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A Systematic Review of Group Work Interventions in UK High Secure Hospitals

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Abstract

Background: Rehabilitating high secure hospital patients poses significant challenges. Group work is thought to play a key role in patient recovery; however, there have been no reviews conducted specifically assessing group work interventions for high secure hospital patients.

Objectives: To review the focus of group work interventions that are being implemented and evaluated with high secure hospital patients in the UK and to examine the effectiveness of these interventions and the methods used to assess intervention effectiveness.

Method: A systematic literature search combined with reference screening was conducted examining group work interventions with high secure hospital patients in the UK.

Results: In total, 29 manuscripts were identified for review inclusion. Across these, ten focuses of group work intervention emerged: *anger/aggression, offence-specific, enhancing insight and understanding of mental illness, thinking skills/problem solving, substance misuse, self-harm, relationships, self-esteem and well-being, relapse prevention,* and *moving on.* Positive outcomes were generally reported across all ten areas.

Conclusions: Studies assessing the impact of group work interventions could be improved by increasing sample sizes, reducing sole reliance on self-report measures, employing clear statistical and clinical significance testing, and increasing the use of follow-up assessments and control groups.

Individuals admitted to high secure services present with severe and often co-morbid mental and personality disorder(s). Additionally, their propensities for dangerous, violent, and/or criminal behaviours mean that the risk of harm they pose to both themselves and others cannot effectively be managed in conditions of lesser security[1]. The majority of patients detained in high secure hospitals have been involved with the criminal justice system[2], and will be referred to throughout this review as Forensic Patients (FPs). FPs typically have long histories of offending behaviour, display poor psycho-social functioning, possess poor problem solving and cognitive abilities, as well as impaired verbal intelligence and substance misuse problems[3-5].

Secure hospitals consume around a fifth of the overall mental health budget in England and Wales; and costs per person are substantially more for FPs resident in conditions of high security in comparison to low security[6]. The recent mandate of Payment by Results within England, together with funding cuts to mental health services, means that developing and utilising effective interventions for patients in secure hospitals is of paramount importance both ethically and fiscally[7,8].

The objectives of secure services are to reduce risk, assess and treat mental disorder, and promote recovery in the least restrictive environment possible[9]. This is done via structured care pathways and the use of a broad range of evidence-based treatments and interventions such as group work therapy[2]. In terms of general intervention provision, there has been a shift from concluding that 'nothing works'[10] to establishing 'what works best'[11]. This appears to have been as a result of the Risk Need and Responsivity Model which has shown that interventions adhering to these principles produce positive outcomes[12, 13].

With regard to group therapy provision in particular, Yalom[14] proposes a number of therapeutic factors (originally termed curative factors) that are thought to influence and facilitate change and recovery in group participants. These factors are; universality, altruism,

instillation of hope, imparting information, corrective recapitulation of the primary family experience, development of socialising techniques, imitative behaviour, cohesiveness, existential factors, catharsis, interpersonal learning, and self-understanding.

Qualitative research has reported that many of the therapeutic factors outlined by Yalom are valued by FPs engaged (or previously engaged) in group therapy[15]. Such factors cited by FPs include; learning from others (interpersonal learning), supportive alliances (universality/cohesiveness), and impact of disclosing offending experiences (catharsis). In fact, FPs report that these elements of group work have positively contributed to their progress and recovery within secure settings[16]. Additionally, given the emergence of the focus on both risk and protective factors within forensic mental health settings, it has been argued that dynamic protective factors, such as capacity for hope, are amenable to treatment via group therapy[17].

However, the mercurial nature of high secure FPs means that the delivery of group work interventions is challenging. Many patients are difficult to engage and attrition rates are high[18]. Furthermore, patients in secure services are liable to attend group work interventions sporadically, which is likely to impede upon the success of interventions[19]. Notwithstanding these problems, engagement with appropriate group work interventions is associated with positive outcomes such as reduced length of stay and reductions in antisocial behaviour[20, 21]. As such, group work interventions are seen as a fundamental component of a patient's care pathway[22].

Evidence Based Practice (EBP) is viewed as the gold standard for psychological practice [23, 24]. The importance of evaluating treatment interventions in order to increase their effectiveness and suitability for forensic populations is widely recognised[25, 26]. A number of studies and reviews have previously been conducted examining 'what works' for FPs[27, 28, 29, 30]. These have focused on FPs generally (i.e., from a range of settings) and have reported

evidence of group work alongside other methods of rehabilitation. Qualitative research in this area has also offered insights into the interventions and processes that are valued by FPs when progressing through secure services. The difficulties with measuring outcome in relation to FPs given the heterogeneity of such a population and their complex care and rehabilitation needs has also been highlighted within the literature[15, 16].

Previous reviews of the effectiveness of group work interventions for FPs have been conducted[31]; however, they have focused mainly on cognitive-behavioural group work interventions and have not implemented formal data extraction techniques. Additionally, previous reviews are now dated since, although still relatively limited, research examining group work interventions has proliferated over recent years.

To our knowledge, there have been no reviews that specifically assess group work interventions for UK high secure hospital patients. Given that high secure hospitals have been described as the 'last chance saloon' for individuals who have transgressed interpersonal, community, and legal boundaries[32], we argue that it would not be appropriate to generalise findings of existing studies and reviews examining group work for other populations (e.g., FPs in medium / low security, or community settings, or individuals detained in prisons) to FPs resident in high security.

Furthermore, as outlined above, the economic burden of such services is high, and they are highly restrictive for FPs. Therefore, it is hoped that this review exploring the treatment interventions provided for FPs resident in UK high security hospitals will be valuable both in terms of drawing conclusions about treatment modalities that effectively promote recovery and risk reduction, as well as highlighting important implications for future research and practice.

This systematic review seeks to fill the current gap in the literature by providing an up to date and comprehensive overview of the research examining group work interventions for

high secure hospital patients in the UK. More specifically, the first aim of this study is to identify the focus of group work interventions that are being implemented and evaluated with high secure patients. A second aim is to assess the effectiveness of these interventions with this client group, and to examine the methods used to report intervention outcomes.

Method

Inclusion Criteria

Studies that examined the effectiveness of group work interventions provided by high secure services for forensic patients in the UK were selected for inclusion in the review. In order to be selected for final inclusion, studies were required to (1) have been conducted with adult patients (≥ 18 years; male or female) resident in high secure UK hospitals, (2) have evaluated interventions that were group based, (3) include quantitative outcome measures or mixed-methods outcome measures (purely qualitative studies were excluded), (4) be published in a peer reviewed journal from 1990 onwards, and (5) be written in English.

We acknowledge the wealth of information that can be obtained from qualitative research conducted with FPs. However, the literature highlights the issue of face validity when conducting qualitative research with FPs and the impact that this may have on qualitative data being considered a valid outcome with this population[33]. Furthermore, the perspectives of 'more unwell' FPs, or those with more complex needs, may be overlooked in qualitative data[16]; thus reducing the generalisability of results. Because of these issues, we excluded pure qualitative studies from this review.

Search Strategy and Document Extraction

Prior to identifying studies for inclusion, a scoping search was conducted by the lead investigator to assess the volume and type of publications within this field. Only studies published from 1990 onwards were included due to differences in the definition of mental health problems within the literature prior to this date. Figure 1 shows the results of the

publication search and process of study selection. Document extraction was performed independently by MS and databases were last searched on 14th October 2017.

PsycINFO and Web of Science were searched by the lead investigator using the following search terms: *group work, group, intervention, treatment, evaluation, high secure, high security, forensic, offender, mentally disordered*. The search terms were relatively broad to ensure that all relevant documents could be retrieved. When searching Google Scholar, additional search terms were used: *forensic, security, mental, personality disorder, outcome, UK*, with the specific phrase *'high security'* included. Given that Google Scholar indexes an extensive range of scholarly literature across a vast array of disciplines, these additional search terms were included to confine the results of the search.

