ANGER DYSFUNTION AND ITS TREATMENT AMONG OFFENDERS

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Thesis Abstract

This thesis sought to explore the effectiveness of CBT based anger management interventions with offenders. This was achieved through a random control trial on a sample of 24 community based male offenders who were screened prior to interventions as having dysfunctional anger. The participants were randomly allocated to one group of 12 who were assessed at baseline, post-intervention and after a three-month follow-up period, the other group of 12 were assessed at baseline and placed on a waitlist for a period of 3 months after which they were administered the intervention and re-assessed post-treatment. Statistical analysis revealed significant post-intervention reductions for both Groups in the reported anger symptoms and a substantial overall treatment effect noted (r = .89). The brief anger management intervention used was the Individual Managing Anger or I-MAP (Johnson & Gast, 2013). This was primarily developed for community based male offenders and was intended to be delivered on a one-to one basis.

Since dysfunctional anger is not only an issue with male offenders this intervention was adapted to provide treatment for a female offender (N=1). To assess the adaptation of this intervention a case study was carried out where an in-depth formulation facilitated the process of adapting the programme for the female offender in the study. This enabled the researcher to focus on the individual needs of the client under review. The female case study was assessed using the same psychometric tool used in the research study, the Anger Disorder Scales or ADS (Di Giuseppe & Tafrate, 2004). The case study was also assessed at baseline, after the intervention and after a period of follow-up. Results obtained were explored in terms of the formulation. The results obtained offered clinically

significant changes which seemed to justify the formal adaption of the programme.

A psychometric critique also delved in the suitability of using the ADS (Di Giuseppe & Tafrate, 2004) as the main measure of anger in the research and case study. Its reliability and validity and its strengths in terms of developing in-depth formulation of offenders' anger dysfunction were discussed. Issues related to its use with Maltese offenders were also explored.

To complement the use of psychometric measures in the research and case study of this thesis the systematic review and meta-analysis sought to explore effectiveness of CBT based interventions with offenders through long-term behavioural changes in offenders which was measured through general or violent recidivism. All the included studies (n=14) were submitted to a quality assessment prior to extracting the required information. An overall risk reduction of 23% was estimated for general recidivism (k = 7; n = 1836; RR = .77; 95% CI .61 to .96) and 28% for violent recidivism (k = 7; n = 1888; RR = .72; 95% CI .55 to .93) following treatment. Furthermore the risk reduction for general recidivism increased to 42% (k = 6; n = 703; RR = .58; 95% CI .39 to .87) and increased to 56% for violent recidivism (k = 6; n = 1029; RR = .44; 95% CI .27 to .71) for those offenders completing treatment compared to treatment drop-outs. The magnitude of effect in the included studies also compared lower intensity programmes such as anger management with more intensive violence prevention programmes. Conclusions of this meta-analysis were discussed in terms of the economic viability of interventions and magnitude of treatment effects.

The research study, a small sample RCT, demonstrated that brief anger management on a one-to-one basis could significantly reduce self-

reported anger levels amongst offenders. Future research could explore the effectiveness of these interventions by increasing the sample size and the subsequent power of the study. Research focusing on behavioural outcomes or longitudinal studies assessing recidivism rates of those offenders that received treatment could help address whether the changes reported through self-reported psychometrics are also reflected in the participants' behaviour. Further research could also explore, through a cost effective analysis, the potential benefits of one-to-one interventions in comparison to more groups based therapeutic interventions. Results from the female case study also indicated the potential benefits of delivering an adapted anger management specifically designed for the needs of female offenders. More research is needed to assess further the differences in the conceptualisation of anger between males and females, thus also exploring potentially different needs based on gender. Also a larger sample is needed to assess the gender based adaptations to the anger management intervention carried out in this case study. Finally, further research is warranted in terms of understanding the relationship between treatment intensity and treatment effect. The systematic review and meta-analysis carried out in this thesis seemed to indicate that moderate intensity CBT based programmes had larger magnitude of effect in reducing recidivism in offenders than the more intensive correctional programmes.

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Statement of Authorship

I confirm that the work presented in this thesis was carried out solely by myself unless otherwise stated*. This thesis is being presented in partial fulfilment for the DForenPsy degree at the University of Nottingham and has not been submitted elsewhere in any other form for the fulfilment of any other qualification.

*Chapter 2 was submitted for publication with the *International Journal of Offender Therapy and Comparative Criminology*. In this manuscript I am named as the senior author and Prof K.D. Browne and Dr S. Chou have been named as co-authors.

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Publications

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Chapter 1

1. INTRODUCTION

Prevalence of violent offending and anger dysfunction amongst offenders

The Annual Report of Government Departments of Malta in 2011 (Operations and Programme Implementation Directorate, 2012)[1] makes reference to a growing number of violence related cases that were disposed of by the Maltese Courts of Law. It seems that most of these cases were disposed of through community based sanctions or probation orders. In 2011, out of a total of 461 inmates sentenced to a term of imprisonment, only 15 of the said inmates were incarcerated because of crimes that involved violence in Corradino Correctional Facility. In fact out of these 15 cases, 13 were incarcerated for homicide or attempted homicide. During the same year the Department of Probation and Parole a total of 95 violent offenders were sentenced to a probation order, an increase of 38% from the previous year.

On the other hand, Eurostat statistics for the period of 2007 – 2010, show a decrease of reported violent crime across the member states of around 6%. This sharp reduction seems to be largely due to the substantial drop of reported violent crimes in the UK, a drop of some 146, 000 crimes (Clarke, 2013). Violent crime in these statistics is defined as violence against persons, sexual offences and robbery. This definition is different from the definition used by the Government of Malta, which had defined violence only as violence against persons (e.g. assault). These differences

[1] The electronic version of the Annual Report by the Government of Malta is available at; https://www.gov.mt/en/Government/Publications/Publications%20and%20Policies/Documents/Annual%20Report%20of%20Government%20Departments%20-%202011.pdf

in the operationalisation of violence might make further comparisons difficult.

Although violent offending in Europe might be in decline, the trauma that a violent offence might cause to the victims of the crime and their families justifies the continued research in the area to ensure that the interventions aimed at addressing violence have the desired effects. One method which has been used in order to address violence amongst offenders, especially when it is emotionally mediated, is through anger management interventions (Novaco, 1975; 1997; 2011). Furthermore, the type of crime itself is not necessarily indicative of whether the offender has symptoms of problematic anger as from the author's experience of 10 years working as a psychologist within the Maltese Correctional Services, a number of offenders who have been sentenced for a non-violent offence have significant issues with controlling their anger.

Offender populations are often characterised by lack of social and educational skills, flawed attribution processes and childhood histories of trauma, abandonment and rejection by significant others. The collusion of these vulnerability and perpetuating factors might facilitate the use of anger and aggression as primary modes of reacting to environmental triggers. Thus apart from possibly reducing the propensity for aggression and violent offending, helping offenders achieve control of problematic and dysfunctional anger is a valid treatment target in itself as it helps offenders achieve a better quality of life. The next section shall attempt to explore the links between anger, aggression and violence.

The Role of Anger in Aggression and Violence

Anger can be classed as having a cognitive, emotional and physiological component. From a cognitive perspective anger elicits many

mental schemas that might involve harm to self or to others, thoughts aimed at diminishing one's responsibility, attributing blame onto others and other kin thoughts. From an emotional perspective anger elicits a range of feelings ranging from mild frustration to more intense feelings of rage. Finally physiologically it results in triggering arousal states in the person's body, a state of readiness for action (Deffenbacher & McKay, 2000). Anger can lead the person to seek expression and positive coping by trying to address the problem of the source of the frustration. However, with increased levels of anger, the person might elicit increased use of negative schemas and cognitions increasing the chance of resorting to more dysfunctional forms of expression like aggression (Deffenbacher, 2011).

Aggression on the other hand can be said to be a behaviour in which one expresses frustration and seeks redress on the object, system or person seen as causing the frustration. It generally seeks to harm, threaten or intimidate the intended victim (Deffenbacher, 2011). Rather than defining aggression as hostile/affective or instrumental aggression, Anderson and Bushman (2002) define aggression on the basis of the goals it seeks to achieve. Their view sees the individual as either motivated by proximate, immediate goals or ultimate wider goals to guide their behaviour.

Although some violent behaviour occurs without the presence of anger, a large number of aggressive incidents have anger as a contributing factor or antecedent which would thus necessitate intervention (Novaco, 2011; Howells, 2004). Anger as a feeling is often linked and often accompanied by motor impulses related to aggression (Berkowitz, 2011). In fact angry reactions to particular events or stimuli can last for an extended period of time in the individual feeling anger, especially if their

ability to control emotions and arousal is weak, the feeling is too intense or when the person ruminates about the event (Berkowitz, 2011).

The General Aggression Model views aggression as a coming together of situational factors or triggers and characteristics within the individual (Anderson & Bushman, 2002; Anderson & Carnagey, 2004; De Wall & Anderson, 2011). This model identifies personal and situational factors, known as input factors, as having an effect on present internal states comprised of the cognitions, arousal and affect. These states or routes in turn influence the individual's appraisal and decision making ability, thus the outcome (De Wall, Anderson & Bushman, 2011). This appraisal and subsequent action could influence the likelihood of future violence, by effecting the input factors. These three stages offer a way of understanding single episodic cycles of behaviour. The repeated association of particular cognitions with particular affect might lead to the development of an affect node (De Wall & Anderson, 2011). In the case of aggression it can be argued that when a knowledge structure or schema regarding aggression is activated the associated emotion of anger is also triggered with the resultant change in the person's affect. These knowledge structures might also be comprised of action scripts or internalised templates of behaviour. Frequent activations of the nodes might result in the node being easily accessible in memory. Furthermore, if an event or indeed a person is repeatedly associated with anger then just by seeing the person or having knowledge that an event would occur then one might attribute hostile intentions to the person, misconstrue the event, experience anger and elicit aggressive behavioural scripts almost simultaneously.

Anger can be seen as reducing inhibitors of aggression by hindering the reappraisal process and facilitating the accessibility of aggression

scripts by priming the person to anger related knowledge structures. These in turn would be used to interpret the environment making the individual more "sensitive" to anger provoking stimuli further facilitating their processing and recollection of these events (Anderson & Bushman, 2002; De Wall & Anderson, 2011).

More situation specific factors such as provocation, perceived incentives to violence, frustration, pain and discomfort and drug use can also combine with person specific factors and generate changes in the internal state of the individual (Anderson & Bushman, 2002; De Wall & Anderson, 2011). In summary, through idiosyncratic experiential and socialisation processes individuals could become prone to act aggressively (behavioural scripts), experience anger (affect nodes) and attribute hostility in others (person/perceptual schemas). These make individual reactions largely consistent over time and across situations in both their reactions and their interpretations to external stimuli.

The General Aggression Model suggests that treatment of aggression should concentrate on five crucial aspects; the reduction of anger arousal; the identification of knowledge structures involved in maintaining the aggressive behaviour; the extent of automaticity of behaviour; the identification of dysfunctional thoughts, affect and behavioural scripts; the increase thoughtful decision making and self-regulation (De Wall, Anderson & Bushman, 2011). Individuals should be encouraged to reduce the state of arousal, control or manage the affect and explore alternative explanations for personal attributions of the situation. To reduce the likelihood of impulsive aggressive actions the person has to increase their cognitive resources, take time out of the situation and engage in effective cost-benefit analysis of the consequences of their actions. Interventions should target the occurrence of immediate

appraisals by addressing factors within the person and their interpretation of the situation since these control internal mental states used when automatic inferences are made. These treatment objectives appear to be the core components and treatment goals identified in most anger management programmes.

Aims and Objectives of the Thesis

The main aims and objectives of this thesis were; to analyse the effectiveness of a brief anger management programme on male community based offenders, to assess the potential adaptability of the same brief anger management with a female case study, and to explore the overall effectiveness of CBT based interventions such as anger management or violence reduction programmes in terms of reducing general recidivism and violent recidivism.

In order to achieve these aims a research study, in Chapter 2, had randomly assigned 24 convicted offenders to two groups A and B. Both of these groups were tested on three occasions to determine the effectiveness of a pre-selected brief CBT and mindfulness based anger management programme, the Individual Managing Anger Programme[2] (I-MAP: Johnson & Gast, 2013). All of the offenders participating in the study were screened for anger dysfunction. Those who did not report high levels of anger dyscontrol were directed to more apposite treatment. Interestingly, not all those referred for treatment were convicted for violent offenders. Although most offenders referred for anger difficulties were invariably male, a growing number of female offenders with anger dysfunction was steadily on the increase. Since the I-MAP was primarily developed for male clients a number of adaptations were made to the programme in order to

[2] The I-MAP was developed under Framework 2008/947/JHA of the European Union and financed by the European Commission's 2010 " Criminal Justice" programme.

incorporate the specific needs of female offenders. These adaptations were piloted in a case study reported in Chapter 3.

The treatment effectiveness of the anger management programme was measured through the use of psychometric self-reported measures. The main tool selected to explore the treatment effects was the Anger Disorder Scales (Di Giuseppe & Tafrate, 2004). This psychometric tool measures the cognitive, emotional, behavioural, physiological and the motivational components of anger symptomology. These scales are explored in detail in the psychometric critique in this thesis in Chapter 4.

The limited timescales, during which the thesis was carried out, meant that more a more longitudinal or long term exploration of treatment effectiveness was not possible. Thus to compensate for this, a systematic review and meta-analysis, Chapter 5, was undertaken to determine whether CBT based treatment for anger problems or violence had any effects in reducing general and violent recidivism.

Chapter 2

2. A RANDOM CONTROL TRIAL EXPLORING THE EFFECTS OF BRIEF ANGER MANAGEMENT ON COMMUNITY BASED OFFENDERS IN MALTA

Abstract

This research examined the effects of a short-term one-to-one anger management programme delivered to community based offenders in Malta. The programme delivered consisted of a CBT and mindfulness based anger management intervention. An RCT was carried out to analyse the effects on a sample of 24 participants screened a priori for anger dysfunction and randomly assigned to 2 groups. All 24 offenders, aged between 18 -57, were serving a community based sanction, approximately 71% of the sample were deemed to be of high risk of re-offending and high needs for supervision using the Level of Service Inventory (Andrews & Bonta, 1995) and 66.7% were convicted for a violent offence. However, eligibility for treatment was based on screening for anger dysfunction and not index offence. Group A, the follow-up group, was administered psychometric measures before treatment, after treatment and after a period of follow-up; whereas Group B, the waitlist group, were administered the measures at baseline and repeated after terminating a set period on the waiting list. Finally, the measures were repeated post-intervention. The measures used were the Anger Disorder Scales (Di Giuseppe & Tafrate, 2001) and another measure of anger inherent in the programme. All the statistical analyses carried out showed significant results of intervention in terms of reduced anger symptoms. The statistical analysis also controlled for social desirable responding, with participants who did not manage their impression still demonstrating significant post-treatment differences in reported anger expression. Results of the interventions show a substantial magnitude of treatment effect ($r = .891$). These results are discussed in light of recent research.

INTRODUCTION

The aim of the study was to establish the treatment outcome of a structured one-to-one anger intervention programme through the use of psychometric measures. The selected intervention was the Individual Managing Anger Programme (I-MAP) which was developed in partnership by the Romanian Ministry of Justice, the Irish Probation Service and the Italian Ministry of Justice. The I-MAP was developed under Framework 2008/947/JHA of the European Union and financed by the European Commission's 2010 " Criminal Justice" programme. The I-MAP is still not validated on offender populations so the study served as an opportunity to test the effectiveness of such a programme. Furthermore there have been no other studies exploring the effectiveness of psychological interventions on Maltese offender populations.

Anger and aggression

Lack of research on the relationship between anger and aggression or violence might have led to anger not being identified as a factor related to offending behaviour and in thus in need of correctional interventions. Thus, in some case dysfunctional anger might not be targeted in treatment with offenders (Novaco, 2011a).

Eckhardt and Deffenbacher (1995) see anger as an emotion dependent on the appraisal process. The appraisal is triggered when the individual experiences external antecedents such as perceived threats to physical or psychological self or conflict between individual expectations and the environment. It can also be triggered through internal antecedents such as a desire for retribution for perceived or real abuse or to defend a challenge to one's self-worth.

The association between anger and aggression was also identified by the General Aggression Model (Anderson & Bushman, 2002; Anderson & Carnegy, 2004; De Wall, Anderson & Bushman, 2011). It posits that a person might resort to aggression following an interaction of situational cues and internal predispositions. Situational precipitators can take the form of internal cues such as beliefs, goals and moods and more external cues such as perceived level of provocation, frustration and incentives. The internal predispositions are comprised of knowledge structures (schemas and action scripts) generally developed through socialisation. It is also claimed that particular knowledge structures can be paired to certain emotions such as anger to develop what are termed "affect nodes". This node would be an associative memory network that gains strength through repeated association. Thus a mental representation such as another person or situation may be linked to an action script such as aggression and also linked to a particular emotion such as anger. The activation of one component might lead to the activation of the entire network (Anderson & Bushman, 2002; Anderson & Carnegy, 2004; De Wall, et al., 2011).

A study carried out by Gilbert, Daffern, Talevski and Ogloff, (2013) concluded that offenders with high trait anger were prone to activate aggressive behavioural scripts which stay activated for longer periods. It was also concluded that intensity, frequency and the duration of the anger problem were salient features associated with determining future violence. In a way this study showed that anger could justify aggression by reducing inhibition to violence while activating normative beliefs and aggressive scripts. Berkowitz (2011) and Deffenbacher (2011) also claim that higher levels of anger might elicit increased use of negative schemas facilitating the chance of resorting to more dysfunctional forms of expression like aggression and violence. This might indicate that anger is a central

component to aggression or as Novaco (2011a) depicts it a "driver" to violent offending which consequentially makes anger dysfunction an important risk factor necessitating interventions. In fact studies that focused on offenders who were screened for symptoms of anger dysfunction as eligibility criteria for anger management rather than a violent offending history reported statistically significant treatment effects following the administration of brief anger management interventions on measures of anger (e.g. Ireland, 2008; Black, Forrester, Wilks, Riaz, Maguire & Carlin, 2011).

Invariably not all anger manifests itself in aggression as some anger might be seen as invigorating the person to take action against the object, person or event causing the frustration. Generally the frequency, intensity, duration and mode of expression distinguishes pathological from functional forms of anger expression (Novaco, 2011b). Also more instrumental forms of aggression might be present in a number of offenders incarcerated for violent offences. In fact some studies have reported that some violent offenders had no pathological or problematic levels of anger despite being incarcerated for violence and aggression (Howells, 2004; Watt & Howells, 1999; Heseltine, Howells & Day, 2010). This implies that the role of assessment and formulation to determine the role of anger in the offending behaviour is essential to ensure that appropriate interventions are delivered to respective clients (Howells, 2004; Walker & Bright, 2009; Novaco, 2011a, b). It is recommended that anger management should only be considered if there are clear triggers for anger; a pattern of dysfunctional cognitive appraisal systems; an element of physiological arousal; an intense feeling of anger; impulsive actions and behavioural reactions related to the angry feeling (Howells, 2004). Perhaps this lack of a priori screening for anger related symptoms resulted in some studies like

Watt and Howells (1999) and Heseltine et al (2010) to find an overall ineffectiveness of anger management amongst offender populations. In fact in these studies only anger related knowledge increased significantly following anger management interventions other more salient symptoms of anger showed no significant changes.

METHODOLOGY

This research study was designed as a Phase I cross over random control trial (Cummings, Grady & Hulley, 2007) aimed at assessing the effectiveness of an unvalidated anger management programme on a sample of community based offenders in Malta. Approval for the RCT was sought with the Department of Probation and Parole and representatives of the Ministry for Home Affairs and National Security. An application for ethical approval was filed with the Research Ethics Committee of the University of Nottingham (Appendix III).

This research study was carried out at the Department of Probation and Parole in Malta. The role of this department is primarily to provide supervision of community based offenders. This function is generally achieved through the service of probation officers. As part of offender case management, probation officers might request the offender to address particular criminogenic needs to reduce the potential risk of recidivism and increase public safety.

The RCT was carried out between March 2014 and June 2015. Steps identified by Goldstein, Leff and Lochman (2013) were taken to enhance desirable outcomes and facilitate the replicability of this study. A detailed explanation of the steps undertaken to implement this programme can be found in Appendix I.

Procedure

Sampling, recruitment and group allocation

Before launching the research study probation officers were given training related to anger dyscontrol and the Screening Candidates Checklist (Van Dieten, Winogron & Grisim, 2001) which they would be required to complete with the referral. Consent for participation in the RCT was included in the referral. The consent form specified the overall aims of the research and the intervention. Prospective participants were informed that all data collected would be handled anonymously and their participation was on a voluntary basis.

Participants for the programme were recruited from amongst offenders on probation or parole in Malta. All offenders referred for treatment were screened for anger or attitudes supportive of violence. These participants were referred by their probation/parole officer following the administration of an adapted form based on the Screening Candidates Checklist (Van Dieten et al., 2001). This checklist helped probation officers identify particular criteria that might be associated with problematic anger such as high level of arousal, feelings of anger over extended periods of time, history of aggression, and frequent loss of control.

Furthermore, following the referral, candidates were assessed for problematic anger through the administration of the baseline measures by psychologists delivering the interventions. Candidates that did not score pathological or clinical levels of anger were not administered the intervention and were directed to more apposite interventions. Thus, participants were selected on the basis of anger dyscontrol rather than their offence history

Group allocation to Group A and Group B (the waitlist group) was carried out by the researcher. It involved the generation of a list of random numbers through a coin toss method. Participants were then assigned to the group according to their respective number which was awarded according to the order of referral. Following the administration of the baseline measures and the allocation of the group membership, participants in Group A started the treatment programme and participants in Group B were placed on a waiting list.

Sample composition

A total of 27 offenders were referred for the anger management programme during the months of March 2014 and December 2014. Three offenders had failed to complete the programme and their data was removed from the analysis. This data mainly consisted of the variables extracted from their respective case files and the results of the baseline measures.

Interventions

Format and Delivery of Interventions of the I-MAP

The I-MAP aims to target community-based offenders aged 16 years and upwards. As a programme it consists of 9 sessions lasting approximately 90 minutes (refer to Appendix II for a brief description of the individual sessions). Although manualised the sessions were designed to allow sufficient flexibility to focus on the idiosyncratic variants and needs of the client's problematic anger. This focus on individual needs is considered to be one of the hallmarks of good quality interventions (Walker & Bright, 2009).

The I-MAP aims to address anger through cognitive behavioural

techniques and mindfulness strategies. It consists of cognitive components aimed at replacing the dysfunctional cognitions and inferences with anger inhibiting ones (Howells, 1998; Trower, Casey & Dryden, 2008); arousal reduction techniques aimed at allaying the client's physiological state of readiness (Novaco, 1975); and behavioural components where clients are usually taught behaviours that are functionally equivalent to their dysfunctional behaviour (Deffenbacher, 2011).

To ensure programme integrity the I-MAP sessions were delivered by qualified psychologists. About 92% of the interventions were carried out by the main author of the research. These psychologists had received a priori instruction and training in the use of the programme from one of the programme developers. All the sessions were delivered in a one-to-one format which allowed the facilitator to adapt the manual to cater for the idiosyncratic aspects of the participants' problematic anger.

Group membership and the Intervention

All participants of the study received the intervention however one group was waitlisted and received the intervention after a stipulated time period. Table 1.1 outlines the different testing periods of the two groups. Those allocated to the Group A started the intervention period and were re-administered the outcome measures upon completion of treatment. The outcome measures were re-administered after a 3 month period to assess whether treatment gains were maintained over time. Group B was administered the baseline measures and then placed on a waitlist for a period of 3 months. Following the elapse of this waitlist period the baseline measures were re-administered and then delivered the interventions. This waitlist period was meant to control for the potential confounding effects of supervision. The outcome measures were re-administered once the

intervention period was completed. During the waitlist period for Group B and the follow-up period for Group A participants were under the supervision of their respective probation officer.

Table 1: The different testing periods for Group A and B

Baseline and Outcome Measures for the Experimental and Waitlist Control			
Group A	Testing Period 1 (TP1) Pre-intervention Assessment (Baseline 1)	Testing Period 2 (TP2) Post-intervention Assessment (Outcome 1)	Testing Period 3 (TP3) Follow-up Assessment after 3 months (Outcome 2)
Group B	Testing Period 1 Pre-intervention Assessment (Baseline 1)	Testing Period 2 Pre-intervention Assessment after waitlist (Baseline 2)	Testing Period 3 Post-intervention Assessment (Outcome 1)

Data collection

Following the group allocation a number of variables pertaining to the participants' criminal history and psycho-social factors were extracted and coded as either present or absent from the information available in the participants' case file. These variables yielded useful information on the composition of the sample and also served as means to assess the independence of group allocation. Demographic and psycho-social variables

of interest were age; employment status; literacy and educational level; history of substance abuse; previous contact with mental health professionals; and stability of relationships. Criminal history variables extracted from the data consisted of; the level of risk; incarceration history; pending cases; attitudes supportive of violence; and history of previous convictions. The level of risk was established using the Level of Service Inventory-Revised (LSI-R: Andrews & Bonta, 1995). This assessment is usually carried out by the probation officers under the supervision of psychologists. Apart from the level of risk, this assessment can also help in the identification of criminogenic needs that the offenders might need to address thus could have helped probation officers ascertain whether the client's anger was in need for interventions (Andrews & Bonta, 1995). The participants were also administered the Anger Readiness to Change Questionnaire (ARC – Q) to assess whether they were either in the Pre-Contemplation, Contemplation or Action Stage (Williamson, Day, Bubner & Jauncey, 2003). Previous research had identified readiness to change as a salient factor influencing treatment effect (Howells, 2004). Thus to control for potential differences between the two groups on this variable participants were also administered the ARC-Q (Williamson et al., 2003).

An analysis of the differences in the group allocation (Group A and B) using cross tabulation analysis was carried out. Since some of the cell values had small expected frequencies (less than 5) the Fisher's Exact Test was used to assess for significance. All the results were not statistically significant which indicated that the ratio of observed frequencies and proportion of participants on the variables of interest was similar in Group A and waitlist Group B (see Table 2.1 and 2.2).

Psychometric Baseline/ Outcome Measures

Success of the interventions was measured through the alleviation of anger symptoms. This was measured through the Anger Disorder Scales (ADS) developed by Di Giuseppe and Tafrate (2004) and the Individual Anger Assessment (IAA) developed by Johnson and Gast (2013) for use with the I-MAP.

The ADS is a multidimensional scale which distinguishes between varying levels of pathological anger (mild, moderate or severe). This tool assesses anger on 18 different subscales; Brooding; Revenge; Scope of Provocations; duration of Anger Problems; Hurt/Social Rejection; Tension Reduction; Resentment; episode Length; Suspiciousness; Rumination; Impulsivity; Coercion; Verbal Expression; Passive Aggression; Physical Aggression; Indirect Aggression; Relational Aggression; and Physiological Arousal. These subscales are loaded on three higher order scales that of; Anger in; Vengeance; and Reactivity/expression. The final score of the ADS is then calculated by combining the total scores on the higher order scales. The subscales are useful in order to develop an in-depth formulation of the offender's anger problem however for the purpose of identifying post-intervention change this research specifically focused on comparing the baseline scores and outcome scores on the higher order scales and the total score. T-scores above 65 are indicative of a clinical problem of anger symptoms in terms of duration, frequency and severity (Di Giuseppe & Tafrate, 2004). Further information of this psychometric tool is provided in Chapter 4.

The IAA is a 24 item tool examining the internal and external expression of anger, the level of anger control and how anger is perceived. As a tool it was specifically developed for use with the I-MAP. It is intended

to serve as a screening tool giving an indication of anger related needs that the participant might have. Participants with scores above 72 (high) would require clinical intervention (Johnson & Gast, 2013). The total scores of the IAA were also used to assess for differences between baseline and outcome measures and facilitate possible comparative studies with other probation services also using the I-MAP (Italy, Romania and Ireland).

Since the same psychometric tools were administered at different times for the Group A (follow-up) and B (waitlist) thus instructions given to participants prior to administration of the repeated measures varied depending on the testing period. To make the outcome measures more sensitive to the possible changes due to the intervention the participants were instructed to score and rate the items according to their experience of anger over the period since the last administration of the test.

Statistical Analysis

A number of non-parametric statistical analyses were carried out to assess for significant differences between pre and post-intervention and follow-up scores on the outcome measures of the experimental group. Testing for significant differences was also carried out between the baseline measures and outcome measures of the control group. Differences between before and after intervention scores were also calculated for the total sample (N=24) to assess for any reductions of symptoms of anger through the intervention. An overall treatment effect size was also calculated. It was hypothesised that significant post-treatment differences would be noted following the delivery of treatment for both groups in the study.

Non-parametric statistics were used primarily due to the small sample size of the research study. The choice of outcome measures also

contributed to this decision as the items and subscales of the ADS are purposefully positively skewed. Furthermore, the ADS also uses linear t-scores that are positively skewed (Di Giuseppe & Tafrate, 2004). Consequentially the Freidman test was used to assess for pre and post-intervention differences in Group A and B. Post hoc analysis was then carried out using the Wilcoxon Signed test with the Bonferroni adjustment to adjust for multiple comparisons. Thus the within group analysis sought to explore significant differences in the baseline scores (TP1 for Group A and TP1 and TP2 for Group B) and the outcome scores (TP2 and TP3 for Group A and TP3 for Group B).

RESULTS

Sample characteristics

Demographic Variables.

The mean age for the Group A was 33.25(12.32) and for the Group B 33.08(10.51). Statistical analysis revealed no significant difference between groups on age t (0.36) = 21.465, p= .972.

More than half (58.3%) the participants were unemployed at the time of the study and about 66.7% had reported to have completed their compulsory education. Nevertheless a substantial proportion (41.7%) of the participants reported to be illiterate in Maltese and English. This might be indicative of a socially disadvantaged background. Most participants (79.2%) were reported to have had a significant alcohol or drug abuse problem in the past and 62.5% had previous contact with mental health professionals mainly in relation to the aforementioned substance abuse or for assessments purposes. None of the participants had previously been in treatment for anger management or violence reduction. The results of the Anger Readiness to Change Scale indicated that a substantial proportion

(approx. 79%) of the participants were either in the contemplation or action phase.

Table 2.1: Demographic variables and sample composition

Psycho-social Variables		**Group A n = 12**	**Group B n = 12**	**Fisher's Exact Sign (2 tailed)**
Employment Status	Unemployed	6	8	.68
	Employed	6	4	
Literacy Level	Notable literacy difficulties	7	3	.214
	Functionally literate	5	9	
Level of Education	School drop-outs	4	4	1.00
	Completed compulsory education	8	8	
History of Substance Abuse	Alcohol or/and Drug Abuse History	9	10	1.00
	No history of substance abuse	3	2	
Previous Contact with Mental Health Professionals	Previous contact	9	6	.400
	No previous contact	3	6	
Relationship Status	No stable relationship	10	10	1.00
	Stable relationship	2	2	
Anger Readiness to Change	Pre-contemplation	4	1	.317
	Contemplation & Action	8	11	

Criminal History Variables.

The offenders participating in the research study were all screened by their probation/parole officers as having significant issues with anger control or attitudes supportive of violence. The screening process might have led to high risk offenders being overrepresented in the sample. In fact the vast majority of offenders (70.8%) referred were deemed to be of a high risk for recidivism and of high needs in terms of supervision. The level of risk was calculated through the Level of Service Inventory - Revised (LSI-R) (Andrews & Bonta, 1995). Indicative of this level of risk 58.3% had pending criminal court proceedings, 79.2% had previous convictions and a further 54.2% had been incarcerated in the past. In terms of index offence the largest percentage of participants were serving a supervision order for crimes against persons such as assault or threats against others (66.7%). The other 33.3% had been sentenced for property or drug related offences. The substantial number of offenders referred for anger dyscontrol who were not sentenced for violent offences further supports the need for screening and assessment to determine eligibility for anger management rather than assessing eligibility on the basis of index offence.

Table 2.2: Criminal history variables and sample composition

Criminal History Variables		**Group A n = 12**	**Group B n=12**	**Fisher's Exact Sign (2 tailed)**
Risk and Needs Level (LSI-R)	High Risk	9	8	1.00
	Low/Medium Risk	3	4	
Incarceration History	Incarcerated	6	7	1.00
	Never Incarcerated	6	5	
Pending criminal cases	Pending cases	9	5	.214
	No pending cases	3	7	
Index Offence	Offences against others (e.g. assault)	9	7	.667
	Property/Drug related offences	3	5	
Attitude Supportive of Violence	Violent Attitudes	10	9	1.00
	Attitudes not supportive of violence	2	3	
Previous Conviction History	Previous Convictions	10	9	1.00
	No previous convictions	2	3	

Within Group Analysis

A necessary criterion for inclusion in this research was pathological anger. This meant that the data collected would be skewed towards higher anger scores on the selected measures violating the assumption of normal distribution needed for parametric analysis. Consequentially the Freidman test was used to assess for pre and post-intervention differences in Group A and B. Post hoc analysis was then carried out using the Wilcoxon Signed test with the Bonferroni adjustment. Thus the within group analysis sought to explore significant differences in the baseline scores (TP1 for Group A and TP1 and TP2 for Group B) and the outcome scores (TP2 and TP3 for Group A and TP3 for Group B).

The higher order scales of Reactivity, Anger In and Vengeance and the total ADS score were used for the comparison of baseline and outcome measures. The calculation of t-scores was based on the overall normative sample in the ADS Manual (Di Giuseppe & Tafrate, 2001) rather than the age specific norms (18-29, 30-49, 50+). This consideration was mainly based on the need to compare the measures on the total sample which was comprised of different age groups together (age range of sample 18 - 57). The total scores of the IAA were also used to assess for differences between baseline and outcome measures.

Table 2.3 displays the mean and standard deviations for the IAA, the total ADS score and the Higher Order Scales of Reactivity, Anger In and Vengeance at the different testing periods and the results of the within group analysis using the Freidman test.

Table 2.3: Group A (n=12) within study results across the testing periods

Measure	Testing period 1 Baseline	Testing Period 2 Post-treatment Outcome	Testing Period 3 Follow-up Outcome	χ^2(df)
IAA total	86.75 (6.917)	54.50 (7.681)	55.08 (11.082)	18.426 (2) ***
ADS total	86.25 (10.028)	51.08 (7.217)	51.75 (9.771)	18.957 (2) ***
ADS – Reactivity	83.83 (9.272)	52.50 (7.526)	52.83 (8.726)	19.636 (2) ***
ADS – Anger In	76.08 (7.267)	45.92 (7.428)	46.75 (9.526)	19.818 (2) ***
ADS – Vengeance	83.83 (14.263)	53.5 (5.469)	56.58 (8.898)	20.311 (2) ***

*p< .05, ** p < .01, *** p< .001

The differences between the baseline and outcome scores on the IAA were statistically significant. Post hoc analysis using the Wilcoxon Signed Rank Test applying the Bonferroni Adjustment (p value set at < .017) indicated a significantly different score on the IAA total scores between pre-intervention and post-intervention (z= -3.063, p = .002) and between the pre-intervention and follow-up scores (z = -3.063, p = .002). Post-intervention and follow-up scores were significantly lower than the pre-intervention scores on the IAA measure. There was no significant difference between post-intervention scores and follow-up scores (z = -0.133, p = .894).

Differences at baseline and the outcome measures of post-intervention and follow-up were also statistically significant. Post hoc

analysis found significantly lower scores post-intervention (z= -3.061, p = .002) and at follow-up (z = -3.064, p= .002) when these were compared to the scores obtained at pre-intervention. The difference between post-treatment and follow-up scores was not significant (z = -0.563, p =.574).

The results of the Group A on the higher order scales of Reactivity, Anger In and Vengeance were all statistically significant which implied that the distributions on these scales were different at the different measurement periods.

The related samples Freidman test indicated significant differences between the baseline (pre-intervention) and outcomes scores (post/follow-up scores). Post hoc analysis showed significant lower scores between pre (TP1) and post-treatment (TP2) on Reactivity (z = -3.065, p = .002), Anger In (z = -3.068, p = .002) and Vengeance (z = -3.061, p = .002). Significantly lower scores were also observed between the pre-intervention scores (TP1) and the follow-up scores (TP3) on the Reactivity scale (z = -3.062, P = .002), the Anger In scale (z = - 3.068, p = .002) and the Vengeance scale (z = -3.063, p = .002). No significant differences were observed between post-treatment scores (TP2) and follow-up scores (TP3) on the Reactivity scale (z = .000, p = 1.00), Anger In scale (z = -.722, p = .470) and the Vengeance scale (z = -1.931, p = .053).

Group B was first tested at baseline (testing-period1) and then placed on a 3 month waitlist. Prior to delivering the interventions another baseline measure was collected (testing-period 2). This was supposed to control for the effects of time, standard error in measurement due to re-testing using the same tools and the effects of supervision. The outcome measures were then recorded following the delivery of the intervention (testing-period 3). Statistical analysis using the Freidman test showed

significant differences in the median scores of the four scales analysed across the three testing periods (Table 2.4).

