The exception to this trend was for shopping obsessions, which indexed a significant reduction during PCE when compared to CBT (t = -0.235, p = .006)

Nomothetic CBD outcomes

The CBS scores indicate that the participant no longer met the criteria for CBD at the end of CBT, improved on this progress following completion of PCE and improved again at follow-up. There was a reliable reduction in compulsive buying (CAS-Buy) comparing assessment to end of CBT, no further change to end of PCE and then a further reliable reduction at follow-up. There were no reliable or clinically significant reductions in the compulsive acquisition of free objects (CAS-Free) over time. The CAS-Buy results would suggest recovery by the end of the follow-up period.

Nomothetic mental health outcomes

There was a reliable reduction in depression (BDI-II) from assessment to end of CBT, but a reliable increase in depression at the end of PCE. Baseline to follow-up comparisons indexed a reliable and clinically significant reduction in depression. There was no reliable reduction in psychological distress (BSI-GSI) from assessment to end of CBT. There was an observed increase in distress comparing the end of CBT with the end of PCE, at which the patient

reached clinical caseness. There was a reliable and clinically significant reduction in psychological distress from PCE termination to follow-up, with the patient no longer reaching caseness on the BSI-GSI at follow-up. There was a reliable increase in interpersonal problems (IIP-32) from assessment to end of CBT, and then no further change from end of CBT to the end of PCE, and end of PCE to final follow-up. The BDI-II and BSI-GSI results would suggest recovery by the end of the follow-up period.

Discussion

This has been the first study to evaluate the effectiveness of CBT for CBD with a SCED, with the method containing both a comparative cross-over treatment phase and an extended follow-up phase to add to the internal validity of the study (Barlow & Hersen, 1984). This research adds to and extends the extant CBT evidence base, that has previously tended to focus on evaluations of group treatments, and the results are in line with the positive outcomes described for CBT (Hague et al. 2016). The CTS-R and PCEP-10 scores provide some confidence that both competent CBT and PCE were delivered, and therefore that the phases were theoretically and clinically differentiated. The results demonstrated a moderately to highly effective intervention for cognitive and emotional ideographic CBD outcomes and a less effective intervention for the behavioural ideographic CBD outcomes. In terms of a very basic analysis of outcome, then the time spent compulsively shopping had halved when the baseline was compared to the follow-up. It has been argued that complete abstinence or elimination of CBD behaviours is unrealistic, with treatment therefore more focussing on the management of problematic shopping and spending behaviours (Benson & Eisenach, 2013). The only moderately effective financial results could be viewed with clinical concern, as 89% of CBD patients report excessive ongoing CBD-related debt (Schlosser et al., 1994).

The reductions to shopping obsessions, excitement associated with shopping, shopping compulsions and CBD fusion with self-esteem were founded on stable baselines, suggesting that change was therefore not purely the result of therapist contact. Stable baselines are a key component of SCED (Barlow et al. 2009; Morley, 2018), as unstable baselines undermine confidence in any subsequent changes detected in response to intervention or withdrawal (McMillan & Morley, 2010). With impulse control disorders such as CBD (Robbins & Clark, 2015), then perhaps it is better to expect a pattern of stable instability, rather than pure stability during baseline phases. The introduction of the case formulation appeared to signal a sudden insight gain for the participant that was translated into behavioural and cognitive changes. The therapeutic impact of case formulation has been observed previously in SCED studies (see Curling et al. 2018 as an example). It is worth noting that across all the ideographic outcome measures, there was no evidence of deterioration or relapse across the follow-up period. This suggests that durable CBD self-management skills had been learnt by the patient.

The CBD-specific nomothetic outcomes would suggest that the patient was in the community sample by the end of the follow-up period and therefore that clinically significant change had occurred. Across the nomothetic outcome measures of depression (BDI-II), psychological distress (BSI-GSI), symptom severity (BSI-PDSI) and interpersonal problems (IIP-32), it was observed that deterioration occurred at the end of the PCE phase. This deterioration seemed to reflect the external stress factors that the patient was experiencing during this period, but it is interesting to note that the intervention appeared to insulate the patient from concurrent CBD relapse. As stated, the opportunity to turn the study into an ABC design arose due to the fact the patient had an impending court appearance and wanted to continue to access support during this period. It is therefore probable that these forensic problems resulted in the observed increases in depression, psychological distress, symptom

severity and interpersonal problems during this period. There was evidence of recovery on these measures by the end of the follow-up period.

Study limitations

As this study was a SCED, then the results may not easily generalize to other CBD patients. As all the measures were self-report, then outcomes may have been unduly influenced by response and/or social disability bias (Rosenman, Tennekoon & Hill, 2011). The study could be criticised for the length of the follow-up period. The CBS (i.e. the primary nomothetic outcome measure) has been criticised on the grounds of item face validity (Edwards, 1993). Scoring just one session from each phase in terms of competency could be criticised for under-sampling and this criticism also applies to the lack of a follow-up MIDI (Christenson et al., 1994). Considering the dissociation described during compulsive shopping episodes, then adding in an ideographic and nomothetic measure of dissociation would have been useful. There is an obvious issue with the ordering of phases, as it was not possible to clarify if the observed outcomes would have been different if the order of treatments had been reversed, (i.e. 'B' = PCE and 'C' = CBT). The decision to deliver the CBT first was based on awareness of the evidence base for CBT (Hague et al. 2016) and so to withhold CBT as the first phase of treatment would have been potentially unethical. Ninan et al. (2000) conducted a trial of fluvoxamine in treating compulsive buying and reported a high placebo-response rate that was ascribed to the behavioural benefits of keeping a daily diary. This is also known as the mere measurement effect (Morwitz & Fitzsimons, 2004). The baselines in the current study were stable however which would mitigate against this effect being apparent in the current study.

Future research

The CBD outcome evidence base would benefit from conducting a case series with a counterbalanced ABC design. An ABC with counterbalancing entails half of the participants

being randomly assigned to receive B (i.e. CBT) and then C (i.e. PCE), whilst the other half receives C (i.e. PCE) and then B (i.e. CBT). Introducing counterbalancing for the order of treatment delivery helps to rule out alternative explanations of outcome (McMillan & Morley, 2010). Whilst this is a methodologically appropriate means of investigating CBD outcome, it also raises ethical issues concerning withholding a potentially effective intervention, or removing a treatment that is already working (Rizvi & Nock, 2008). The more recently developed Pathological Buying Screener (Muller, Trotzke, Mitchell, de Zwann & Brand, 2015) may be a better choice of primary nomothetic outcome measure in future studies, due to its more extensive psychometric evaluation. Future research could also collect data from informants other than the patient to reduce threats from response and/or social disability bias to the internal validity of the study (e.g. Kellett & Totterdell, 2013).

Conclusion

As the first SCED evaluating the treatment of CBD, this study has strengthened the CBD treatment evidence base, by providing an intricate longitudinal evaluation of the effectiveness of CBT against an active PCE comparator. For the CBD treatment outcome evidence base to progress, the methodological quality of such small scale practice-based designs needs to improve, and also be used as a foundation from which to design more controlled clinical trials (Hague et al. 2016). Measuring change to financial functioning appears vital in any evaluation of CBD treatment outcome. Overall, active intervention in this study was effective, but there were few differences between the modalities. The next research step for the CBT CBD evidence base might be to conduct a SCED in which behavioural and cognitive change methods are systematically introduced or removed, in order to assess their relative contribution. The evidence base for intervention in CBD clearly requires more work across all the psychotherapeutic modalities.

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