A clinician working within the Centralised Group Work Service at Broadmoor Hospital was contacted via email to identify any further studies or publications that could potentially be included in the review. The research departments within Ashworth, Rampton, and The State (Carstairs) Hospitals were also contacted via email to identify any further publications. A clinician working within the Ashworth Research Centre at Ashworth Hospital provided a recently completed study to be included in the review. The lead investigator was also signposted to the 'Prisons and other secure settings' domain of the Nottinghamshire Healthcare Trust Research Repository by a contact at Rampton Hospital. However, no new publications were retrieved via search of this repository.

The corresponding authors of two studies[34, 35] which included data from FPs across a range of settings (high/medium/low) were contacted to request if data could be provided for FPs in high security only. Unfortunately, the authors were unable to provide this. Consequently, we have had to report their overall findings—across all settings—in the body of this review. Reference lists, including those of two previous reviews[8, 31] were also hand searched for relevant studies.

A total of 1861 documents were retrieved using the search strategies mentioned above; however, only 28 publications—describing 29 interventions—were included for final review. The majority of the documents excluded did not examine group work interventions for FPs and so were deemed not relevant. Books and book chapters were also excluded due to the absence of peer review. Studies that were relevant but did not adhere to the inclusion criteria (e.g., evaluations of group work in medium secure units or outside of the UK) were excluded. A number of the studies were repeatedly identified via the different search strategies, and as such duplicates were also excluded.

Assessment of Study Quality and Risk of Bias

A quality assessment and profile of risk of bias was carried out individually for all studies included in the review using the Cochrane Collaboration's tool[36] for assessing risk of bias (see Table 1).

In all but one[34] of the studies included in the review, patients had been referred for the group work interventions by their Responsible Clinician or clinical team. Furthermore, the authors of the studies were often involved in the facilitation of the groups and/or were part of the clinical teams and as such had knowledge of which patients had been referred for the group work interventions, and which patients had been part of the control group (if a control group was used).

Results

Outcome Measures

The most common approaches used to measure the effectiveness of the group work interventions were standardised assessments (completed by staff members) and self report questionnaires. Twenty evaluations (69%) employed this methodology. Nine evaluations (31%) used a combination of methods to record intervention outcomes - incorporating

standardised assessments, self report questionnaires, clinical observations, and semi-structured interviews.

Focus of Group Work Interventions

Across the publications identified, 10 distinct focuses of group work intervention were identified. These included; *anger/aggression* (five evaluations; 17%), *offence-specific*, (three evaluations; 10%), *enhancing insight and understanding of mental illness* (six evaluations; 21%), *thinking skills/problem solving* (five evaluations; 17%), *substance misuse* (three evaluations; 10%), *self-harm* (one evaluation; 3%), *relationships* (two evaluations; 7%), *self-esteem and well-being* (two evaluations; 7%), *relapse prevention* (one evaluation; 3%), and *moving on* (one evaluation; 3%).

One publication[37] presented an evaluation of two focuses of group work intervention (*anger/aggression* and *relationships*). Thus, there were 28 publications and 29 intervention evaluations in total. All key findings are outlined in Table 2.

Key Findings

Anger / aggression. Five studies assessed the effectiveness of group work interventions targeted at reducing anger and aggression. Quayle and Moore[37] evaluated FPs resident in a Young Men's Unit who completed a nine month weekly CBT-oriented anger management programme. Evaluation showed statistically significant improvements in self reported levels of assertiveness and staff ratings of peer relationships. These results are promising; however, the small sample size (n = 10), absence of a control group, and lack of any follow-up data mean that conclusions regarding the effectiveness of the group are drawn with caution.

Nevertheless, more recent studies lend further support to the positive impact of anger management group work for high secure hospital patients. Jones and Hollin[20] investigated the effectiveness of a 'Managing Problematic Anger' group for eight personality disordered high

secure hospital patients. The intervention ran over weekly two-hour sessions for 36 weeks and incorporated an individual mentor scheme that ran parallel to the group. Although this individualised component of the group raises questions as to whether positive treatment effects were due to group work, individual sessions, or both, the finding that all eight patients completed the group suggests that the design of the programme was appropriate for use with high secure hospital patients. Post-intervention and at 8-week follow-up, reductions in both the frequency and intensity of anger incidents—as rated by staff—were reported. Positive pre-post intervention shifts were also noted on the majority of self report measures assessing anger and aggression. The use of follow-up behavioural assessments represents a strength of this study, as the longer term implications of the group work intervention could be assessed. However, the authors did not employ any statistical significance testing making it hard to assess the most important areas of change facilitated by the intervention.

In a more recent retrospective study, Wilson and colleagues[38] studied the effectiveness of a 20-session CBT anger management group implemented with 86 high secure hospital patients; 70 of whom completed the group. Statistically, the intervention led to significant pre-post intervention improvements on self report measures examining anger duration and control, aggressive acts, as well as trait and dispositional anger. A particular strength of this study was the authors' examination of both clinical and reliable change measures in relation to the self report data. Here, areas that appeared to have been particularly impacted by the intervention were those measuring anger intensity and duration, anger control and inward expression, and dispositional anger. Although the authors report that some behavioural incidents of aggression differentiated patients who completed the intervention versus those who did not, no statistically significant differences were observed when comparing treatment completers with a waiting list control group (n = 64).

Evershed et al.[39] examined the effectiveness of an 18 month group treatment based on DBT targeting anger and violence in males who met the criteria for borderline personality disorder. Evershed et al.[39] compared eight male patients receiving DBT group therapy with nine patients receiving treatment as usual (TAU). The DBT group therapy combined weekly group skills training with behavioural psychotherapy. Both groups had access to other treatments within the hospital. In the DBT group this comprised solely of a sex offender group; whereas patients receiving TAU undertook a sex offender group, substance misuse group, individual CBT work focused on offending, and motivational work.

Outcomes were measured pre-treatment, seven to 12 months into treatment, and post-treatment using the Buss-Durkee Hostility Inventory, Dutch Version (BDHI-D)[40], State-Trait Anger Expression Inventory (STAXI)[41], Novaco Anger Scale (NAS)[42], and nursing files to assess the frequency and seriousness of observed behaviours. Patients in the treatment group showed greater gains on a number of treatment measures. These patients were better able to reduce the cognitive, covert, and dispositional aspects of hostility and anger, and were significantly better at managing their outward expression of anger and hostility. However, it is argued that the acid test for an intervention targeting anger and aggression is reduction in aggressive behaviour. The results of this evaluation demonstrated that, although there was no significant change in the frequency of violence related behaviours between the two groups, the seriousness of violence related behaviours did reduce more in the DBT group. These gains were maintained and the reductions increased as the programme proceeded, suggesting that DBT more effectively reduced the seriousness of violence-related behaviour than TAU.

As with many of the studies mentioned in this review, conclusions regarding the positive impact of DBT group work for targeting anger and violence in FPs are drawn tentatively. In this particular evaluation, the DBT therapists had no adherence training and it is impossible to determine the extent to which the treatment delivered was truly DBT.

Furthermore, it is a possibility that patients were utilising skills learnt elsewhere (i.e. the sex offender group), and therefore this intervention cannot be held solely accountable for the positive outcomes associated with it.