Table 2.4: Group B (n=12) within study results across the testing periods

Measure	Testing Period 1 Baseline Measure	Testing Period 2 Baseline (waitlist)	Testing Period 3 Outcome Measures	χ^2(df)
IAA total	82.25 (8.00)	85.67 (6.04)	52.75 (6.37)	18.000 (2) ***
ADS total	82.50 (8.523)	83.58 (8.94)	48.67 (6.080)	19.478 (2) ***
ADS Reactivity	77.75 (9.026)	76.75 (8.84)	49.25 (6.468)	18.167(2) ***
ADS Anger In	75.75 (7.162)	76.67 (11.17)	45.08 (5.160)	18.783 (2) ***
ADS Vengeance	80.42 (13.474)	83.25 (10.84)	52.92 (5.900)	19.818 (2) ***

*p < .05, ** p < .01, *** p< .001

Post hoc pairwise comparisons using the Wilcoxon test with a Bonferroni adjustment explored the statistical significance between each time period. The median scores on the baseline measures i.e. testing periods 1 and 2 for the IAA total score (z = -.118, p = .906); the ADS total score (z = -.767, p = .443); the Reactivity scale (z = -.670, p = .503); Anger In scale (z = -.102, p = .919); and Vengeance scale (z = -1.268, p = .205) were all not significant. The pairwise comparisons between testing period 1 (baseline) and testing period 3 (outcome) showed significantly lower scores at the outcome stage for the IAA total (z = -3.062, p = .002); the ADS total (z = - 3.061, p = .002); the Reactivity scale (z = -3.063, p = .002); the Anger In scale (z = -3.063, p = .002); and the Vengeance scale (z = -3.063, p = .002). Similar results were also obtained in the comparisons between testing period 2 (baselines after the waitlist period) and testing period 3 (the outcome measures post-intervention) showing

significant reduction in scores after interventions on the IAA total score (z = -3.065, p=.002); the ADS Total score (z = -3.062, p = .002); the Reactivity scale (z = -3.062, p = .002); the Anger In Scale (z = -3.063, p = .002); and the Vengeance Scale (z = -3.063, p = .002).

Between Group Analysis

Between group analyses for differences were also carried out on the 3 different testing periods and the total scores of the ADS and IAA (Table 2.5). A Mann Whitney test on the ADS total scores indicated that only the scores at testing period 2 were significantly different between Group A (equivalent to post-treatment) and Group B (the waitlist before intervention group) U = .000, p < .001 with scores in Group A (Mdn = 52.5) being significantly lower than Group B (Mdn = 85). There was no significant statistical difference between Group A and Group B on the baseline measure at testing period 1 (U = 60.0, p = .487) and the final outcome measures at testing period 3 (U = 53.0, p = 271).

Table 2.5: Between Group Comparisons on the three testing periods using the ADS and IAA total score

		Group A - M(SD)	**Group B - M(SD)**	**Mann-Whitney U**
Testing period 1	ADS total	86.25 (10.03)	82.50 (8.52)	60 $^{n.s}$.
	IAA total	86.75 (6.92)	85.25 (8.00)	65.5 $^{n.s}$.
Testing Period 2	ADS total	51.08 (7.22)	83.58 (8.94)	.000 ***
	IAA total	54.5 (7.68)	84.67 (6.04)	.000 ***
Testing Period 3	ADS total	51.75 (9.77)	48.67 (6.08)	53.0 $^{n.s}$.
	IAA total	55.08 (11.08)	52.75 (6.37)	61.0 $^{n.s}$.

*p < .05, ** p < .01, *** p< .001

A similar picture emerged from the Mann Whitney Test on the IAA total scores on the 3 testing periods. No statistically significant differences were observed between the groups in terms of testing period 1 ($U = 65.5$, $p = .706$) and testing period 3 ($U = 61.0$, $p = .524$). Median differences were significant in testing period 2 ($U = .000$, $p < .001$) indicating that the scores of Group A (Mdn = 53) which had received the intervention were significantly lower than scores on group B (Mdn = 84.5) which had not yet been given the treatment.

Positive Impression Index

A further analysis was carried out to control for the effects of socially desirable responding. The ADS provides a Positive Impression Index (PII) which aims to identify those respondents that attempt to fake good the test and minimise their anger problems**.** Scores under 15 on this scale might be considered to be indicative of socially desirable responding (Di Giuseppe & Tafrate, 2001). This could confound any findings in terms of treatment effect. For the analysis group allocation was assigned by categorising those participants that exhibited social desirability (< 15 on the PII) and those that did not demonstrate social desirable responding (> 15). It was hypothesised that the group that did not demonstrate social desirable responding would not show statistically significant differences in the outcome scores if the result is only due to impression management. On the other hand significant post-treatment differences in the outcome measures in this group would indicate an effect of treatment regardless of the desire to manage their impression.

Table 2.6: Mean Scores on the Positive Impression Scale.

	Testing Period 1 ADS Total M (SD)	**Testing Period 3 ADS Total M (SD)**	**Z**
Social Desirable Responding Group (n = 12)	80.00 (8.399)	45.25 (7.275)	-3.061
No Social Desirability Group (n =12)	88.75 (8.28)	55.17 (5.57)	-3.065

Wilcoxon Signed Rank Test p = .002

Table 2.6 shows that both groups, the social desirable responding group and the no social desirability group, experienced significantly lower post-intervention scores on the ADS total. This might indicate that there is a treatment effect regardless of the desirability demonstrated by some of the participants.

Treatment Effect

A final analysis of difference combining the total sample (N=24) was carried out using a Wilcoxon Signed Rank test found that the differences in scores between TP1, the baseline and TP 3, the outcome on the total ADS score were significantly different ($z = -4.289, p < .001$) with outcome scores being lower. An overall treatment effect size was also calculated using the mean scores on the mean and standard deviations of the ADS total scores of Group A and Group B at testing period 1 ($M = 84.38$, $SD = 9.301$) and testing period 3 ($M = 50.21$, $SD = 8.113$). Cohen's d was calculated at - 3.9153 with a global treatment effect size of $r = .891$. This is indicative of a very large treatment effect demonstrating a significant reduction in anger symptoms as measured by the ADS (Di Giuseppe & Tafrate, 2001). Post hoc power analysis using the G*Power software (Faul, Erdfelder, Lang & Buchner, 2007) was also carried out. The actual power of

the study using means and standardised differences of TP 1 and TP 3 was estimated at .995.

DISCUSSION

Summary of Results

Significant post-treatment effects in both Group A and B were observed. The overall treatment effect could be indicative of substantial improvements in terms of self-reported anger symptoms following the delivery of the IMAP. Significantly lower dysfunctional anger was reported even after a follow-up period of 3 months (TP3 for Group A), indicating that the treatment gains were maintained over time. Within group analysis on Group B, the waitlist group, showed that there were no significant differences between the baseline scores at TP1 and TP2, which might indicate that without the intervention the reported anger symptoms remained constant over the 3 month waitlist period. This could indicate that time and supervision in terms of reported anger did not have significant effects. It also indicated a level of reliability in the measures of anger used although this was not analysed statistically. Post-hoc analysis of Group B revealed that the significant differences on the psychometric measures were between scores obtained during the baseline periods (TP1 and TP2) compared to those obtained at the outcome period (TP3). This supported the analysis of Group A in finding statistical differences post-administration of the IMAP.

Between group analysis was carried out by comparing scores of the ADS and the IAA of Group A and B on the three time periods. This analysis showed that there were no differences in the scores on the measures of anger at TP1 (the baseline) and at TP3 (the outcome). This might imply

that at pre-intervention (TP1) the scores on the anger measures of Group A and Group B were statistically similar, indicating high levels of dysfunctional anger prior to treatment. No significant differences between the scores of Group A (follow-up) and Group B (post-intervention) at TP3 might mean that the effect of the IMAP was similar for both groups with a significant reduction in the negative symptoms of anger in both groups following treatment. Furthermore the earlier conclusion that that treatment gains for Group A were maintained in the follow-up is sustained in this analysis as the results were comparable to results at post-intervention of Group B. Significant differences on the scores between the groups at TP2 might be attributable to the treatment effect of the intervention, as Group A had just completed treatment whereas Group B had still not commenced treatment.

Findings from studies exploring the effects of short-term anger management on offender samples are often contradictory. For example Heseltine et al (2010) found no reductions on measures of anger following a 20 hour anger management programme except for increased anger knowledge post-intervention. However Chen, Li, Wang, Ou, Zhou & Wang, (2014) carried out a RCT exploring the effectiveness of anger management on young offenders found significant post-treatment differences in terms of self-reported hostility and impulsivity as well as reduced observed aggression. Thus it indicated that anger management was successful in reducing symptoms associated with anger dysregulation. Similarly another study by Black, Forrester, Wilks, Riaz, Maguire & Carlin, (2011) found that those inmates completing a 10 week anger management programme experienced significantly lower reported anger on the STAXI-II post-intervention when compared to other untreated but unmatched inmates. The results of this study support the conclusions of the latter studies

showing that anger management can be an effective intervention with offender populations in terms of reducing anger symptoms.

The treatment effect might have been a factor of the treatment components of the programme, the I-MAP. Towl (1994) maintains that effective anger management should focus on increasing the regulation of physiological arousal, increasing behavioural strategies and challenging thinking errors. These three components are intrinsic features of the treatment programme used in the research study.

Individualised treatment

Despite the small size of the sample in the study and the relatively short duration of the interventions approximately of 14 hours per participant a substantial treatment effect was noted. This treatment effect could in part be explained by the format of interventions. One-to-one sessions could have mitigated for the relative brevity of the intervention. The programme itself is designed to offer the client a myriad of skills and techniques from which the participant would then chose those that most suit their idiosyncratic needs. This together with a careful fostering of a therapeutic bond might have facilitated change in the participants.

Most interventions reported in the aforementioned studies were carried out in a group basis (e.g. Heseltine et al., 2010; Chen et al., 2014). This in part might be due to economical reasons since group therapy could potentially address larger number of offenders. However a more individualised approach to treatment might also have significant cost-effective implications in addressing anger disturbances as the results of the self-reported measures in this study suggest.

Importance of Screening

As an intervention, the I-MAP contains a blend of CBT techniques and mindfulness strategies such as psycho-education, an exploration of triggers of anger, problem solving techniques, challenging unhelpful thoughts and thinking errors, dealing with relationships, problem solving techniques and progressive relaxation. Such techniques are recommended for individuals with anger and information processing problems, deficiencies in emotional regulation and impulsivity (Wright & Bright, 2009). Thus the intervention was only considered appropriate with those offenders identified as having deficiencies in these areas. Ireland (2004) also concluded that anger management interventions should be administered only with angry offenders and anger measures should be used to assess anger. This study in fact administered an anger management intervention to offenders screened for anger dysfunction and assessed through apposite scales to measure anger. The screening process could have contributed in selecting candidates that might benefit the most for the intervention which in turn could have enhanced the treatment effect of the interventions.

Readiness to Change and Mindfulness components

Davey, Day and Howells (2005) argue that readiness to change might facilitate the development of therapeutic engagement. Although not explored through statistical analysis a large proportion (n = 19) of the selected participants were deemed to be either in the contemplation or action stage in terms of readiness to change prior to administering treatment. This readiness to change was facilitated throughout the programme by focusing on the individual needs of the participants and the adoption of developmental perspectives in terms of conceptualising and contextualising their anger symptoms especially in the initial phases of the

programme in order to increase self-efficacy (Honos-Webb, Stiles & Greenberg, 2003; Howells, 2004). This might have contributed to the treatment effect noted in this study.

A dosage of mindfulness training inherent in the IMAP could have also contributed positively to the magnitude of the treatment effect. Wright, Day and Howells (2009) maintain that mindfulness might increase the process of cognitive change and increase self-regulatory behaviour when experiencing anger states by preventing the maladaptive anger responses.

CONCLUSIONS AND LIMITATIONS

This study is an example of a RCT within the criminal justice system albeit different measures could have been introduced to minimise potential biases such as increasing the sample size or controlling for risk level it demonstrated that this type of research can be carried out within such settings.

Small sample size and Attrition

The results of this study need to be interpreted with caution due to the small sample size used. The rigorous screening process adopted during the recruitment period could have limited an already small pool of potential participants from community based offenders in a small island. Future research could possibly extend the recruitment period to enhance the sample size and increase the power of study while maintaining the same level of screening at pre-intervention. Also a larger study could also incorporate a cost-effectiveness analysis between comparing one-to-one and group based interventions.

A major flaw of any community based programme with offenders is high attrition rates as it might not only effect the study but also might pose a greater risk for recidivism (McMurran & Theodosi, 2007). Effective monitoring and supervision by probation officers was encouraged to increase the retention of participants in the study during the 3 month follow-up for Group A and 3 month latency period for Group B. The reported attrition of about 8% in this study is rather low considering that it is a community based study with offenders. Only one of the non-completers had breached his conditions and was re-incarcerated, the other two participants had terminated the programme as they had received a sentence of imprisonment for a pending case[3]. Excluding their data from the analysis might have also effected the results of this RCT. Since non-completers are usually associated with higher risk and greater resistance to treatment (McMurran & Theodosi, 2007) their inclusion could have tempered the result obtained.

The individualised format of the interventions and the continued supervision could have contributed in the retention of participants. Participants received treatment on a voluntary basis although one must acknowledge that they were directed towards interventions by their probation/parole officer. One-to-one interventions had the distinct advantage of moving with the pace of the client receiving the intervention and might have fostered a greater therapeutic bond. It also allowed sufficient logistical flexibility to re-schedule and reorganise sessions when the client could not attend. Most group-based interventions might not have this flexibility and consequentially either clients miss out on important

[3] The judicial process in Malta is very slow and it might take 3 -6 years for a criminal case to be concluded. Thus some persons can be sentenced to a community sanction while still awaiting trial for other offences.

therapeutic aspects or skills or might be dropped from the programme altogether.

Statistics on the number of offenders offered the treatment intervention and yet refused to attend or did not consent for the sessions were not available. Such statistics could have yielded some potentially valuable information on the type of offenders that are resistant to attempts at treatment.

Sources of bias and Socially Desirable Responding

Participants in this research study were aware that they were participating in a research study exploring anger symptoms and the response to treatment. Thus, in part, the reported reduction in the anger symptoms following the intervention might have been a result of a Hawthorne effect, were their responses might have been modified as a consequence of being studied.

Group allocation was not concealed to the researcher so potential selection bias might have effected the outcome. Furthermore the fact that the researcher administered the assessments as well as delivered the interventions might have helped in fostering a sense of therapeutic alliance with the participants of the programme and increase their commitment to change. Conversely the substantial treatment effect observed might have also been artificially bolstered through bias. This might be a by-product of the therapeutic alliance itself where clients might have felt compelled to exaggerate the effects of the programme out of a desire to please the researcher/therapist.

Polaschek, Bell, Calvert & Takarangi (2010) suggest that using self-reported measures with offenders might be prone to social desirability in

the response pattern. In fact half the sample demonstrated social desirable responding when the tests were administered at the outcome phase and this could have confounded the true treatment effect size. The psycho-educational component of the intervention might have taught clients how to respond appropriately to particular items in the outcome measures due to a better recognition of "angry responses".

The instructions given to the participants could have also effected this type of responding. To make the tools more sensitive to treatment effects or to changes in anger levels at different points in time the participants were instructed to rate particular items according to frequency or duration of the particular behaviour since the previous administration of the test. This instruction could have invalidated the scale since some of the items require respondents to rate whether a statement describing their anger holds true for the participant for the past year, months, weeks or days. The response is in a likert scale format with the longer duration incurring higher scores (e.g. item 5 of the ADS).

Nevertheless, an analysis comparing the pre and post-treatment scores of those participants that did not exhibit socially desirable responding, still demonstrated significantly lower scores after treatment. Thus despite the susceptibility of psychometric measures to social desirable responding in offender populations there might be some significant treatment change. Furthermore Di Giuseppe and Tafrate (2001) maintain that the Positive Impression Index was only validated on clinical populations and a low score on this scale might also be indicative of normalised anger reactions. This could imply that the scores of post-intervention had decreased significantly to the extent that their anger was no longer dysfunctional and within normal experience. The use of further assessment tools such as the Paulhus Deception Scales (Paulhus, 1999)

might have improved the analysis of the study as it would explore in more detail any tendency of impression management by the participants.

The use of Psychometric measures

A substantial proportion of offenders in the study experienced literacy difficulties especially in the English language. Great care was taken during the administration of the interventions to cater for the educational differences of the offenders however certain aspects might have reduced the effectiveness of the interventions. Due to illiteracy many offenders reported that they could not complete the homework tasks that require some academic skills such as the diary. Although alternatives to writing were explored in some cases the diary or journal was completed during the intervention session. This could have introduced potential biases of exploring "angry" events after the passage of time and could have led to reporting only the issues the client's expected that the therapist wanted to hear. It also increased the time spent competing and analysing the journal which could have possibly limited the amount of time spent exploring other components of the IMAP. Language difficulties could have introduced bias and error in the measures of anger.

The psychometric measures used in this study have not been validated on Maltese samples and unfortunately there are no standardised norms of Maltese populations. Also the psychology profession in Malta has not yet sought to officially translate many of the psychometric tools used in Malta to Maltese. Even though Malta is officially a bilingual country many offenders express difficulty in communicating in English. Thus the use and interpretation of tools for example the ADS and IAA has to be done with great care in order to avoid invalid results. Nevertheless both these tools

used very simple English which facilitated their administration. In fact the ADS's readability analysis based on word and syntax difficulty was determined to be of the reading level of a 10-11 year old (Di Giuseppe & Tafrate, 2001).

Furthermore the use of psychometrics might also present another limitation to this study. Self-reported measures might only be measuring attitudinal changes which might not necessarily translate in behavioural change. During the sessions the therapists monitored the behavioural reactions of clients through their analysis of journal to assure of their progress. However this source of potential data was not formerly analysed in this study. Further research in the Maltese context could focus on the possible long-term behavioural effects of the programme and the interventions such as exploring the recidivism rates of those offenders that underwent the programme or monitor frequency of anger expressions. In conclusion the I-MAP was designed as an anger management intervention tool and was not intended to serve as a specific offending behaviour programme. However it was expected due to the link between anger and some forms of violence that the significant reductions in anger symptoms as measured by psychometric measures would not only lead to a better quality of life for the offender but also lower the risk of engaging in violent behaviour (Novaco, Ramm & Black, 2001).

Chapter 3

3. ADAPTING A BRIEF ANGER MANAGEMENT PROGRAMME WITH A FEMALE VIOLENT OFFENDER.

Abstract

This case study sought to determine whether CBT informed anger management interventions are effective in reducing anger in a female offender in the community. The interventions were delivered to a 32 year old female offender on a probation order with the Department of Probation and Parole, Malta. The client was administered a number of psychometric tools and other idiographic assessments to determine the case formulation and the effectiveness of the interventions. Scores on the Anger Disorder Scales (Di Guiseppe & Tafrate, 2004) were used prior to the administration of treatment, post intervention and at the follow-up phase. The treatment components used addressed the appraisal process and dysfunctional thinking; ruminations; adequate problem solving routines; arousal; assertiveness skills; and relapse prevention. The Individual Managing Anger Programme (Johnson & Gast, 2013) manual was used to guide the interventions and the components delivered. Scores on the ADS were compared at the different time intervals and it showed a reduction in self-reported symptoms of anger supporting the adaptability of the I-MAP with different offender population groups.

INTRODUCTION

The aim of this study was to explore the effectiveness of a brief anger management programme with a community-based female offender and to explore the potential adaptability of the Individual Managing Anger Programme (Johnson & Gast, 2013).

LITERATURE REVIEW

The literature review shall cover the basic definitions of anger and aggression, the principles of cognitive-behavioural treatment for anger and salient gender differences in the expression of dysfunctional anger.

Anger and Aggression

Anger can be conceptualised as having a cognitive, an emotional and a physiological component. Cognitively, anger elicits many mental schemas that might involve harm to self or to others. Emotionally, anger elicits a range of feelings from mild frustration to more intense feelings of rage. Finally, physiologically it is associated with triggering arousal states in the person's body or states where the body is prepared for action (Deffenbacher & McKay, 2000). Anger can lead the person to seek expression and positive coping by trying to address the problem or the source of the frustration. However, high levels of anger might elicit an increased use of negative schemas and cognitions. Thus increasing the chance of resorting to more dysfunctional forms of expression like aggression (Deffenbacher, 2011). Aggression as a behaviour generally serves to express frustration and seeks redress on the object, system or person seen as causing the frustration (Deffenbacher, 2011).

Although some violent behaviour occurs without the presence of anger, a large number of aggressive incidents have anger as a contributing factor or antecedent, indicating that anger as a feeling is often linked and accompanied by motor impulses related to aggression (Berkowitz, 2011).

Assessment is thus crucial in determining whether anger is identified as a treatment need in the client or if it is related to the person's offending behaviour. Only following screening should anger management be delivered (Howells, 2004).

Anger Management

Generally, anger management programmes are informed from the cognitive behavioural perspective and aim to address the cognitive thought process, the behavioural component, such as verbal or physical aggression, and the physiological component. In typical anger management interventions there are three stages namely; cognitive preparation, skills acquisition and application of training. In the cognitive preparation stage, clients are educated about the functions of anger in their lives and they are also helped at identifying triggers and cognitive distortions or thinking errors (Gorenstein, Tager, Shapiro, Monk & Sloan, 2007). Generally, the clients are introduced to the treatment rationale and explained about the use of tools such as the diary to help monitor their behaviour. The skills acquisition stage sees the client addressing distortions and using coping self-statements. In this stage techniques such as the relaxation techniques are also rehearsed or modelled. In the application training stage, the client would practice the skills learnt in the sessions through role-plays or in vivo through the use of homework.

The cognitive component in anger management aims at replacing the dysfunctional cognitions, inferences and evaluations with anger inhibiting ones like seeking alternative reality based explanations for the antecedent events (Howells, 1998; Trower, Casey & Dryden, 2008). Novaco (2011) argues that arousal reduction techniques are essential tools for the treatment of anger since arousal is a central component. Furthermore, it is not possible to experience the state of anger and relaxation concurrently

further limiting the potential risk of aggression. Typical examples of such arousal techniques are breathing and visualisation exercises. Anger management also has a behavioural component where clients are usually taught behaviours that are functionally equivalent to their dysfunctional behaviour. Rehearsal is needed in order to ensure the client feels confident enough with the new skill to use it in real life situations and increase self-efficacy (Deffenbacher, 2011). Examples of behavioural interventions can vary, however, assertiveness skills training is a typical example of skills exercises taught in anger management interventions. All of these components are included in the Individual Managing Anger Programme or I-MAP (Johnson & Gast, 2013). Although this programme was originally developed for male community offenders components of this programme were piloted and adapted for use with the client in this case study. Other components identified through the formulation were included to make the I-MAP more apposite for the idiosyncratic needs of the client. These are described when discussing the interventions with the client.

Gender Differences in Anger Expression

Few studies have focused on analysing female offenders and their experience of anger and even fewer studies have explored differences between male and female populations on the expression of anger and aggression. This could have resulted in the delivery of anger management programmes typically designed for males being delivered to female offenders with very little adaptation (Horn & Towl, 1997). Suter, Byrne, Byrne, Howells and Day (2002) analysed gender difference in anger symptomology and reported significantly higher scores for female samples on the STAXI-II (Spielberger, 1999) subscales of state and trait anger, angry reaction and temperament, anger in and anger out and anger expression. Males scored higher on anger control. On the NAS (Novaco,

1994) females scored higher on three anger domains of arousal, cognitions and behaviours. This implied that female offenders in this study were significantly angrier than their male counterparts. Female offenders also scored higher on the "unfair treatment" triggers. This implied that females were more sensitive to triggers related to injustice and unfairness in their environment (Suter et al, 2002). A similar finding was observed in the formulation of the case study in this thesis. This could be related to the often chronic traumatic histories found in female offender populations (Cherry-Lind, 1995) which might even be described as contributing to the development of a "chronic anger condition" due to the sustained trauma (Horn & Towl, 1997). This implied that more components had to be added to the IMAP to focus on coping with injustice and repeat victimisation. Some of these factors are explored in the next sections of this chapter.

Rossegger, Wetli, Urbaniok, Elbert, Cortoni and Endross (2009) reported that male and female offenders share a history of poor socio-demographic statistics and childhood trauma, however female offenders tended to report a greater incidence of being victims of child sexual abuse. Despite some similarities between male and female history of trauma, female offenders seem to perpetuate the trauma and victimisation in adulthood. This was also found in the case study conducted. Interestingly many of the female offenders cited in the aforementioned study, just like the case study in this thesis had a history of prostitution prior to the index offence. Assessing for past trauma and its effects on the development of anger dysfunction is an area worthy of further exploration to determine if there are significant differences between Maltese male and female offenders.

ASSESSMENTS

Referral context and forensic history

Ms YA was a 32 year old female offender who was sentenced to a probation order for being in possession of drugs. She was also sentenced to a community-based sanction in 1998, aged 16 years the client was also convicted of stabbing her mother's partner in the face and back with a sharp instrument. Since she was a minor she was given a 2 year imprisonment sentence suspended for 4 years. This meant that for both convictions the client was given community-based sanctions. Her criminal record indicated no other criminal convictions despite engaging in other risky behaviours which shall be duly discussed. The Probation Officer had administered the Level of Service Inventory–Revised (Andrews & Bonta, 1995), under the supervision of a registered psychologist. This psychometric tool was administered to identify the level of risk and needs posed by the offender. Her score indicated that she was of a high risk for re-offending and necessitated an elevated level of supervision. The LSI-R has good predictive validity in analysing future risk of re-offending in females (Coulson, Haqua, Nutbrown, Giulekas & Cudjoe, 1996).

The client was referred by her probation officer to address identified symptoms related to anger dysfunction. Prior to engaging with the client voluntary participation in the case study was sought. In the process of seeking consent the client was advised that she would still access the service even if she declined to participate. The client was informed of the purpose of the study and that any data gathered shall be processed confidentially.

Psychological interventions based on a brief anger management programme were designed to address the reported dysfunctional anger. A number of psychometric tools and idiographic methods of assessment were used to develop an in-depth formulation in order to inform the facilitator of

the needs of the client that would have to be catered for in the intervention.

Discerning Distal Factors

A case file review and an introductory interviewing session were conducted to elicit information regarding the referral and develop a working formulation of the client's problem. This analysis seemed to indicate a number of vulnerability factors such as maternal rejection, history of abuse, lack of academic achievement and a tendency towards repeat victimisation. The preliminary hypothesis seemed to indicate a particular sensitivity of the client to situations she perceived to be humiliating linked with an activation of memories of her childhood traumas.

Family Relationships (Maternal abandonment and rejection)

The client had been living with her present partner for the past three years. She shared the custody of her 13 year old daughter with her previous partner, a relationship which although ended some years ago she described as amicable.

She had a good relationship with her elderly father but had been estranged from her mother from a young age following parental separation. The client also maintained that she has no contact with her other siblings. Thus, in terms of family relationships, her only protective relationships are her daughter, her partner and her elderly father.

Following maternal abandonment the client's maternal figure was briefly replaced by her paternal grandmother. Rather than being a moderator in this situation she claimed that her grandmother used to be physically abusive. She asserted that her paternal grandmother used to make write depreciative and rude letters to her mother. When the client did not comply she was frequently physically abused by her grandmother.

At the age of 12 she re-established contact with her mother. She admitted that she had expected her mother to be regretful for abandoning her. Unfortunately, her mother did not meet her expectations. The client maintained that her mother used to repeatedly tell her that she was the least loved out of all of her children. The sense of disappointment and rejection was exacerbated when her mother's partner attempted to sexually molest her. Furthermore, she claimed that all of the other interactions she had with her mother's partner were aimed at belittling her. These experiences she found to be very humiliating. It was at this stage that the client started to use violent fantasies in order to deal with the frustrations and negative feelings she was experiencing. Her violent fantasies were rather vivid where she used to imagine kidnapping her mother and partner keeping them hostage and subjecting them to torture. The fantasy or aggressive script could have led to further normalise violence, priming the client towards the attempted murder of her mother's partner at the age of 16.

Education and Employment (Early school drop-out)

At the age of 12 the client claimed that she was made to leave formal education in order to look after her other younger siblings and her father, who had a rather patriarchal approach to the upbringing of his children. This event was also rather significant as it removed the client from many social situations which could be found in the school environment. Potentially, she could have learnt to control her anger and aggression and built self-confidence, which could be considered to be protective factors for future aggression.

Since she left school at such a young age she had no educational or academic qualifications although she is functionally literate in Maltese and English. This lack of academic qualifications and skills was effecting her

employment prospects as she maintained that she found it hard to find and keep legitimate employment. Employment and meaningful social interactions at work could have also acted as a means of learning to control or mitigate for some negative feelings as well as help her be more financially stable. Thus despite being 32 years of age the client had never been formally employed and for a while used to live off the pocket money her father provided. In order to sustain her income she disclosed that she frequently engaged in illegal activity, mainly prostitution.

Intimate relationships and Repeat Victimisation

Female violent offenders typically have a long history of abuse in childhood, similar to their male counterparts, however what differentiates females is the continued victimisation in adulthood (Chambers, Ward, Eccleston & Brown, 2010). This seemed to be the case with YA in which she cited at least three episodes of this perpetuation of victimisation in her relationships with intimate partners in adulthood.

The client had a child by the time she was 18 years of age but the relationship with the child's father ended sometime after giving birth. For a period she also started experimenting with recreational drugs. By the age of 24 she started a relationship with another person who had a long history of violence and drug related offences. Through this relationship her drug abuse increased exponentially, to the point that it could be considered to be an addiction. During the eight-month period she lived with him she reported that he frequently humiliated and physically assaulted her in front of others. This situation lasted until her partner was arrested for shooting a police officer and other drug trafficking offences. It was also during this period that the client reported to have started to use prostitution to sustain her drug habit, namely heroin and cocaine. Although she claimed to have been clean for more than a year prior to being referred the client still used

prostitution in order to supplement her income. Due to the risks inherent in this type of work and its association with humiliation which will be discussed shortly one might interpret this behaviour as a continued propagation of her victimisation. The present relationship seemed to be more stable however it must be noted that her current partner was unemployed and was dependent on the client financially.

Mental Health History

The client disclosed that she had no prior history of mental health interventions. Prior to being referred for anger management the client had been benefitting from drug addiction counselling and she maintained that she had been clean for the past 12 months.

Psychometric and idiographic Assessment

A number of direct and indirect methods of assessment were used in order to analyse the client's behavioural and cognitive and affective reactions to proximal factors in her environment. The psychometric tools used were the Anger Disorder Scales (ADS) (Di Guiseppe & Tafrate, 2004) and the Millon Clinical Multiaxial Inventory MCMI-III (Millon, Millon, Davies & Grossman, 2009). The ADS was also used to measure success of interventions, where a reduction in severity category following the administration of treatment would be indicative of intervention success. Other idiographic methods complimented the nomothetic assessments to get a more detailed picture, aid in the clarification and ensure that all aspects of the various episodes of anger and aggression were dealt with (Deffenbacher, 2011). This combination was expected to facilitate the adaptation of the I-MAP (Johnson & Gast, 2013) due to the identification of the idiosyncratic needs of the client.

Psychometric testing

Assessment of Personality

The MCMI-III (Millon et al., 2009) personality assessment was carried out to screen for pathological characteristics. Some research determined that some female violent offenders might have characteristics akin to psychopathy, such as egocentricity and persistent violation of social norms, and higher tendencies to have anti-social personality disorder than non-offending community samples ((Weizman-Henelius, Salias, Viemero & Eronen, 2002; Weizman-Henelius, Viemero & Eronen, 2003; Lewis, 2010). The DSM V describes the latter disorder as a pattern of behaviour that persistently fails to conform to norms and regulations and is characterised by impulsivity, irritability, deceitfulness and aggressiveness (APA, 2013). This personality test was also meant to augment the information derived from the extensive interviews and help generate a more in-depth formulation.

Her responses on the assessment indicated a valid profile. Her scores on the Debasement and Disclosure scales also indicated that the client was ready to disclose information adequately and did not seem to be concerned with over or under reporting particular symptoms. The results of the MCMI-III can be summarised through codes indicating personality traits and clinical syndromes. The generated Personality Code was 6B6A**8B2A8A3*1+2B5”74// P**-*//. This meant that her profile indicated pathological scores on the paranoid, antisocial and sadistic scales. YA’s scores on masochistic and negative scales were also clinically significant. Her personality style seemed to emphasise her difficulties in relating to others with a tendency to reactivate past adverse experiences. Her distal experiences seem to have instilled in the client a significant mistrust of others. This sense of mistrust might have been sustained by her cognitive distortions and an over-generalisation that others around her

intend to harm her. Her perception that others are untrustworthy could increase her vigilance in social situations.

The client is behaviourally defensive being quick to take offence and react aggressively, especially when faced with unanticipated stressors. She seemed to fail to disclose her needs and feelings possibly out of a fear of being used and humiliated by others. The client had tendency of making excessive demands on the behaviour of others and would get very irritated and frustrated when others especially those close to her fail to meet these demands. When analysed further it was surmised that often these demands were never vocalised and were just expectations of behaviours, such as having an expectation that her teenage daughter helps around the house. When her daughter fails to do so she felt justified in getting angry as she believed that a failure to do so would show weakness. This often caused arguments between her daughter, her present partner and herself. With her partner her behaviour is often similar in that she did not vocalise or communicate her feelings. She had an expectation that her partner "should" or "must" know what she wants. This lack of communication left some of her needs unresolved and further exacerbated her frustration and anger. In fact when she eventually did vocalise her needs she often appeared argumentative invariably leading to further conflict.

Her hostile attribution bias and a tendency to bear grudges might have facilitated the aggressive reactions to perceived provocations. This might explain the elevated sadistic and antisocial traits. Her humiliation of others in public seemed to occur as a pre-emptive strike to prevent her expectation that the other person shall humiliate her. Violence was occasionally used by the client as a means of establishing control over others. The client seemed spurred by a need to get even with the world for what she perceived to be her cruel past and the rejections she had sustained, a trait akin with antisocial personalities. Linked with aggression

was the client's occasional use of violent fantasy reminiscent of her past coping style to physical abuse and maternal rejection in childhood.

The Clinical Syndrome code generated was T**A*// - ** -* //. This code is indicative of high scores on substance abuse scales and anxiety. Her high score of anxiety might indicate the presence of a clinical syndrome. This anxiety could be a result of a sense of dissonance in the client where she believed that laws and regulations are important yet she failed to conform and regularly transgressed these norms by engaging in deviant behaviour such as drug use, prostitution and violence. Her profile scores also indicate the prominence of another syndrome that of substance abuse. This could have emerged as a coping mechanism to deal with issues of her distal past, pathological personality, dysfunctional thoughts and feelings of anxiety. This latter syndrome the client was addressing through the help of the probation officer and the counselling sessions with her substance-abuse worker.

Baseline Anger Symptoms

The ADS is a multi-dimensional anger scale and a self-report instrument used to identify problems on various dimensions of anger. It could help in the formulation of the client's idiosyncratic variants of anger and its expression as well as aiding in the development of interventions to address the anger dysfunction (Di Guiseppe & Tafrate, 2004). Apart from aiding the development of suitable interventions the ADS was used to assess the client's level of anger at baseline, post-intervention and after a period of follow-up. The scores obtained from the test were converted to t-values and corresponding percentile ranks. Percentile ranks were collapsed into categorical values comprised of four percentile ranges; 0-74th percentile indicative of no significant problem; values between the 75th – 89th percentile indicative of a mild problem; values between the 90th – 94th percentile indicative of moderate anger dysfunction; and scores beyond the

95th indicate a severe problem. Table 3.1 displays the ranged percentiles and the associated severity category. A reduction in severity rating between baselines and the outcome following the intervention would be considered as successful treatment of anger symptoms in this case study.

Table 3.1: Severity Category Table

Percentile Range	**Clinical Relevance**	**Severity Category**
>95th percentile	Severe Pathology	3
90th – 94th percentile	Moderate Pathology	2
75th – 89th percentile	Mild Pathology	1
< 74th percentile	No Pathology	0

The profile generated by YA responses to the ADS indicated severe anger pathology. The raw scores and the corresponding t-scores are also tabulated in Appendix IV. This Appendix also contains the post-treatment scores and the scores at follow-up.