The question of whether FPs with a diagnosis of personality disorder can be engaged in meaningful therapy is a pertinent one within the field of forensic mental health. In this study, only one patient dropped out during the treatment period. It is important to note that this low attrition rate is unusual compared to other studies of a similar nature[39], and suggests that patients with a diagnosis of personality disorder can be engaged in meaningful therapy for a substantial period of time. Furthermore, when the treatment programme ended, five patients autonomously set up a self-help group and continued to complete diary cards. The results of this evaluation therefore appear to counter the view that patients with a diagnosis of personality disorder cannot be engaged in meaningful psychological therapy.

Reiss, Quayle, Brett, and Meuz[43] examined changes in levels of anger following a therapeutic theatre project. In their study, 12 males recruited from a Young Persons Unit took part in a dramatherapy group workshop provided by The Geese Theatre Company – a British touring group which performs in custodial institutions and probation settings throughout the UK and abroad. During the company's five day residency, patients took part in *'The Violence Illusion Trilogy'* – a series of drama-based group work sessions exploring why individuals become violent, offending behaviour, and providing skills training such as anger management and problem solving. Outcomes were measured one week pre-intervention, one week post-intervention, and three months post intervention using a locally developed anger inventory and the STAXI[41].

The results demonstrated significant improvements on the *'how angry'* and *'how react'* sub-scales of the locally developed anger inventory between pre- and post-intervention measures, and this was maintained at follow-up. This finding may reflect that patients were

spending more time monitoring and preventing their experience and expression of anger. No significant differences were reported on the STAXI[41] for state anger across the time points; however, trait anger was significantly improved upon from pre-intervention to follow-up.

The project also evoked a positive response amongst patients and staff alike, with patients commenting that they enjoyed the trust and support of everyone working together and learning new ways to cope with problems. Overall, the results demonstrate the positive impact of dramatherapy treatment. However, this conclusion is with caution due to the study's small sample size and lack of control group.

Despite encouraging results from these studies mentioned above, Wilson et al.[38] themselves argue that assessing the specific gains of anger management group work in high security is problematic given that the milieu of the hospital is designed more generally to reduce incidents of anger and violence amongst patients.

Offence-specific. Three studies included in the review evaluated a group work intervention specific to offending behaviour; two for interventions to address violence and one to address firesetting. This relatively small number of studies is surprising given that the vast majority of individuals admitted to high secure services have committed or are suspected of having committed a criminal offence[2]. Braham, Jones, and Hollin[44] describe the development and evaluation of a violent offender treatment programme (VOTP). Thirteen male patients with a history of violence were referred to the VOTP and ten of these completed the programme. The VOTP is described as a pilot programme aimed at helping patients develop interpersonal skills, reframe pro-offending and pro-violence attitudes, and equip patients with practical skills to maintain progress and prevent relapse. A particular strength of the VOTP is the recognition that motivation to change is dynamic and can be influenced by a range of internal and external factors.

Outcome was assessed via the use of self report measures assessing anger, thinking styles, and impulsivity administered pre and post treatment. Patients were also assessed pre and post treatment using the Violence Risk Scale[45] and were assessed at four time points (pre, post, and at two points partway through treatment) using the Clinical Rating Form-Violence[46]. Post-treatment, patients reported lower levels of anger, criminal thinking styles, and impulsivity. Patients' dynamic risk scores also decreased, as did clinical ratings related to acceptance of guilt and responsibility, and minimisation. Empathy, disclosure, participation, and motivation to change ratings also showed improvements.

Although these results are encouraging, Braham et al.[44] do not report significant levels or effect sizes and did not employ a control group for comparison purposes. It is therefore difficult to draw conclusions about the true extent of positive outcomes. The absence of follow-up data also highlights questions concerning the long-lasting impact of the programme.

A later, purely qualitative, study was conducted by Stewart, Oldham and Braham[47] which utilised interpretative phenomenological analysis to explore interviews of seven service users' experiences of the VOTP, within a high secure psychiatric hospital. Four broad themes were found: consistency, learning and application, the group experience, and programme structure. Findings indicated that participants held positive views of the VOTP. They could relate to the material covered and felt this had enhanced their ability to manage violence and aggression. Recommendations to improve the programme included simplifying programme material, maintaining patient motivation, and ensuring effective communication.

A more recent study by Daffern, Simpson, Ainslie, and Chu[48] also evaluated the impact of an inpatient violent offender treatment programme, Life Minus Violence-Enhanced (LMV-E). LMV-E is a cognitive-behavioural treatment programme comprising of seven modules delivered over a 10 to 12 month period. The LMV-E programme employs multiple

therapeutic methodologies (e.g. group discussion, skills role plays, and cognitive rehearsal) and was delivered by psychology and nursing staff trained in delivering the programme and supervised by the treatment manager.

The treatment group consisted of 33 male patients, and the comparison group consisted of 42 male patients receiving TAU. A quasi-experimental design was used with the authors citing randomisation to a clinical or comparison group as ethically contentious. The authors note that the original approach to data analysis was to analyse pre, post, and follow-up (1 year following completion of the group) data; however, only a single comparison group member participated in the follow-up assessment. As such comparisons were made between the groups for pre and post treatment only. Results showed that FPs in both groups demonstrated reductions in aggressive behaviour, social problem solving, and anger regulation, as well as a reduction in aggregate risk as measured by the HCR-20 Total Score (this reduction was greater for the comparison group). Participants in the LMV-E treatment group showed a reduction in sensitivity to provocation; however, this finding was not extended between post-treatment and follow-up in the LMV-E group.

Daffern et al.[48] note that the dynamic risk factors included in the study were not exhaustive and this may have impacted upon results given that there are limits to the number of tests that can be imposed upon FPs participating in a clinical treatment programme. Furthermore, it is argued that the small sample size likely impacted the power to detect differences between groups as both groups reported improvements in a number of areas related to aggressive behaviour and anger regulation.

The studies by Braham et al.[44] and Daffern et al.[48] provide preliminary support for the effectiveness of violent offender treatment for FPs resident in high security. However, although improvements in anger, impulsivity, and social problem solving corresponded with reduced aggressive behaviour during treatment, the lack of follow-up data begs the question

as to whether these gains may be sufficient to effect reductions in violent recidivism in future. The authors acknowledge that future research should explore change following treatment and link these changes with recidivism data.

In the only paper in this review to evaluate an intervention to address firesetting, Annesley, Davison, Colley, Gilley, and Thomson[49] evaluated group and individual interventions for women firesetters in high secure mental healthcare at the UK's National Women's Service (NWS). For the purposes of this review, their evaluation of two group Arson Treatment Programmes utilising a cognitive behavioural and cognitive analytical approach will be reported on. All women referred to the groups (n = 22) had a history of firesetting and 86% had arson / firesetting convictions. Some motivation to engage in arson treatment was required. A control group was not included to ethical issues of withholding treatment, and the authors acknowledged that selecting controls from a wider population would be challenging given the specific population of women within the NWS.

Two Arson Treatment Group Programmes (ATGP1 and ATGP2) developed, delivered, and evaluated between 2007 and 2015. Major developments over time included the introduction of a module on trauma; more experiential and diverse teaching methods; and greater patient involvement. Also, the measures used to assess outcome changed after ATGP1 due to patients' struggles to understand some tests, difficulties administering numerous measures, and researcher advice to use fewer measures.

Post ATGP1 participants reported much less interest in fire, less use of fantasy, less personal distress and less loneliness. Socially desirable responding and blame attribution remained very similar pre and post treatment. Participants reported the important roles of social attention, depression and anger as motivators for fire setting and post treatment recognised anxiety as an additional important factor. ATGP2 participants showed improvements post treatment in all areas of self-capacities, all areas of problem solving, all

areas of emotional problems and on self-liking and global self-esteem. Scores for impression management and self-deceptive enhancement varied slightly but remained with the average range. It was also noted that attrition rates were low for both groups. Thematic analysis was used to analyse qualitative data and positive feedback was obtained along the themes of 'good group, great benefits' and '(positively) changing attitudes to the group over time'.