Table 3.2 Severity category of ADS total and Higher Order scales

Higher order scale & Total score	**Pre-intervention Percentiles (t-score)**	**Severity Rating**
ADS Total	99 (96)	Severe Anger Pathology
Anger-In Scale	99 (80)	Severe Anger Pathology
Reactivity/Expression Scale	99 (86)	Severe Anger Pathology
Vengeance Scale	99 (110)	Severe Anger Pathology

Her ADS total score and her scores in the higher order scales were all within the range indicating severe anger pathology at the pre-intervention stage. Typical of respondents scoring high scores on the Reactivity/Expression Scale the client's behaviour was in fact characterised

by the extensive use of verbal aggression and abuse towards others. Her experience of physiological arousal was also substantially high. The client was prone to ruminate about distal events and perceived humiliation by others. The client scored a t-score of 86 on this scale which was within the 99th percentile. Di Guiseppe and Tafrate (2004) claim that respondents with high scores in the Reactivity/Expression Scale typically have anger outbursts targeting those close to them, a similar pattern to the client's aggressive outbursts. This implied that in treatment the client needed to increase her monitoring of anger and her arousal and avoid getting in situations in which she might lose control. Relaxation techniques and self-talk are recommended components to be used in treatment to reduce her physiological arousal.

Her t-score of 80 on the Anger-In Scale was within the 99th percentile indicative of severe issues in this scale. In fact the client typically attributed hostile intentions in others. These seemed to stem from feelings of extreme resentment possibly due to the maternal rejection she had sustained in her past. Di Guiseppe and Tafrate (2004) suggest that clients manifesting high Anger-In scores should focus on addressing their cognitions especially those related to hostile attribution and resentment. Treatment should also include a heavy input of assertiveness skills training in order to enable the client to effectively deal with conflict.

Perceived attacks on her sense of self and a perception of being shamed trigger off a reaction of seeking vengeance to restore a sense of justice. This pattern was evidenced by the Vengeance scale which was also with the severe range, having a t-score value of 115 and within the 99th percentile. Her typical reactions to when she felt shamed or humiliated were usually verbal or physical violence. The client in this case needed to address her inferences and evaluations of others through cognitive disputing and resorting to more realistic evaluations. Table 3.3 displays the

different percentiles and severity ratings of the subscales of the ADS of the client at baseline. The Provocations domain attempts to identify the triggers associated with anger. In the subscale of Scope of Anger Provocations the client's score was in the 59th percentile which indicated that the client experienced specific antecedents in her anger responses which will be discussed further in the functional analysis. Anger appeared to be triggered when she perceived social rejection or disrespect. On the Hurt/Social Rejection scale the score pre-treatment was on the 97th percentile which might imply as suggested by the formulation that the client is sensitive to criticism and perceived shame. In treatment therefore the client needed to identify triggers of anger and through cognitive restructuring address dysfunctional thoughts.

Table 3.3: Subscales of the ADS at baseline and their severity rating.

Domains	**Subscales of the ADS**	**Pre-intervention Percentiles (t-score)**	**Severity Rating**
Provocations	Scope of Anger Provocations	59 (55)	No Significant Problem
	Hurt/Social Rejection	97 (74)	Severe Problem
Arousal	Physiological Arousal	98 (86)	Severe Problem
	Duration of Anger Problems	95 (75)	Severe Problem
	Episode Length	96 (70)	Severe Problem
Cognitive	Suspiciousness	99 (80)	Severe Problem
	Resentment	98 (77)	Severe Problem
	Rumination	98 (76)	Severe Problem
	Impulsivity	98 (89)	Severe Problem
Motives	Revenge	99 (106)	Severe Problem
	Tension Reduction	77 (58)	Mild Problem
	Coercion	99 (80)	Severe Problem

Behaviours	Brooding	90 (63)	Moderate Problem
	Verbal Expression	99 (97)	Severe Problem
	Physical Aggression	99 (130)	Severe Problem
	Relational Aggression	99 (102)	Severe Problem
	Passive Aggression	99 (83)	Severe Problem
	Indirect aggression	98 (90)	Severe Problem

The arousal domain focuses on the subjective physiological experience of anger (Physiological Arousal), the intensity of the anger and the length of time (Duration of Anger Problems and Episode Length) associated with the arousal. The client experienced intense arousal and activation of the physiological reactions when angered. She also tended to stay angry for long periods as she was unable to de-escalate her arousal. Her arousal and anger was sustained with her frequent ruminations about the trigger. In fact scores on these subscales were all in the severe problem range being in the 98th, 95th and 96th percentile respectively. Thus a substantial part of treatment had to focus on engaging in positive self-talk and practicing relaxation techniques to reduce arousal.

The client's scores in the cognitive domain were all within the severe problem range indicative of several cognitive dysfunctions. High scores on the suspiciousness scale might indicate that the client experienced hostile attribution biases. She also had a belief that she had a "rough" deal in life, which belief was based on her distal experiences and measured by the Resentment Scale (99th percentile). The scores on the Rumination Scale (98th percentile) might indicate a preoccupation with the transgressions of others and a tendency to ruminate about perceived humiliations. This matched the results from the MCMI-III (Millon et al., 2009). The Impulsivity Scale (98th percentile) seems similar to the concept of automatisation of behaviour and the immediate appraisal system identified in the General Aggression Model (Anderson & Bushman, 2002; Anderson & Carnagey, 2004; De Wall & Anderson, 2011). This occurred when the behaviour becomes activated through memory constructs triggered by environmental cues. Di Guiseppe and Tafrate (2004) recommend that treatment for dysfunction in this domain should consist of cognitive disputing of inferences and evaluations; generating alternative appraisals; positive self-talk; thought stopping and relaxation techniques.

Tension Reduction in the Motives domain was within the mild range (77th percentile). On the other hand the motive of seeking revenge for past hurts and for the perception that others attempt to humiliate her was quite prominent in the client as testified by her score on the Revenge Scale (99th percentile). The Coercion Scale also within the 99th percentile could indicate that she attempted to assert control over others through her use of anger and aggression. Such coercion could be an attempt at manipulating her environment fed by core beliefs that others cannot be trusted (hostile attributions) and that she must aggress before they shame her. The results on this domain also matched with the diagnosis and profile on the personality assessment. Such results emphasise the need that treatment tries to deal with acceptance of past hurts and development of tolerance to injustice and unfairness as well as acknowledging the long-term effects that her behaviour has on her relationships.

The client scores were within the 99th percentile for the scales of Physical Aggression, Verbal Expression, Passive aggression and Relational Aggression and within the 98th percentile for the Indirect Aggression Scale. This indicated severe issues in most of the scales of this domain. Only the Brooding scale (90th percentile) was within the moderate range. Although the client resorted to violent physical aggression her typical behavioural reaction to anger was through verbal aggression. This often takes the form of insults, swearing and humiliating others. Ironically she seemed to resort to the same motives she attempted to stave off. These behaviours were sustained by a belief that others deserve retribution in order to re-establish a sense of power. This domain shall be explored in more detail in the functional analysis. Due to her scores on this scale it seemed important that the client improved her communicational skills and problem solving abilities. It was also deemed important that she practiced assertiveness skills and understands the consequences of her actions on others.

Most of the treatment needs that were identified by the ADS (Di Giuseppe & Tafrate, 2004) for example assertiveness, communication skills and arousal control strategies are also treatment components of the I-MAP (Johnson & Gast, 2013) further supporting the notion that this programme can with some amendments be piloted for the use of this case study.

Idiographic Assessment

The idiographic assessment was meant to consist of the journal and Frequency Data Sheets. The Frequency Data Sheet was intended to record the number of times she felt angry or displayed aggression in between sessions and so establish baselines for the target behaviours. The client however, found the use of these sheets difficult in monitoring her daily experience of anger, even though she managed to record the most salient bouts of anger on the Journal. After the initial sessions the frequency data sheets were discarded to avoid the client getting frustrated with failure and consequentially only the scores on the ADS were used to obtain baseline scores and assess intervention outcome.

The journal was used to obtain information about the client's anger experience, identify triggers, behaviours and cognitions associated with anger and their potential consequences. The use of the journal could have resulted in reactivity whereby through the use of such data recording tools the client would be gaining insight into her behaviour. Thus apart from providing material for review in the sessions they could have led to increased awareness in the client and help in practising self-monitoring (Miltenberger, 1997; Deffenbacher, 2011; Novaco, 2011). The Journal might be prone to the biases implicit in self-reporting however it can be argued that it is precisely this possible dysfunctionality and selective nature of one's cognitions that needs to be addressed.

Thus the identification of proximal factors linked with eliciting anger and aggression in the client was achieved through the use of extensive interviews with the free recall of events and use of visualisation and the analysis of the journal entries. These explored the antecedents involved, the appraisal system used, the behaviour manifested and the outcomes of the action sequences.

After analysing the content from the interviews and the journal one surmised that the usual antecedents or triggering factors involved in the client's manifestation of anger and aggression were related to those events in which the client perceived that she was being humiliated. When other people's behaviour did not match up to her expectations the client would also react aggressively. The client often interpreted social events as being hostile with the result of eliciting a state of affective arousal, anger. This affective state could further bias the individual by priming the offender to retrieve aggressive scripts and eliciting normative beliefs that support aggression (Huesmann, 1998). This analysis substantiated the initial hypothetical formulation.

Financial difficulties were an especially salient antecedent event or setting factor. The client's maintains that she supplements her social security benefits from working illegitimately as a part-time cleaner. Despite this employment the client claims in many instances she could not financially sustain herself, her partner and teenage daughter. It was during these periods that YA typically engaged in prostitution. Although this behaviour rends a lot of financial rewards it was psychologically very taxing on her. She felt dirty and humiliated every time she had to perform sexually for money triggering off further feelings of anger, a general state of arousal and also personal factors and knowledge schemas associated with her distal past. This primed her to reacting aggressively in the period just after she engaged in prostitution. During this period she frequently

experienced aggressive outbursts against other prostitutes and also her partner.

Experiences could lead to the development of links between the cognitive schemas and particular affective states, known as *nodes* (Anderson & Carnagey, 2004; De Wall & Anderson, 2011). Repeated associations increase the strength of the link. In client YA repeated association of humiliation and feelings of anger had possibly contributed to the development of a node. Thus the perception of being humiliated would trigger off feelings of anger and behaviourally trigger off aggression. Another consequence of affective arousal inherent of this node was the impaired processing ability of social information losing out on the accurate interpretation of the event and causing the offender to be more dependent on past experiences (Gilbert & Daffern, 2010), increasing in the client the potential for violence.

Case Formulation and Functional analysis

As a final analysis the information was formulated in a functional analysis to assess how her problematic behaviour, emotions and cognitions were being sustained. Functional analysis is one method of developing a case formulation. Typically, functional analyses focus on operant conditioning and behaviours, however, the functional analysis conducted in this case study also focused on cognitive aspects related to behaviour. This approach would help the clinician deliver therapeutic content based on the developed case formulation (Persons, 2012). Functional analysis as a case formulation has been reported to yield significant treatment effects in relation to behavioural and emotional problems (Nelson-Gray, 2003; Haynes, Leisen & Blaine, 1997).

When operationalising behaviours one can focus on both overt and covert behaviours elicited by the antecedents (Sturmey, 1996). The target

set of behaviours noted through indirect and direct methods of assessment comprised of the overt behaviour of aggression in the form of verbal threats and abuse and physical assault and more private events that involved the experience of recurrent thoughts of losing face or being humiliated and experiencing a physiological state of arousal.

There were specific identifiable events that are linked with aggression in the client. These were frustration inducing and provocative events like the financial difficulties; precipitating factors in the behaviours of others such as the sense of being used and criticism from other people; and precipitating factors more associated with the behaviour of the client such as prostitution and intra-familial conflict. The external event of experiencing financial difficulties might facilitate another antecedent that of prostitution which combines with internal events like anger related memories or memories from her distal past associated with losing face of humiliation. This in turn could facilitate the probability of appraising social situations as anger inducing and consequentially aggression.

Reinforcement strengthens and maintains the behavioural, affective and cognitive sequences in response to antecedents. Aggression could be seen as self-reinforcing as it seemed to help the client attain a sense of power and restitution when she experienced negative feelings. Aggression can be seen as reducing the aversive feelings such as shame inherent in particular events such as prostitution thus would be negatively reinforcing. In her domestic situation aggression can be seen as positively reinforced as it established control over her partner and also satisfied a perceived sense of revenge, issues also identified by the ADS.

The main motivations involved in aggression seem to involve the concept of losing face, shame and humiliation. The purpose of the behavioural set is to achieve a sense of justice and restitution to the aforementioned proximal antecedents and achieve revenge for her past

hurts.

Table 3.4 – The functional analysis and interventions

Antecedents	**Treatment**
External Factors Financial difficulties Prostitution Being used by others Being criticised by others Intra-familial conflict *Internal Factors* Anger related memories	1. Directing interventions of the probation officer to address issues such as keeping to a budget and finding stable employment. 2. Identifying risky situations and ways of avoiding them. 3. Challenging through cognitive disputing and analysis of Journal notions of being used by others and accepting criticism. 4. Acceptance of distal traumas.
Behaviours	**Treatment**
Cognitive (covert) rumination of being humiliated or losing face *Physiological (covert)* Arousal *Behavioural (overt)* Verbal & physical aggression	1. Analysis of the dysfunctional thoughts through the use of Journal/Anger log and disputing the inferences and evaluations made. 2. Addressing arousal through the use of the body scan technique and breathing exercises. 3. In-session and in-vivo training of the relaxation techniques and assertiveness. 4. Identifying functional alternatives to aggression such as assertiveness and assertiveness training.
Consequences Self-reinforcement Positive Reinforcement – establishes sense of control Negative Reinforcement – reduction of aversive feelings lowers sense of shame and anger	**Treatment** 1. Conducting a cost-benefit analysis of anger and aggression. 2. Identifying the long term effects of anger and aggression.
Other	**Treatment**
Repeat victimisation Drug abuse	1. Recognising dysfunctional relationships 2. Developing the motivation to seek further interventions for treatment of drug abuse, relapse prevention and possibly a drug free residential/non-residential treatment programme.

Table 3.4 summarises the results of the functional analysis and the suggested therapeutic interventions to address the issues identified.

SUMMARY OF INTERVENTIONS

Interventions

All the information derived from the assessments carried out were collated together to identify the best strategy for treatment based on the identified needs. During the initial sessions the timescales and the scope of interventions were agreed upon. The first four sessions heavily concentrated on interviewing and administering psychometrics; explaining the process of therapeutic change from a cognitive-behavioural perspective; the methods used such as the diary and goals of treatment. These sessions also concentrated on rapport building and reinforcing her motivation to change (Harms, 2007). Linking one's issues and problems to their developmental and historical roots helps in promoting self-efficacy and contextualises the anger (Honos-Webb, Stiles & Greenberg, 2003). A further 12 sessions were planned in order to deliver the interventions and a final 2 sessions were dedicated to the re-administration of the ADS and closure.

The format of the interventions conducted was on a one-to-one basis. The *Individual Managing Anger Programme Facilitators Manual* and the *Participant's Workbook* (Johnson & Gast, 2013) were used as a guideline for the interventions delivered with the tasks adapted to fit the idiosyncratic formulation. The factors explored in the formulation were also treatment goals of this programme such as addressing cognitive distortions. However, some minor revisions were made in order to emphasise certain elements that emerged in the formulation.

The I-MAP typically consists of 9 sessions, (refer to Appendix II for a brief description of the individual sessions), which attempt to: facilitate the understanding of anger; identify the triggers, thoughts, emotions and behaviours associated with anger; develop positive communication

strategies; develop positive relationships; understanding thinking styles and errors; recognising and challenging unhelpful thoughts; and developing inhibitions to anger and developing strategies to increase anger control (Johnson & Gast, 2013).

A substantial amount of time during the sessions was dedicated to cognitive restructuring. This was primarily attained through the use of the journal that monitored the cognitive distortions and its accompanied emotional and behavioural consequences or antecedents. The Journal in the I-MAP also provides a number of questions which are aimed to help the client identify the intensity of the emotions, the triggers of anger, the physical sensations noted by the client and the dysfunctional thoughts. The client is also required to list possible alternative and functional thoughts. During these sessions the client was refrained from completing this section in the initial sessions until she was confident enough in generating alternative thoughts without facilitation.

A number of cognitive distortions were identified and needed to be addressed these included: over-generalisations; flawed appraisals and expectations; and over-reactions to situations.

The client's tendency to over-generalise negative events and magnify their significance in her life compounded the negative attributions and evaluations of herself and others. This distorted cognitive process was addressed by getting YA to determine what evidence she had to sustain her beliefs, whether any alternative explanations can be surmised and the potential consequences of both the dysfunctional and the functional thinking would have on her life and her relationships with others (Miltenberger, 1997).

The client was also helped to question the evidence used to sustain her flawed thinking with a more reality focused thinking strategies. This also involved analysing and disputing her appraisal and expectations of

others and situations by exploring: possible alternative evaluations; exploring how others might react; the practicality of reacting to the event or interpretation; and need to avoid making inferences and evaluations by being open to alternative explanations.

Once the client was able to confidently come up with rational reality focused alternatives to the different situations explored during the session she was then advised to add the more rational thoughts herself in the journal prior to the sessions. The suggested questions in the journal in the *I-MAP Participant Workbook* (Johnson & Gast, 2013) also helped the client to sustain the work carried out during the sessions by applying the learning in vivo using the journal as a self-monitoring tool.

The client had a pattern of over-reacting to particular situations. Primarily the client was advised to determine which of these situations had practical importance and so deserving of a reaction. Gorenstein et al. (2007) propose that the client can be taught a type of self-talk that reminds them of the often trivial matter of a frustrating stimulus. Alternatively clients could try and engage in reciprocal behaviours that might alienate them from what they are experiencing. Both of these techniques were attempted in treatment. Gorenstein et al. (2007) further propose that clients can understand that they can control their reactions but have little or no control over events or the behaviours of others. The client was made aware of the analysis that she needs to make prior to reacting to her environment as she needs to ascertain the potential costs of her reaction. Once the client determines that it is important to react to the stimuli she was coached to deal with these stimuli in an assertive and non-aggressive manner. As an example during the sessions the issue of her daughter and her contribution to the housework was explored. Rather than overreacting when her daughter does not help which would serve only to frustrate her even further she could respond in a polite way and using

assertiveness skills to get her message across. By practicing how to control her reactions she would be more confident in controlling them in the future and by consequence her relationships with others might improve. This latter idiosyncratic adaptation was implemented mostly during the session focusing on relationships in the I-MAP which attempts to get the client to practice positive communication skills, increase perspective taking and understand the role of blaming in sustaining the anger response (Johnson & Gast, 2013). The I-FOR exercise, hand-outs and case examples in the *I-MAP Participant's Workbook* (Johnson & Gast, 2013) were particularly useful. In this exercise the client was coached in using assertive body postures and making what can be termed to be "I" statements. She was advised on using facts rather than inferences or evaluations of others and to express a sense of ownership of her thoughts and feelings. In this exercise she was also advised on how to make appropriate clear and direct requests and to avoid the pit-falls of assuming what and how others should do or behave. The treatment plan attempted to help the client establish a more flexible way of thinking where rather than placing demands on others and ourselves we develop preferences (Trower, Casey & Dryden, 2008).

With clients undergoing anger management interventions the therapist should not only focus on developing more realistic interpretations but also focus on issues of fairness and fact (Gorenstein et al., 2007). In issues of fact the therapist could use cognitive disputing as mentioned earlier to compare thoughts with reality and then determine what evidence sustains the "facts". Issues of fairness rest on the belief that the client was at some point unjustly treated. As evidenced from the formulation and her profile on the ADS she harboured deep sentiments of being wronged in her past which also affected the way she interpreted new events. In treatment YA was guided to start developing a tolerance to injustice noting that the unrealistic to expect the world to be just. So rather than focusing on

disputing injustice in therapy one focused on the automatic thoughts that sustain the idea that injustice or unfairness cannot be tolerated (Gorenstein et al. 2007). In the sessions this was done by dealing with the practical implications of having to deal with the perceived injustices. An example of this practical issue dealt with in treatment was similar to situation identified by Gorenstein et al. (2007). YA used to get angry when someone cuts the road in front of her whilst driving to the extent that she frequently stopped the car and became aggressive. The practical implication here was that if her goal is to get to her destination in the shortest possible time the few moments it took to drop a gear or break her car is far less time consuming than stopping the car completely and threatening the perpetrator. The client was helped to understand that responding to the perceived injustices makes her feel more resentful of others and their intentions. If the practical impact of other's indiscretion on her life was minimal she should not waste her time and energy to deal with it. The aim was to help YA see that restraint and tolerance to injustice is an advantage in some situations.

The issue of resentment and injustice was introduced almost in every session with the client due to its prominence in the formulation, especially in the sessions dealing with triggers of anger, communication, relationships and recognising/challenging unhelpful thoughts. A number of techniques were used to help address resentment. These were the use of the formulation diagram to help the client understand the links between her past and present thoughts and behaviours, the use of the road map in the IMAP which also helps the client apprehend the formulation and identifying a way forward and the journal. These techniques sought to help the client accept and overcome resentments by helping the client put the past into perspective (Di Giuseppe, 2011). It was also deemed important to help the client identify how she repeatedly puts herself in situations that elicit her angry response, namely when she engages in prostitution.

Related to the issue of resentment the client maintained that sometimes she ended up ruminating about past hurts, humiliations and injustices with the result that she frequently triggers anger related memories. Memories related to her maternal rejection, humiliations and other distal factors. This invariably led the client to fantasise on revenge and increase her arousal state hindering the effective appraisal of events. To address these ruminations the client was advised to use mindfulness and focusing on the here and now. The client was also asked to set a particular place and time in which she can ruminate freely bearing in mind that she has a stipulated time period of about 15 to 20 minutes in which she can do so. She was also instructed to note the negative thoughts she experienced during this period and if she ruminated out of the stipulated time frame. These thoughts were then disputed in the sessions noting that her anger seemed to masking a fear of humiliation and losing face and also a violation of long held rigid beliefs.

Her use of violent fantasy was also addressed in the interventions. Repeated use or rehearsal of such fantasies could lead the client to think violence is a normative belief and could act as a rehearsal of aggressive cognitive scripts (Huesman, 1998; Seager, 2005; Berkowitz, 2008; Gilbert & Daffern, 2010). The client had rather normative beliefs that some forms of aggression were acceptable considering her circumstances. These aggressive scripts and beliefs were analysed and disputed to help the client understand their effect on how she interacts with others and how they are involved in perpetuating further negative feelings.

Trower, Casey & Dryden (2008) claim, that the more intense the emotional consequence of the belief the more extreme would be the behavioural consequence of the client. Discussing the formulation helped the client develop an understanding of her behavioural action sequences. The I-MAP also provided exercises to help the client identify the benefits

and costs of anger on herself and her relationships with significant others. The client was made aware of the short term reinforcement schedules of her behaviour, such as a sense of restitution of her shame and perceived empowerment.

The client was also taught a number of self-statements to replace the dysfunctional automatic thoughts triggered in potentially conflictual situations. This self-talk was used primarily to increase the client's appraisal repertoire and prepare her to cope with provocations or confrontations. Examples of the self-talk used were "*Don't take this personally*" or "*I can do this without losing it*". During the stressful event itself the client's de-escalating thought was that "*I am under control*". Should she identify her arousal increasing she was instructed to slowdown (using the traffic light metaphor from the I-MAP) and repeat the phrase "*Time to do breathing exercises*", as well as seeking to remove herself from the situation and engage in arousal reduction strategies. Once she was successful in coping with the situation the client was instructed to always reinforce herself for successfully dealing with the situation. These statements were also used when compiling the Cue Card exercise in the I-MAP (Johnson & Gast, 2013).

Breathing and visualisation exercises were used to help the client reduce and de-escalate her arousal to stressful situations and increase mindfulness. These consisted of 3-minute long exercises aimed at relaxing the client by focusing on the breathing. Here the client was asked to inhale deeply from the nose and exhale slowly from the mouth. Complimenting breathing exercises the client used two kinds of visualisation techniques. Image cued relaxation or the "Happy Place Technique" implied that the client would visualise places in which she feels calm and in word-cued relaxation techniques the client repeats particular cue words such as "*relax*" or "*calm down*". Both of these techniques are described in the *IMAP*

Facilitator Manual (Johnson & Gast, 2013).

After developing fluency in relaxation techniques the client was asked to visualise anger provoking situations while she conducted in situ arousal reduction exercises. This would serve as counter-conditioning and is believed to take off some of the angry arousal of real life situations facilitating her control in vivo (Deffenbacher & McKay, 2000). A further technique called the Body Scan Technique which aims to increase a sense of mindfulness was also used in the interventions, this arousal reduction technique is also described in the *IMAP Facilitation Manual* (Johnson & Gast, 2013).

Assertiveness training is an important skill in anger management (Gorenstein et al., 2007; Trower, Casey & Dryden, 2008). Here one can identify 3 stages of acquisition starting from the discerning of the difference between submissiveness, aggression and assertiveness; dealing with any cognitive blocks to assertiveness such as being overly concerned with the flaws in others; and the behavioural practice of the new skill in treatment and then in-vivo. Assertiveness is a socially acceptable alternative to her angry response pattern. By being assertive she avoids penting up frustrations and could communicate her wants and feelings to significant others in her life or in situations she deems she needs to react. Whilst coaching assertiveness skills she was always reminded to focus on communicating how she is feeling in the given situation and the goal or objective she is after.

Closure

During the interventions the client was taught how to identify problems and understand how these make her feel. YA was helped to recognise problems and situations that require her action, reduce the attribution of blame onto others (e.g. understanding her role in financial difficulty and not just blaming others) and be specific and realistic on the

identification of desired outcomes. She was helped to identify different alternatives; their outcomes and the resources or steps needed to achieve her objectives. To sustain the gains in the sessions the Probation Officer supervising the client was also advised on how to compliment the progress the client was having in the sessions and helped the client for example to identify adequate budget keeping strategies.

At the end of the planned sessions the client was given feedback concerning her achievements and the results of the psychometric tests were discussed. These were presented in a diagram format for ease of understanding. The client was advised on the need of a follow-up and a review session was planned in 4 months-time. In the closure sessions the client also discussed the concept of traffic lights and the roadmap was used to show her progress through the sessions (Johnson & Gast, 2013). Potential relapse prevention techniques as recommended by Van Dieten et al. (2001) were also explored in the closure session. These included discussing: personal safety issues such as prostitution; accepting negative emotions and resentment; to continue to generate alternative thoughts and evaluations and challenge cognitive distortions; accept responsibility for actions; engage in positive self-talk as directed in interventions; reviewing and generate alternative thoughts to events; and planning ahead. These were also amalgamated with the concept of cue-cards which would provide the client with useful tips following the termination of the sessions and also serve as reminder for the client of the commitment she had expressed during the sessions (Johnson & Gast, 2013).

RESULTS AND DISCUSSION

Summary of Results

The results of the interventions were measures by comparing the results of the pre-intervention scores on the ADS (Di Giuseppe & Tafrate, 2004) to the results of the same measure post-intervention and after the 4-month follow-up. A psychometric tool was opted for due to the difficulties in using observational methods with offenders in the community. As mentioned the client was asked to use frequency data sheets to self-report the operationalised behaviour of interest. However she had expressed that using the Journal and the sheets was too taxing. The Journal itself could not be used as a suitable and accurate tool to establish baselines as the client maintained that she only reported the most salient behaviours and events. Thus the ADS (Di Giuseppe & Tafrate, 2004) were used as an adequate alternative to establish the baseline. Although the test would not be specifically measuring the operationalised behaviour in the formulation it would be assessing the client across the higher order scales and the 5 domains of provocations; arousal; cognitions; motives and behaviour. The scores converted to percentiles and then assigned a severity category were compared to assess the treatment effect of the intervention at the different testing periods. It was hypothesised that the therapeutic interventions held would have a positive effect on the client's self-reported scores and lower her severity rating on the scales.

The scores obtained during the three testing periods were analysed for clinical significance by calculating the Reliable Change Index (Jacobson & Truax, 1991). To compute the RCI value the mean scores and standard deviations for female normative samples; the mean scores and standard deviations for the offender samples; and the overall reliability score of the ADS were used. The computation revealed that the RCI value was 7.18

indicating that the change in value from pre-intervention to post-intervention (a decrease of 28.7 value points) was clinically significant. Also the change between the pre-intervention score and the follow-up scores was also clinically significant with a calculated RCI of 15.51 (a decrease of 41.9) were clinically significant. Since the ADS total score is a composite score of all the other subscales only this score was used to assess for clinical significance using the RCI. In Appendix IV one can view the tables with the complete raw scores, t-scores and percentile scores on all three testing periods, the pre-intervention, the post-intervention and follow-up. In Figure 1 one can observe the changes experienced by the client's self-reported symptom t-scores of the ADS on the three testing periods.

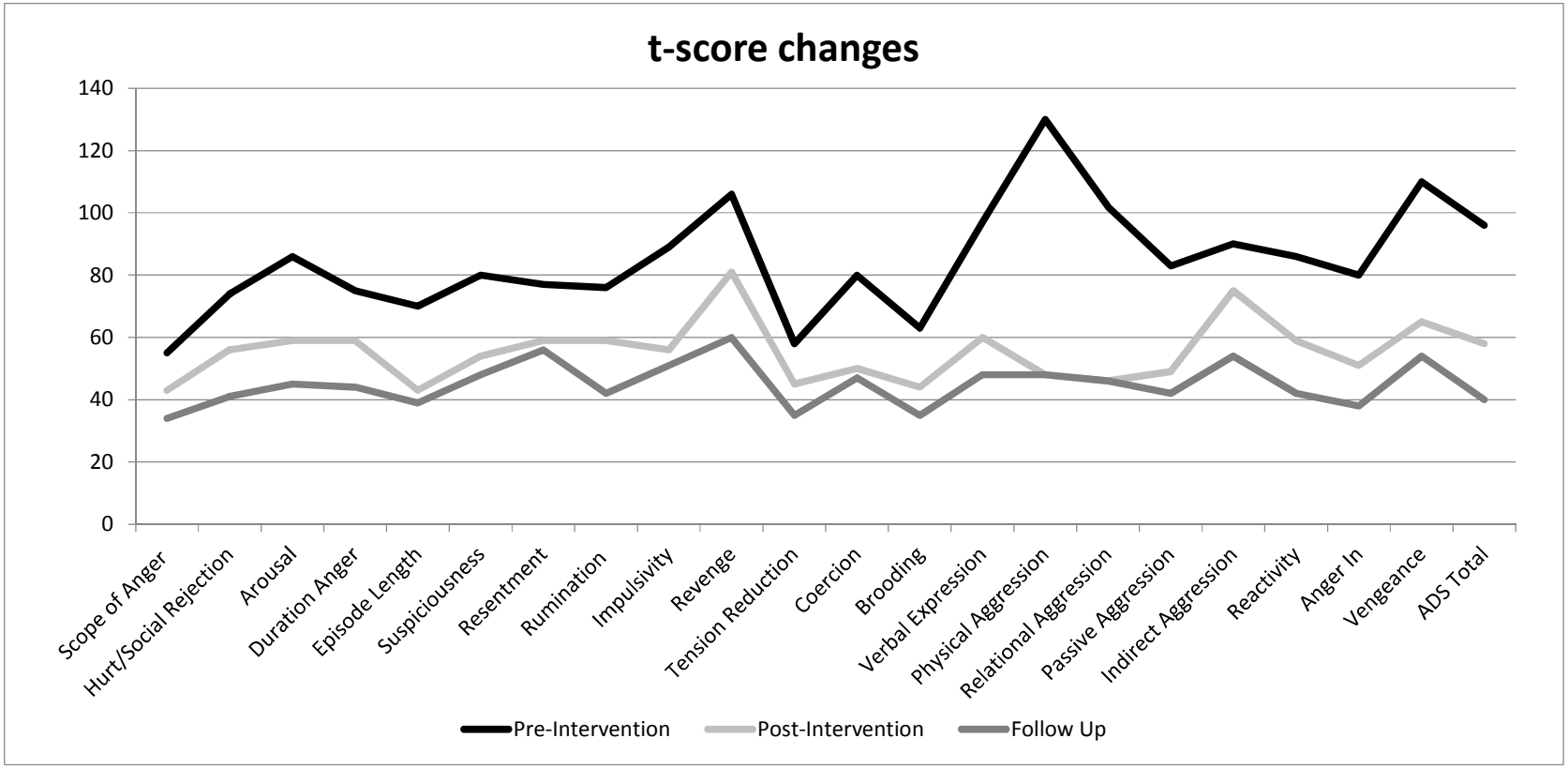

Figure 1. The t-scores at pre, post-intervention and follow-up of the case study.

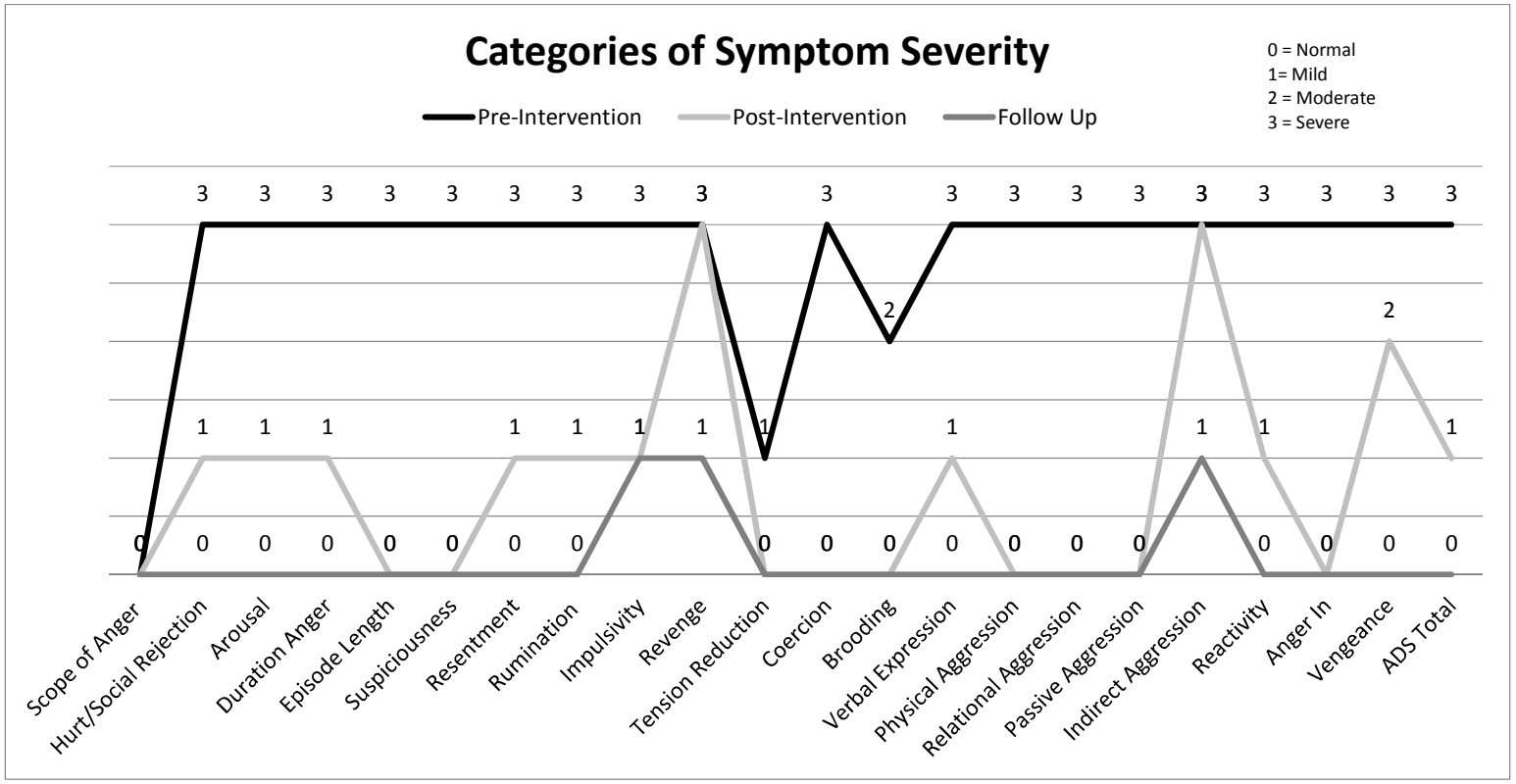

Figure 2. Changes in Severity Category across the assessment periods

Figure 2 displays the client categorised severity percentile ranks in all the assessment periods. A positive shift in the severity categories was recorded following interventions. These changes seem to not only have been maintained but continued to improve the follow-up stage.

Post-treatment scores on the Higher Order Scales

All scores on the higher order scales experienced a reduction of reported symptoms. Scores on the Reactivity/Expression Scale were reduced to the mild pathology range post intervention and to the no significant problem range at follow-up. Clinically this is a marked improvement for the client where her expression of anger seemed to have reduced considerably to the extent that it does not appear to hinder her daily social interactions and experiences with others.