This study evidenced high levels of engagement with group arson treatment programmes, several post treatment psychometric gains, and positive qualitative feedback and ratings. However, in interpreting the findings it is important to note self-report measures were predominantly used; although results from the deception scales do not suggest invalid scores or areas of concern. As with other studies included in this review, the evaluation is limited by the small sample size and absence of a control group, as well as the lack of follow-up data to monitor recidivism. Furthermore, there are questions with regards to the generalisability of results to male FPs resident in high security.

Enhancing insight and understanding of mental illness. FPs have a right to receive information regarding their mental health diagnosis, and research suggests that increased knowledge in this area reduces rehospitalisation associated with relapse[50]. Jennings et al.[51] assessed the impact of a psycho-educational programme for seven male patients suffering from schizophrenia. Modules included: positive and negative symptoms of schizophrenia, the role of medication and coping strategies, and symptom management. The majority of patients self reported improvements in knowledge of schizophrenia and insights into mental illness, which were maintained at six month follow-up. There was also suggestion that positive approaches to medication had increased for group members at six month follow-up. However, no statistical significance testing was employed and there was no control group making it difficult to fully assess the effectiveness of this group work over and above TAU.

Nevertheless, the findings of this study have been supported by more recent research. Walker, Connaughton, Wilson, and Martin[52] used self report measures to assess the impact of an 11-week 'Coping with Mental Illness' programme with 28 male patients suffering from psychosis. In comparison to seemingly well-matched controls receiving TAU, patients who attended the programme demonstrated increased knowledge of and insight into mental illness, and an increased understanding of their medication at six month follow-up which was statistically significant. Compared to other studies conducted in this area, the sample size used by Walker et al.[52] is relatively large. Additionally, the use of a matched participant control group means that some meaningful conclusions can be drawn regarding intervention effectiveness.

However, limitations of this study include the fact that (a) the control group were only tested pre treatment and six months post treatment meaning that patients' immediate post treatment scores could not be adequately compared, (b) the specific magnitude of change reported is unclear, and (c) all patients were receiving anti-psychotic medication. Although it would be unethical to refuse patients pharmacological treatment, it is unclear how a patient's positive response to medication may have influenced their results.

Walker et al.[34] further explored the effectiveness of the same 'Coping with Mental Illness' programme using a randomised controlled trial design, comparing 46 patients who completed the group to 35 control participants. Participants were recruited from across four forensic centres in Scotland (including one high secure hospital; The State Hospital, Carstairs). Walker et al.[34] found that compared to the control group, those who attended the 'Coping with Mental Illness' group showed significant improvements post treatment in their knowledge about mental illness and empathy. Improvements were also noted in patients' insight, mental health, and quality of life, however, these did not reach statistical significance. Although Walker et al.[34] improved upon the previous study design (e.g., testing controls

immediately post treatment) there are still several limitations to this study. First, a large number of participants were lost at six month follow-up (n = 16); thus, it is difficult to draw any conclusions whether effects of treatment were sustained. Second, no information is reported regarding the magnitude of change that patients made. Third, high and medium secure FPs were analysed together, making it difficult to draw specific conclusions about high secure FPs.

In a recent study, Walker and Trenoweth[53] utilised repertory grid analysis to explore FPs perspectives of the impact of the 'Coping with Mental Illness' programme. A purposive sample of (n = 20) participants were selected from two secure forensic units (one high secure and one medium secure) during the final year of the randomised control trial of the 'Coping with Mental Illness' programme mentioned above[34]. Structured interviews were completed using repertory grid at baseline and post intervention. Constructs were drawn from open ended discussions with FPs, where they were asked to firstly consider what were the key features of this psycho-education group and what they thought other people (fellow FPs) might get from their participation in such a group.

No scores reached a significant level when exploring how participants felt at baseline and post group; and as such the null hypothesis indicating there would be no difference in the FPs impression of why things might change following attendance at the 'Coping with Mental Illness' group was accepted. Perception at post group stage revealed significant differences in three areas: 'have confidence to engage in groups', 'understand my own illness and how it affects me', and 'feel normal'. It is reported that realistic expectations were actively encouraged within the group whilst attempting to maintain a balance between realism and hope. The results evidenced that hope to move on was no longer significant post group. The desire to 'feel normal' and 'get back to normal' seemed to be a motivating factor associated with attending the group.

The authors argued that the use of the repertory grid, a technique thought to be on the border between quantitative and qualitative research methods, enhanced the information gathered from the randomised control trial[34] offering a rare insight into the patient experience and substantiating the findings drawn from the range of psychometric assessments. However, they noted that a small number of the FPs found the repertory grid challenging, possibly due to intellectual and cognitive impairment, as well as the potential anticholinergic cognitive burden associated taking antipsychotic medication. Another finding that emerged was the use of extreme scores (e.g. scoring number one across the majority of the grid, making the grid lopsided) in instances where the participant seemed particularly eager to show themselves in a positive light. The authors also noted that whilst purposive sampling was appropriate in this study, it is less objective than random sampling and could result in biased results.

A study conducted by Vallentine, Tapp, Dudley, Wilson, and Moore[54] evaluated another psycho-educational programme 'Understanding Mental Illness'; a psycho-educational 20 session group work programme to promote awareness of mental illness and strategies for managing symptoms. Overall, no statistically significant shifts were observed in the areas of self reported subjective well-being, problems/symptoms, social functioning, risk, or self-esteem. Calculations of clinical significance indicated that around one fifth of patients improved in these areas with the exception of risk. However, a proportion (up to 38%) reported no change or negative change (i.e., decreased self-esteem). Other measures of treatment outcome (i.e., incidence reporting, medication amendments, ward progression) were compared for treatment completers (n = 31) and non-completers (n = 11). However, no differential changes were observed across the groups.

A strength of this study is that a range of outcome measures were included in the evaluation and clinically significant change was calculated. Also, qualitative feedback from service users was obtained indicating that some patients reported valuing the information

provided by the group yet sometimes found the group disclosure aspect challenging. Obtaining qualitative feedback from service users is useful as it can be used to modify the intervention in order to increase its effectiveness and suitability for group members[15].

Williams, Ferrito, and Tapp[55] evaluated the effectiveness of group CBT in reducing the positive and negative symptoms of schizophrenia and improving functioning for patients with a diagnosis of schizophrenia or schizoaffective disorder. In total, 27 male patients completed a manualised CBT group consisting of 35 one and a half hour sessions. These patients were compared on a number of primary and secondary outcome measures to a control group of 14 patients receiving TAU.

The results of the evaluation were conflicting. Findings from the Scale for the Assessment of Positive Symptoms[56] and the Scale for the Assessment of Negative Symptoms[57] reported reductions in both negative (e.g., affective flattening, alogia, anhedonia) and positive (e.g., delusions and hallucinations) symptoms for patients in the CBT group, although these results were not significant when compared to controls. However, the results from the Psychotic Symptom Rating Scales (PSYRATS)[58] showed no improvements in positive symptoms, and a slight increase in reported hallucinations for patients in the CBT group. The authors note that it is possible that an increase in reported hallucinations is due to patients gaining more of an insight into their mental illness as the group progressed. Patients in the CBT group also reported improvements in anxiety and depression, and an overall reduction in interpersonal problems.