Her lower Anger-In scores seem to indicate an increased proficiency in communicating her wants and needs avoiding the frustration. In fact her scores on the Brooding subscale associated with keeping her anger in had been reduced considerably. It might be postulated that the client learnt to express herself in a positive and assertive way rather than resorting to underreporting or overreacting to particular situations. This could be an indication that she had come to see talking about issues as a valid alternative to her previous behaviour. She claimed towards the planned closure of the sessions that her appraisal of others especially those close to her had changed considerably and she was less preoccupied with issues of trust. She had also become better at engaging in a process of reappraisal and at taking the perspectives of others. These were maintained in the follow-up period where the client claims that her relationships with others had improved considerably.

Post-intervention her score on the Vengeance scale also decreased to within the moderate problem range. Although her score at follow-up was

on the borderline uppermost percentile (74th) within the no significant symptoms category it indicated a substantial decrease on this scale. This was especially salient when one considers her profile on the MCMI-III (Millon et al., 2009) which indicated a pathological personality and rather entrenched core belief system of seeking retribution.

Post-treatment score on the Domains of the ADS

Through the interventions the client was able to reduce the amount of situations that were previously considered anger provoking. Her score on the Hurt/Social Rejection decreased to within the no pathology range from the severe range pre-intervention scores. During the sessions there was a lot of emphasis on how to cope effectively with criticism and generate alternative interpretations to the different scenarios described in the Journal. Her role in sustaining social rejection seems to have been positively addressed by the client who reported that since the intervention she has found stable employment and no longer resorts to prostitution.

Through the use of visualisation, breathing techniques and positive self-talk the client was able to reduce the symptoms assessed in this domain. Her reported level of arousal post-intervention was in the mild range and in the no significant problem at follow-up. The Duration of Anger Problems scale followed a similar pathway indicating that she possibly no longer sees anger as significant in her life as she did prior to interventions. The psycho-educational component in the anger management interventions could have resulted in a greater understanding of anger, de-mystifying the hold it had the client.

Her reported anger arousal was less intense and of shorter duration. Her Episode Length post-intervention and follow-up was within the non-pathological range. This change could have also been sustained through the reduction of associated symptoms on the Resentment, Brooding and

Ruminations scales.

A substantial number of sessions concentrated on disputing her inferences and evaluations; flawed appraisal systems and her sensitivity to issues such as perceived humiliation. All scales measured in this domain sustained positive treatment effects. Her score on the Suspiciousness scale shifted to within the "normal" range post intervention and was maintained at follow-up. This could be the result of the strong emphasis in the sessions to reduce the aspect of hostile attributions. Positive shifts in the severity category were also noted in the Resentment, Rumination and Impulsivity scales recorded after intervention to the mild pathology range. In the follow-up phase the client's scores on resentment and rumination sustained further reductions to the no significant problem range. Impulsivity however remained stable in the mild problem range.

Her traumatic past and experiences might have instilled in the client a belief that she was entitled to exact revenge on those that trespass against her. The scale of Revenge was still within the severe pathological range at post-intervention but registered a decrease in severity in the follow-up period. Arguably this could also be a feature of her antisocial personality and core belief system as identified by the MCMI-III (Millon et al., 2009). The issue of entitlement to seek revenge might necessitate further interventions despite being in the mild problem range. The other motives measured by this domain, Coercion and Tension Reduction, have been substantially decreased to within non-pathological levels in the post-intervention and follow-up periods.

On the scales of Brooding, Physical, Passive and Relational Aggression the client's score decreased to a non-problematic range. Thus it might be postulated that the interventions used like assertiveness skills, reducing arousal and identifying functional alternatives to aggression seemed to have had the desired effect. Verbal Expression was her most

frequently used behavioural reaction to anger and the results also indicated a graduated positive shift in severity category from severe to the no problem indicated category. Indirect Aggression on the other hand was still significantly prominent at post-treatment and only decreased to the mild pathology range by the follow-up period. This scale is strongly associated with her motive of revenge. Di Guiseppe and Tafrate (2004) maintain that this subscale could be comprised of individuals who can control their behaviour and yet harbour desires to pay back others on perceived transgressions. Through the sessions the client could have come to the conclusion that overt forms of aggression could have undesirable consequences especially through the analysis of the potential costs of anger. In fact the formulation and functional analysis focused mainly on physical and verbal abuse, or the more direct forms of aggression. The client could have learnt that by using more covert forms of aggression she could still achieve the much craved vengeance on others and avoid potential detrimental effects of aggression.

During the follow-up period the results of the interventions were explored with the client and the issue of revenge and indirect aggression discussed further. Overall as testified by the total scores on the ADS (Di Guiseppe & Tafrate, 2004) the client seemed to no longer have an anger management problem considering that the changes initiated with the intervention were sustained in the 4 month follow-up period.

Response to Treatment and Gender Difference

To briefly explore the issue of gender differences in anger dysfunction and their response to treatment the t-scores on the ADS of female case study (assessed at baseline, post-intervention and follow-up) were compared to mean t-scores of the male Group A sample who were

tested at similar time periods. The number of participants involved in the comparisons was too small for any significant statistical analysis however an indication of the salient differences on gender between the participants in these studies might be surmised.

Table 3.5: The mean t-scores of male Group A compared to the female case study on the Subscales of the ADS

ADS Subscales	**Pre-intervention TP1**		**Post-intervention TP2**		**Follow-up TP3**	
	Group A male	Female Case	Group A male	Female Case	Group A male	Female Case
Scope of Anger Provocation	65.5	55	48.67	43	47.5	34
Hurt/Social Rejection	66.67	74	48.5	57	45.67	42
Physiological Arousal	82.58	86	49.08	58	53.25	44
Duration of Anger Problem	73.83	75	49.75	60	49.5	44
Episode Length	67.83	71	46.5	67	46.25	40
Suspiciousness	73.58	81	52.08	55	53.58	49
Resentment	69.25	78	54.25	60	53	57

Rumination	77.17	74	52.17	58	52.33	41
Impulsivity	78.33	85	54.58	55	56.25	50
Revenge	84	98	56.83	76	58.33	57
Tension Reduction	59.5	57	45.5	45	46	36
Coercion	76.92	78	51.17	49	52.83	45
Brooding	64.33	63	43	44	43.75	35
Verbal Expression	85	95	55.25	59	57.92	48
Physical Aggression	90.17	89	55.75	47	57.5	47
Relational Aggression	77.67	88	59.42	46	53	46
Passive Aggression	68.83	79	49.5	48	51.58	42
Indirect Aggression	70.25	84	48.92	70	50.25	53

In all the subscales of the ADS (Di Giuseppe & Tafrate, 2004) the female case study had higher t-scores than the mean t-scores for the male Group A (Table 6.1). Only on subscales of Scope of Anger Provocations, Rumination, Tension Reduction and Brooding was the mean male score higher. The higher scores on scales such as Hurt/Social Rejection and Resentment subscales might be indicative of the often traumatic life trajectories of female offenders. This was also identified in the formulation and the I-MAP was adapted in order to include components aimed at increasing the tolerance to injustices and resentment (Gorenstein et al, 2007; Di Giuseppe, 2011).

Both the mean male scores and the scores in the female case study saw substantial reductions in anger symptoms following intervention. Again at post-treatment most of the t-scores of the female case study remained higher than the mean male scores with the exception of Scope of Anger Provocations, Tension Reduction, Coercion, Relational Aggression, Physical Aggression and Passive Aggression. This could be indicative that the intervention had its desired effects on both male and female participants. The decrease noted in mean male scores between baseline (TP1) and post-treatment (TP2) remained constant for this group in the follow-up period (TP3). On the other hand the scores of the female case study continued to show substantial reductions in anger symptomology with all anger related symptoms reporting further reductions in symptoms at TP3. It was only in the follow-up period that most scores in the female case study were lower than the male t-score average. Only the Resentment and Indirect Aggression scale remained higher. This could be indicative that the element of victimisation and sense of past traumas was more salient in the female offender and more resistant to treatment.

A similar trend was noted in the Higher Order Scales and the ADS Total Score (Table 6.2) with both the male and female participants experiencing lower scores following the intervention, indicating that treatment had the desired effect of reducing the reported anger symptoms. Again the scores on the female case study continued to register improvements in the reported symptomology at TP3 or the follow-up period. The continued improvement on nearly all the scales of the ADS from the post-treatment to the follow-up in the female case study could have been the result of a synergic effect between the treatment, treatment engagement and the effects of supervision. The intensity of this synergic effect might not have been present in male samples analysed.

Table 3.6: The comparison of the mean male t-scores and the t-scores of the female case study on the Higher Order Scales and the ADS total score.

	Pre-intervention TP1		**Post-intervention TP2**		**Follow-up TP3**	
	Group A	Female Case	Group A	Female Case	Group A	Female Case
Reactivity	83.83	85	52.5	58	52.83	41
Anger In	76.08	81	45.92	51	46.75	38
Vengeance	83.83	92	53.5	60	56.58	51
ADS Total Score	86.25	92	51.08	58	51.75	41

Further research into the potential adaptability of the I-MAP with female offenders might shed more light on whether this continued reduction in anger symptoms at the follow-up stage was a result of this pilot adaptation or whether it was just dependent on this individual case.

CONCLUSION

In the field of corrections in Malta there is virtually no research that seeks to determine the effectiveness of psychological interventions on offending populations. This case study sought to determine the effectiveness of CBT based anger management on a community-based offender by adapting the I-MAP (Johnson & Gast, 2013) according to the idiosyncratic needs of the offender. Thus the interventions were tailored according to the needs of the client. They also focused on the material that the client brought to the therapeutic sessions through the use of home-work tasks and the Journal. Through the administration of the psychometric tests especially the ADS (Di Giuseppe & Tafrate, 2004) specific issues pertaining to the client's anger were identified and aided in the adaptation of the IMAP by identifying those modules that might need to be adapted or bolstered such as dealing with resentment. At the end of the planned sessions the potential obstacles for maintaining her treatment gains and potential sources of relapse were identified. Overall the treatment provided had a marked impact on the client's level of anger and the interventions reduced most scales to within the mild-moderate range at post-intervention and to the mild-no significant problem range at the follow-up phase as opposed to her severe symptoms reported in pre-intervention. In fact most scales seem to be within the normal experience of anger with only three notable exceptions on the scales of impulsivity, revenge and indirect aggression.

Cognitively the client had demonstrated an improvement in her ability to reappraise situations and consider alternatives to her previously dysfunctional thoughts and also consider alternatives to aggression. It seems that most proximal antecedents that previously were involved in eliciting an angry response had been successfully dealt with in therapy.

Her change in behaviour seems to suggest that she learnt to identify the costs of physical or verbal violence. Perhaps to avoid further sanctions she shifted her behaviour to more indirect and covert methods to restore a sense of revenge. This could have also be linked to the strong emphasis during the interventions to the more direct and overt forms of aggression to the detriment of a possible lack of focus on the more covert expressions of anger.

The outcome measure used, the ADS (Di Giuseppe & Tafrate, 2004) also makes use of a Positive Impression Index. This explores any attempts at ingratiation or social desirable responding by the respondents. The client's scores on the Positive Impression Index at pre-intervention (25) and post-intervention (17) were both beyond the threshold of what is considered to be impression management (scores <15). Thus the client did not seem to be concerned with giving a more positive impression of herself during these assessments. However her score at the follow-up stage on the Positive Impression Index was of 11. This low score might indicate impression management and thus any results must be interpreted with caution.

Despite this possible attempt of ingratiation the client's ability to control anger considerably increased and as she herself remarked during the follow-up she only lost control over her anger once in 4 months a far cry from the daily angry and aggressive outbursts suggesting that the gains occurred in vivo as well as being self-reported. This supports the shift noted in severity category following treatment using the outcome measure. Furthermore Di Giuseppe and Tafrate (2004) claim that the Positive Impression Index as a scale might not be able to distinguish between "normal" expressions of anger or social desirable responding.

Limitations

The study design itself had potential flaws as it would be difficult to attribute causality of the treatment design to the interventions as there might be a number of other confounding variables that might be effecting the behavioural change (Miltenberger, 1997).

Ideally, to determine success of intervention on the targeted behaviour, the client's behaviour should have been analysed as well. This however was not possible due to the reasons discussed earlier. However, during the follow up the client did disclose that her behaviour shifted significantly and she had experienced dramatic reductions of aggressive behaviour. This supports the link between the experience of anger and aggressive behaviour and further supports the notion that anger management works with those offenders identified as needing interventions to help them control their anger.

The sessions carried out appeared to show significant reductions in the clients dysfunctional emotions, cognitions and behaviours, however further interventions and adaptations of the I-MAP need to focus on the area of repeat victimisation with female offenders. In the client this was not only evident in her previous relationships, but in her illicit work of prostitution which often puts her in considerable risk. This area was explored during the discussion of the formulation and in some sessions that involved relationships and disputing inferences and evaluations. However this area would have benefited from more apposite sessions and exercises in order to prevent placing herself in situations where she can be victimised.

Future recommendations

This case study was an example of a CBT-based anger management intervention held on a one-to-one basis in the community. The subsequent

treatment effects and improved control of anger appear to be clinically significant and it might be argued that the potential risk of violence and aggression in the client was reduced considerably. Considering these results one might also undertake the task of formerly adapting the I-MAP to cater for female offender populations. As a programme it offers sufficient flexibility to cater the interventions on the individual formulation of the client while still serving as a guide for the modules and components to be addressed in treatment. With few amendments the I-MAP could be adapted for use with almost any offender population group that is experiencing anger dysfunction. The brief comparison between genders in terms of anger dysfunction and response to treatment also warrants further attention and research to ensure that any gender-specific treatment needs are being targeted by the interventions being used.

Chapter 4

4. PSYCHOMETRIC CRITIQUE OF THE ANGER DISORDER SCALES

Abstract

The Anger Disorder Scales (ADS) consists of 75 items, each measured on a Likert scale, and attempts to measure 18 different subscales (Di Giuseppe & Tafrate, 2004). The psychometric measure can be delivered in 20-30 minutes and the language used to phrase the items is adequate enough for most clients in treatment to comprehend unaided by the test administrator limiting potential bias. The psychometric properties of the test indicate that the test has good internal consistency and test-retest reliability with correlations ranging from 0.75 to 0.91. The ADS also compares well with other measures of anger such as the STAXI-II (Spielberger, 1999) and the AQ (Buss & Perry, 1992), showing good concurrent validity. This psychometric critique explores the different scales and subscales used to described the different components of anger. The ADS is especially useful in its in-depth analysis of the anger dysfunction which facilitates the development of an idiosyncratic formulation. Being constructed by clinicians the ADS is very much concerned with the developing a formulation and offers treatment recommendations to help address areas of concern. The ADS has been also standardised on forensic populations. However, it must be noted that most of the validation studies were carried out by the test developers themselves and does not seem to be widely used in research.

INTRODUCTION

The Anger Disorder Scales (ADS) was developed by Dr Di Giuseppe and Dr Tafrate, both of whom are clinical practitioners and have contributed widely to the field of psychology, cognitive behavioural therapy and anger. This makes the ADS not only based on sound theories of emotions and cognitive behavioural theory but it also provides intervention strategies and practical advice for different anger profiles. The ADS is a self-report measure aiming to analyse problematic anger. As a multidimensional tool it assesses anger through the use of different scales that might help the clinician develop and inform the formulation concerning anger dysfunction. The ADS offers the practitioner the ability to discriminate between problematic and a normal anger experience and also the degree of severity of the anger disturbance (Di Giuseppe & Tafrate, 2004).

Theoretical Background

Anger as an emotion is comprised of an experiential component; physiological or somatic components; cognitive components or schemas; and behavioural components or behavioural scripts (Eckhardt & Deffenbacher, 1995). Thus individual's idiosyncratic life experiences combine to shape and develop links between the cognitive, physiological and behavioural reactions to create anger related memory constructs (Anderson, Gentile & Buckley, 2007; Berkowitz, 2012). Activation of these constructs through particular provocateurs in the environment would trigger all other anger related constructs like aggressive behaviours and thought processes (Gilbert & Daffern, 2010). The ADS attempts to explore all these constructs.

Although some argue that the link between anger and aggression is tenuous, anger is frequently seen as an antecedent of aggression (Novaco, 2011). A recent theory of aggression the General Aggression Model (GAM) sees aggression as a coming together of personality factors, knowledge structures and situations associated with it as being mediated by internal mental states. Such states are comprised of cognitions, affect and arousal and serve to facilitate or inhibit particular behavioural outcomes (DeWall, Anderson, & Bushman, 2011). The socialisation process and experiences are emphasised in the GAM to explain how knowledge structures are developed. Furthermore aggression related knowledge structures are believed to be heavily dependent on the person's affective state like anger. The latter is also associated with lowering of inhibitions to aggression, increased justification of aggression, and aggressive scripts and increased maintenance of long term aggressive intentions (Anderson & Bushman, 2002).

The ADS also proposes that anger and aggression are inherently linked and suggests that individuals who keep their anger-in are susceptible to greater reactivity and aggression, be it overt such as verbal or physical aggression or more covert forms of aggression such as indirect or passive aggression. During the reliability and validation studies the authors noted that the Rumination scale was significantly predictive of impulsivity, challenging the previously held construct that much of the angry aggression was impulsive and without previous premeditation. This supports the assumption that aggression is a result of cognitive processes (Di Giuseppe & Tafrate, 2004).

Also the Total ADS score can be seen as a reliable measure of trait anger (Di Giuseppe & Tafrate, 2004). Recent research suggests that trait anger is a good predictor of future violence (Gilbert, Daffern, Talevski &

Ogloff, 2013). Furthermore high trait anger seems to be associated with increased use of aggressive script rehearsal and longer periods of arousal which could further intensify and increase the frequency and duration of anger episodes (Gilbert et al, 2013), thus indirectly supporting the ADS's validity as a measure of anger.

Overview and Administration

All the items included in the test are scored using a 5-point Likert scale which offers a set of choices for the respondent to select from. The wording used in the Likert scale varies depending on the particular item and what it attempts to measure. The full version of the ADS is comprised of 75 items and the screening tool has 18 items (ADS:S). The test developers recommend that the full version is administered when clients are specifically referred for anger management interventions, and that the screening version should only be used in conjunction with other tests aimed at screening for general psychological difficulties (Di Guiseppe & Tafrate, 2004). This psychometric critique shall focus exclusively on the ADS full-version.

The ADS has been developed for use in males and females over the age of 18 years. Although there is no upper-age limit to administering the test it has not been normed on individuals younger than the age of 18 years. The authors of the ADS have also developed an anger measure for young persons aged between 10-17 years, the Anger Regulation and Expression Scale ARES (Di Giuseppe & Tafrate, 2011). Cavlazoglu, Erdogan, Paine and Jones (2012) conducted an apt review of this measure.

The ADS can be administered using the Item Booklet and Response Sheets, additional software is also available. The manual claims that the test can be administered in approximately 20 minutes. However in the

cases were the clients request help in comprehending the items this might take longer. The ADS can be administered individually and also in groups using the same administration procedure. The manual identifies and lists the steps necessary to ensure a standardised administration. Following completion item responses are scanned to clarify any missing items or any difficulties raised by the respondents. The manual recommends that post-administration discussions could explore particular responses if it is evident that the client has particular elevations on some items. This would garner further information regarding the respondent's anger experiences and validate further the test results. To complete this step however the administrator needs to have a good grasp of the items, scales and the manual and cognisant of good interviewing techniques. This contradicts Di Giuseppe and Tafrate who claim that the tests can be administrated by individuals with very little formal training.

Care must be taken whilst transposing responses onto the appropriate area of the response sheet as it might potentially introduce bias. After adding up the scores on the subscales a further calculation is conducted in order to obtain the scores for the three higher order scales. This calculation is based on the mean scores of the different items measuring the particular subscales. Finally the total ADS score is computed by adding the scores of the higher order scales together. The manual also proposes an adjustment based on the scoring patterns of the respondent should missing items be present. However if more than one item is missing per subscale then the scale and corresponding higher order scale would have to be omitted from the interpretation.

A post-graduate level training on psychometric techniques is recommended to perform the interpretation of the test (Multi-Health Systems, 2014). Raw scores can be transposed on profile sheets to obtain

the corresponding percentile scores. Corresponding t-scores based on the age and gender of respondents can also be obtained from the apposite tables in the manual. Using the t-scores and percentile ranks enables the administrator to compare the respondents' raw scores to the corresponding normative data. It also facilitates the interpretation of the responses by assessing in detail areas of concern and facilitates the identification of positive and protective factors.

Higher t-scores are associated with a greater clinical problem on the relevant scale with scores above 65 indicative of clinically significant anger related problems (Di Giuseppe & Tafrate, 2004). Percentiles can be collapsed into categories of anger depending on the severity of the condition with scores above the 75th percentile being in clinical range. Percentiles above the 95th percentile indicate a severe anger related dysfunction; scores between 90-94th percentiles indicate moderate anger related symptoms; and scores between the 75-89th percentiles are indicative of mild anger related symptoms. Any scores less than the 74th percentile indicate no significant anger symptoms (Di Guiseppe & Tafrate, 2004).

Table 4.1: The percentile scores indicating level of severity of the anger problems

Percentile Range	**Clinical Relevance**
>95th percentile	Severe Problem
90th – 94th percentile	Moderate Problem
75th – 89th percentile	Mild Problem
< 74th percentile	No dysfunction

The results obtained from the interpretation of the ADS need to be integrated with other sources of information in order to increase the validity of the testing process and the derived results. The manual

recommends that information concerning the respondents' anger history is complemented with an exploration of the client's history of aggression; psychiatric problems; substance abuse history; medical history; relationships and employment history.

THE ANGER DISORDER SCALES

The ADS total score is an aggregate score of all the scales on the ADS. Respondents that score above the 95th percentile can be said to be experiencing intense and dysfunctional anger problems that would be affecting most, if not all, areas of the respondent's life. High scores on this scale might also be indicative of an element of comorbidity with Axis I or Axis II disorders which might necessitate further exploration in subsequent interventions with the respondent (Di Giuseppe & Tafrate, 2004). Scores above the 75th percentile would also be deemed to have clinical levels of anger consequentially requiring interventions. Peaks in particular scales might also be indicative of areas in need of intervention even when the score is within the normal range (< 75th percentile).

Higher order scales

The ADS has three composite scales that contribute to the total ADS score, the Reactivity/Expression Scale, the Anger In and the Vengeance Scales.

Reactivity/ Expression scale is made up of a composite score of the following scales: Scope of Anger Provocations; Physiological Arousal; Duration of Anger Problems; Rumination; Impulsivity; Coercion; and Verbal Expression. It attempts to describe the respondents' outward expression of anger. The primary emphasis of this scale is to assess external manifestations of anger and aggression however individuals within the clinical range on the Reactivity scale might not always appear aggressive.

They could exhibit periods of rumination where no outward displays of aggression are manifested. However these periods of rumination might serve to disinhibit future acts of aggression. The anger outburst might appear to be impulsive or automatic in nature, however there is an element of premeditation and also reinforcement of the aggressive behaviour and anger.

Low Reactivity scores might indicate that the respondent's anger and outbursts are more situation or person specific. Alternatively the outward expression of anger might be of a very low frequency. The interpretation of this scale is also related to the higher order scale of Anger-In. If both are high then it might be indicative that respondent might fluctuate between long periods of holding the anger in before expressing it outwardly. Similar to the pattern described where intensive ruminations are a feature of the client's anger (Di Giuseppe & Tafrate, 2004). The manual proposes some treatment recommendations to address problematic symptoms as measured by the Reactivity scale. These include: the development of consequential thinking skills; seeking alternative conflict resolution skills e.g. assertiveness skills; relaxation or arousal reduction; and thought stopping techniques.

The Anger-in scale is comprised of a composite score of the Hurt/Social Rejection, Episode Length, Suspiciousness, Resentment, Tension Reduction and Brooding scales. Respondents scoring in the clinical range might be particularly sensitive to perceived threats to their self-esteem or rejection. This might make them rather suspicious of others around them. They might also have high levels of resentment or a belief that others have had a better deal in life and might be seen as "injustice collectors"(Di Giuseppe & Tafrate, 2004). Such individuals also tend to stay angry for elevated periods of time. Di Giuseppe and Tafrate (2004)

recommend that in treatment cognitive distortions associated with resentment, suspiciousness and hostile attributions need to be addressed. Assertiveness training is also recommended to provide an adequate conflict resolution strategy. Gorenstein et al. (2007) maintain that while traditional CBT focuses on dealing with issues of fact through cognitive disputing they propose that in anger management clients should also learn to deal and tolerate unfairness. Here clients rather than challenging injustice, which is not possible in some cases, should learn to focus only on those problems that are important for them and those problems that can be solved from a practical perspective.

The final higher order scale of Vengeance is comprised of scores on Revenge, Physical Aggression, Relational Aggression, Passive Aggression and Indirect Aggression. Respondents in the clinical ranges are characterised by a sense of revenge or retribution especially once they perceive an attack or slight. Di Giuseppe and Tafrate (2004) maintain that these respondents primed by a sense of injustice seek to get even with those they perceive to have transgressed against them. To achieve these aims individuals with high Vengeance would use a number of strategies either through direct use of aggression or through less confrontational means such as damaging property, resisting any instructions or obligations they have in an attempt at retribution. In treatment Di Giuseppe and Tafrate (2004) recommend that therapy challenges the need for vengeance and helps clients analyse the practical costs involved in seeking vengeance.

Scales grouped by domains

The next section shall explore the five domains and subscales measured by the ADS. For each domain a table is presented which

contained the subscales of the domain, the item numbers, a description of the subscale and recommended directions for treatment.

The ADS is based on the cognitive theory of emotions and duly explores the domains of provocations, arousal, cognitive and behavioural patterns. It adds a further domain exploring the motives of anger or goals that individuals seek to achieve when angry, reflecting more recent revisions of the cognitive theory of emotions (Power and Dalgleish, 1997).

All items in the ADS attempt to measure an aspect of the anger construct and the particular subscale. During the construction of the test items that correlated below .6 with other items of the subscale or other psychometric tools measuring anger were removed from the test (Di Giuseppe and Tafrate, 2004). Removed also were those items that failed to discriminate between groups, a concept discussed later in the critique. This resulted in some subscales being assessed by an unbalanced number of items. Some scales were measured by three items (Duration of Anger Problems, Episode length, Impulsivity, Relational aggression, Physical aggression); four items (Indirect aggression, Scope of anger problems, Resentment, Suspicions, Rumination); five items (Hurt/social rejection, Physiological arousal, Revenge, Coercion, Brooding, Passive aggression); and six items (Verbal aggression).

Although the Provocations domain provides an indication on possible antecedents of anger it is by no means exhaustive. Di Guiseppe and Tafrate (2004) postulate that there might be many idiosyncratic variants of anger eliciting stimuli and thus further exploration of this domain with the respondent would be necessary. Table 4.2 provides a brief description of the subscale and the recommended treatment for identified problems in that scale.

Table 4.2: The Provocation Domain Scales their description and treatment recommendations.

Scale & Items	Description	Treatment
Scope of Anger Provocations Items 1; 22; 33; 35.	Aims to distinguish between generalised anger and more specific antecedents	Anger control. Addressing antecedents.
Hurt/Social Rejection Items 4; 14; 24; 36; 43**.**	Explores perceived disrespect or rejection	Addressing hostile attributions. Cognitive restructuring.

This domain or its equivalent is only found in the Multi-Dimensional Anger Inventory (MAI: Siegel, 1986) and the Novaco Anger Scale-Provocations Inventory (NAS-PI: Novaco, 1994). The NAS-PI for example includes five subscales to assess the provocations domain; disrespect; unfairness; frustration; annoying traits in others; and irritations or hassles (Di Giuseppe & Tafrate, 2004). Thus might provide more insight than the ADS in terms of the particular triggers involved in the activation of anger.

The Arousal domain consists of the following subscales Physiological Arousal; Duration of Anger Problems; and Episode Length.

Table 4.3: The Arousal Domain Scales their description and treatment recommendations.

Scale &Items	Description	Treatment
Physiological Arousal Items 8; 10; 16; 19; 42.	Measures somatic reactions to anger	Arousal reduction techniques Mindfulness training
Duration of Anger Problem Items 5; 11; 31.	Explores for how long anger was a problem	Arousal reduction techniques
Episode Length Items 6; 13; 46.	Measures the average duration of an anger episode	Cognitive restructuring and exposure interventions.

Bettencourt, Talley, Benjamin & Valentine (2006) maintain that affective arousal is linked with aggressive behaviour, whereby the arousal serves to facilitate the activation and retrieval of aggression related cognitions making exploration of this domain important.

A number of other psychometric measures have included physiological constructs. The State Trait Anger Expression Inventory-II (STAXI-II: Spielberger, 1999) explores this area through the general trait anger scale whereas the Buss-Durke Hostility Index (BDHI: Buss & Durke, 1957) and the NAS-PI (Novaco, 1994) explore the respondent's ability to deal with daily stressors. Both the Multidimensional Anger Inventory (MAI: Siegel, 1986) and the NAS-PI (Novaco, 1994) analyse the physiological arousal but only the NAS-PI (Novaco, 1994) explores the intensity and length of an anger episode like the ADS (Di Giuseppe & Tafrate, 2004).

Table 4.4: The Cognitive Domain Scales their description and treatment recommendations.

Scale & Items	Description	Treatment
Resentment Items 48; 49; 50; 51.	Explores a belief that the respondent was unfairly or unjustly treated	Address dysfunctional and distorted thinking Develop tolerance to injustice
Suspiciousness Items 52; 53; 54; 55.	Explores the respondent's belief of the hostile intentions in others	Addressing attribution biases and generating alternative explanations Coping with disapproval
Impulsivity Items 26; 39; 47.	Explores the amount of anger control that respondent has	Relaxation coping skills Coping statements and positive self-talk
Rumination Items 21; 25; 37; 45.	Explores the respondent's tendency to think about anger antecedents	Cognitive restructuring Positive self-talk Thought stopping

Knowledge structures analysed in this domain can be conceptualised as particularly rigid core beliefs developed in childhood early interactions and reinforced throughout their life. These are activated by a number of situations and are usually paired with particular associated emotions. Tremblay and Dozois (2009) found that certain knowledge structures were positively related with aggression. The knowledge structures which were found to have the strongest association were; mistrust (similar to Suspiciousness in the ADS), insufficient self-control (similar to Impulsivity) and entitlement (similar to Resentment). Furthermore suspiciousness and hostile interpretations of others are associated with increased accessibility

of aggression related constructs and also increases the predisposition to experience anger (Anderson & Bushman, 2002).

The GAM suggests that impulsive actions result when the individual lacks resources such as time and cognitive ability. This would facilitate the immediate appraisal of the environmental cues leading to impulsive outcomes such as aggression. Should aggression be reinforced this would strengthen the impulsive act (Anderson & Bushman, 2002; De Wall & Anderson, 2011). In fact in treatment clients should be guided to increase their cognitive and behavioural resources to aid the re-appraisal process (Di Giuseppe & Tafrate, 2004; De Wall, Anderson & Bushman, 2011).

The BDHI (Buss & Durke, 1957), MAI (Siegel, 1986), NAS-PI (Novaco, 1994) and Aggression Questionnaire (AQ: Buss & Perry, 1992) all include measures assessing the cognitive domain but they seem to use a general measure of hostility to incorporate the scales of resentment and suspiciousness. The ADS examines these symptoms on different scales. The NAS-PI (Novaco, 1994) like the ADS also explores the Rumination scale.

The Motives domain appears to be unique to the ADS as no other psychometric tool assessing anger delves into the subscales forming this domain. This domain attempts to assess the respondents' motives behind their anger whether it is an attempt at restitution to perceived or real transgressions, to elicit compliance in others or to vent their frustration. From a practitioners perspective understanding the motives behind the behaviours of clients is important to develop a formulation and treatment plan that would address issues that are sustaining the deviant behaviours and dysfunctional thoughts and emotions.

Table 4.5: The Motives Domain Scales their description and treatment recommendations.

Scale & Items	Description	Treatment
Revenge Items 58; 64; 70; 72; 74.	Explores the desire to correct perceived transgressions in others	Consequential thinking Learning to forgive
Tension Reduction Items 57; 62; 68.	Explores the use of behaviours that reduces the unpleasant reaction to anger	Relaxation training Verbal coping skills Meditation
Coercion Items 7; 12; 17; 23; 38.	Explores if respondent's use anger to coerce others	Empathy training

The Behavioural domain was developed by exploring the most frequent and most empirically validated behavioural reactions to anger. Unlike the STAXI-II (Spielberger, 1999) which measures anger-out only other assessments such as the AQ (Buss & Perry, 1992), BDHI (Buss & Durke, 1957), NAS-PI (Novaco, 1994) and ADS measure this construct by assessing verbal expression and physical aggression. Other scales within this domain are endemic to the ADS and these scales explore less impulsive and more premeditated forms of aggression, generally aimed at restoring a sense of justice or vengeance for perceived transgressions. These are measured on the scales of Passive Aggression; Indirect Aggression; Relational Aggression.

Table 4.6: The Behavioural Domain Scales their description and treatment recommendations.

Scale & Item	Description	Treatment
Brooding Items 2; 3; 9; 30; 32.	Measures the extent of suppression of anger	Assertiveness skills Conflict resolution
Verbal Expression Items 15; 18; 20; 27; 28; 29.	Measures the extent of verbal aggression e.g. threats, sarcasm and insults	Challenging and identifying dysfunctional thoughts Impulse control Assertiveness skills
Physical Aggression Items 34; 40; 44.	Measures the extent the respondent strikes out	Challenging and identifying dysfunctional thoughts Impulse control Assertiveness skills
Indirect Aggression Items 41; 63; 67; 73.	Measures covert premeditated acts of aggression such as damaging property or spreading lies	Consequential thinking (developing an awareness of time, energy and resources and the long term consequences of revenge strategies) Assertiveness skills
Passive Aggression Items 56; 59; 61; 66; 71.	Measures the likelihood that the respondent purposefully fails tasks or requests	Consequential thinking Assertiveness skills
Relational Aggression Items 60; 65; 69.	Measures the attempts of denigration of others, ostracisation and defamation	Assertiveness skills

PSYCHOMETRIC PROPERTIES

The manual reports that 8 different populations were sampled in order to norm and standardise the ADS. Table 4.7 lists the different populations sampled in the standardisation process.

Table 4.7: A brief description of the samples used in the standardisation studies

Population **Sample Size**	**Characteristics of the sample**
"Normal" individuals **N = 1669**	Not in treatment No apparent pathological characteristics
Aggressive Drivers **N = 196**	At least one aggressive driving incident in the 6 months preceding participation.
General Outpatients **N = 409**	In treatment or seeking treatment in a New York City Clinic.
US Anger Management Clients **N = 50**	Persons who sought help due to anger dysfunction at a New York Clinic.
Court Mandated Treatment **N = 62**	Referred for treatment in Long Island New York by court or legal representative.
Male and Female Offenders **N = 162**	Recruited from a number of medium secure prisons in the state of Connecticut.
Sex Offenders **N = 29**	Incarcerated sex offenders from the State of Connecticut.
Canadian Anger Management Clients **N = 107**	In treatment or seeking treatment for anger problems at the University of Ottawa Medical School, Canada.

From the samples described in Table 4.7 it is evident that the ADS was standardised on North American populations. Most of the scales on the ADS indicated small significant differences between the ethnic groups,

however the authors report that the effect size was too small and indicated no particular direction of bias (Di Giuseppe and Tafrate, 2004). Consequentially no norms were developed based on ethnic composition.

Gender differences on the ADS were examined using the Kruskal-Wallis test which showed that statistically significant differences between genders were reported on the Higher Order Scales and subscales. Males scored higher on Vengeance and females scored higher on Anger-In. With regards to the subscales males scored higher on the Physical Aggression, Coercion, Revenge and Indirect Aggression and females scored higher on the Rumination, Episode Length, Scope of Anger Provocations, Hurt/Social Rejection, Resentment, and Suspiciousness. No significant statistical differences between genders on the ADS total scores were surmised. These seem to indicate that although the overall anger score in males and females might be the same, the way that they experience anger might be different supporting the concept of assessing anger using different domains and constructs. Significant differences were also reported between respondents' age and ADS scales. Due to these differences the ADS manual provides percentiles and t-scores based on age (18-29; 30-49; 50+) and gender as well as norms for the overall norms. The standardisation sample was based on data collected from 1669 nonclinical respondents. Normative data is also provided for the overall sample.

Reliability and Validity

Internal consistency.

Internal consistency attempts to determine whether the items used in the test are measuring the same construct. Typically this is measured through correlating the different items on the test. Since the ADS Total score and the Higher Order Scales are multidimensional composite scores

the Stratified alpha was used with the alpha ranging from .97 to .98 for the ADS total score and .91 to .96 for the Higher Order Scales. The Cronbach's alpha coefficients, which were calculated from pairwise correlations between items, ranged from .60 to .97 for the 18 ADS subscales (Di Guiseppe & Tafrate, 2004). Such alpha coefficients are deemed to be acceptable in terms of development of psychometric measures (Kline, 2000).

Test Re-test Reliability.

A further sample of 65 college students was used to assess the test-retest reliability of the ADS. The scores for all subscales and higher order scales indicate that this was significant (at $p < .001$) and demonstrated good reliability with the reliability ranging from 0.75 to 0.91. However it must be noted that the sample used might be a convenience sample.

Factor analysis.

The items in the test were subjected to factor analysis to determine the number of variables that can be grouped together and develop the domains and higher order scales. Testing revealed that the data exhibited multivariate normality so both exploratory factor analysis and confirmatory factor analysis were carried out. The analysis at subscale level was conducted separately for each domain. In order to assess the adequacy of fit, different models were used. In this analysis oblimin rotations were used to determine the structure of scales and domains on the ADS and estimate the correlations among the factors. In summary, the results from the oblimin rotations indicated that the subscales showed adequate differentiation and the multiple goodness of fit models used indicated a good fit in relation to the higher order scales and domain scales especially

for the Provocations, Arousal, Motives and Cognitive domains and a moderate fit for the Behaviours domain which might indicate that the behaviour scales have strong inter-correlations (Di Giuseppe & Tafrate, 2004). These strong correlations might be indicative of some degree of overlap of the different subscales which attempt to describe the Behavioural domain.

Confirmatory factor analysis showed that the clinical and normative samples produced very similar results demonstrating further the comparability of the factor structure.

Development of Higher order factors

Di Giuseppe and Tafrate (2004) reported a 3 factor extraction identified as the Anger-In Scale; the Reactivity Scale and the Vengeance Scale (based on Eigen values greater than 1 and convergence).

The subscales that loaded high on the Anger-In factor were the Hurt/Social Rejection (.60); Suspiciousness (.61) and Brooding (.55) scales. Other scales like the Episode Length (.38) and Resentment (.54) scales were also significant but had lower loadings than the other scales. Subscales that loaded highly on the higher order scale of Vengeance were Relational Aggression (-.74), Indirect Aggression (-.66), Physical Aggression (-.55), Revenge (-.52) and Passive Aggression (-.44). The final higher order scale of Reactivity/Expression had Physiological Arousal (-.60), Rumination (-.64), Impulsivity (-.83), and Verbal Expression (-.75) loaded very high. The subscales of Scope of Anger Provocations (-.44), Duration of Anger Problems (-.46) and Coercion (-.40) loaded moderately.

ADS Total Score

Through principle axis factor analysis one factor accounted for 78.8% of the variance, this was labelled as the ADS Total score. Also, Di Giuseppe and Tafrate (2004) report that the mean inter-item correlations were .26 and .28 for the normative and clinical samples and the corrected item-total correlations were at .49 and .52 respectively showing a degree of homogeneity. The manual also reports that when they used a ratio of the inter-item correlations to the product of the item communalities the value obtained was .97, a figure very close to 1 indicative of a great deal of homogeneity (Di Giuseppe & Tafrate, 2004).

Rather than viewing Anger-in and the Anger-out scores as being oppositional constructs like the STAXI-II (Speilberger, 1999) the ADS views these constructs as being part of the same experience of anger and not independent of each other. Thus the ADS views that individuals with very high anger problems would experience high anger-in and reactivity (anger-out) scores. Di Giuseppe and Tafrate (2006) maintain that individuals with severe anger disorder would experience intense rumination, resentment and suspiciousness related to anger-in yet this experience might be peppered with periods of reactivity and anger expressiveness (anger-out). The relationship reported by the anger-in and the reactivity/expression scales was reported as $r\ (634) = .62$, $p<.001$ as opposed to the equivalent constructs developed by Spielberger $r\ (443) = .38$, $p<.001$.

Regression analysis also supported the view held by the ADS with the higher the anger-in scores the greater the probability that the respondent would be reactive ($R= .62$, $F\ [1, 1, 190] = 738.18$, $p < .001$) or display features of vengeance ($R = .52$ $F[1, 1, 190] = 405.55$, $p < .001$).

Di Giuseppe and Tafrate (2004) observe that Anger-In scores predicted adequately and correlated with individual scores on the behavioural reactions of associated with anger. This, they claim, was supported through a regression analysis using the Anger-In scale to predict scores on the behaviour domain of the ADS. The R ranged from .42 for physical aggression to .62 for passive aggression.

ADS Deception and Socially Desirable Responding

An additional scale in the ADS, the Positive Impression Index, attempts to measure impression management in respondents. It was developed from the six items that were most associated with socially desirable responding. A regression equation was used to determine the intercept that best predicts faking good responses. The intercept was 14.76 which meant that the cut-off was set at 15. In a study reported by the *ADS Technical Manual* such a cut-off was shown to correctly identify approximately 71% of the participants in positive impression group. However it did erroneously identify approximately 39% from the standard instruction group as deceivers and failed to identify approximately 29% of the positive impression group (Di Giuseppe & Tafrate, 2004). The manual reports that the Goodman test of membership was .097, $p < .003$ indicating that it predicts better than chance (Di Giuseppe & Tafrate, 2004).

The manual also reports a study examining social desirable responding, through the use of Paulhus Deception Scales (PDS: Paulhus, 1998). The sample used consisted of 135 participants from the normative sample, 115 inmates and 63 outpatients. The study correlated the PDS (Paulhus, 1998) with the ADS, STAXI-II (Spielberger, 1999), Becks Depression Index (BDI-II: Beck, 1996) and the Becks Anxiety Inventory

(BAI: Beck, 1990). It was hypothesised that scales in the PDS (Paulhus, 1998) the Socially Desirable Responding Scale and the Self-Deception Scale would correlate highly with the psychometric tests susceptible to social desirability responding. The magnitude and direction of the correlations for the ADS were the same as for the other psychometric measures used. This implies that the ADS were not more susceptible to social desirable responding than the other widely used tests. Despite its limitations the manual still claims that administrators should take heed of the Positive Impression Index however they do also recommend to also use the PDS (Paulhus, 1998) to better assess validity of the test results (Di Giuseppe & Tafrate, 2004).

Studies reported in previous chapters of this thesis found that some of the participants in the study reported in Chapter 2 and the case study (Chapter 3) had exhibited social desirable responding following the delivery of interventions and/or at the follow-up period. Although it might be the case that the participants were attempting to manage their impression these low scores on the index might also be indicative that after treatment their expression of anger may have become more "normalised". In fact Di Giuseppe and Tafrate (2004) maintain that this scale is not sufficient in distinguishing between social desirable responding and normal anger expression. This seems to be supported by the results reported in Chapter 2. None of the 24 participants had exhibited social desirability at baseline and all had significantly high scores on the ADS. Following the intervention half of the sample (n = 12) had exhibited social desirability. Statistical analysis showed that there were no significant post-treatment differences on the ADS scores between those scoring low scores on the Positive Impression Index and those participants whose scores were greater than

the stipulated cut-off point. This might suggest that the index did not differentiate adequately between the samples in the study.

Furthermore analysis of the ADS results at baseline, post intervention and at follow-up in the case study also showed possible evidence of socially desirable responding during the follow-up period. Although not formerly assessed, the client in the case study had reported significant improvement in terms of reduced frequencies of anger related episodes (Chapter 3). This self-observation seemed to substantiate the claim that the client's anger experience had become more normalised rather than being an attempt to manage impression. Thus although valid this scale must be interpreted with caution especially when the ADS is being used as an outcome measure.

Validity studies
Concurrent Validity.

A further study comprised of 400 individuals and 100 prison inmates was used to assess the concurrent validity of the ADS with the STAXI-II (Spielberger, 1999). All the scales of the ADS indicated moderate to high correlations with the STAXI-II (Spielberger, 1999), except for the control subscale which is inversely proportional to the other measures (Di Giuseppe & Tafrate, 2004). The total ADS score and the Trait Anger Score from the STAXI-II (Spielberger, 1999) showed a strong correlation $r\ (450) = .78$, $p < .001$, suggesting that the ADS total score is a good measure of trait anger (Di Giuseppe & Tafrate, 2004).

The ADS also compares favourably to the AQ (Buss & Perry, 1992) which also is comprised of a number of subscales such as physical and verbal aggression, anger, hostility and a total score. Di Giuseppe and Tafrate (2004) compared the ADS and the AQ (Buss & Perry, 1992) using a

normal sample of 231 adults and a clinical sample from the Anger Disorders Clinic at the University of Ottawa. This study showed moderate correlations on the scales analysed all significant at $p < .01$. The authors claim this further supports the concurrent validity of the ADS (Di Giuseppe and Tafrate, 2004).

A study further validating the ADS was conducted by Wydo (2003) correlating the ADS and the Personality Assessment Inventory (PAI: Morey, 2007). This study focused on a previous version of the ADS. A total of 213 inmates were sampled from a US prison with diverse ethnic backgrounds. The total ADS correlated well with the aggression scales of the PAI ($r=.537$, $p<.0001$) and the other scales correlated from high to moderate with the Aggression subscale of the PAI (Wydo, 2003). The only subscale that did not correlate significantly was the scale of Tension Reduction. Other subscales namely Relational Aggression and Suspiciousness showed small correlations. The Tension Reduction scale was also not correlated well in the ADS validation studies however the continued use of this scale in the current version of the ADS is indicative of the developers insistence that anger dysfunction is associated with risky behaviour. Perhaps the items used to measure this scale are not adequate enough to assess this possible feature of anger.

The PAI (Morey, 2007) Aggression Scale focused on Verbal Aggression, Physical Aggression and Aggressive Attitudes whereas the ADS is a multidimensional measure of anger so some subscales might not be represented within the PAI. This might explain some of the low correlations in the analysis.

Predictive Validity.

In a study conducted by the authors using a clinical sample it was found that a number of scales correlated and significantly with job loss and problems at the workplace. Di Giuseppe and Tafrate (2004) reported that the Spearman Rho's (ρ) for Brooding (.44), and Relational Aggression (.42) were significant at $p < .01$ and for Resentment, Rumination and Verbal Expression ($\rho = .36$, $p < .05$). This study however did not control for the possible confounding variable of other comorbid symptoms considering that the study was undertaken with a clinical population. Furthermore, additional studies however need to be conducted to assess the predictive validity of the ADS especially in predicting future aggression.

Validity of differentiating between groups

Differentiating between groups is an important feature of a psychometric test. Non-parametric statistics were used to assess the main effect of group membership due to positive skewness of the subscales. The ADS scores were compared amongst the different groups used in the standardisation of the test. This included angry drivers, outpatient clients, and clients in treatment for anger problems, individuals referred to treatment prior sentencing, male and female offenders, sex offenders and Canadian outpatients. Table 4.8 displays the mean t-score on the Higher Order Scales and the ADS Total score and Table 4.9 shows the means and standard deviations for all the population groups. The Kruskal-Wallis test indicated a significant difference for all the ADS scales and subscales ($p<.001$).

Table 4.8: The sample mean t-scores and their standard deviation on the Higher Order Scales for the standardised samples

Population Group	Anger-In t-score M(SD)	Reactivity/ Expression t-score M(SD)	Vengeance M(SD)	ADS Total M(SD)
Normal	50.4(10.25)	50.25(9.99)	49.85(10.01)	49.69 (9.99)
Angry Driver	55.8(9.81)	58.91(11.12)	57.88(12.33)	58.28(10.65)
General Outpatients	57.7(12.14)	54.96(11.90)	51.59(13.67)	55.42(11.36)
Angry Outpatient	62.4(12.21)	70.96(14.76)	63.17(20.96)	68.28(15.64)
Court Mandated	51.4(14.01)	53.44(13.79)	51.24(13.67)	52.40(14.66)
Correctional Inmate	60.8(12.32)	60.45(13.89)	61.62(17.10)	61.95(14.96)
Sex Offender	59.7(11.01)	54.28(9.91)	53.31(8.79)	56.24(9.75)
Ottawa Anger Disorders Clinic	62.2(13.89)	67.16(16.31)	57.89(14.00)	64.97(15.90)

Post-hoc analysis using the Mann-Whitney *U* and Wilcoxon *W* further substantiated the validity of the ADS in differentiating between groups, proving an ability to distinguish between the "angry" groups and the normal samples. A large significant difference was detected between the clinical and offender groups and the normal samples.

The Mann Whitney *U* tests between angry drivers and normal samples revealed significant differences on all the scales of the ADS except for Tension Reduction. The highest mean average t-scores on the subscales for this population group ranged in the region of 50-60. Similar results were obtained for the angry outpatients group however the average t-scores of this population group was over 60 with several scores on scales

being in the 70s range. The sample derived from the Ottawa Anger Disorders Clinic also showed similar results with only the scales of Relational Aggression and Tension Reduction being not significantly different from normative samples. The post-hoc analysis for prison inmates revealed significant differences on all the 26 scales of the ADS/ADS:S, with their mean t-scores being over 60s in nearly all the scales. The profiles obtained for sex offenders also revealed significant differences between the normative samples with higher significant scores on 20 of the scales. However the typical anger profile score of the sex offender analysed by Di Giuseppe and Tafrate (2004) showed that they typically hold their anger in and when they do react they do so indirectly and covertly. Thus they had higher scores on Indirect Aggression, Brooding and Passive Aggression with no elevations on other more direct forms of aggression. Cognitively they seem to have high suspiciousness and a sense of resentment. The general outpatients group compared to the normative samples was also significantly different on 23 of the scales. This analysis showed that they did not differ in terms of Physical Aggression, Verbal Expression and Indirect Aggression but revealed greater problems with managing anger than standardised sample. Despite these differences the general magnitude of difference was smaller than the other clinical samples included in the manual. The court-mandated sample that comprised of individuals referred for evaluation prior to sentencing or for psychological treatment showed a significant difference on only 7 of the ADS/ADS:S scales with certain scales being significantly lower than the normal samples on Episode Length and Hurt/Social Rejection. Compared to the norm they scored higher on Vengeance, Physical Aggression, Duration of Anger Problems, Resentment and Suspiciousness scales.

Table 4.9 The mean t-scores and standard deviations on the different population groups on the respective domains

Domains	**Subscales**	**Normal**	**Angry Driver**	**General Outpatient**	**Angry Outpatient**	**Court-mandated**	**Correctional Inmate**	**Sex offender**	**Ottawa Anger Disorders Clinic**
Provocation	Scope of Anger Provocation	50.1(9.97)	56.2(6.08)	54.0(16.68)	62.9(9.29)	48.6(10.96)	56.2(11.32)	55.0(9.35)	58.1(12.83)
	Hurt/Social Rejection	50.4(9.93)	56.8(10.16)	55.1(11.26)	60.5(10.89)	47.7(13.03)	56.0(11.52)	53.2(11.41)	55.6(13.99)
Arousal	Physiological Arousal	49.9(10.34)	56.4(13.04)	51.8(12.19)	62.7(19.65)	50.8(12.48)	59.7(17.55)	54.3(13.50)	61.1(18.29)
	Duration Of Anger Problems	50.1(9.88)	54.6(11.55)	56.0(12.11)	68.8(10.35)	56.7(13.29)	61.3(12.84)	56.3(11.34)	69.6(10.27)
	Episode Length	50.3(10.13)	52.8(10.53)	54.5(12.80)	58.2(15.48)	46.8(10.12)	55.0(14.10)	52.0(10.53)	58.0(15.20)
Cognitions	Suspiciousn	50.4(10.28)	55.2(11.12)	54.6(11.22)	58.9(12.77)	54.4(13.05)	61.5(11.54)	58.8(12.92)	60.5(16.03)

	ess								
	Resentment	50.2(10.12)	54.9(10.92)	56.2(12.72)	60.2(13.59)	54.8(13.43)	57.6(11.80)	57.0(12.03)	63.1(12.93)
	Rumination	50.2(10.19)	58.9(12.34)	55.8(14.17)	67.7(14.57)	50.8(12.79)	58.1(15.67)	52.0(9.83)	62.9(16.13)
	Impulsivity	49.7(9.77)	55.3(12.52)	51.6(11.18)	67.6(18.88)	52.5(13.04)	57.4(16.16)	51.9(9.58)	62.7(19.13)
Motive	Revenge	50.0(9.97)	57.1(12.53)	52.6(11.74)	62.6(16.89)	52.5(14.93)	60.6(16.79)	52.3(8.82)	59.6(16.97)
	Tension Reduction	50.4(9.89)	50.5(7.93)	52.6(9.48)	52.8(9.85)	51.2(11.58)	54.7(9.81)	55.2(9.17)	53.5(9.47)
	Coercion	49.7(10.08)	58.1(12.49)	52.9(10.82)	63.3(16.47)	52.6(14.31)	54.2(12.82)	50.0(6.58)	60.9(15.79)
Behavioural	Brooding	49.9(10.36)	52.9(8.99)	56.1(12.16)	58.7(12.37)	48.2(12.77)	56.2(11.96)	60.8(12.10)	55.9(13.48)
	Verbal Expression	50.1(9.94)	60.3(13.30)	50.2(10.46)	66.6(18.98)	51.9(13.73)	55.7(15.78)	49.6(8.79)	58.7(17.27)
	Physical Aggression	50.2(9.81)	56.4(14.39)	48.8(5.17)	59.0(21.68)	52.4(13.34)	55.6(18.05)	49.9(6.62)	54.7(15.34)
	Relational Aggression	50.0(9.72)	56.0(13.82)	51.6(11.36)	59.9(25.51)	49.6(12.71)	56.7(17.72)	52.8(15.87)	53.8(16.98)

Passive Aggression	50.1(9.92)	56.7(10.73)	53.3(11.26)	62.7(17.99)	50.0(10.85)	59.2(15.78)	53.6(16.54)	58.6(16.54)
Indirect Aggression	49.8(10.02)	55.3(13.01)	49.7(9.09)	57.9(19.19)	51.8(13.40)	64.0(18.00)	54.2(12.39)	55.0(12.96)

Interestingly this sample was also administered the PDS (Paulhus, 1998) considering that favourable impressions and minimisation of symptoms could serve them well in court. However, this analysis did not show particularly elevated scores on the PDS (Paulhus, 1998), which thus could have meant that faking could not account for all the variance. This led to Di Giuseppe and Tafrate (2004) to propose that this sample might be comprised of individuals who although aggressive might have low levels of trait anger, similar to the concept of instrumental aggression or that they respond with aggression every time they experience anger possibly through a process of immediate appraisal and thus have little awareness of their anger. Interestingly a substantial proportion of this group was made up of domestic abusers.

The results obtained from these analyses led the authors to conclude that the ADS can be used to distinguish and discriminate between groups and also produce valid interpretations of general profiles or patterns of anger pertaining to different population groups (Di Giuseppe & Tafrate, 2004).

LIMITATIONS OF THE TEST

Multiple measures need to be used in order to seek convergence and gather an accurate picture of anger which is an abstract construct and multifaceted (Novaco, 1994). Apart from the considerable difficulty in defining and conceptualising anger, a number of other limitations can be identified in using the ADS with Maltese samples.

Lack of studies using ADS

The authors themselves indicate that the ADS lack sufficient studies that are supportive of its discriminant validity. Due to the large amount of

scales used in the full version of the ADS the authors also recommended a large scale research that would involve analysing the scales of the ADS with an independent measure assessing the same particular construct each scale claims to measure (Di Giuseppe & Tafrate, 2004).

Most of the studies carried out to validate the use of the ADS were carried out by the authors. Searches on PsychInfo, Web of Science and sources of grey literature carried out in November 2014, yielded limited studies that used the ADS as a measure of anger which could have further validated the tool. From a personal observation of the studies obtained through a search on PsychInfo one could observe that the earliest studies on anger used the Cook-Medley Hostility Scale (Cook & Medley, 1954) followed by the BDHI (Buss & Durke, 1957) with the more recent studies using the STAXI-II (Spielberger, 1999). One possible reason for the lack of studies using ADS as a measure of anger is possibly the length of time needed to interpret the test results when compared to the STAXI-II (Spielberger, 1999). This time constraint might effect the researchers' decision making process when conducting research. The authors themselves only sought to correlate the ADS with two measures of anger in order to show concurrent validity. In doing so they failed to correlate the test with measures that appear to be similar to the ADS as described earlier when reporting the domain subscales such as the NAS-PI (Novaco, 1994). In fact the authors acknowledge that these measures are similar in many respects however they indicate that the ADS has the advantage of being supported empirically through their factorial analysis (Di Giuseppe & Tafrate, 2004). Further validation studies might help improve areas such as the Positive Impression Index.

Language used and possible cultural bias

Using any form of psychometric measure on Maltese populations comes with inherent difficulties and potential biases. Firstly, the samples that the test was standardised on might not be equivalent to Maltese populations due to differences in culture. The manual asserts that no major differences were obtained from different ethnic backgrounds in the normative studies it had conducted (Di Giuseppe & Tafrate, 2004). This does not imply that cultural differences in the expression of anger might not effect how a normal person manifests his/her anger, indeed culture effects how emotions are expressed and determines what is socially acceptable behaviour. The possible cultural bias might not be particular to the ADS when one considers that no psychometric tool was standardised or normed on Maltese populations.

Secondly, the test is administered in the English language. Although Malta is officially a bilingual country, many offenders and service users report difficulties in completing the test administration in English and would need the help of the test administrator to complete and comprehend some of the items of the test. This might potentially introduce bias in the testing process through inaccurate translation and influence of the test administrator. It must be noted that these limitations do not pertain solely to the ADS but are a limitation for any psychometric tool compiled in the English language and that were standardised on American, Canadian or British samples. As yet very few attempts have been made by the psychology profession to standardise these important tools on Maltese populations or officially translate them to Maltese. The use and interpretation of psychometric tools must be done with great care and caution when used in such a context to avoid invalid results. Nevertheless

the ADS seem to use language which is simple enough for the respondent to comprehend and limits the help needed by the administrator. In fact the ADS was submitted to readability analysis using the Dale-Chall formula. This formula analyses the word and the syntax difficulty used by the test. Di Giuseppe and Tafrate (2004) claim that test has a reading level of a 10/11 year old.

CONCLUSION

Studies reported on the ADS demonstrated good internal and test-retest reliability and also good concurrent validity correlating well with some widely used measures of anger. It used wide ranging samples from "normal" males and females to different populations that might have anger management issues in order to norm the test albeit the normative sample was purely North American. A substantial number of participants in the normative samples consisted of offender populations which justifies its use within such settings. Despite some limitations in distinguishing between normal expressions of anger and socially desirable responding the ADS was also not more susceptible to attempts at faking good the tests than other well established measures (Di Giuseppe & Tafrate, 2004).

The ADS appears to have solid theoretical basis fitting well with most recent theories of anger and aggression such as the GAM. An advantage of the ADS is that is able to class clients in terms of severity and provides valid treatment recommendations based on the unique and idiosyncratic client profile which helps in developing individualised psychological interventions.

Chapter 5

5. A SYSTEMATIC REVIEW AND META-ANALYSIS ON THE EFFECTIVENESS OF CBT INFORMED ANGER MANAGEMENT

Abstract

This meta-analysis sought to investigate the effectiveness of CBT based anger management interventions in reducing recidivism among adult male offenders. Studies were selected after a bibliographic database search, a hand-search of references from similar studies and an electronic search on apposite Correctional websites. The outcome measures of interest were general and violent recidivism rates. These were considered to be evidence of long term behavioural change. Studies that included appropriate data were analysed using risk ratio analysis. The analysis of the effect of exposure to CBT based treatment on general recidivism showed an overall effect of 0.77, indicating a risk reduction of 23%, whereas the overall effect on violent recidivism was 0.72, indicating a risk reduction of 28%. The meta-analysis also explored the effects of treatment completion in comparison to attrition groups. The effects of treatment completion on general recidivism through risk ratios was 0.58, indicating a 42% risk reduction. For violent recidivism, the risk ratio was 0.44, indicating a 56% risk reduction. Subgroup analysis based on the treatment modality and the analysis of the risk of bias carried out on the selected studies was conducted to explore the significant heterogeneity noted in the results. Overall, anger management appeared to be effective in reducing the risk of recidivism, especially violent recidivism. Moderate-intensity anger management were associated with larger effect than the high-intensity correctional programmes for violence reduction.

BACKGROUND

The aim of this study was to explore whether CBT based anger management reduces recidivism for both general and violent offenders. The link between anger and offending behaviour is not clearly understood. Anger does not always manifest itself in aggression, as it could help invigorate the person to take action against the object, person, or event causing the frustration. Also, not all aggressive acts necessitate anger. This instrumental form of aggression might be present in a number of violent offenders, explaining why some violent offenders were found to have no pathological or problematic levels of anger when assessed (Howells, 2004). Dysfunctional anger typically is more frequent, more intense, of longer duration and comprised of more adverse action schemas (Novaco, 2011). A recent study in a forensic setting (Gilbert, Daffern, Talevski, & Ogloff, 2013) noted that individuals with high trait anger were prone to activating aggressive behavioural scripts. Furthermore, they suggest that intensity, frequency and the duration of the anger problem were more salient than normative beliefs about violence and aggressive script rehearsal in determining future violence. Thus, anger and associated feelings like rage can be considered as precipitators to violent offending (Novaco, 2011) activating aggression related knowledge structures which justify aggression, reduce inhibitions to violence, and disabling cognitive reappraisal while also activating aggressive scripts. This might imply that anger dysfunction can be involved in recidivism.

Group-based cognitive behavioural programmes seem to be the most widely used intervention for dysfunctional anger. Typically, such programmes are brief and aim to increase the client's ability to control anger and limit arousal (Gilbert & Daffern, 2010). This is achieved by replacing the dysfunctional cognitions, inferences, and evaluations with

anger inhibiting ones such as seeking alternative reality-based explanations for the antecedent events (Howells, 1998; Trower, Casey, & Dryden, 2008); addressing aggression related knowledge structures such as schemas and behavioural scripts (Gilbert & Daffern, 2010); imparting arousal reduction techniques are aimed at reducing the client's physiological state of readiness such as breathing and visualisation (Novaco, 2011); and teaching behaviours that are functionally equivalent to their dysfunctional behaviour (Deffenbacher, 2011).

Previous systematic reviews

A scoping search was carried out on five databases (CENTRAL, Campbell, Medline, PsychInfo and SCOPUS) and the Ministry of Justice website in February 2014. Six systematic reviews were published between 1995 and 2009, seeking to determine the effectiveness of psychological therapies and cognitive behavioural interventions specifically on problematic anger; Tafrate (1995); Edmonson and Conger (1996); Beck and Fernandez, (1998); Di Guiseppe and Tafrate (2003); Del Vecchio and O'Leary (2004) and Saini (2009). They all reported mean treatment effects of between .70 and .76 on measures of anger. However, most of these reviews did not include offender populations, as some focused exclusively on college students or clinical samples.

A further four systematic reviews focused specifically on offenders. Dowden and Andrews (2000) explored anger management and offending behaviour and found significant positive treatment effect for programmes focusing on anger management and relapse prevention with. Other programmes such as those dealing only with antisocial attitudes also showed positive effect but the results were not significant. This systematic review did not examine risk of bias of the 35 included studies.

Lipsey et al. (2007) systematic review analysed the effects of CBT on offenders with anger management being one type of the interventions explored and found positive treatment effects. Moderator variables were also explored. For example, higher risk offenders fared significantly better and good quality programme implementation was associated with greater treatment effect. This study, however, provided little information on the risk of bias of the included studies except to state that only 19 out of 58 studies included were randomised control trials (RCTs).

A review from the UK Ministry of Justice Research Series focused on the effectiveness of interventions in general for violent offenders and included studies that did not administer psychological interventions such as electronic monitoring. Jolliffe and Farrington (2007) concluded that despite violent offenders being more difficult to engage in therapy and having extensive offending histories, the overall results showed an 8-11% post-treatment reduction in general re-offending and a 7-8% reduction in violent re-offending. Jolliffe and Farrington's (2007) review also found evidence that the length of treatment was negatively correlated with re-offending rates. It should be noted that the effects were significantly smaller in good quality studies. This finding could not be explored further due to heterogeneity of their included studies. In fact, only one out of the 11 included studies was a random control trial.

Ross, Quayle, Newman, and Tansey's (2013) narrative review aimed at determining the effectiveness of psychological therapies on violent behaviour. The participants included for analysis consisted of offenders with and without mental health issues. This narrative review included 10 studies, consisting of randomised controlled studies, controlled before and after studies and case series studies. Ross et al. (2013) concluded that most of the studies showed a reduction of aggressive

behaviour amongst those who had received psychological therapies. However, high levels of heterogeneity between their included studies may have confounded the overall conclusions of this narrative review. Jolliffe and Farrington (2007) and Ross et al. (2013) were the only 2 systematic reviews analysed that used a quality analysis of the included studies but neither focused exclusively on anger.

OBJECTIVES

The aim of this systematic review was to assess the effectiveness of CBT informed interventions or anger management interventions on adult offenders sentenced to probation orders or incarceration. Unlike previous reviews, it quantitatively explored the treatment effects on recidivism by conducting a meta-analysis based on a stringent review process, including a systematic literature search and an assessment of risk of bias that explored the common methodological flaws to help explain the findings.

METHOD

Criteria for study inclusion

An Inclusion Criteria Checklist (Appendix VI) was used to assess the studies for eligibility.

Type of Studies: RCT or NRCT with a matched control or a waitlist control, case control and cohort studies. Single case studies and qualitative designs were excluded.

Participants: At least 50% of sample had to be comprised of adult male offenders (>18 years) with a history of violence or screened for dysfunctional anger. Studies that focused exclusively on domestic violence abusers or offenders with mental health diagnosis were excluded to limit heterogeneity.

Interventions: All modalities of CBT based treatment for anger or violence receiving treatment in prison or the community.

Comparators: Randomised or non-randomised control group receiving alternate treatment to anger management, waitlist control, intent to treat, or comparison to attrition group.

Outcomes: Reconviction as a measure of general and/or violent re-offending.

Search methods for identification of studies

The following electronic databases were searched in June 2014; the Cochrane Library; the Campbell Collaboration; Medline; PsychInfo; ASSIA; SCOPUS; and Web of Science. The same concatenation of key words was used in all searches, although minor modifications to the search syntax were made for each particular database.

(anger OR aggression OR violen) AND (offend* OR crimin* OR perpetrat*) AND (CBT OR cognitive OR behavio* OR treatment OR "anger management")*

In addition, the reference lists of the previous 10 systematic reviews were hand searched. Relevant Governmental portals were also searched, such as the Canadian Correctional Service portal, the Australian Institute of Criminology portal, and the UK Ministry of Justice.

DATA COLLECTION AND ANALYSIS

The references yielded in the database search were exported onto Endnote Online (N=3362). Following the exclusion of duplicates (n=273), the titles of the remaining references were scanned to remove any book chapters, reviews or meta-analyses, opinion papers and clearly irrelevant

papers (n=2985). The 104 remaining references and their abstract were compared to the inclusion/exclusion criteria. The full-text of the remaining 61 articles was assessed using the Inclusion Criteria Checklist (Appendix VI). The final analysis resulted in the exclusion of 47 studies with 13 studies matching all the inclusion criteria. One article by Marquis, Bourgon, Armstrong, and Pfaff (1996) contained a report on two studies using different samples, baseline measures, and results. Thus, this report was considered to be two studies. The reason for exclusion can be found in Appendix VII. The sorting process can be viewed in Figure 3.

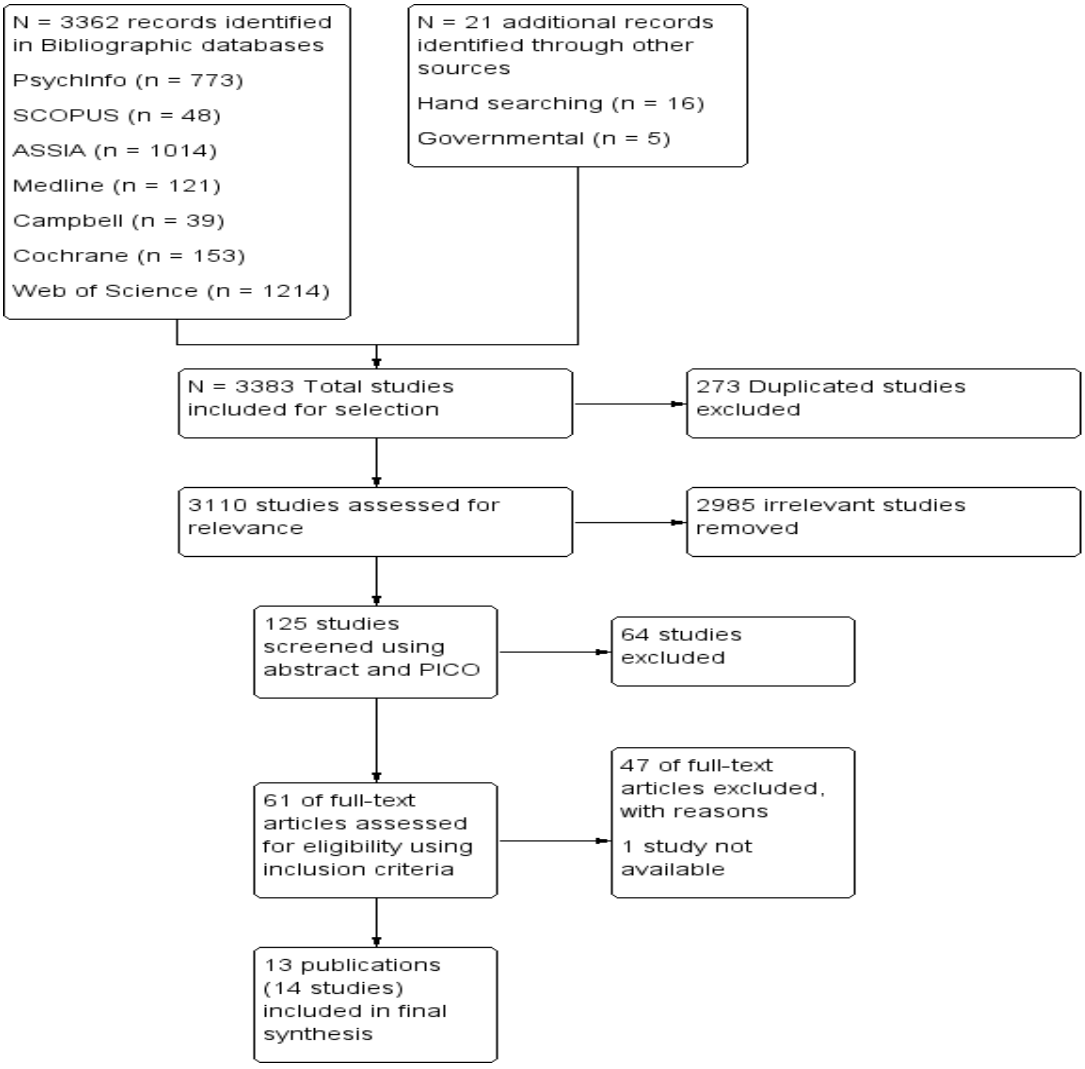

Figure 3.The Selection Process.

Data extraction.

A pre-defined Data Extraction Sheet was used to extract the information relevant to the review question (Appendix VIII). This was adapted from using Cochrane's EPOC as a guideline (Cochrane Public Health Group, 2011).

Assessment of risk of bias in included studies.

The included studies were either case control studies (n= 7) or controlled before and after studies (n = 7). The checklist was adapted from the Risk of Bias (ROB) Tool in the Cochrane Handbook for Systematic Reviews of Interventions (Higgins, Atman, & Sterne, 2011). The checklist covered selection bias, performance bias, attrition bias, detection bias, and reporting bias (kindly refer to Appendix IX). Where possible, an appraisal of the overestimation or underestimation of the reported treatment effects of the study was attempted. A number of criteria were identified in each category of bias whose presence would increase or decrease the risk of bias. The assessor could also rate an item unclear or inconclusive from the information provided in the article. The ROB analysis was carried out by the researcher. The included studies were also assessed using the Maryland Scientific Methods Scale (MSMS). This MSMS has been widely used in criminological studies to assess the methodological quality of studies (Sherman, Gottfredson, Mackenzie, Reuter, & Bushway, 1997).

Statistical Analysis.

A meta-analysis was carried out to explore the reduction of risk of reconviction after treatment exposure or completion. Not all the included studies contained the data needed for meta-analyses. Although these studies were not included in the meta-analyses, their findings were used to

compliment the meta-analytic synthesis. Subgroup analysis based on treatment modality was used to assess the effects associated with anger management, correctional programmes for violent reduction, and other CBT-based treatments. This would compare the effect of anger management to more intensive correctional programmes. Subgroup allocation was based on the treatment components reported in the study and the intensity or dosage of the respective programmes.

Risk Ratio Analysis (RR) was performed on the recidivism rates of treatment groups and their respective controls to estimate the overall risk of general or violent recidivism. This was calculated through Review Manager 5.3 (RevMan) computer software (Review Manager, 2014). Analyses were carried out to determine:

1. The overall effect of treatment on general recidivism and violent recidivism. Subgroup analyses compared the magnitude of effect and treatment modalities.

2. The overall effect of treatment completion on recidivism and violent recidivism in comparison to attrition groups with the same subgroups of treatment modality.