A strength of this evaluation is that iatrogenic outcomes were also considered. The fact that none were found suggests there were no adverse effects of the group. A second strength is that a control group was included. This allows for more confident conclusions to be drawn with regards to the treatment group itself being the main driver of any positive gains noted. Although the results are equivocal, the findings are encouraging. The reported

reductions in negative symptoms such as affective flattening, alogia, and anhedonia are particularly promising as these are the core symptoms which are usually persistent over time and often intractable[59]. Thus, a reduction in these symptoms could have a significant impact on recovery.

Thinking skills / problem solving. The positive impact of cognitive and problem solving skills training on offender rehabilitation is widely recognised[60]. Five studies in this review investigated the impact of thinking skills / problem solving group on high secure hospital patients. Donnelly and Scott[61] examined the effectiveness of the original Reasoning and Rehabilitation Programme (R&R)[62] with 11 high secure patients. The aim of this CBT oriented programme was to promote functional styles of problem solving, thinking patterns, and overall locus of control. A control group of patients (n = 10) receiving TAU were used for comparison purposes. Patients who completed R&R self reported improved performance in frustration tolerance as measured by the Rosenzweig Picture-Frustration Study Group Conformity Rating[63] as well as improved social problem solving as measured by the Means-End Problem Solving Procedure[64]. However, when these within group differences were compared with the performance of the control group patients, only improved social problem solving appeared to be uniquely linked to R&R completion.

A key issue with this evaluation is that the authors' method of assessing within and between group differences is not clearly articulated. Because of this, it is not clear whether full consideration was given to baseline differences between the groups on the key self report measures of interest. Although no follow-up testing is reported, a strength of this study is that the authors report their findings within the context of pre existing measure norms.

Tapp, Fellowes, Wallis, Blud, and Moore[65] evaluated a 20-session Enhanced Thinking Skills (ETS) programme with 83 patients over a six-year period. Patients who completed the group (n = 62) self reported statistically significant improvements in the areas of

externalising blame, frustration tolerance, power orientation, critical thinking, and aggressive problem solving as measured by the Psychological Inventory of Criminal Thinking Styles (PICTS)[66] and the Social Problem Solving Inventory (SPSI)[67]. However, patients also reported increases in passive or dysfunctional problem solving. No statistically significant improvements were reported on the Clinical Outcomes in routine Evaluation–Outcome Measure (CORE-OM)[68]. Calculation of clinical change indicators showed that 40% of ETS group participants evidenced clinical change in the area of CORE-OM problems/symptoms and 36% in the area of social functioning. Clinical change was almost absent on the SPSI and could not be calculated for the PICTS although reliable change indicators illustrated that small numbers of participants had evidenced meaningful shifts (i.e., 10.9% to 21.8%). These results suggest that ETS can elicit positive short-term changes in patients' thinking. However, a limitation of the study is the sole reliance on self report measures and lack of a control group. Further, many patients did not fully complete the questionnaires, which is likely to have affected analysis quality.

Young, Chick and Gudjonsson[35] also used self report measures to evaluate the effectiveness of a R&R programme adapted for 34 FPs (R&R2 for youths and adults with Mental Health Problems [R&R2M aka R&R2MHP][5]) from high and medium secure hospitals (53% medium secure, 47% high secure). Young et al.[35] compared pre-post treatment assessments for patients who completed the programme (n = 22) to that of a waiting list control group (n = 12; 8% medium secure, 92% high secure). Results demonstrated that the treatment group made a significant improvement in violent attitudes and behaviour as measured by the Maudsley Violence Questionnaire[69] and Disruptive Behaviour and Social Problems Scale[70]. Although Young et al.[35] report positive findings for R&R2M the small and unevenly matched control group prevents any firm conclusions being made regarding the effectiveness of the programme as no direct statistical comparisons could be made between

the two groups. Furthermore, high and medium secure FPs were analysed together, rather than separately.

Yip et al.[71] conducted a further evaluation of the R&R2M programme for 30 offenders with severe mental illness. A key strength of this study is that a control group of patients receiving TAU was used for comparison. Using Intention to Treat Analyses results demonstrated that, in comparison to controls, R&R2M patients were significantly more likely to self report improvements in violent attitudes, social problem-solving and coping processes. Ward behaviour—as assessed via staff ratings—had also significantly improved. A further notable strength of this evaluation is that it employed a power calculation in order to determine sample size. Furthermore, this study demonstrates that the R&R2M—which takes almost half as much time to run as the previous 36 session R&R programme—appears to keep FPs maximally engaged with notable post treatment gains. This suggests that the R&R2M represents a cost-effective group work intervention for high secure hospital patients. It is unclear, however, how much the individualised support offered to patients as part of the R&RM may have contributed towards treatment outcome.

Young, Hopkin, Perkins, Farr, Doidge, and Gudjonsson[72] evaluated the effectiveness of an adapted version of the R&R2 programme (R&R2 for ADHD Youths and Adults [R&R2 ADHD]) with 16 male patients with a diagnosed personality disorder, detained in the dangerous and severe personality disorder unit at Broadmoor hospital. Young et al.[72] compared self report measures completed pre-post treatment by patients in the group to those of a seemingly well matched waiting list controls. Intention to Treat Analysis showed that patients who completed the group made significant improvements in comparison to controls in their problem solving ability and emotional stability, whilst also showing significant reductions in anger, violent attitudes and ADHD symptoms. Despite the small sample size, this study provides promising evidence for R&R2 ADHD's effectiveness with personality

disordered offenders. However, since there was no follow-up period it is unclear whether these positive treatment outcomes were maintained by patients.

Substance misuse. Three studies in this review evaluated a substance misuse group. Morris and Moore[73] examined the use of CBT group work as an intervention for FPs with an established history of substance misuse. The aim of the weekly group was to minimise future misuse by helping patients to identify high-risk situations and strategies to deal with potential relapse. Four substance misuse groups were run (totalling 30 patients) over a period of approximately 9-14 months. Just under three quarters of patients who started the group completed (n = 22). Completers differed from non completers since they held more previous experience of group work.

Two self report measures were used to assess pre-post treatment shifts: the Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES)[74], and the Psychological Inventory of Drug-Based Thinking Styles (PIDTS)[75]. On the SOCRATES, patients reported statistically significant decreases in ambivalence suggesting that they may have developed a greater awareness of the association between personal problems and substance misuse. On the PIDTS, patients reported statistically significant improvements in the areas of mollification (i.e., justifying substance misuse), cut-off (i.e., frustration tolerance), entitlement (i.e., a sense of privilege), and cognitive indolence (i.e., critical reasoning). Reliable Change Indices were calculated across both self report measures confirming generally positive change in the key areas highlighted.

Incident reporting was utilised to assess substance misuse behaviourally, however, no patient who completed the group was reported as experiencing an incident involving substances during the study period (i.e., up to three months post group). A small number of group participants completed semi-structured interviews (n = 4). These interviews highlighted that patients who completed the group reported generally positive experiences.

Although the authors themselves recognise the importance of providing on-going monitoring and support for patients with histories of substance misuse, a limitation of the study is that no follow-up data was collected to establish the long-term impact of the group. Furthermore, conclusions about the effectiveness of the group work intervention should be drawn with caution due to the quality of the data. Of those that completed the intervention, just under half (n = 10) were included in the evaluation since many patients refused to complete the pre-post group measures in full. This critique highlights the inherent problems of using self report measures with forensic populations.

In the second evaluation of substance misuse group work, Ritchie, Billcliff, McMahon, and Thomson[76] examined the efficacy of an eight week drug and alcohol education and awareness programme aimed at increasing patients' knowledge of drugs and alcohol, enhancing internal control, and increasing motivation. Sessions covered areas such as why individuals use substances, alcohol and the law, substance use and mental illness, and physical health issues relating to the use of substances. A total of 51 males participated in the group, and outcomes were measured at pre- and post-intervention using locally developed drug and alcohol questionnaires, the Stages of Change Questionnaire[77], and the Multidimensional Locus of Control scale[78]. The results demonstrated that, subsequent to participation in the education and awareness programme, participants scored significantly higher in tests of alcohol and drug knowledge. However, this increase in knowledge did not result in changes in locus of control or stages of change measures.