Any relative risk reductions of the analyses being conducted were calculated by computing 100% x (1-RR). The analyses were performed using the inverse variance random effects model (DerSimonian & Laird, 1986). This would take into account the amount of heterogeneity across the studies. Such a method would generate more conservative estimations of statistical significance producing an average treatment effect (Deeks et al., 2008). A random effects model was used on the assumption that any treatment effects in the studies would take the form of a distribution of effect sizes with the mean effect size being the centre point of this

distribution. Heterogeneity would then be the spread of the distribution (Deeks et al., 2008).

The Q statistic and the I^2 estimates were used to estimate the probability of heterogeneity in the included studies. The I^2 indicates the amount of variance in a pooled effect size that could be explained through heterogeneity (Higgins, Thompson, Deeks, & Altman, 2003). An I^2 value between 0 and 40% indicates low variance, scores in the region of 30%-60% indicate moderate variance and those score from 50% to 90% indicate substantial variance (Deeks, Higgins, & Altman, 2008). The magnitude, direction, and possible reasons for heterogeneity were explored in the results section.

RESULTS

Characteristics of included studies

The characteristics and results of the 14 reviewed studies can be seen in Table 5.1. Each study was assigned a study number and will be referred to by their study number in text or in superscript when mentioned in the results, discussion, and conclusion. An extended narrative synthesis exploring the settings, samples, and interventions used can be viewed in Appendix X. In brief, this narrative synthesis of the included studies confirmed the main findings of the meta-analysis.

Table 5.1: Relevant characteristics and findings of included studies

Study No., Author, Country of Publication and Design	**Sample composition and Mean Ages (M)**	**Intervention Type and Brief Description**	**Setting and duration of treatment**	**Percentage of offenders involved in Recidivism**		**Percentage of offenders involved in Violent Recidivism**		**Follow up period**	**Salient Limitation of the Study*** **
1. Henning & Freuh (1996) USA Before and After Study	N = 196 Adult male offenders 60% violent offenders M age treatment = 32 yrs M age control = 29.6 yrs	Cognitive Self Change Programme – components similar to anger management – designed for offenders with history of interpersonal violence	Prison Min. 6 months – 3/5 times weekly	Treatment – 50%	Control – 70.8%	Treatment – 17%	Control – 24%	2 yrs	Common confounding variables not controlled for. Significant differences noted at baseline between comparison groups. Relatively small sample.
2. Hughes (1993) Canada Before and	N= 79 Adult male offenders	Anger Management and Drama therapy – components of anger management	Prison 24 hours	Treatment – 56%	Control – 68.8%	Treatment – 40%	Control – 65.8%	9mths – 4 yrs	Treatment integrity might have been

After Study	screened for anger problems M age not reported	combined with drama							compromised as analysis conducted after ½ of the sessions. Small sample size.
3. Motiuk, Smiley & Blanchette (1996) Canada Case Control Study	N = 120 Adult male violent offenders – 95% of treatment group and 86% of control with violent index offence M age 35 yrs	Intensive programme for violent offending – a cognitive behavioural programme with psychosocial components aimed to address criminogenic needs	Prison 8 months	Treatment – 40%	Control – 35%	Treatment – 18%	Control – 15%	Average of 2 yrs 3 mths – 6 years	Significant differences noted at baseline between treatment and control group.
4. Marquis, Bourgon, Armstrong & Pfaff (1996) Canada Case Control Study	N1 = 216 Adult male offenders Violent and non-violent offenders included M age not reported	Substance Abuse Treatment – relapse prevention components Anger Management Treatment – programmes containing anger management	Prison Based Treatment Facility at least 20days 4/5 times weekly	Relapse prev.** - 51% Relapse prev. & anger management – 34%	Matched control – 59% Matched control – 59%	N/A	N/A	Not Reported	Insufficient details are provided in the report to adequately assess the strengths and limitations.

		components but not enough details are provided.							
5. Marquis, Bourgon, Armstrong & Pfaff (1996) Canada Before and After Study	N = 190 Adult male offenders screened for anger problems M age not reported	Substance Abuse Treatment – relapse prevention components Anger Management Treatment – programmes contained anger management components but not enough details are provided.	Prison Based Treatment Facility min. of 20days 4/5 times weekly	Relapse Prevention – 48% Anger Management – 33% Combined – 36%	Untreated Control – 60%	N/A	N/A	Not reported	Reporting of methodology insufficient. No analysis between groups at baseline.
6. Boe, Belcourt, Ishak & Bsilis (1997) Canada Before and After Study	N = 74 Adult male offenders – 96% had violent index offence – high risk offenders (SIR-R1) M age not reported	Violent Unit Programme - intensive community supervision – components of the programme could not be ascertained	Community Min. 6 months with 2 sessions weekly	Treatment – 0%*	Control – 15%	N/A	N/A	6 months – 2 years	Confounding variables between treatment and control groups not controlled for. Small sample size.

7. Dowden, Blanchette &Serin (1999) Canada Case Control Study	N = 220 Adult male violent offenders M age 35.6 yrs.	Anger and Other Emotions Management Programme – anger management focused treatment	Prison 50 hours	Treatment – 10%	Control – 30%	Treatment – 5%	Control – 17%	3 years	No analysis of treatment non-completers. Different time cohort might have effected some of the analysis.
8. Dowden & Serin (2001) Canada Case Control Study	N = 220 Adult male violent offenders – M age 35.6 yrs.	Anger and Other Emotions Management Programme – anger management focused treatment	Prison 50 hours	Treatment -1 10%	Attrition Group – 52% Control – 30%	Treatment – 5%	Control – 17% Attrition Group – 40%	3 years	Significant differences noted at baseline between comparison groups.
9. Cortoni, Nunes & Latendresse (2006) Canada Case Control Study	N = 966 Adult male violent offenders M age 30.3 yrs. All had min. of 2 violent offences High Risk Offenders (SIR-R1)	Violence Prevention Programme – programme contains components of anger management but also focused on criminogenic needs.	Prison 188 hours	Treatment – 24.6%	Attrition Group – 37.7% Control - 41%	Treatment – 8.5%	Attrition Group – 24.5% Control – 21.8%	5 years Average 1 year	

10. Serin, Gobeil & Preston (2009) Canada Before and After Study	N = 256 Adult male violent offenders M Age 31.75 yrs.	Persistently Violent Offender Programme – cognitive behavioural programme based on social information processing. Anger and Other Emotions Management Programme - anger management focused treatment	Prison 144 hours	PVO Group -17% AEMP PV Group – 11%	AEMP Group – 21% Drop-out Group – 38%	PVO Group -8% AEMP PV Group – 8%	AEMP Group – 7% Drop-out Group – 21%	5 years Average of 3.29 years	Treatment Integrity could have been undermined through analysis of multiple sites and significant differences between treatment and control group present at baseline.
11.Hatcher, Palmer, MacGuire, Hounsome, Belby & Hollin (2008) UK Before and After Study	N = 197 Adult male violent offenders with established pattern of aggression and anger problems M Age 27.42 yrs. Medium – Medium/High risk on OGRS-2	Aggression Replacement Therapy – programme contained components of anger management, behavioural and affective components and an additional component on values.	Community Min. 10 week	Treatment – 39.2%	Control – 50.9%	N/A	N/A	10 mths	Very high attrition rate and relatively small sample size.

12. Berry (2003) New Zealand Case Control Study	N = 164 Adult violent offenders M Age 28yrs.	Montgomery House Violence Prevention Programme – cognitive behavioural programme with violence prevention components, addictions and communication.	Community Rehab 10 weeks	Treatment – 40%	Control – 62%	Treatment – 26%	Control – 44%	17 mths	Relatively short post-programme follow-up. The control group might have also been exposed to treatment. Relatively small sample size.
13. Polaschek, Wilson, Townsend & Daly (2005) New Zealand Before and After Study	N = 104 Adults male violent offenders High risk offenders Mean age treatment 23..5 yrs Mean age control 24.4 yrs	Violence Prevention Unit Programme– programme contains components of anger management but also focused on criminogenic needs e.g. victim empathy and offence supporting thinking.	Prison 330 hours 28 weeks	VPUP – 73%	Control – 85%	VPUP – 32%	Control – 63%	3 years	Significant differences between the treatment and control groups at baseline. Relatively small sample size.
14. Polaschek (2010) New	N = 224 Adult male violent offenders	Violence Prevention Unit Programme– programme contains	Prison 330 hours 28 weeks	High Risk Treatment	High risk control – 95%	Treatment High Risk 62% -	High Risk Control	3.5 years	Treatment integrity effected

Zealand Case Control Study	M age 28 yrs. Medium and High risk offenders	components of anger management but also focused on criminogenic needs e.g. victim empathy and offence supporting thinking.	– 83% Medium Risk Treatment - 76% Drop-out 93%	Medium risk control – 67% Drop-out control – 89%	Drop-out 71% Treatment Medium Risk – 33%	72% Drop out Control 75% Medium Risk Control 48%	through ad hoc adjustments to the manual/ programme and untrained staff delivering the programme.

* Study examined failure rates with 10 out of 11 returns to custody were due to technical breaches of licence.

**Results presented for violent offenders only

***The limitations of the included studies are discussed in further detail in the Risk of Bias analysis.

General characteristics

Two studies [6, 11] focused on offenders in the community while four studies [1, 4, 5, 12] were conducted in secure rehabilitative centres. The remaining studies were carried out in prison settings [2, 7-10, 13, 14]. The number of participants varied from 74 to 892.

The mean ages of all participants across studies ranged from 23.5 years to 35.6 years. There was considerable variation in participants' offence history and other demographic variables. Only three of the 14 studies [2, 4, 5] screened offenders for dysfunctional anger before treatment. Thirteen studies focused on violent offenders with the exception of Study 1 which included 40% of the participants with no violent history. In terms of risk, some diversity was noted. Studies 9, 10, 12, 13 included high-risk offenders with limited capacity for making or maintaining progress. For example, offenders in Study 6 were responsible for over 1300 offences, with 222 being violent offences, 33 homicides, 103 robberies, and 81 assaults. This indicated the seriousness of offending history amongst some offenders included in this meta-analysis. Other studies [7, 8, 14] explored how risk levels might affect treatment outcomes, thus included offenders with different levels of risk.

The mean maximum follow-up period reported in the study was 3.21 years (SD 1.55). However, the period of follow up for some offenders ended once they were returned to custody or reconvicted and this varied considerably across studies.

Intervention types

The included studies adopted a mixture of intervention modalities that might be broadly CBT-based. All the interventions in the studies were

manualised and had provided training for the programme facilitators. However, the level of reported integrity and fidelity varied across the studies. Study 14 distinguished between low intensity treatment, typically of a shorter duration and frequency, such as traditional anger management and more intensive correctional programmes such as the violence reduction programmes typically run in correctional institutions. Although the level of intensity varied in these violence reduction programmes, the mean length of the programme was of 190 hours.

Five studies had specifically focused on anger management. Studies 7, 8, 10 used the Anger and Other Emotions Programme (AEMP). This programme comprised of typical anger management components such as developing self-management, increasing problem solving, improving communication, challenging dysfunctional thinking, and relapse prevention. It consisted of approximately 50 hours of therapeutic engagement. Study 2 also explored anger management but was supplemented with psychodrama. This intervention was shorter, with 24 hours of therapy delivered to participants. Studies 4 and 5 were described in the same report. Both studies compared recidivism rates of offenders who received a combined intervention of relapse prevention and anger management to those offenders receiving relapse prevention only or anger management only. Participants in Study 4 comprised of violent and non-violent offenders, whereas Study 5 included exclusively offenders screened for anger dysregulation.

Study 11 focused on Aggression Replacement Therapy (ART). This programme typically imparts new skills to address the behavioural, affective, and moral components. It aims to deliver arousal and anger control training and moral reasoning modules. Study 1 examined the effects of a Cognitive Self Change Programme which attempted to address

interpersonal aggression through challenging cognitive distortions and offending thought patterns.

Five studies [9-10, 12-14] explored the effectiveness of intensive violence reduction programmes such as the Violence Prevention Programme [9]; Persistently Violent Offender programme [10], Montgomery House Violence Prevention Programme [12]; and the Violence Prevention Unit Programme [13-14]. The content of the programmes were typical of anger management interventions such as arousal reduction, communication skills, relationships, addressing cognitive distortions, and problem solving. They would also include other elements such as victim empathy and risk management deemed essential in correctional programmes. The length of treatment ranged from 144 hours to 330 hours, indicating high intensity.

Outcome Measures

The outcome measure of interest was general and violent recidivism. The percentage rates of the reported outcomes in the individual studies are summarised in Table 5.1.

Excluded studies

When full text studies were examined, 22 out of 61 studies were excluded as they focused on psychometric or observational measures only. Although these might yield valuable information on the efficacy of treatment, the focus of the review was to explore the long-term effectiveness in terms of recidivism of anger management treatment. Another 15 studies were excluded for not meeting the population criteria due to sampling offenders with no anger problems or history of violence or offenders with acute personality disorders or adolescents. Ten studies were excluded as they were multiple case studies, narrative reviews, or opinion papers.

Risk of bias in included studies

Previous research on offender populations highlight that it is inherently difficult to conduct RCTs with offender populations and in settings such as prisons (Jollifee & Farrington, 2009; Ross et al., 2013). This limits the potential number of RCTs included in the review. Focusing on recidivism analysis also makes random allocation of participants difficult, reducing the probability of finding RCTs that answered the review question. Table 5.2 summarises the levels of risk of bias.

Table 5.2: Risk of Bias in Included Studies

Authors; Publication Date and Study No	**Maryland Scientific Methods Scale level**	**Selection Bias**	**Performance Bias**	**Attrition Bias**	**Detection Bias**	**Reporting Bias**
Henning & Frueh (1996) Study 1	Level 3	High	Low	High	High	Low
Hughes (1993) Study 2	Level 3	High	High	High	Low	High
Motiuk, et al (1996) Study 3	Level 4	High	Unclear	High	Unclear	High
Marquis et al (1996) Study 4 and 5	Level 3	Unclear	Unclear	High	Unclear	High
Boe et al (1997) Study 6	Level 3	High	Unclear	Unclear	Low	High
Dowden et al (1999) Study 7	Level 4	High	Low	High	Low	Low

Dowden & Serin (2001) Study 8	Level 4	High	Low	Low	Low	Low
Cortoni et al (2006) Study 9	Level 4	Low	Unclear	Low	Low	Low
Serin et al (2009) Study 10	Level 3	High	Low	Low	Low	Low
Hatcher et al (2008) Study 11	Level 4	Low	Unclear	Low	Low	Low
Berry (2003) study 12	Level 4	Low	Low	Low	Low	Low
Polaschek et al (2005) Study 13	Level 3	High	Low	Low	Low	Low
Polaschek (2010) Study 14	Level 4	Low	Unclear	Low	Low	Low

Selection bias.

The analysis of selection bias focused on whether the study adequately controlled for baseline differences between the control and treatment groups. NRCTs are particularly prone to this bias potentially introducing substantial amount of error in the review (Reeves et al., 2008). Eight (57.1%) of the included studies were deemed to be high risk, with a further study being classed as unclear or undetermined. All the studies classed as Level 3 of the Maryland Scientific Methods Scale (MSMS) were deemed to have a high risk of selection bias. This judgment was based mainly on the basis that the studies used an unmatched control group and in most instances did not control for known variables associated with recidivism. Two studies [6, 13] in particular used comparison groups that were used as a matched control group in another study. Although some of these reported that analysis revealed no pre-treatment significant differences on some important confounding variables, the analysis was not exhaustive, and other differences between the treatment and control groups could have introduced bias, for example, differences in offence histories [1,10] or ethnic composition [13].

Level 4 studies also displayed high risks of selection bias [3, 7, 8]. This was primarily because the matching process resulted in the exclusion of a large number of participants that had received treatment. This could have potentially affected the treatment outcomes. Furthermore, significant differences were observed between groups even after the matching process in terms of offence type (e.g. Study 3) and ethnic composition (e.g. Studies 7, 8).

The studies deemed as low risk for selection bias were those that conducted case-by-case matching on confounding variables such as risk of

reconviction, previous offence history, and salient demographic variables. Also, they reported no significant differences before treatment. These studies included almost all of the participants that had received the treatment intervention and had no candidates excluded due to the matching process [9, 11, 12, 14].

Through matching participants on common confounding variables such as age, variables associated with recidivism and level of risk or analysing pre-treatment differences meant that some extraneous variables were controlled for. However, even when no significant differences exist at baseline, there is still a substantial amount of residual confounders such as misclassification of offenders, which could have affected the matching process and consequently, the results (Reeves et al., 2008).

The lack of information in the report of Studies 4 and 5 rendered the assessment of these studies difficult. One report contained two studies; a case control study [4] and a before-and-after study [5]. Selection bias could not be determined as detailed descriptions of participants were omitted, resulting in a rating of unclear despite reporting that analysis revealed no significant pre-intervention differences on salient confounding variables.

Direction of bias was difficult to ascertain adequately. For example, Study 2 used non-completers as a control group and conducted no analysis before or after interventions to assess possible differences that could have affected the outcome. In this case, the results could have favoured the treatment group since treatment non-completers could have failed to complete treatment due to more complex needs and entrenched psychosocial difficulties. However, in Studies 1 and 3, the potential bias might have favoured the control group, as more high risk and violent

offenders were included in the treatment group than in the respective controls.

Performance bias.

Performance bias tends to occur due to inconsistency in treatment delivery. Elements assessed included whether interventions were delivered in different locations, times or by different facilitators. It also explored the reported integrity and fidelity of the programme through the use of supervision and training of facilitators. Only one study [2] was deemed to have a high risk of performance bias. Although the study reported that the treatment was delivered by professional and experienced staff, the treatment group was deemed to have completed treatment after 6 of the planned 12 sessions. This could have undermined the integrity of the treatment. Seven studies [3-6, 9, 11, 14] were rated as unclear, as they did not provide enough information on the integrity and fidelity of the programme.

Those studies that were classed as low risk of performance bias had reported adequate measures of controlling for potential biases. For example, Studies 1, 7, 8, 10, 12, 13 reported that the treatment was administered under supervision, by trained personnel and using a manual. Only one study[8], however, claimed to have controlled for the effect of parallel interventions on the subjects included in the study.

Measurement Bias.

Since the focus was on failure or recidivism rates, it can be argued that the evaluators (the criminal justice system) act blind to whether the offender received treatment or not. However, other sources of bias could have affected the measurement of outcomes such as different follow-up

periods or different legal jurisdictions. The latter could have introduced bias due to potentially different rates of prosecution and conviction.

Most of the studies (n= 10) included were rated as being of low risk for measurement bias. These studies were rated as low risk as they used multiple information sources to arrive at the recidivism rate of participants in the study by exploring national correctional and police data. One study [1] was rated as high risk of measurement bias. This study was reported to have used only one state database, which would not reveal re-offending in different states. The remaining studies [3, 4, 5] were rated as unclear, as they did not provide enough information pertaining to the length of follow-up period or the provenance of the information concerning conviction rates.

Attrition bias.

Considering that recidivism rates can only be observed after a period of time, attrition bias could have also significantly affected the studies. The principle method by which attrition bias was considered was assessing the type of analysis the researchers conducted on the non-completer group. Attrition levels in the selected studies varied from 22% [11] to 71.7% [12]. Interestingly, the study that reported the most attrition was the only study conducted on probationers. One study [13] reported no attrition as the participants were selected after the completion of the programme but this procedure could also have introduced selection bias.

High risk of attrition bias was noted in six included studies[1-5, 7]. In Studies 3, 4, 5 and 7, non-completer groups were removed from the analysis and subjected to no further analysis. Study 2 reported that as much as 50% of the treatment group did not complete the programme. The attrition group in this study was then compared to the treatment

completers. No analysis of group differences was conducted before comparing their outcomes. Furthermore, setting programme completion at half of the planned interventions could have been indicative of greater attrition figures which were not reported in the study.

The other seven studies [8-14] were deemed to be of low risk of attrition bias, as these studies reported the figure of attrition and analysed the reasons for non-completion. Studies 8-10, 12 and 14 explored characteristics of the attrition groups and in some cases compared them to the treatment completer groups. High attrition rates are a common problem with community-based studies (McMurran & Theodosi, 2007). Study 11 was in fact conducted in the community and sustained serious attrition rates of over 70%. Nevertheless, this study was able to compare the attrition group to the treatment group on the outcome measures and other salient confounding variables associated with recidivism. Study 6 could not be rated due to insufficient information in the study report.

Reporting bias.

The quality of reporting in NRCTs is often very poor and difficult to assess (Reeves et al., 2008). Poor quality of reporting could hinder the effective analysis of quality and inhibit the accurate determination of biases.

Considering that NRCTs would in most instances not have an a priori protocol to analyse the risk of reporting bias, the assessment focused on the overall quality and depth of reporting in the study. Five studies [2-6] were deemed to be of high risk. This bias affected the rating of other quality criteria, as not enough information could be extracted to effectively assess

the risk of bias. The other studies, however, were all classed as having satisfactory levels of reporting where methodological and other limitations of the studies were also reported. These studies explored clinically relevant features of their study even when the results were not significant.

However, it must be noted that although Study 7 was deemed satisfactory, there was not enough information reported on the attrition or non-completer group in the study. Also, Study 14 contained what could be interpreted as contradictory information between the fidelity and integrity of the programme reported in the method section compared to analysis provided in the discussion.

Overall, only one study[12] was rated as low risk in all five areas of bias and was also classed as level 4 on the MSMS. Six studies[8-11, 13-14] had only one area rated as high risk or unclear risk of bias. Only two of these studies[10, 13] were classed as level 3 on the MSMS. Study 7 was classed as level 4 but had been rated as high risk for selection and attrition bias. Study 4 another level 4 study had three areas rated as high risk for selection, attrition and reporting bias. Other areas of bias in Study 4 were rated unclear. Most of the studies[1, 2, 4, 5] classed as level 3 on the MSMS had been rated as having 3 or more areas which were considered as high risk of bias.

Effects of interventions

Exposure to Treatment.

The first set of RRs aimed to analyse the effect of treatment on general (Fig. 4) and violent recidivism (Fig. 5). Studies that included appropriate data, a treatment and a matched or intent-to-treat control group were used to run the RR. Some studies [2, 4-6, 10] did not report

appropriate data for a meta-analysis. Studies 2 and 10 used attritions as controls. Studies 4 and 5 did not report the number of participants in the experimental and treatment groups. Study 6 reported failure rates or returns to custody such as withdrawal of licenses which might not indicate actual re-offending. Thus, these studies were not entered into this analysis.

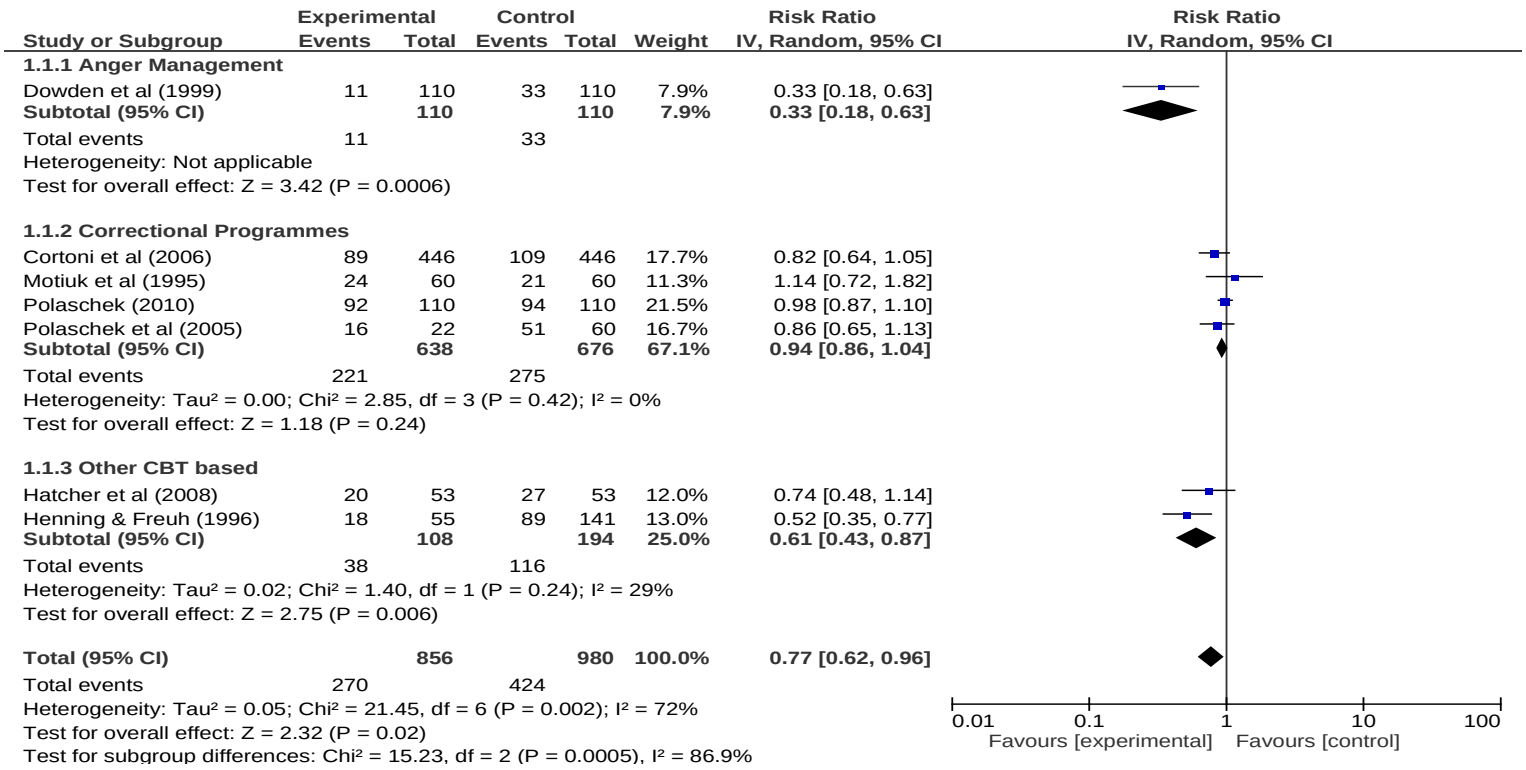

Figure 4. Exposure to treatment and recidivism

Figure 4 presents the results using random effect of exposure to treatment on general recidivism. The treatment groups consisted of all cases exposed to treatment and thus included the attrition groups. The overall risk ratio for general reconviction of offenders exposed to treatment against their respective control groups was 0.77 (p= .02), indicating a significant risk reduction of 23% for general recidivism among offenders after treatment. However, significant heterogeneity was observed through the Q statistic (p= .002). The I^2 value was 72%, also indicating significant heterogeneity across the study results. Interestingly, significant differences were noted between the different subgroups included in the RR. This may indicate significant cumulative differences in the results calculated with the three subgroups. Although this could indicate a real difference between the levels of treatment efficacy across studies, it could also be a result of the clinical and methodological diversity of the included studies.

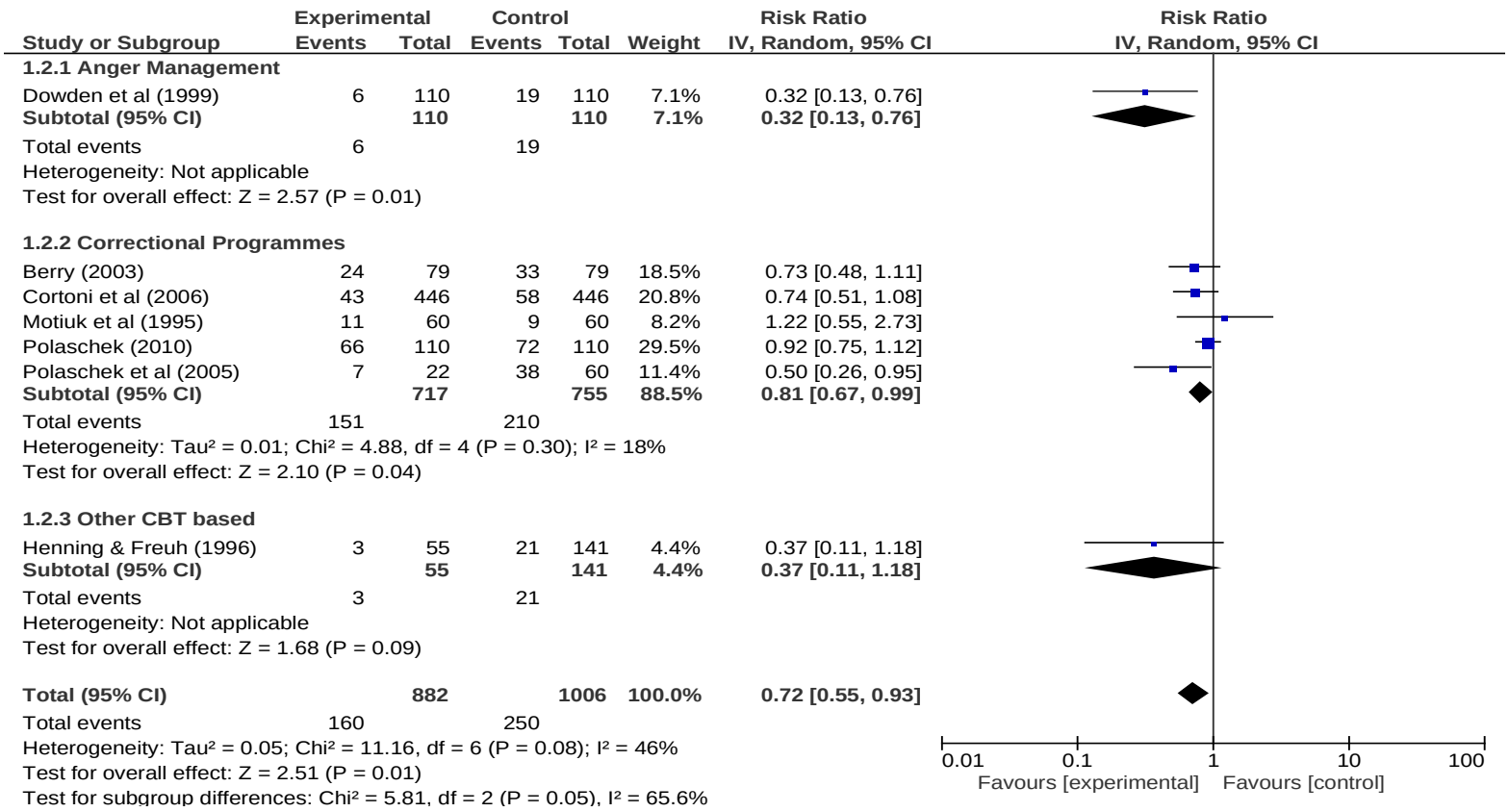

Figure 5. Exposure to treatment and violent recidivism

Figure 5 presents the RR exploring the effects of exposure to treatment and the risk for violent recidivism only. Six studies divided into subgroups based on the treatment modality contain the appropriate data for this analysis. The results indicate a 28% significant risk reduction of reconviction for violence (p=.01) if the offender receives treatment of any modality. The Q statistic was not significant (p = .08). The I^2 value of 46% on the other hand indicated moderate variance amongst the study results. Due to the limited number of studies included in the meta-analysis, the Q statistic could be deemed to be have low power in detecting heterogeneity. However, since the I^2 value was not 0%, heterogeneity was assumed to be present (Heudo-Medina, Sanchez-Meca, Marin, & Botella, 2006).

Results in Figures 4 and 5 may give the impression of a qualitative interaction, with Study 3 seemingly showing results in the opposite direction of the other included studies. However, this difference in recidivism between treated and untreated offenders was not statistically significant. Nevertheless, the treatment group in Study 3 included offenders considered of higher risk than their controls, which might skew the results. Furthermore, the high attrition rates in this study could have also affected the result. A quantitative interaction was also found with the anger management subgroups seemingly associated with larger effect sizes. This shall be explored in the subgroup analysis.

In these RR analyses, only Study 7 focused on the effects of traditional anger management, with the other studies focusing on other treatment programmes which included only some components of anger management. The largest effect of risk reduction of treatment on recidivism and violent offending amongst the subgroups was found in Study 7. Results from other studies on traditional anger management in this systematic review [2, 4, 5, 10] but not suitable to be entered into the RR

analysis support the result of this analysis, with anger management being associated with a significantly lower rate of re-offending. For example, Studies 4 and 5 showed that anger management seemed a key element for the treatment of violent offenders and those with anger dysregulation. Study 4 reported that violent offenders receiving combined relapse prevention and anger management fared better than their waitlist control and those receiving only relapse prevention. Study 5 concentrated on offenders with anger difficulties only. It also found significantly lower rates of re-offending among offenders receiving the anger management interventions when compared to their controls.

The subgroup analysis for general and violent reconviction also explored the reduction of risk associated with exposure to correctional violence reduction programmes. Four studies [3, 9, 13, 14] were deemed to contain appropriate data for the analysis of general reconviction and five studies [3, 9, 12-14] for violent reconviction. The Correctional Programme subgroup showed the smallest effect.

Both tests for heterogeneity between the studies in the Correctional Programme subgroups of the two RR analyses were not significant for general reconviction ($p=.42$) and violent reconviction ($p=.30$). The I^2 values of 0% and 18% respectively. This may indicate the studies in these subgroups were not as diverse in clinical terms.

The subgroups exploring other CBT-based treatments on reduction of general recidivism included two studies [1, 11] and one study [1] for violent recidivism. This subgroup also seemed to produce larger effects than the correctional programmes.

The Q statistic was not significant for the general reconviction analysis. The I^2 value was 29%, indicating a moderate level of

heterogeneity. This might be explained by the differences inherent in the samples of the two studies [1, 11]. Study 1 only included approximately 60% incarcerated violent offenders in the sample, whereas study 11 consisted of medium risk offenders in the community who were court mandated to attend treatment. A salient difference between the studies was the treatment modality, with one study [1] using the Cognitive Self Change programme and the other [11] using Aggression Replacement Therapy.

Treatment completion.

In this set of RR analysis the focus was the effect of treatment completion on recidivism (Fig. 6) and violent (Fig. 7) recidivism.

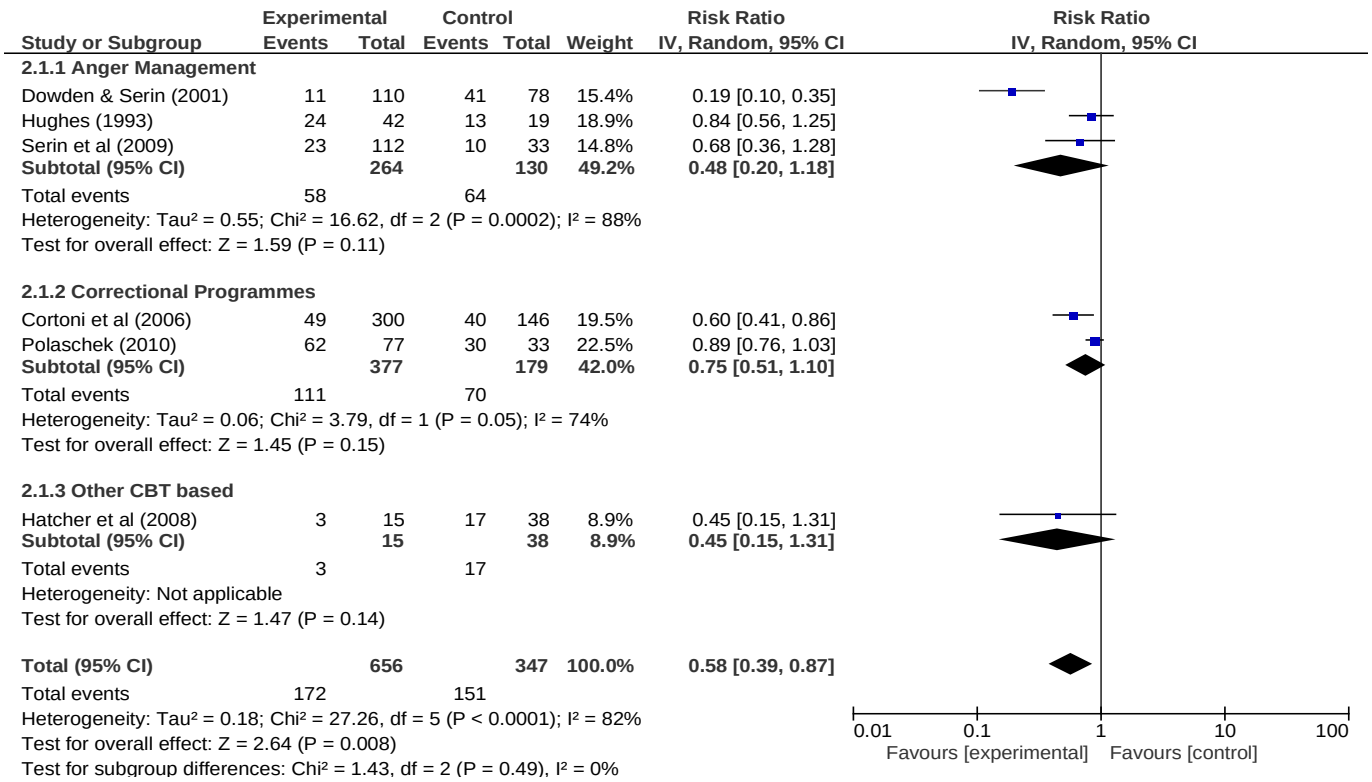

Figure 6. Treatment Completion and Recidivism

Figure 6 presents an RR analysis using random effects on the risk reduction of recidivism of treatment completers and non-completers. Subgroup analysis was also calculated based on treatment modalities, with the studies divided into three subgroups; three studies[2, 8, 10] in the anger management subgroup, two studies[9, 14] in the correctional programmes for violence reduction and one[11] in the other CBT programmes subgroup.