Although the results did not fully support the authors' hypothesis that the group would enhance patients' internal control and motivation, it is a possibility that the intervention had a greater positive impact but the measures used lacked the precision to detect it. The authors themselves note that while the Stages of Change Questionnaire is widely used, the validity of this instrument and stages of change approach has come under criticism[76].

Another possible explanation for these results is that increasing knowledge has little or no effect on motivation or other cognitive or attitudinal variables. This is consistent with previous studies which have demonstrated that knowledge change has not been associated with cognitive or behavioural change[79].

Comparable to the study by Morris and Moore[73], conclusions regarding the efficacy of this education and awareness programme should be drawn tentatively due to the quality of the data. The authors report that 51 patients participated in the group, however, there is no comment on attrition rates or how many patients were included in the evaluation. Furthermore, a control group was not included; therefore meaningful comparisons regarding the positive impact of the group cannot be drawn. Despite these limitations, it is argued that it is important for patients to obtain basic knowledge about substances before further substance misuse work is commenced.

In a third study Ritchie, Weldon, Freeman, MacPherson, and Davies[80] evaluated a CBT based substance misuse 'Relapse Prevention Programme' (Saying No, Coping and Social Skills Programme). The authors compared pre-post treatment assessments for 83 male patients using the Drug Taking Confidence Questionnaire[81], the Stages of Change Questionnaire[77], the Multidimensional Locus of Control Scale[78], and the Rosenberg Self-esteem Scale[82]. Analyses indicated that patients self reported a significant increase in their perceived confidence of being able to refrain from their primary substance of choice following the programme. However, no significant improvements were found in terms of participants' locus of control, stages of change, or self-esteem. Similarly to Ritchie et al.'s[76] study, a big limitation to this evaluation is that it lacked a control group limiting any conclusions that can be made about treatment effectiveness. Further, the context of enforced abstinence due to the nature of the high secure environment makes it difficult to establish

whether patients' perceived confidence in their ability to resist substances would differ in a lower security setting or upon discharge.

Self-harm. In the only study in this review to focus on self-harm in female FPs, Low, Jones and Duggan[83] evaluated the effectiveness of group DBT for deliberate self-harm in 10 female patients who met the diagnostic criteria for borderline personality disorder. Patients were assessed using self report measures at five intervals: pre treatment, four months into treatment, eight months into treatment, immediately post treatment, and six months following treatment. Low et al.[83] reported that patients' rates of self-harm significantly decreased during therapy, a finding which was maintained post treatment and at six month follow-up. Further, patients self reported significant reductions in dissociative experiences, depression, suicidal ideation, and impulsiveness alongside improvements in survival and coping beliefs.

The sample size in this evaluation was small and no control group was employed as a comparison to the treatment group. Thus, only tentative conclusions can be drawn about the effectiveness of the programme. Nonetheless the findings of this study suggests that group DBT may be an effective therapy for reducing related psychological variables and therefore incidents of deliberate self-harm in females with borderline personality disorder.

Relationships. Moore, Manners, Lee, Quayle, and Wilkinson[84] assessed the outcome of family awareness group work for eight male patients who had a history of childhood trauma (e.g., sexual abuse during adolescence) and/or complex family relationships. Twenty-eight group sessions were designed to re-frame family narratives, help patients to understand the impact of early experiences, develop patients' understandings of group processes and improve communication skills. Prior to commencement and upon completion of the group, patients completed the Family Relations Test (adult version; FRT)[85]. The FRT facilitates exploration of positive and negative attitudes to family members as well as recollections of childhood experiences.

Longer-term progress associated with the group was measured through examining patients' placement (e.g., non-transfer, transfer to a less secure unit) 12 months post treatment. Post group, some statistically significant positive changes in feelings associated with familial figures were reported on the FRT. For example, patients reported significantly reduced negative feelings towards their mother, and were less likely to think that their fathers perceived them in a negative way. However, general negative feelings associated with fathers remained high post-intervention.

At 12-month follow-up, two patients (25%) were deemed suitable for placement in medium secure units. This could tentatively be concluded to indicate a positive impact of treatment; however, as the authors themselves acknowledge, patient placement represents a crude measure of intervention success and the lack of a control group means that improvements cannot specifically be linked to the family awareness intervention[84].

One evaluation of an interpersonal relationship skills group was found within the high secure hospital context. In this study, Quayle and Moore[37] evaluated the effectiveness of a seven month weekly structured group work intervention on the interpersonal relationships of eight male patients resident in a Young Men's Unit. The authors describe this intervention alongside an Anger Management group described earlier in this manuscript. The Interpersonal Skills intervention employed various psychological approaches (i.e., CBT, cognitive-interpersonal and psychodynamic) to improve patients' understanding and skills in relation to successful interpersonal relationships. Treatment response was measured using the Inventory of Interpersonal Problems (IIP)[86] which illustrated that patients who attended the group reported statistically significant reductions in three of six areas; namely: interpersonal assertiveness, responsibility, and control. Upon further investigation, disparities between self report and records kept by staff highlighted the challenges of using self report measures to investigate the impacts of group work. A social desirability scale could have gone some way

towards excluding impression management as a potential confounding variable. Additionally, without the use of a control group, it is difficult to solely attribute any changes in behaviour to aspects of the group work intervention.

Self-esteem and well-being. Two studies evaluated group work interventions aimed at promoting general well-being and self-esteem. The first study by Laithwaite et al.[87] examined the impact of a pilot intervention aimed at increasing self-esteem in 15 patients diagnosed with schizophrenia. Outcome was assessed via the use of self report measures assessing self-esteem, psychiatric symptoms, and depression administered at four key time points: pre group, midway through group, post group and three month follow-up. Using statistical significance testing, results demonstrated that self-esteem and levels of depression were significantly improved post-treatment. Improvements in levels of depression were also maintained at three month follow-up. Although these results are promising, they were only reported in a small number of the outcome measures.

As the authors themselves acknowledge, these findings can be interpreted in two ways. It may be that the group work intervention did not have a profound positive effect, or it could be that the outcome measures were not appropriate for forensic patients with complex needs. Standardised measures allow comparisons to be drawn with the general population; however, some items may be irrelevant to patients confined to conditions of high security. Furthermore, indices of clinical or reliable change were not reported in this study and a control group of patients was not employed making it hard to evaluate the effectiveness of the self-esteem group work.

A second study conducted by Laithwaite et al.[88] evaluated the impact of a psychosis recovery group designed to improve depression, facilitate self-compassion, and promote help seeking in 19 patients. Just as with the study by Laithwaite et al.[87], a strength of this study is that follow-up assessments were conducted to assess the longer-term impact of the group. For

the 18 patients who completed the programme, statistically significant improvements were reported for self-esteem, depression, and general psychopathology immediately post treatment; and these results were maintained at 6-week follow-up. However, similarly to Laithwaite et al.[87], significant improvements in self-esteem were only reported on one outcome measure. The researchers themselves acknowledge that the inclusion of a waiting list control group would have significantly strengthened their study design. Furthermore, since many of the outcome measures implemented had not been validated for use with clinical forensic samples, and lacked comparative norms, clinical significance testing was not employed. This highlights the importance of preliminary evaluation studies in this area using well established outcome measures that have been developed for use with forensic populations.