The RR analysis on recidivism revealed a significant overall effect of 0.58 ($p = .008$). This represents a 42% reduced risk of reconviction if treatment is completed. The results also indicate a significant Q statistic ($p=.001$) and an I^2 value of 82%, showing considerable variance in the study results.

Similarly, Figure 7 shows the RR analysis on violent reconviction for completers and non-completers. However, only three studies[2, 8, 10] in the anger management group and three studies[9, 12, 14] in the correctional programmes group were deemed to have the appropriate data for this subgroup analysis.

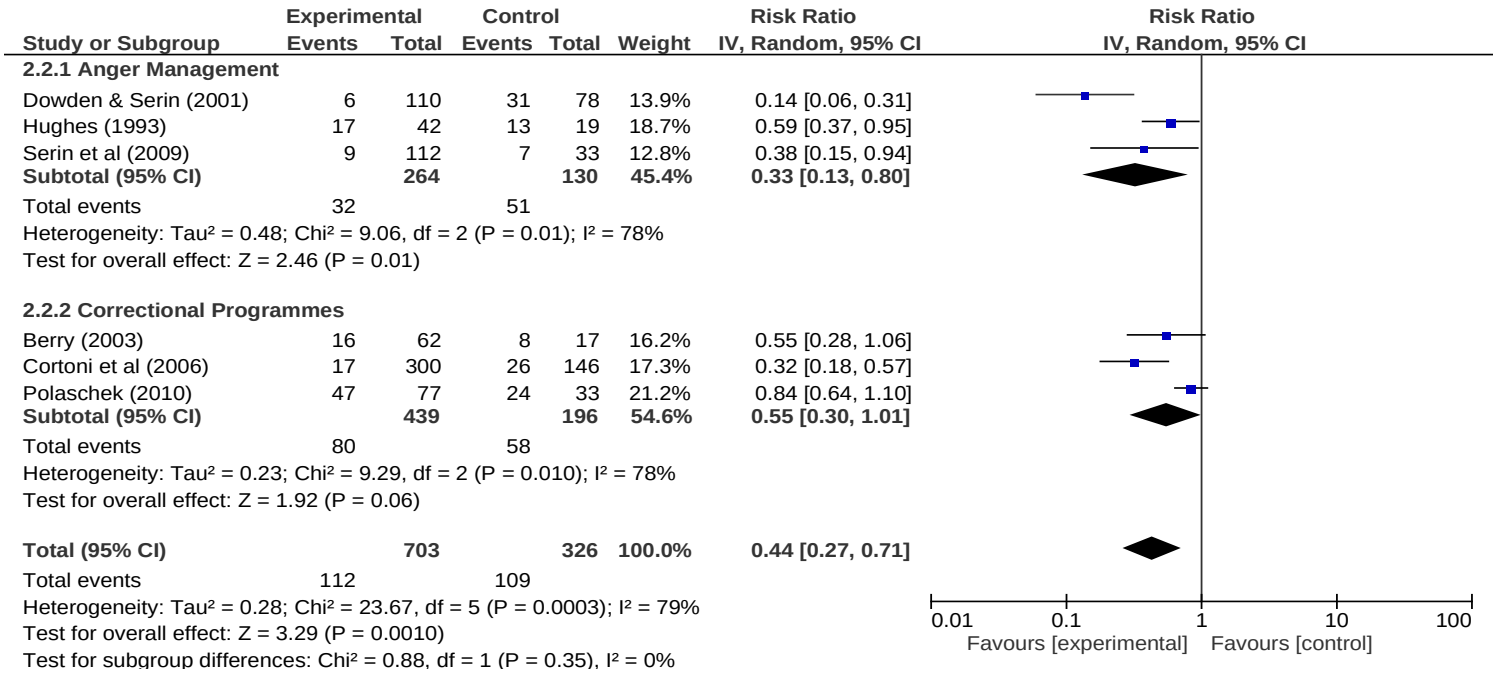

Figure 7. Treatment Completion and Violent Recidivism

The RR analysis showed a significant overall effect of 0.44 (p=.001). This indicates a 56% reduction in risk of reconviction for violence if offenders had completed treatment. This set of analysis had a significant Q statistic (p = .0003). The I^2 value (78%) was also highly indicative of substantial heterogeneity amongst the study results.

The largest effect was noted in the ART study, closely followed by the Anger Management subgroup. The smallest treatment effect was found in the Correctional Programme subgroup. For violent reconviction, the intensive correctional programmes show the smallest effect. Again, the anger management subgroup shows the greatest effect. Thus, this subgroup analysis found a similar quantitative interaction as reported in the analysis for exposure to treatment with anger management subgroups having the largest effect.

DISCUSSION

The RR analysis found an overall risk reduction in recidivism of 23% for general recidivism and 28% for violent recidivism after treatment. The overall risk reduction for treatment completion as opposed to non-completion was of a 42% reduction in general recidivism and 56% in violent recidivism. Quantitative interactions were noted in all the subgroup analyses, with anger management subgroups showing the largest effect. This quantitative interaction between subgroups appears to be clinically plausible.

Difference between anger management and violence reduction programme

Most studies exploring the effects of traditional anger management on offenders found that treatment had significant effects on reconviction (e.g. Studies 4, 5, 7 and 8). The subgroup analysis found greater effects

for the Anger Management subgroups, compared to the Correctional Programmes subgroup. These results may be due to the differences in severity of risk of offenders included in the studies [9, 12-14], as violence reduction programmes typically target offenders with an extensive history of violence and criminal convictions. Studies on anger management groups either did not report the risk level of the offenders (e.g. Studies 4 and 5) or a mix low risk or high risk offenders (e.g. Studies 7 and 8). Study 10 controlled for the difference in risk level when comparing violence reduction programmes and anger management. This study concluded that the PVO programme was not superior in reducing re-offending to anger management. However, it must be noted that most of the anger management studies included were related to the AEMP which at 50 hours of treatment might be considered to be more intense than traditional anger management and of moderate intensity in comparison to violence reduction programmes.

Effect of treatment completion

All the studies that included the non-completer groups found that reconviction was higher for these groups than for the control groups. This applied for all types of programmes reviewed, indicating that overall treatment completion plays a significant role in changing the problematic behaviour. It might be useful to explore in further research variables that increase the likelihood of treatment completion. Some notable differences at baseline were identified from the studies that explored the differences between completer and non-completer groups. Study 9 found that non-completers were significantly younger and had shorter sentences than the completer group. Marital status also approached significance with more single men in the attrition group. This difference in marital status was statistically significant in Study 12. Study 8 found that ethnic minorities

and offenders classed as medium risk were over-represented in the attrition group, with these differences also being statistically significant. Study 11 had controlled for significant differences on salient criminogenic variables between the completers and non-completers to ensure that any treatment effect can be attributed to treatment completion. They found that completing treatment decreases odds for reconviction by 42%. The RR analysis exploring the effects of treatment completion supports these findings.

Clinical heterogeneity

The marked heterogeneity of the data indicated a need to explore clinical and methodological variables that could moderate the overall results in the meta-analyses. Clinical heterogeneity was observed in the offenders included and the intervention modalities.

Studies that included offenders of different risk levels and criminal histories could have affected the outcome measure of recidivism. This could have introduced an artificial effect in the meta-analysis and increased the amount of error in the overall results. This systematic review excluded those studies focusing only on domestic violent abusers or those with a mental health diagnosis, in order to limit the potential confounding effects of extraneous variables other than anger. However, this could affect the generalisability of the findings, as problematic anger may be comorbid with other mental health diagnoses. Another source of error could stem from the lack of pre-treatment screening and assessment for anger dysfunction to ensure the allocated treatment actually meets this need. Indeed, Watt and Howells (1999) and Howells (2004) recommend that offenders be assessed at intake and screened for anger problems prior to assigning them to a correctional programme. Unfortunately, most studies included

offenders on the basis of offending history and may have diluted the treatment effect as a result.

To maximise the inclusion of potentially relevant studies, violent offending or violent recidivism was not formerly operationalised in this systematic review. Different studies might have used different definitions of what is classed as violent offending. The possible lack of standardisation on the definition of violent offending between the studies might have introduced error in the review and meta-analysis.

Another considerable source of error that could have affected the results is the lack of standardisation of follow-up periods between the included studies. Periods of follow-up varied considerably with a range between 6 months to 5 years.

Methodological differences

The results of the ROB analysis were attained through the use of a ROB Checklist to ensure uniformity of the analysis. An independent and blind quality assessment of the included studies was not carried out in this systematic review this could have in itself introduced artificial bias. Nevertheless, various types of bias were identified in the included studies. All the studies included were NRCTs which are considered to be more prone to bias than RCTs. Selection bias was particularly prominent. The direction of bias could not be ascertained, as some of the studies might be deemed to underestimate or over-inflate the treatment effects at the same time. Therefore, the results must be interpreted with caution.

Some studies did not report the appropriate data for meta-analysis. Attempts at contacting authors also bore little results since some of the studies were at least 20 years old and most of the data had since been discarded.

Another potential moderating factor was the lack of integrity and treatment fidelity reported in some studies. This could have potentially moderated the overall effect. Such bias could have been introduced through different staff competencies and different sites in which interventions where delivered. For instance, Study 14 stated that psychologists were frequently replaced by students and rehabilitation staff who often had extensive experience in social work but little experience in working with offenders. However, treatment integrity is in fact considered essential for an effective correctional system (Howells, Watt, Hall, & Baldwin, 1997; Howells et al., 2002). These issues might have introduced considerable methodological diversity which could have affected the accuracy of the reported results.

A small sample size in some of the included studies may have introduced a within-study bias, since the random effects model might give them more weight (Deeks et al., 2008; Kjaergaard, Villumson, & Gluud, 2001). Furthermore, the lack of appropriate data in some included studies limited the number of studies included in the meta-analysis and consequently the possibility of further analysis such as meta-regression. This may have also introduced artificial bias due to the exclusion of studies.

CONCLUSIONS

Most of the included studies indicate a decrease in re-offending especially when the focus is on violent reconviction, albeit not always statistically significant (e.g. Study 2). This supports the results of the RR analyses carried out. In fact, Studies 1, 4, 5, 7, 8, 14 reported significant differences in general re-offending for high-risk groups. Studies 2, 4, 5, 7, 8, 12 and 13 all reported significant differences on violent re-offending between treatment and control groups. Other studies [9, 11] reported that

these differences became significant only when the attrition or non-completers were removed from the analysis.

The analyses also indicate that the less intensive anger management seemed to be, the most effective treatment modality was in reducing offending behaviour, especially violent offending. This seems to contradict Joliffe and Farrington (2007) who had found that greater dosage of interventions was related with a greater response. Their review had a wider scope than our study, as they included different types of interventions such as electronic tagging and comparatively brief interventions (e.g. approximately 15-20 minutes) when compared to the studies included in our review. It is worth noting that our finding is based almost exclusively on one particular anger management programme, the AEMP. The length and intensity (50 hours) of this programme may be classed as moderate in our study but considered more intense in the Joliffe and Farrington (2007) review. It is possible that this programme struck an optimum dose-response relationship, as intensity beyond a certain threshold would no longer be beneficial. Therefore, this finding may have significant funding implications for correctional programmes, as less intensive might be more cost-effective than the intensive violence reduction programmes.

Further empirical research in this area could explore other moderators, for example, readiness to change and pre-intervention screening for anger dysfunction. This would aid the development of more consistent treatment protocols. This is especially important, considering the amount of heterogeneity in the included studies in this systematic review.

Anger control dysregulation often plays a significant role in violent offending. The findings from this review seem to support this claim that

when anger control is addressed, violent recidivism in particular would be reduced. This may apply for both intensive violence reduction programmes whose programme components place heavy emphasis on anger management modules and the less intensive anger management.

Chapter 6

6. CONCLUSION

The principal aims of this thesis were to assess the treatment effectiveness of a brief anger management programme in reducing symptoms of anger dyscontrol amongst community based offenders; to assess the validity of adapting an anger management programme to the treatment needs of a female offender; and to explore the effectiveness of CBT based treatment aimed at addressing anger or violence in reducing general and violent recidivism.

To assess treatment effectiveness of a brief anger management a random control study was carried out and reported in Chapter 2. A sample of 24 community-based male offenders was randomly assigned to two treatment groups. Group A (n=12) was tested before and after the treatment and also after a follow-up period. Group B (n=12) was tested upon referral, tested again after spending a period on a waitlist prior to the treatment and tested after the intervention. The intervention was a CBT and mindfulness based anger management intervention called the Individual Managing Anger Programme (Johnson & Gast, 2013). Statistical analysis found significantly lower scores after treatment on the reported anger symptoms. This could have indicated that treatment significantly reduced anger related symptomology. The treatment effect calculated was also very large r = .89 and Cohen d = - 3.9153. The research study also sought to analyse potential confounding effects of impression management through the Positive Impression Index in the ADS (Di Giuseppe & Tafrate, 2004). The analysis of those offenders not displaying socially desirable responding still indicated statistically significantly lower scores after

treatment. Thus positive treatment effects were noted regardless of the whether the participants were attempting to manage their impression.

This research study demonstrated that although on a small scale RCTs can be carried out in the criminal justice system. The results of this study seemed to indicate that brief anger management, held on a one-to-one basis, could reduce self-reported anger symptoms. Further research could explore whether the effects of the intervention could have been enhanced through the use of one-to-one interventions. Furthermore, a longitudinal analysis of recidivism and/or violent recidivism would also establish whether the effects of the interventions resulted in long-term behavioural changes in the participants of the study.

While the largest amount of violent offenders or those deemed to have anger management problems by court and professionals tend to be male there is still a proportion of females that would necessitate interventions for problematic anger. Based on available numbers of violent or angry female community-based offenders in Malta willing to receive treatment a case study was conducted using the I-MAP manual as a guideline to develop a set of interventions specifically a female offender case study (N=1), who was screened for significant anger dyscontrol. This adaptation was facilitated by the development of a case formulation that had identified particular differences in the experience of anger between the male participants and the female case study. Results on this case study also showed significant post-treatment reductions both when tested just after the delivery of the treatment and more so at follow-up. This showed that brief anger management interventions could yield substantial reductions in anger symptoms amongst both male and female community based offenders. The I-MAP that was specifically designed for male

populations, however the results of the case study could pave the way for the formal adaptation of the manual for female populations.

The psychometric critique, in Chapter 4, focused on the ADS (Di Giuseppe & Tafrate, 2004). This anger measure was discussed in terms of its suitability in exploring the idiosyncratic variants of anger and in preparation for individualised formulations and treatment plans. As a tool measuring anger it explores anger on five major domains the cognitive, arousal, motivational, behavioural and provocation/ triggers by using 18 different subscales. These subscales and their scores can be computed to obtain the higher order scales of Reactivity, Anger-In and Vengeance as well as a total ADS score.

Analysis of test re-test reliability demonstrated that the test had good reliability ranging from .75 to .91 for the different scales and subscales. The reported internal consistency was also reported to be adequate in the studies carried out by the authors of the psychometric tool (Di Giuseppe & Tafrate, 2004). The validity studies reveal that the ADS compares well with other measures of anger such as the STAXI-II (Spielberger, 1991) and the Aggression Questionnaire (Buss & Perry, 1992). From a database search it seems however this psychometric tool still lacks large scale validation studies conducted by researchers other than the authors.

The ADS was also normed on offender populations making this tool appropriate for use amongst forensic populations. Its analysis of social desirable responding is also useful however it might need refinement when used to analyse post-treatment effectiveness as it might not be particularly sensitive in identifying offenders managing their impression or showing genuine post-treatment reductions in anger symptomology. This was also

identified by Di Giuseppe and Tafrate (2004) who noted that the positive impression index was not standardised with normal populations.

At present all psychometric tools used in Malta are not validated on Maltese populations. The research study and case study provided insight into how these tools could potentially be used in the local context. A larger scale validation study which would aim to derive locally standardised and normed scales is recommended for further research.

It might be argued however that psychometric measures are not ideal to measure change in offender populations since psychometric measures focus on short-term gains and are prone to impression management (e.g. Polaschek, Bell, Calvert & Takarangi, 2010). Behavioural analysis or institutional misconducts were also considered to be fraught with difficulties primarily because they would exclude community based studies and secondly the behaviours were associated with low base rates considering the possible survival value of aggression in prisons and poor inter-rater reliability making statistical analysis difficult (Kennedy, 1992; Hunter, 1991; Barto-Lynch, 1995; Watt & Howells, 1999; Macpherson, 1986; Forbes, 1990; Howells & Day, 2003). To address this deficiency this thesis also sought to undertake a systematic review and meta-analysis exploring the effects of CBT based interventions amongst offender populations by examining recidivism rates after treatment (Chapter 5). The meta-analysis focused only on studies (n=14) that conducted an analysis of recidivism rates following the administration of CBT based treatment. Relative risk reductions (100% x [1-RR]) were calculated for exposure to treatment and its associated reduction in recidivism and violent recidivism risk and treatment completion and its associated risk reduction. An overall risk reduction of 23% was estimated for general recidivism (k = 7; n = 1836; RR = .77; 95% CI .61 to .96) and 28% for violent recidivism (k = 7;

n = 1888; RR = .72; 95% CI .55 to .93) following treatment. Treatment completion was associated with greater risk reductions of 42% (k = 6; n = 703; RR = .58; 95% CI .39 to .87) for general recidivism and 56% for violent recidivism (k = 6; n = 1029; RR = .44; 95% CI .27 to .71). Results in this meta-analysis also compared the typically less intensive anger management with the more intensive violence reduction correctional programmes in reducing recidivism and violent re-offending. Moderate anger management interventions seemed to have greater a magnitude of effect than the longer and more intense correctional programmes aimed specifically at violence reduction. Although this could be due to the selection process involved in the allocation of candidates for intervention with violence reduction programmes targeting specifically violent offenders it might also be argued that a there seems to be a golden rule for treatment intensity whereby increased duration of treatment might be counter-productive in terms of treatment effect.

The focus on long term behavioural change through recidivism analysis also has its flaws with some studies not differentiating between returns to custody due to breaches of release licences or re-offending such as Boe et al (1997). Some discrepancies occurred in the classification of recidivism and classification of violent offending with some studies reporting that the sexual offending included with violence (e.g. Berry, 2003). Also in reconviction analysis there is a risk of type I errors were offenders are charged with an offence and are in fact innocent and type II errors were the offender is guilty but not charged with the offence. Furthermore recidivism is only one area of behaviour in which offenders can be assessed in the community with other areas of interest that might be targeted by interventions not being investigated in many studies of treatment effectiveness such as improved interpersonal communication

(Henning & Freuh, 1996). Focusing on recidivism analysis resulted in the exclusion of many studies that focused on anger management since they had mainly used psychometric measures to assess treatment effect. The number and recency of long-term outcome studies using recidivism analysis, a long term behavioural analysis, was also limited which might reflect the difficult economic circumstances that research is currently being conducted in. More comprehensive studies using a mixture of outcome measures would help in increasing the understanding of the link between anger and crime as well as the effectiveness of anger management on recidivism (Howells et al, 2002).

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Appendix I: The process of adaptation of a manualised intervention within the Department of Probation and Parole (DPP) Malta.

After identifying the need for intervention, a search of available manualised interventions was carried out. The selected intervention, the I-MAP was chosen on the basis of practical considerations such as treatment length, the client group for which it was designed and the setting in which the interventions were planned to be held. Ideally an empirically supported manualised intervention should have been selected for the identified population (Goldstein et al. 2013). However considering particular constraints pertaining to the DPP and the knowledge that the programme was developed with similar clinical populations in mind then a previously untested IMAP was opted for. It was believed that the procedural and clinical content of the manual made it more adaptable to the population identified. Despite not being empirically supported the identified manualised programme had a strong theoretical foundation and was developed by clinicians who have a lot of experience delivering and also constructing manualised interventions within the British criminal justice system.

Prior to commencing the research project the researcher underwent a process of training and mentoring with the programme developers. This was completed to ensure the integrity of the treatment programme. In fact following training it was decided that no manual revisions of procedural or clinical content were to be made to maintain as much as possible the integrity of the intervention programme.

In order to officially launch the pilot project information posters were affixed on the Department of Probation and Parole noticeboard aimed at generating awareness and interest amongst potential participants. To further facilitate the recruitment process and answer any concerns or queries, a training seminar was organised for probation officers. The seminar provided general information on anger and aggression and the structure of the proposed intervention. Information was also provided on the screening tool that they would be required to administer on prospective candidates of interventions. This screening tool or checklist and the training seminar provided had the intention of aiding the probation officers to

identify the symptoms of problematic anger in their clients. They were also briefed on the information required in the referral form so that data on the characteristics of participants could be collected. The training seminar emphasised the importance of the role of the probation officer not only in recruiting offenders to participate in the study but also in their retention.

Appendix II: Brief description of session content – Individual Managing Anger Programme

In session one clients were explained the plan of the programme and interventions. The general objectives were agreed upon and a process of establishing a therapeutic alliance with the clients was initiated. The focus of the second session was on being able to understand anger and its consequences on the body. It also contains a skills component in that the client was introduced to the Body Scan technique an arousal reduction technique. As an assignment the client would then have to practice this technique in his natural environment.

In the third session the focus was on being able to identify the typical idiosyncratic triggers of anger in the respective client. The session would also help the offender establish a link between one's cognitions and thought process; one's emotions; and one's behavioural reactions. The Journal was introduced in this session with an emphasis on the identification of triggers of anger. By the fourth session the interventions were centred on teaching assertiveness skills and effective communication. Alternative arousal reduction techniques like breathing exercises were also practiced in the session. Identifying and understanding the basic concepts of effective communication were dealt with in the fifth session. The focus of the sessions was on improving the client's relationship with others through better communicational skills. An alternative arousal reduction technique that of visualisation was also introduced in this session. Interpretation of environmental cues was the subject matter of the sixth session and it concentrates on the typical thinking errors or attributional biases inherent in the particular client. Here the emphasis was on disputing these thoughts and helping the clients generate alternative explanations for their inferences and evaluations. This theme was continued in the seventh session where the inferences and evaluations that the client has were disputed on the basis of available evidence. The journal and its entries were of central importance in these sessions as clients need to practice recognising unhelpful thoughts, disputing their beliefs and coming up with alternative more functional thoughts. The last 2 sessions can be seen to be closure sessions since they focus on being able to plan ahead and strengthening the inhibitions to anger. The final session focuses on concluding the programme and dealing with issues of relapse prevention,

maintaining any treatment gains and techniques practiced during the sessions.

The structured sessions are designed to contain sufficient repetition for the client to learn appropriate styles of coping and to respond in situ. To facilitate the transfer of learning to the individual's environment the client has a number of tools such as the Participant Workbook and the Journal. These tools would serve as a personal record for the client acting as a reminder of the topics and modules covered during the sessions. The Journal in particular would serve another 2 functions, a diary of the angry events which would then be analysed during the sessions (Trower, Casey & Dryden, 2008) and act as a self-monitoring tool which would regulate the client's behaviour and facilitate the transfer of learning in vivo (Miltenberger, 1997; Deffenbacher, 2011; Novaco, 2011b).

Appendix III: Ethics Approval

The University of Nottingham

Direct line/e-mail
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Louise.Dale@nottingham.ac.uk

Faculty of Medicine and Health Sciences

Research Ethics Committee
Division of Respiratory Medicine
D Floor, South Block
Queen's Medical Centre
Nottingham University Hospitals
Nottingham
NG7 2UH

18th March 2014

Kevin Sammut Herwood
Postgraduate Student
Professor Kevin Browne
Head of Institute and Chair of Forensic Psychology and Child Health
Division of Psychiatry and Applied Psychology
Centre for Forensic and Family Psychology
The University of Nottingham
Room B25, Floor B, Yang Fujia Building, Jubilee Campus
Nottingham
NG8 1BB

Dear Kevin

Ethics Reference No: OVSa13032014 SuM PAPsych
Study Title: Evaluating the use of a structured CBT informed anger management programme amongst offenders sentenced to a community sanction in Malta: A Service Evaluation.
Chief Investigator/Academic Supervisor: Professor Kevin Browne, Head of Institute and Chair of Forensic Psychology and Child Health, Division of Psychiatry and Applied Psychology, Centre for Forensic and Family Psychology
Lead Investigators/Student: Kevin Sammut Herwood, Postgraduate Student, School of Medicine.

Thank you for your recent application which was considered by the Committee and the following documents were received:

Evaluating anger management interventions with offenders in the community

Psychiatry and Applied Psychology Research Ethics Checklist final version 1.0, Date: 24.12.2013
Research Proposal version 1.0 date 24.12.2014

These have been reviewed and are satisfactory and this Service Evaluation study has been given a favourable opinion.

Approval is given on the understanding that the Conditions of Approval set out below are followed.

1. A favourable opinion is given on the understanding that all appropriate ethical and regulatory permissions are respected and followed in accordance with all local laws of the country in which the study is being conducted and those required by the host organisation/s involved.

2. Please can you submit copies of approval from Senior Management of the Department Probation and Parole for our records please.

The University of Nottingham

3. You must follow the protocol agreed and inform the Committee of any changes using a notification of amendment form (please request a form).

4. You must notify the Chair of any serious or unexpected event.

5. This study is approved for the period of active recruitment requested. The Committee also provides a further 5 year approval for any necessary work to be performed on the study which may arise in the process of publication and peer review.

6. An End of Project Progress Report is completed and returned when the study has finished (Please request a form).

Yours sincerely

Dr Cadogh Dugdale
Chair, Faculty of Medicine & Health Sciences Research Ethics Committee

Appendix IV: Table indicating the raw scores, t-scores and percentile scores of the female case study on the ADS

	Scales and Domains	**Pre-treatment Raw Score**	**Pre-treatment T-Score**	**Pre-treatment Percentile**	**Post-treatment Raw Score**	**Post-treatment T - Score**	**Post-treatment Percentile**	**4 month follow-up Raw Scores**	**4 month follow-up T Scores**	**4 month follow-up Percentiles**
Provocation Domain	Scope of Anger Provocations	11	55	59 (0)	7	43	27(0)	4	34	9(0)
	Hurt/Social Rejection	24	74	97(3)	17	56	77(1)	11	41	20(0)
Arousal	Physiological Arousal	17	86	98(3)	9	59	89(1)	5	45	30(0)
Domain	Duration of Anger Problems	15	75	95(3)	9	59	85(1)	3	44	29(0)

	Episode Length	10	70	96(3)	9	43	32(0)	3	39	15(0)
Cognitions	Suspiciousness	18	80	99(3)	10	54	69(0)	8	48	44(0)
Domain	Resentment	17	77	99(3)	11	59	81(1)	10	56	74(0)
	Rumination	14	76	98(3)	9	59	84(1)	4	42	19(0)
	Impulsivity	11	89	98(3)	5	56	86(1)	4	51	79(1)
Motives	Revenge	23	106	99(3)	16	81	98(3)	10	60	87(1)
Domain	Tension Reduction	10	58	77(1)	6	45	35(0)	3	35	5(0)
	Coercion	17	80	99(3)	8	50	62(0)	7	47	47(0)
Behaviours	Brooding	16	63	90(2)	10	44	31(0)	7	35	5(0)
Domain	Verbal Expression	25	97	99(3)	12	60	88(1)	8	48	58(0)

	Physical Aggression	9	130	99(3)	3	48	46(0)	3	48	46(0)
	Relational Aggression	9	102	99(3)	3	46	40(0)	3	46	40(0)
	Passive Aggression	17	83	99(3)	7	49	62(0)	5	42	18(0)
	Indirect aggression	13	90	98(3)	10	75	96(3)	6	54	79(1)
Higher	Reactivity/Expression	25.887	86	99(3)	14.6	59	83(1)	8.03	42	18(0)
Order	Anger In	23.41	80	99(3)	13.95	51	55(0)	10.1	38	10(0)
Scales	Vengeance	17.25	110	99(3)	9.3	65	92(2)	6.5	54	74(0)
	ADS Total	66.547	96	99(3)	37.8	58	81(1)	24.65	40	13(0)

Appendix V: Case study consent

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

Department of Probation and Parole
Valletta Malta.

CONSENT FORM
(Draft Version 1 / Final version 1.0: 30th November 2013)

Title of Case Study: CBT informed anger management in the Department of Probation and Parole Malta.

Name of Researcher: Kevin Sammut Henwood B. Psy (Hons) MSc RPsy 078

Name of Participant: [redacted] **Please initial box**

1. I confirm that I have read and understand the information sheet version number 1 dated 30th November 2013 for the above study and have had the opportunity to ask questions. ☑

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, and without my legal rights being affected. I understand that should I withdraw then the unidentifiable information collected so far cannot be erased and that this information may still be used in the project analysis. ☑

3. I understand that the data pertaining to the treatment process and collected in the study may be looked at by authorised individuals from the University of Nottingham, the researcher's supervisors and regulatory authorities where it is relevant to my taking part in the study. I give permission for these individuals to have access to these records and to collect, store, analyse and publish anonymous information obtained from my participation in this study. I understand that my personal details will be kept confidential. ☑

4. I understand and agree that a psychological intervention will take place for the analysis of the treatment effect of a non-manualised anger management intervention. ☑

5. I agree to my Probation Officer being informed of my participation in this study. ☑

6. I agree to take part in the above study. ☑

[redacted]	30/11/2013	[redacted]
Name of Participant	Date	Signature
KEVIN SAMMUT HENWOOD	30/11/2013	
Name of Researcher	Date	Signature

3 copies: 1 for participant, 1 for the project notes and 1 for the Probation Officer

Appendix VI: Inclusion Criteria Checklist

Name of Authors		
Publication Date		
Inclusion Criteria	**Criterion Met**	**Comments**
<u>Study Design</u> • Random Control Trial • Control Trial • Matched Samples • Cohort Study	Does the study meet the criteria?	
<u>Population</u> ***Male Adult offenders*** with ***problematic anger*** or ***sentenced for aggression***. To exclude • Offenders with acute mental health issues. • Offenders with acute learning disabilities. • Female offenders. • Adolescent or Juvenile offenders. • Domestic abusers or batterers.	Does the population meet the criteria?	
Interventions and Comparators Treatment aimed at addressing anger or aggression. • Cognitive-Behavioural informed anger management. • Any other alternative treatment. Moderator Variables of interest • Group based □	Does the intervention or the comparator meet the criteria for inclusion?	

• Individual based □ • Brief treatment □ • Long term treatment □ • Community □ • Secure Setting □ • High Risk □		
Outcome Measures Recidivism or Reconviction information Provided.	Does the outcome measure meet the criteria?	
All Criteria were met?	Yes □ Unclear □ No □	
Independently Screened and Compared	Yes □ No □	
Differences Resolved	Yes □ No □	
Study Included	Yes □ No □	

Appendix VII: Table of Excluded Studies

Study Authors and Publishing Date	Study Design	Reason For Exclusion
Armstrong, (2012) Unpublished Dissertation Chicago School of Professional Psychology	Before and After Study	Outcome measures – only psychometric measures used to determine outcomes. Study also had no control group.
Barto Lynch, 1995 USA Unpublished dissertation Spalding University	Before and After Study	Outcome measures – psychometrics and staff ratings or institutional misconducts were used as outcomes measures
Black, Forrester, Wilks, Riaz, Maguire & Carlin (2011)	Case Control Study	Outcome measures – psychometrics only were used to assess outcomes.
Blacker, Watson & Beech (2008)	Before and After Study	Outcome measures – the study used only psychometrics to ascertain outcomes.
Chen, Li, Wang, Ou, Zhou & Wang, (2014)	Random Control Trial	Population – male adolescents used in the sample. Outcome measures – the study used only psychometrics to determine outcomes.
Clouston, (1991) Unpublished Study University of Manituba	Before and After study	Outcome measures – the study used only psychometrics to ascertain outcomes and interviews held with the participants. The study also had no control group and a very small sample size.
Day, Gerace, Wilson & Howells	Opinion Paper	N/A

(2008)		
Diaz (2000)	Before and After Study	Population Criteria – offenders from the general prison population included. They were not analysed or screened for problematic anger or violent history.
Doyle, Khanna, Lennox, Shaw, Hayes, Taylor, Roberts & Dolan (2012)	Before and After Study	Population Criteria – focused on offenders diagnosed with personality disorder.
Fink (1980) unpublished dissertation University of New Jersey	Before and After Study	Population Criteria - Pilot Study of an anger management programme. In the small sample borderline psychotic offenders were included.
Forbes (1990) Unpublished dissertation Indiana State University	Random Control Trial	Outcome measures – psychometric measures only were used as a measure of treatment outcomes.
Forbes, Pratsinak, Fagan & Ax (1992)	Narrative Review	Brief report on already included study by Forbes (1990) an unpublished dissertation.
Fox (1999)a	Qualitative Study	Study Design
Fox (1999)b	Qualitative Study	Study Design
Frank (2005)	Before and After study	Population Criteria – 2/3 of sample still on remand and no violent history. Low reported anger at pre-intervention. Outcome measures – contained only 2 likert scale questions to ascertain treatment gain on anger control. Only psychometric measures used to determine outcomes.
Gaertner, 1983 USA Unpublished dissertation Pennsylvania State	Random Control	Outcome measures – psychometrics and staff ratings or institutional

Univeristy	Trial	misconducts were used as outcomes measures.
Hejazi, Alehashem & Alavi (2011)	Random Control Study	Population Criteria – College Students.
Heseltine, Howells & Day (2010)	Before and After Study	Outcome measures – the study used psychometrics as outcome measures.
Holbrook (1997)	Before and After Study	Outcome measures – psychometric measures only were used to assess outcomes.
Hollenhurst (1998)	Opinion paper	No Criteria Met - Review of different programmes on offender populations of which anger management and violence was one such example.
Howells, Day, Williamson, Bubner, Jauncey, Parker & Heseltine, 2005	Before and After Study	Outcome measures – psychometrics and staff ratings were used as outcomes measures.
Hunter, 1991 Canada Unpublished Dissertation University of Regina	Before and After Study	Outcome measures – psychometrics and staff ratings were used as outcomes measures.
Ireland (2004)	Before and After Study	Outcome measures – psychometrics and staff ratings were used as outcomes measures.
Joseph & McLeod (2014)	Case Study	Study Design Population Criteria – couple therapy.
Kennedy, 1990 Canada Unpublished dissertation University of Ottowa	Before and After Study	Outcome measures – psychometrics and staff ratings were used as outcomes measures.

Khoury Kassabri, Sharvet, Braver & Livneh (2009)	Before and after study	Population Criteria – included children as young as 12 in the study.
Lloyd, Hanby & Serin (2014)	Interrupted time series	Study did not attempt to analyse the effectiveness of treatment but focused on the process of the intervention. Intervention Criteria – included many different programmes did not focus exclusively on anger or violence reduction.
Macpherson, 1986 USA Unpublished dissertation Pennsylvania State University	Random Control Trial	Outcome measures – psychometrics and staff ratings or institutional misconducts were used as outcomes measures.
Perelman, Miller, Clements, Rodriguez, Allen & Cavanagh (2012)	Before and after study	Population Criteria – adult offenders not screened for anger or violent offences. Intervention & Comparator Criteria – compared intensive mindfulness on less intensive mindfulness interventions.
Polaschek, Bell, Calvert & Takarangi (2010)	Before and After Study	Outcome measures – implicit and explicit psychometric measures used to ascertain outcomes.
Polaschek, Calvert & Gannon (2009)	Qualitative Analysis	Study Design
Prince (1995) Unpublished dissertation	Before and After Study	Population – Male adolescents used in the sample. Outcome Measures – psychometrics and observation methods used as outcome measures.
Rahaim, Lefebvre & Jenkins (1980)	Case Study	Population Criteria – case used was a police officer.

		Study Design
Richards, Kaplan & Kafami (2000)	Cross sectional between subjects correlational design	Scope of Study was to determine the effectiveness of certain psychometric tools in identifying treatment progress or prison adjustment. Outcome measures used were only psychometric measures and staff rating measures.
Rokach (1987)	Before and After Study	Outcome measures – the study used psychometrics and observational methods only as outcome measures.
Russell & Jory (1997)	Before and After Study	Population Criteria – focused exclusively male batterers.
Sahagan & Salgado (2013)	Before and after study	Population Criteria – focused exclusively on Domestic violent offenders.
Sanders (1993) Unpublished dissertation University of California	Random Control Trial	Outcome measures – only psychometrics were used to assess treatment outcomes.
Schippers, Marker & De Fuentes-Merillas (2001)	Before and After Study	Outcome measures – psychometrics and staff ratings were used as outcomes measures.
Smith & Beckner (1993)	Random Control Trial	Population Criteria – the study selected at random 18 medium risk offenders; scores on NAS indicated a mean score of average anger and only 44.4% of sample had crimes against persons of which assault was only 11.1%.
Stone (1990) USA Unpublished dissertation University of Montana	Random Control Trial	Population Criteria – low risk offenders with no screening for problematic anger or violence

Tew, Dixon, Harkin & Bernett (2012)	Multiple case studies	Study Design Population Criteria – Psychopathic offenders.
Valliant & Raven (1994)	Before and After Study	Outcome measures – the study used only psychometrics to ascertain outcomes.
Walters (2009)	Before and After Study	Population Criteria – only 8.5% of the sample had violent offences and not screened for anger.
Wang, Owens Diamond & Smith (2000)	Before and After Study	Population Criteria – offenders included in the analysis diagnosed with personality disorder.
Watt & Howells (1999) Study 1 and 2	Before and After Study	Outcome measures – both studies used psychometrics to ascertain outcomes. Study 2 also included staff observation measures.
Wong & Gordon (2013)	Opinion Paper	Explored how to best treat violent mentally disordered offenders.

Appendix VIII: Data Extraction Sheet
Systematic review question: Evaluating the effectiveness of CBT based anger management interventions on offender populations, both in the community and incarcerated.

General Characteristics of the Primary Studies	
Authors	
Title and Year of Publication	
Country of origin	
Dependency of evaluation (have the authors themselves conducted the intervention and the evaluation)	
Sample Characteristics – Offenders in the community or secure settings Sample Size and Allocation (sample size of the treatment and control group and information on the allocation of group membership)	
Information regarding characteristics of the drop-outs or the attrition rate.	
Offender characteristics (any information available of the characteristics of the offenders such as the level of risk, type of offence or diagnosis)	
Treatment or Referral Information (information from identified referring agent; information on whether treatment was voluntary or compulsory e.g. part of prison regime).	
Control Group Information (e.g. randomly assigned control group like wait list group or alternative treatment or "treatment as usual").	
Treatment or Intervention and Comparator – General Information	

Setting of intervention	
Treatment Length (average duration of treatment in months or weeks).	
Frequency of Sessions per week	
General Format of Treatment (Individual or Group)	
Treatment providers (information pertaining to educational or professional training of people delivering the programme).	
Type of Intervention/ Treatment or Comparator Group CBT based intervention (information as to whether the interventions are a "brand-name" programme with use of manual or whether the interventions were dependent on the therapist).	
Other intervention types (information on all other types of treatment that are not purely CBT)	
Control Group (information related to the control group conditions or intervention e.g. placed on intention to treat, wait list group, no treatment or treatment as usual such as incarceration only or management or supervision by probation officer).	
Outcome Measures Type of Outcome measure used: 1. Psychometric tests designed and standardised to measure anger. 2. Recidivism rate and type if available of recidivism. 3. Observation of aggressive or violent incidents. To include also information on whether the scales are self-reported or reported by the assessors.	

Any other moderator variables or categories analysed and information pertaining to these variables.	
Statistics Used to ascertain pre-treatment differences	

Results

Recidivism

Treatment **Control**

Violent recidivism

Treatment **Control**

Statistical Significance

Appendix IX: Quality Assessment Sheet and Risk of Bias
Based on Cochrane's ROB tool

Authors _____

Publication Date _____

Study Type

Controlled before-and-after study
Interrupted time series study
Historically controlled study
Cohort study
Case-control study
Cross-sectional study

Study Aims and Hypothesis
_____
_____
_____

Risk of Bias

Selection Bias Confounding variables	Low Risk	Unclear	High Risk	Evidence
Sample is representative of the population of interest. (*offenders with problematic anger/problems with aggression in community or incarcerated*)				
Baseline characteristics of Offenders similar in the treatment or control group. Homogenous samples or statistical measures taken to control for unequal groups (common confounders matched or controlled e.g. age, risk to reconviction etc)				
Performance Bias				
Exposure of the treatment was				

conducted by qualified or trained personnel				
Exposure of the treatment ensured integrity and fidelity (e.g. same level of integrity if samples selected from different time cohorts)				
Effects of other interventions controlled for e.g. parallel interventions were controlled				
Attrition Bias				
Reasonable attrition rates				
Characteristics of the offenders dropping out analysed				
Attrition or missing data used in the study – in comparison with treatment completers				
Possible reasons for attrition explored				
Detection Bias				
Outcomes of the exposure were clearly measured. Reconviction rates				
Recidivism analysis based on more than one database				
Time and other conditions equivalent for the samples under study				
Reporting Bias				
Study report and outcomes specified in the methodology match				
Clear reporting through the study report which enabled assessment of bias or procedures used				

statistically significant ($\chi 2$ [1, N = 124] = 4.20 $p < .05$). Further analysis of the reconviction rates showed that in the treatment group 17% (N = 3) were charged with a violent offence, 55% (10) were charged with a property offence and 28% (N = 5) were charged with breaching release conditions. The control group saw that 24% (N = 21) were charged with violent offences, 46% (N = 41) charged with a property offence, 20% (N = 18) charged with a violation of release conditions and 10% (N = 9) for misdemeanours.

Failure rate analysis showed that the treatment group had a 25% chance of
Type of intervention

The main type of interventions surmised in the included studies can be divided into those classed as traditional anger management interventions and those classed as correctional programmes aimed at reducing violence. The latter programmes still contained components found in typical anger management programmes however rather than focusing on anger these programmes focused more on criminogenic needs and were typically of longer duration. Polaschek (2010) classed anger management programmes as low intensity programmes to address violence whereas the violent reduction programmes address multiple criminogenic needs and are more intense and of longer duration.

Anger Management studies

A number of Canadian based studies focused on the effectiveness of anger management. The intervention in Hughes (1993) study was a brief anger management programme consisting of 12 weekly 2 hour sessions. It focused on amalgamating typical anger management components such as addressing cognitions, problem-solving exercises and relaxation techniques with drama-focused interventions. The programme was administered by a qualified psychologist and an experienced drama teacher. Marquis, Bourgon, Armstrong and Pfaff (1996) study also assessed the effect of anger management on offenders in the 2 separate studies reported. The initial study administered substance abuse relapse prevention and anger management on violent and non-violent offenders. The second study focused purely on anger management delivered to offenders with anger difficulties. Unfortunately the study did not report much information about the treatment components or modules included. It merely reported that the programmes were CBT based and were delivered 4/5 days a week over a period of at least 20 days in group or one-to-one format.

The Anger and Other Emotions Management Programme (AEMP) explored in the Dowden, Blanchette and Serin, (1999); Serin & Dowden, (2001); Cortoni et al. (2006); and Serin, Gobeil and Preston (2009) studies was a CBT based programme aimed at addressing negative emotions primarily anger but also anxiety or jealousy. The programmes consisted of 25, 2 hour sessions delivered in groups 2 – 5 times a week in groups of 4 – 10 participants. It focused on development of self-management, increasing problems solving, improving communication, challenging dysfunctional thinking and relapse prevention. This intervention programme seems to be of greater intensity when compared to the previous 2 programmes described but moderate in comparison to violence reduction programmes.

Violence Reduction programmes

A study conducted by Serin et al, (2009) compared "traditional" anger management the AEMP reviewed earlier to another programme aimed at reducing violence the Persistently Violent Offender (PVO) programme. The PVO programme was run in Canadian prisons from 1994 to 2001 and was delivered to offenders with 3+ violent offences. It was delivered in groups of 8-10 over a period of 16 weeks, accumulating a total of 144 hours of treatment time. Also offenders in the programme benefited from a further hour a week of individual therapy. The programme was delivered by a psychologist and a programme officer. Specifically it attempted to address the social information processing of violent offenders.

The Violence Prevention Programme (VPP) was analysed in Cortoni, Nunes and Latendresse (2006) study. As a treatment programme it is based on CBT and social learning theories, consisting of 94, 2 hour sessions. It was delivered in prison settings by specially trained personnel.

The other intensive CBT based programmes addressing violence were run in New Zealand. Berry (2003)'s study focused on analysing the programme run at the Montgomery House, the Violence Prevention Programme (MHVPP). Although launched in 1987 it had undergone a radical overhaul in 1995 ensuring that it was more resourced and updated. Treatment was delivered in groups by Maori staff and psychologists from the Department of Corrections covering a number of treatment modules like violence prevention, relationships, problem solving and communication. Physical fitness components were also included. The programme lasted 10 weeks and contained on average 47 hours a week of structured or supervised activity. Content within the programme was adapted for Maori culture since approximately 85% of referrals were Maori. Another programme, the Rimutaka Violence Prevention Unit Programme (VPUP) consisted of a specialised unit housing 30 offenders nearing release. The programme was delivered by psychologists and rehabilitation workers (Polaschek et al., 2005; Polaschek, 2010). The content of the programme was CBT based and involved components typical of anger management such as arousal reduction, communication skills, relationships, addressing cognitive dysfunctions and problem solving as well as victim empathy and risk management which are more akin to violence reduction programmes. Overall the treatment duration of the programme was 330 hours long and held over 28 weeks. Individual sessions were also available.

CBT Based Programmes

Other studies claim to have used CBT techniques which neither consisted of typical anger management nor the intensive violence reduction programmes in order to address violent offending. Henning and Freuh (1996)'s study focused on the Cognitive Self-Change (CSC) programme. The CSC was developed to address interpersonal aggression by focusing on cognitive distortions and offending thought patterns. Following an 8 week orientation phase offenders were assigned to groups of 5-10 offenders. These had therapeutic meetings 3-5 times weekly. During the sessions thinking reports were discussed to unravel cognitive distortions and antisocial thinking. Cognitive-behavioural intervention strategies like keeping journals and producing thinking reports of their offending behaviour were used. Treatment length was dependent on time before release however it consisted of a minimum of 6 months. Programme staff consisted of trained correctional officers, counsellors or psychology

students who also benefitted from on-going training and supervision. A training manual was also available.

Hatcher, Palmer, MacGuire, Hounsome, Belby & Hollin (2008)'s focused on Aggression Replacement Therapy (ART). ART is also a CBT based intervention. It typically consists of imparting new skills to address the behavioural, affective and moral components. Generally it aims to deliver arousal and anger control training and moral reasoning modules.

The next studies contained very little information on the treatment package delivered to the offenders. Motiuk, Smiley and Blanchette (1995) analysed the effect of an intensive CBT based programme aimed at violent offenders. The only information surmised from the report was that the programme was delivered in group format by 2 professionals for a period of 8 months.

Boe, Belcourt, Ishak and Bsilis (1997)'s study evaluating the Violent Unit Programme was carried out by examining the effects of the programme and intensive community supervision on violent offenders. Not much detail is provided in the report concerning the delivery of the programme or its therapeutic contents other then it comprised of 2 weekly sessions and delivered to high risk violent offenders.

Very few studies conducted adequate screening of offenders prior to administering treatment with offenders being directed towards a programme almost solely on the basis of their index offence.

Type of setting and participants

Community based studies

Hatcher et al (2008)'s study focused on offenders sentenced to a probation order with the Probation Service of England and Wales. An experimental group of 53 violent offenders on probation with the requirement to complete ART were selected by probation staff to participate in this study. Candidates were selected on the basis of level of risk (medium and medium/high risk); past conviction for violent offences; and current issues with pro-violent attitudes, poor social skills and anger control difficulties. The comparison group was selected from a sample of 144 offenders who had similar characteristics to the treatment group but did not have the requirement to complete ART. The experimental group was matched to a control group on a case-by-case basis on offence type, age, previous convictions and the Offender Group Reconviction Score (OGRS-2). After the matching process t-tests assessing differences between groups found no significant differences pre-intervention.

Boe et al (1997)'s sample consisted of 74 offenders in the community who participated in the programme. They were followed for a minimum of 6 months. About 95% were convicted for a violent offence and 47% had a very poor prognosis in terms of reconviction prior to treatment. An analysis of offence histories revealed the offenders in the study were responsible for over 1300 offences with 222 being violent offences, 33 homicides, 103 robberies and 87 assaults indicating that they were serious offenders.

Rehabilitative Centres

Other studies like Berry (2003) and Marquis et al (1996) were based in rehabilitative centres the former based in the community and the latter in prison. Berry (2003)'s study explored Montgomery House Programme

during the period of 1995-96. The sample included 82 matched offenders. All entrants had a psychological report compiled analysing suitability, offence history and a psychological formulation. The matching process of the treatment and control group was conducted on a case-by-case basis on salient variables like ethnicity, age at first offence, number of violent offences, seriousness of offending, probability of re-offending (Risk of Reconviction Score RoC) and length of incarceration. No statistically significant differences emerged following the matching process. Marquis et al. (1996) presented 2 separate studies with the first sample comprised of 216 offenders completing a substance abuse relapse prevention programme or the relapse prevention and anger management programme and a waitlist control group during the period of 1991-92. This study contained a mixture of violent and non-violent offenders. However the proportion of violent offenders to non-violent offenders was not reported. Each case was matched on a case by case basis controlling for age, sentence length, substance abuse, and incarceration, offence and employment histories. The second sample consisted of 190 offenders who participated in either a substance abuse programme or an anger management programme or alternatively a combination of relapse prevention and anger management during the period of 1993/4. The study also had a waitlist control group. Marquis et al (1996) maintain that all offenders in this study were deemed to fulfil the requirements for an anger management programme indicating that some screening for anger problems occurred.

Prison based studies

Most of the other interventions consisted of prison based treatment programmes. A number of these studies were conducted in Canadian prisons. Hughes (1993) study conducted over a period of 24 months sampled a total of 79 incarcerated offenders. Out of these 79 offenders 53 completed half of the programme (6 sessions) and were deemed by Hughes (1993) to have completed the programme. The other 27 offenders did not receive the required interventions and these consisted of 8 offenders that dropped out after 2 sessions and 19 that opted out of the programme due to other commitments, lack of motivation or prison transfer. Motiuk et al (1995) study analysed a sample of 60 offenders who had completed the programme and a matched control group matched on age, release date and sentence length. The treatment and control group were similar in terms of risk although there were significantly more serious violent offenders in the treatment group (e.g. homicide) than the control group. This might be indicative that the programme targeted offenders of a higher risk and of poorer prognosis. Dowden et al. (1999) study examined a total of 110 offenders who completed a programme and their matched controls on post-release outcomes. Participants were matched on the Statistical Information on Recidivism Revised Scale (SIR-R1 a tool similar to the OGRS-2), index offence and age. One significant difference emerged between the treatment and control group with 27% of the treatment group being comprised of Aboriginal groups as opposed to the 6% in the control group. High risk offenders were evenly distributed amongst the treatment and control groups however the treatment group had more offenders deemed to be medium risk and less offenders of low risk than the control. An analysis on their needs level indicated the offenders in both groups had identifiable problems in many areas of psychological functioning possibly reflecting needs of inmate populations. The analysis also showed a significant difference in terms of community functioning with the treatment group seemingly having higher needs than the control. Dowden and Serin

(2001) used the same samples reported in Dowden et al (1999) but explored issues omitted by the previous study principally the effect of attrition. Group comparisons of the treatment completers and attrition groups showed some significant differences in terms of ethnic composition with the drop-out group consisting greater proportions of ethnic minorities (42%) than the completer groups (16%). Offenders in the attrition group were also significantly younger than the treatment completer group (t[296] = 2.72, p .01). Criminal risk levels were also significantly different with the attrition group (66%) having more moderate risk level offenders than the treatment completer (41%) and the treatment completer group being comprised of more high risk offenders (50%) as opposed to the drop-out group (41%). No significant differences were observed in terms of identified needs between the 2 groups possibly symptomatic of offender populations.

Serin et al, (2009) study comparing the PVO programme and the AEMP included a sample of 256 violent offenders. To be eligible for PVO offenders need to have at least 3+ violent offences. Offenders completing the PVO programme numbered 70; 33 offenders completed the AEMP but also fulfilled the criteria for inclusion in the PVO programme ; 105 offenders completed the AEMP (+2 violent offences); and a further 48 treatment non-completers. This meant that the first 2 groups had significantly more violent offences than the AEMP group. A total of 202 offenders from the study were released from prison and 114 were followed for the full 5 year follow-up period and 88 followed for an average period of 3.29 years.

Another large scale Canadian study was conducted by Cortoni et al. (2006) who sampled a total of 500 participants who participated in the VPP. A matched control group was also selected on the basis of SIR-R1; need level; ethnic background; age and having at least 2 violent convictions. Similarity analysis revealed no significant differences between treatment and matched control on the matching criteria although a significant difference was noted on level of motivation for interventions at intake with the VPP group having lower motivation than the control group. Level of attrition was reported at 33.3% (N = 167) for the total treatment group with 60.5% (N = 101) being either removed from the programme due to behavioural problems or failed to continue out of their own volition. The remainder 39.5% (N = 66) did not continue due to administrative reasons. Significant differences were noted between the drop-out group and the other groups in terms of age [F (2, 497) = 6.57 p < .01] with the drop-out group being younger and having shorter sentences [F(2, 441) = 4.67, p < .01] than the completer group. In terms of risk level and motivation the groups were comparable but on marital status the difference approached significance with the greater number of single males in the drop-out group.

One study was conducted in a US state prison. Approximately 60% of the sample was comprised of violent offenders from a total of 196 participants (Henning & Freuh, 1996). During the follow-up period however the study experienced high attrition rates and numbers were diminished to 28 participants in the treatment group and 96 in the control group. Candidates for the programme were selected on the basis of length of time to serve (6+ months) and motivation to complete the programme. There were no attempts at screening offenders prior to programme delivery. From the 196 offenders initially participating in the study 55 were in the CSC treatment group and 141 were in the control group. Comparison on group differences revealed that the treatment and control group did not differ in terms of age at first offence, prior convictions, percentage of substance abusers, age at release and time incarcerated. However significant differences were

observed in terms of proportion of property offenders (85.8%) in the control in comparison to the treatment group (67.3%) ($\chi 2$ [1, N = 196] = 8.71, $p < .01$) and proportion of violent offenders in the treatment group (90.9%) compared to the control group (77.3%) ($\chi 2$ [1, N = 196] = 4.78 $p < .05$).

Two studies were conducted in New Zealand prisons by Polaschek, Wilson, Townsend & Daly (2005) and Polaschek (2010). Polaschek et al (2005) treatment group comprised of 22 treatment completers released in the community and followed for a period of 2 years. A control group was selected by adopting the control group used in the study carried out by Berry (2003) due to similar selection criteria adopted in the study. However since there was no matching significant differences were observed in ethnic composition with the control group having significantly more Maori offenders than the VPUP treatment group $\chi 2 = (2) = 14.2$, $p = .001$. No other significance differences were reported in terms of previous convictions, incarcerations, age and violent conviction. Estimated level of risk was also similar.

Polaschek (2010) sample consisted of 112 offenders most of which were Maori (56%), followed by those of European descent (31%) and Pacific Islanders (11%). The previous offences of the samples were suggestive of extensive violence histories with an average of 40 previous convictions (SD 31.6) and an average of 7.2 previous convictions for violence. A matched control group was also selected on the basis of offence history, release date, incarceration time and RoC score. Statistical group comparisons found no significant differences on the variables of interest. Level of treatment completion was 71%. Further analysis on the attrition group showed that 30% were removed for reoffending, 18% were removed due to problematic behaviour and 36% left the programme out of their own volition. The remainder of the attrition group were removed due to concerns of safety.

Outcome Measures

The focus of this systematic review was on the recidivism rates following the administration of treatment. However augmenting recidivism analysis with other measures could have yielded more conclusive results. This level of analysis was achieved in a small number of studies such as Serin et al (2009) who combined psychometric measures, institutional misconducts and recidivism analysis and other studies such as Hughes (1993), Dowden et al (1999) that combined psychometric measures and recidivism analysis and Dowden and Serin (2001) that analysed institutional misconducts and reconviction.

Summary of Psychometric Measures

Hughes (1993) used a number of psychometric measures at baseline which included measures aimed at analysing the physical symptoms of anger and anger provoking situations, attitudes and personality. In follow-up 2 anger measures were re-administered however failure to re-test some of the control group (attrition sample) made the comparisons incomplete. The reported results of psychometric measures administered pre and post intervention were all highly significant and in the expected and desired direction. The tests revealed a reduction in physical symptoms associated with anger, a reduction of beliefs related to anger, and a general reduction in scores on the Anger Inventory.

Serin et al (2009) administered the Aggression Questionnaire, the I-7 Impulsivity Questionnaire, Interpersonal Reactivity Index and the Reactions to Provocations amongst other more specific assessments pertaining to the PVO programme. Results of post-treatment psychometric outcome measures revealed no significant differences between all 3 treatment completer groups and the attrition group. Most measures however registered changes in the right direction and of comparable magnitude for the 3 treatment completer groups. The attrition group saw small mean changes in the post-treatment measures suggesting that on psychometric measures offenders in the AEMP group fared just as well as the PVO group.

Dowden et al (1999) used a self-reported measure of anger comprised of a number of subscales; Trait Anger; State Anger; Insight into Anger Problems; Knowledge of Anger Management Skills; Anger Management Self-Competence and the Eysenck Impulsivity Scale. Pre and post intervention results are not presented in the study but it was reported that they seemed to be in the desired and expected direction. The analysis focused on trying to determine if a reduction of the reported symptoms as measured by the scales was associated with a decrease in re-offending behaviour. Statistical analysis revealed a decrease in State Anger that was associated with a decrease of reoffending ($r=.20$, $p < .05$). Eysneck Impulsivity Scale results approached significance for general reoffending. Repeating the same procedure but correlating with violent offending more scales became statistically significant, Insight into Anger Problems ($r = -.21$, $p < .05$), increased Knowledge of Anger Management skills ($r = -.25$, $p < .02$) and increased Anger Self-Competence ($r = -.28$, $p < .01$). These results however seem to indicate that psychometric measures might not be the most valid measures to determine behavioural change.

Institutional Misconducts

One study analysing institutional misconducts found significant post-treatment reductions in incidents after 6 months $t(303) = 315$, $p < .01$ and after one year $t(245) = 2.49$, $p < .02$ (Cortoni et al, 2006). Other studies comparing treatment and control groups such as Dowden and Serin (2001) report that low base rates made statistical conclusions difficult, where although most of the results showed some difference but none reached statistical significance. The exception was the post-treatment reductions for the AEMP which was statistically significant. As a note of caution institutional data might not be as accurate as other methods due the lack of standardised methods of data recording and collection in the different sites participating in the study.

Follow Up Periods

Follow-up periods ranged from 6 months to 6 years. Table 5.1 displays the follow up periods of the included studies. Only one study failed to report the follow-up period.

Effects of interventions

Intensive violence reduction programmes

A number of violence reduction programmes such as the PVO, VPP and VPUP have been identified and briefly described in the results chapter. Cortoni et al (2006) examined effectiveness of treatment in terms of re-imprisonment and whether the return to custody consisted of withdrawal of

licences, reconviction or violent reconviction of the VPP. The total number of offenders experiencing a failure following release were 103 (51.6%) offenders from the completer group, 67 (63.2%) from the non-completer group and 211 (79.3%) from the control group.

Further analysis of failure rates revealed that 28.1% (N = 56), 25.5% (N = 27) and 39.1% (N = 104) had their licence revoked from the completer group, non-completer and control groups respectively. The completer groups had lower rates of reconviction at 24.6% (N = 49) for general reconviction and 8.5% (N = 17) for violent offences. The control group was responsible for the greatest rates of reconviction at 41% (N = 109) and the second highest rate of violent reconviction 21.8% (N = 58). The non-completer group had 37.7% (N = 40) reconvictions of which 24.5% (N = 26) were reconvicted for violent offences.

No significant differences were detected in failure rates for those offenders exposed to treatment compared to the control group. However the differences became significant when the analysis was repeated following the removal of non-completers from the treatment group.

Cortoni et al (2006) report that the control group had 1.36 times greater chance of failure ($p < .05$), 1.36 times greater chance of recidivism ($p < .08$) and 2.10 times greater chance of violent recidivism ($p < .05$) when compared to the treatment completer groups. Non-completers had 1.69 times higher failure rates ($p < .05$), a 2.22 times higher recidivism rate ($p < .05$) and 4.25 times higher violent recidivism rates ($p < .05$) than treatment completers. Cortoni et al (2006) also maintain that risk level and prior programme participation seemed to have no significant effects on the outcomes of this study. However the relatively small samples included in this study could have contributed to the lack of significance of some of the statistical analysis conducted.

Polaschek et al (2005) exploration of the VPUP demonstrated that the treatment group experienced a 73% (16) rate of general recidivism, with 32% (7) violent offending and 23% (5) resulting to re-imprisonment. The control group saw 85% (51) of the offenders reoffend, with 63% (38) responsible for violent offending and 35% (21) being re-imprisoned. Statistical analysis revealed that only the rate of violent reoffending was significantly different for the treatment and control groups ($t= 2.6$, $p = .015$).

Survival analysis found that most reconvictions occurred within 1 year of release for both treatment and control group. The survival curve for violent reconviction showed that for the first year reconviction rates were similar but after the first year there were no further treatment group reconvictions for the remainder of the follow-up. For the control group the offending rate continued at a steady rate throughout the follow-up period.

Polaschek (2010) study on the VPP consisted of split samples based on the level of risk and RoC scores. The high risk sample consisted of 86 matched samples. Reconviction results indicated that 83% of the treatment completer group were reconvicted in comparison to the 95% of their matched control (φ .19). In comparison 93% of the attrition group and 89% of their matched control were reconvicted (φ -.06).

In terms of violent reconviction 62% of the treatment completer group were reconvicted in comparison to the 72% of their matched control (φ

.11). The drop-out group had 71% reconvicted for violence compared to 75% for the control group (φ .04).

Statistical analysis showed that difference for general reconviction was significant $\chi 2$ (1) = 4.25, p=.04 with the effect sizes showing small but positive effects for treatment completion on reconvictions and violent recidivism.

The medium risk sample was smaller (N = 26) than the high risk group. Comparisons of treatment completion to matched controls resulted in no significant differences, which could be due to these small sample sizes. The attrition group was also too small to analyse statistically (N=5). Frequency analysis of medium-risk treatment completers showed a 76% reconviction rate compared to the control group 67%. Furthermore 33% of the treatment group were reconvicted for violence and their control with 48%.

Intent to treat analysis examining treatment programme starters with matched untreated controls still showed positive effects for those deemed to be high risk for reconvictions (φ .11), and violent reconviction (φ .08). Log rank test of quality showed significance in the survival time for the high risk completer group and their control (4.5, df = 1, p = .03). Interestingly 38% of those who failed did so within the first 6 months of release (Polaschek, 2010).

Berry (2003)'s study using recidivism analysis revealed that the treatment group was responsible for 33 convictions compared to 51 of their matched control. A difference that was statistically significant. Apart from having 33.5% less reconvictions the study also examined seriousness of offences. Following intervention the treatment group had fewer convictions for grievous bodily harm and serious assault than the control. He reported that a notable but not significant difference was observed on the seriousness of reconviction analysis with completers (M 68 SD 197.2) having a 49% lower mean seriousness score than control (M 101 SD 273.4).

In terms of violent offences 16 or 26% of treatment completers had reoffended compared to their matched control with 27 or 44%. Survival analysis for violent offending showed that for the first 2 months treatment completers and their control had similar offending rates but following this period a difference in survival time emerged that was statistically significantly Cox F (54, 30) = 2.1, p .01.

The attrition group experienced 25 convictions for violence compared to 11 convictions for their matched control, thus 127% more convictions. Non-completers also had a mean seriousness score (M 283) that was 192% greater than the mean for controls (M 97).

Combining completers to the non-completer group still yielded significant overall reductions in reoffending in favour of an exposure to treatment (F [108, 66] = 1.67, p = .01).

Contrary to these results reconviction rates in the Motiuk et al. (1995) study reported that 40% of the treatment group and 35% of the matched control had been reconvicted exploring the intensive programme for violent offenders. The rate of violent reoffending was 18% for the treatment group and 15% for the control group. Interestingly only one offender convicted for homicide was reconvicted for violent offending. Also those included in the treatment group but convicted for robbery committed fewer personal injury offences that the control group. It could be the case that the large number of offenders convicted of robbery offences (N = 25) could have

influenced the results. This could indicate that such offenders are more resistant to treatment and that anger and aggression are less important features in treatment considering that robbery has an element of acquisition.

Anger Management

Marquis et al (1996) examined the effectiveness of a prison based treatment centre through 2 separate studies. In the first study participants were divided into those completing a relapse prevention programme; a combination of relapse prevention and anger management; a non-completer group; and matched control groups. The study included violent and non-violent offenders. Marquis et al (1996) maintain that the relapse prevention model seems to have been mostly effective with non-violent offenders with 33% of the treatment group reoffending compared to the 68% of the control group. Relapse prevention alone seems to have had no significant effect on violent offending with treatment offenders reported to have been reconvicted at a rate of 51% and their control at 59%. Interestingly the difference in violent reconviction rates of offenders receiving combined relapse prevention and anger management (34%) and their waitlist control (59%) was statistically significant. This study indicated the importance of delivering appropriate treatment according to the identified needs to reduce reoffending.

The second study comprised of 3 different samples; offenders who received a substance abuse programme; offenders receiving a combination of substance abuse and anger management programmes; and offenders receiving only anger management; and their waitlist control. Participants were all screened a priori and ascertained as necessitating an anger management programme. Recidivism rate analysis indicated that offenders in the combined substance abuse and anger management and offenders in the anger management programme only had significantly ($p < .01$) lower recidivism rates than the waitlist control group at 36% and 33% reoffending rates respectively in the follow-up period in comparison to the control with a 60% recidivism rate. Recidivism rates for offenders administered the substance abuse programme only had lower rates of reoffending (48%) than the control but the results were not statistically significant. These results seem to indicate that anger management was a key treatment in reducing reoffending rates in those offenders deemed to be violent and those with anger difficulties.

Dowden et al (1999) also explored the effect of anger management and reported differences post-treatment on reconviction rates with a rate of 30% for the control group and 10% for the treatment group during the 3 year follow up. A difference between the treatment and control group was also found for violent offending with 5% of the treatment and 17% of the control group reoffending. Dowden et al (1999) maintain the high risk treatment group was reconvicted less than the matched control and results were statistically significant ($\chi 2 = 4.06$, $p < .05$). In the low risk group a difference was also noted however this was not statistically significant. A similar pattern emerged for violence recidivism with the high risk group having significantly less violent offending than the matched control ($\chi 2 = 4.38$, $p < .05$). This might be indicative that high risk groups benefit more from treatment supporting the principle of risk in the risk-needs-responsivity model (Andrews & Bonta, 2003).

Dowden and Serin (2001) re-analysed the same samples that were used in the previously discussed study by Dowden et al (1999). They concluded that the non-completer group experienced a 52% recidivism rate significantly higher than the 30% of the control group ($\chi 2 = 14.88$, $p < .001$) and the 10% of the treatment completer group ($\chi 2 = 32.45$, $p < .001$). Survival curves were also significantly different for the 3 groups ($\chi 2 = 31.55$, $p < .001$). Furthermore recidivism rates for the treatment completer group were significantly less than the control group ($\chi 2 = 5.32$, $p < .05$). Interestingly Dowden and Serin (2001) noted that 34% of the control group and 55% of the treatment group had reoffended with the first 6 months of being released, showing that the initial period post-release is the most difficult period for offenders.

In terms of violent recidivism 5% of the treatment group, 17% of the control group and 40% of the attrition group had been reconvicted of a violent offence. Survival analysis for the 3 groups showed statistical significance ($\chi 2 = 30.93$, $p < .001$). The attrition group had significantly higher rates of violent recidivism than treatment completers ($\chi 2 = 29.32$, $p < .001$) or the control group ($\chi 2 = 16.45$, $p < .001$).

Logistic regression showed that the anger management participation was still significant in reducing offending behaviour even when certain predictor variables associated with recidivism were controlled for such as level of risk, age and history of juvenile offences.

Contrary to the findings reported above the study conducted by Hughes (1993) showed no statistical significance even though the differences observed were notable. Hughes reported that 68.8% of the control and 56% of the treatment group had re-offended in follow-up. Reconviction for violent offences occurred in 65.8% of the control group and in 40% of the treatment group. Reconviction analysis was only available for 41 offenders released from prison and followed in the community.

It must be noted that the studies of Motiuk et al (1996) and Hughes (1993) were of considerable poorer quality than the other studies reported so far.

Comparing Anger management and violence reduction

Serin et al (2009) study comparing the PVO and the AEMP found very low rates of violent reconvictions which prevented some statistical analysis. The PVO group had 35 (59%) offenders return to custody with 25 (42%) returning due to a technicality which meant that their licence was revoked rather than commit a new offence. Those committing new offences were 10 (17%) with 5 (8%) reconvicted for violence. The AEMP completer with more than 3 violent offences had 15 (58%) of the subjects return to custody with 10 (39%) having their licence revoked, 5 (11%) committing a new offence and 3 (8%) for violent offences. The AEMP group saw 44 (52%) of the released sample fail mostly due to revocations 26 (31%). Reoffending occurred with 18 (21%), 6 (7%) of which being reconvicted for violence. The attrition group experienced the largest proportion of failures from the other groups with 22 (69%), the second largest reoffending rate of 38% (N = 12) and the largest percentage of violent reconvictions at 21% (N = 7). However these group differences were not statistically significant. This study concluded that programme completion and the PVO programme were not superior in reducing re-offending when compared to the alternative treatment of anger management.

Other CBT based treatments

The only study conducted on probationers included in the analysis was carried out by Hatcher et al (2008). As is typical of community based studies completion rates of the programme were low with only 15 offenders or 28.3% actually completing the ART programme, with 13 (24.53%) non-completers and a further 25(47.2%) who never started the programme.

A total of 47 from 106 offenders (44.34%) were found to have been reconvicted over the 10 month period. Of these 47, 18 (38.3%) were reconvicted for violence. The calculated effect size of .133 or a 13.3% reduction of reoffending was calculated by comparing reconviction rates of the treatment and control group. Magnitude of effect was also calculated through an analysis of effect size based on completers of treatment and their matched counterparts which was reported to be φ .151 indicative of reduction of reoffending by 15.5%.

Further analysis revealed that those reconvicted from the treatment group 3 (15%) pertained to the completer group, 8 (40%) from the non-completer group and 9 (45%) were from the group that failed to start the programme. Similarity of group analysis between the completer, non-completer, non-starter and comparison groups found no significant differences in terms of age, previous convictions and OGRS-2 scores. Thus any differences in recidivism could be attributed to treatment completion. The effect size correlation was .424 or a reduction of 42.4% reduction in reoffending if treatment is completed. Cox regression survival analysis showed that treatment completion improved the constant only model $\chi 2$ [1, n=28] = 5.56, $p < .05$. The odds ratio showed a 78% in survival chances during the 10 month follow-up if the offender belonged to the treatment completer group.

Non-completers were also analysed in comparison to their matched control group which showed an effect size of .078 indicative of a 7.8% increase of reconviction for the non-completer group. Hatcher et al. (2008) concluded that treatment completion had positive effects on recidivism.

Boe et al (1997) conducted a community based study in which offenders were followed through intense supervision and given 2 therapeutic sessions per week. It was reported that in the first year 13 or 17.5% of the treatment group had returned to custody. In order to control for time the study focused only on the first 6 months following admission to the programme. During this period 15% of the treatment group had been returned to prison. As a control group Boe et al (1997) compared their treatment group to the control group used in the Motiuk et al study. Although the offender characteristics might be similar, the control group was not matched and no attempt to statistically control the differences between populations was made. The reported rate of failure in the first 6 months for the control was also of 15%. Boe et al. (1997) note however that the failure rate explored was not indicative of reoffending as out of these 11 offenders 10 had their release revoked without committing a new offence as they were returned to custody due to technical breaches.

Henning and Frueh (1996) exploring the effects of a CSC programme reported that the treatment group had 14 (50%) of the offenders charged with a new offence in comparison to the 68 (70.8%) of the control. This difference was reconviction within 1 year, 38% within 2 years and 46% within 3 years while the control group had a 46% chance of reconviction within 1 year, 67% within 2 years and 75% by 3 years. Failure curves were

statistically significant ($\chi 2$ [1, N = 196] = 9.90, $p < .01$). Exposure to treatment remained significant in reducing offending even after controlling for the salient variables associated with recidivism ($\chi 2$ [1, N = 194] = 4.36, $p < .05$).