Relapse prevention. One evaluation study was found in relation to relapse prevention groups within the high security hospital context. Newton, Coles, and Quayle[89] assessed the effectiveness of a 13 month weekly relapse prevention group for nine male patients. During the group, patients learnt how their problem behaviours and addictions contributed to the development and maintenance of their offending. Self report measures were used to assess the effectiveness of the group in the areas of criminal thinking styles (PICTS)[66], impulsiveness, risk taking, and empathy (Impulsiveness, Venturesomeness, and Empathy Questionnaire [IVEQ][90]), and responsibility and blame (Gudjonsson Blame Attribution Inventory [GBAI][91]). Patients self reported a statistically significant decrease on overall criminal thinking styles and two of the eight subscales of the PICTS (namely entitlement and discontinuity) as well as a significant increase on the guilt subscale of the GBAI. However, patients did not display any notable shifts on the other subscales making up these measures and nor did they demonstrate any shifts on the IVEQ.

A particularly noteworthy aspect of this study is the fact that the authors examined their patients' questionnaire scores in the light of pre-existing reference data which allowed them to speculate on the relative 'normality; of group scores. For example, Newton et al.[89] noted that their patients' pre-group norms on the IVEQ were similar to pre-existing means obtained with non-offending populations which may go some way to explaining the lack of pre-post treatment shift observed in this area. At two-year follow-up, the authors report that five of the nine patients had been transferred to medium security. However, since all of the patients referred for this intervention had been in high security for at least five years, and had participated in previous group work interventions, positive effects cannot be attributed to the relapse prevention group alone.

Moving on. For the majority of high secure FPs, discharge is a necessary, but potentially difficult, part of treatment, rehabilitation, and recovery. Research highlights that uncertainties about living more independently in a less structured environment, and integrating into a new community with the label of 'high security patient' have been identified as challenges and anxieties faced by some FPs when moving on from high secure care[92].

A study by Adshead, Pyszora, Wilson, Gopie, Thomas, and Smith et al.[93] examined the impact of a leavers' group by using progress on trial leave as outcome data for FPs referred between August 2003 and July 2011. The leavers' group, which utilised cognitive behavioural and psychodynamic therapeutic modalities, was set up to give patients the opportunity to think about the leaving experience and benefit from being with patients going through the same transition. The leavers' group was made available to all FPs in the hospital when referred to another facility. The group was 'open' and ran for one hour each week, and discussion topics were chosen by group participants, with facilitators guiding participants to stay in topic if necessary.

About one fifth of patients who left the hospital on trial leave during the study were referred to the leavers' group (n = 109). Referred patients were significantly more likely to have either been admitted from another high security hospital or transferred from prison for treatment and have a diagnosis of paranoid schizophrenia. Patients not referred had a significantly higher rate of previously refusing to participate in groups. Failed trial leave (i.e. returning to high secure hospital) occurred at about twice the rate for FPs who did not attend the leavers' group in comparison to group graduates, though this finding was not statistically significant.

The results of this study suggest that the leavers' group appeared to be a valued therapy option for people who had spent a long time in high secure psychiatric care or those who continued to require hospital treatment beyond prison tariffs. Although not significant, the findings suggest that leavers' group graduates did do better than those who did not attend such a group; though patient placement is noted to be a crude measure of intervention. There was a low return rate from trial leave which, although is a positive finding, made the evaluation of this outcome difficult and may have influenced the non-significance of results. A further challenge in comparing trial leave progress was the complicated pathways of patients.

It was noted that the distribution of attendance in the leavers' group varied widely and level of therapy exposure would be another variable which could be investigated further; particularly given that patients not referred had a significantly higher rate of previously refusing to participate in groups. Furthermore, an important argument to consider when interpreting the results is that it is likely that not all patients had the same levels of anxieties about moving on, and as such some participants may have found certain aspects of the group more helpful than others. The authors recommend that a detailed study, potentially including

qualitative data, exploring both the reasons for return from trial leave and successes would provide further information on ideal preparation for moving on from high secure hospital.

Discussion

This systematic review examined 29 studies evaluating the focus and effectiveness of group work interventions for high secure hospital patients, as well as the methods used to report intervention outcomes. Overall, this review has highlighted several key findings. However, it also illustrates key problems associated with this research field and points towards future research designs and avenues that will further progress the literature on high secure hospital group work evaluations.

Examining the focus of the group work interventions resulted in the identification of ten distinct types. As no previous studies have reviewed group work for high secure hospital patients, this finding provides initial evidence of the type of group work interventions that are being implemented and formally evaluated in high secure services. Seven types of group work intervention (*anger / aggression, offence-specific, enhancing insight and understanding of mental illness, thinking skills / problem solving, substance misuse, relationships,* and *self-esteem and well-being*) included more than one empirical study evaluation. Three types of group work intervention (*self-harm, relapse prevention,* and *moving on*) included only one evaluation. As such, conclusions with regards to the effectiveness of each type of intervention are drawn with caution as additional research findings are not available to support or refute the results. This overall finding highlights the need for more research to be conducted on each type of intervention (i.e., replication studies) in order to provide a more comprehensive view of the effectiveness of group work for high secure hospital patients.

The varied range of interventions reported suggests that the multifarious needs presented by high secure hospital patients are being acknowledged in therapy. However, given the profile of high secure hospital patients, it is of particular interest that only three

studies investigated a group work intervention focused specifically on offending behaviour. All high secure UK hospitals offer group work specific to offending. For example, the Centralised Group work Service at Broadmoor Hospital offers group work on violence, sexual offending, and homicide. However, the results of this review indicate that there is a distinct lack of published empirical research evaluating the effectiveness of such interventions. Clearly, high secure services require peer reviewed evaluations of their group work specific to offending if they are to provide effective therapy aimed at reducing risk and establishing 'what works best' with this highly complex population. Although the advent of the GLM has highlighted the importance of responding to patients' more general needs, it is important that high secure services do not overlook the multifarious offending histories and criminogenic needs of patients that also require appropriate intervention in order to facilitate rehabilitation[22].

Perhaps the most notable aspect of the studies that we have reviewed, however, is the fact that there has been at least some convergence of promising findings in group work evaluations in which multiple studies have been conducted. Generally, the findings that we have reviewed highlight that anger management interventions improve self reported anger, aggression, assertiveness, and anger control as well as staff rated peer relationships and anger-related incidents. Psycho-educational groups for mental illness, on the other hand, appear to elicit relatively stable improvements in patients' knowledge and insight into their mental health problems as well as improve their understanding of medication. In terms of cognitive skills, the findings that we have reviewed indicate that programmes targeting this area improve patients' self reported social problem solving, offence supportive attitudes/ thinking styles, and coping as well as staff rated ward behaviour. For groups designed to promote general well-being and enhance self-esteem our review indicates that these groups appear to promote improvements in patients' self reported self esteem, depression, and

general psychopathology. For the other intervention types that we have examined, in which only one evaluation study has been identified, we have also noted promising results. For example, relapse prevention group work appears to improve FPs' criminal thinking styles and acceptance of guilt and responsibility.

Yet amidst this array of promising findings, there are key limitations. First, and perhaps most obviously, is that only three of the studies used female patients in their sample. It is not uncommon to observe relatively small amounts of published research in the area of female relative to male offending[94, 95]. It is noted that male high secure patients significantly outnumber female patients. For example, of the 795 beds in high secure inpatient services, only 50 are reserved for women[2]. Nevertheless, the tenets of high secure care are the same regardless of gender – patients should be assessed and treated appropriately in order to facilitate progression through their care pathway[96]. As research reports disparities between the psychiatric and offending profiles of men and women in secure forensic care[97], it may not be appropriate to generalise findings from studies conducted using male patients. Therefore, further research is required to assess the effectiveness of group work interventions for female patients.

In line with previous reviews[31], we have also noted methodological limitations for all of the studies we reviewed. In our view, key limitations require attention in order to improve future work conducted to evaluate group work in high secure services. Most significantly, the majority of studies that we reviewed used a small sample size, with no control group. This makes generalising findings and assessing the reliability of results difficult. Clearly, small sample sizes are likely to be a problem for such a specialist area. However, researchers can ensure that power analyses are conducted a priori to establish whether they have an appropriate number of patients to detect a statistically significant effect. In this review we found that only a small proportion of researchers (n = 1, 3%) had conducted power analyses.

In our view, researchers who do not hold a sufficient number of patients should refrain from publishing until they have collected sufficient numbers of patients for appropriate statistical analyses. Conducting retrospective evaluations of group work conducted over a number of years provides one avenue of collecting large amounts of data within high secure services.

Data published without any statistical analyses or small data sets presented in the absence of any power analysis could potentially provide misleading results that may impact the direction and focus of interventions provided for FPs in the future. Similarly, it is imperative that researchers seek to employ a matched control group in any future evaluations of group work in high security hospitals. In our review, around a third of published group evaluation studies had incorporated a control group. This means that for the majority of studies published in this systematic review, we cannot be confident that the treatment group itself was the main driver of the successful gains noted. Instead, general ward activities, or length of time in hospital may well have contributed to the successful gains described. In such cases, only a group of carefully selected control patients carefully matched on both mental health and offence variables will be able to provide more confidence that group work generates improvement over and above the effects of completing TAU.

A second set of issues commonly seen in the evaluation studies examined in this review was the overreliance on self report methods of measurement and lack of long term follow-up data. Many patients see successful completion of group work as evidence that they are making enough progress in their recovery to be moved on from conditions of high security[37]. Although some patients will possess a genuine motivation to succeed, positive outcomes on self report measures should not be taken at face value[98]. Thus, in order to ensure best practice treatment evaluation we recommend that researchers—wherever possible—incorporate impression management questionnaires into their pre-post questionnaire tests. These additional tests will ensure that researchers are better able to adjust for socially

desirable responding in their statistical analyses. Observation reports in addition to self report data is likely to represent best practice, but only if social desirability can be taken into account in those cases in which contradictory effects appear to be operating. In terms of follow-up data, just under two thirds of the evaluations in this review (n = 17) incorporated some type of follow-up assessment in order to assess longevity of the treatment effects observed. In most cases, 'follow-up' was a few months post treatment completion. Such efforts represent good practice and it is encouraging to see that follow-up assessments are being routinely used.

Finally, many of the studies examined in this review did not report on clinical significance testing or reliable change indices. Such figures provide valuable information regarding how pre-post treatment shifts may be interpreted (i.e., whether the shift led to the patient now scoring within the 'normal' range of functioning as well as whether the shift is deemed large enough to be deemed reliable). Thus, we would advise researchers to comment on one or both of these indices within their evaluations as part of best practice.

As this review highlights, there are significant difficulties inherent in researching forensic mental health populations. It has been noted that such research often suffers logistical problems, with FPs moving through different custodial settings and levels of security. In addition to this, security considerations may have priority over research needs, meaning that access to subgroups of FPs (i.e., those considered to be most dangerous or complex) is impeded due to security and safety implications[99]. Furthermore, as previously stated, even if access can be obtained, many FPs are difficult to engage and attrition rates are high[18].

As discussed in this review, FPs present with multifarious needs which lead to numerous intervention targets and consequently many combinations of potentially relevant outcomes. The literature exploring difficulties of assessing outcome in FPs highlights that

there is little agreement regarding which outcome measures to use in forensic mental health research. It has been argued that this lack of consensus leads to many different outcomes measures being introduced, with too few receiving proper evaluation, and the risk of unvalidated outcome measurement weakening the value of results as a consequence[99].

A number of guiding principles for overcoming the issue of measuring outcome in relation to FPs have been documented in the literature. Of key importance is that outcome measures should be multidimensional – that is, they should cover clinical, rehabilitation, humanitarian, and public safety domains[100]. Outcomes should also be obtained from multiple perspectives (e.g., service user and clinician) and standardisation of measurements should be worked towards in order to facilitate comparison between studies. Finally, costs (i.e., to the service or society) should be incorporated into outcome measurement, and the relevance and impact of outcome research should be considered in relation to clinical practice and policy[100]. The importance of undertaking cross-sectional and longitudinal studies given the chronic nature of the difficulties faced by FPs has also been highlighted[101].

There are some limitations to our current review. First, because we wanted to examine the UK context, our findings are unlikely to be generalisable to countries outside of the UK. Second, we chose only to include peer reviewed studies published in English. This brings with it the possibility that a small number of quality unpublished studies were not included in our review.

In conclusion, developing evidence-based practice and our knowledge base of 'what works best' in the area of group work for high security patients is a pressing need of the upmost societal importance. It is acknowledged that it is difficult to conduct methodologically rigorous evaluation in high secure hospitals given the nature of the therapeutic environment; however, the fundamental issues outlined above must be addressed as a key starting point. Only then can we begin to study exactly which components of

treatment are most effective and how best we can adapt group treatment for the complex needs of high security FPs.

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Table 1

Assessment of Risk of Bias using Cochrane Collaboration's Tool [36] [1]

Study	Random sequence generation	Allocation concealment	Blinding participants and personnel	Blinding outcome of assessment	Incomplete outcome data	Selective reporting	Other bias
Adshead 2017[93]	High	Unclear	Unclear	Unclear	High	Low	Unclear
Annesley 2017[49]	High	Unclear	Unclear	Unclear	Low	Low	Unclear
Braham 2008[44]	High	Unclear	Unclear	Unclear	Low	Unclear	High
Daffern 2017[48]	High	High	Unclear	Unclear	High	Unclear	Unclear
Donnelly 1999[61]	High	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear
Evershed 2003[39]	High	Unclear	Unclear	Unclear	Low	Unclear	Unclear
Jennings 2002[51]	High	Unclear	Unclear	Unclear	Low	Unclear	High
Jones 2004[20]	High	Unclear	Unclear	Unclear	Low	Unclear	High
Laithwaite 2007[87]	High	Unclear	Unclear	Unclear	Low	Low	High
Laithwaite 2009[88]	High	Unclear	Unclear	Unclear	Low	Low	High
Low 2001[79]	High	Unclear	Unclear	Unclear	Unclear	Unclear	High
Moore 2000[84]	High	Unclear	Unclear	Unclear	Unclear	Unclear	High
Morris 2009[73]	High	Unclear	Unclear	Unclear	High	Low	High
Newton 2005[89]	High	Unclear	Unclear	Unclear	Unclear	Low	High
Quayle 1998[37]	High	Unclear	Unclear	Unclear	Low	Unclear	High
Reiss 1998[43]	High	Unclear	Unclear	Unclear	Low	Unclear	High
Ritchie 2004[76]	High	Unclear	Unclear	Unclear	Unclear	Unclear	High
Ritchie 2011[80]	High	Unclear	Unclear	Unclear	Unclear	Unclear	High
Tapp 2009[65]	High	Unclear	Unclear	Unclear	Low	Unclear	High
Vallentine 2010[54]	High	Unclear	Unclear	Unclear	Low	Unclear	High
Walker 2012[52]	High	Unclear	Unclear	Unclear	Low	Low	Unclear
Walker 2013[34]	Low	Low	Unclear	Unclear	Low	Low	Low
Walker 2017[53]	High	Unclear	Unclear	Unclear	Low	Low	Unclear
Williams 2014[55]	High	Unclear	Unclear	Unclear	Low	Unclear	Unclear
Wilson 2013[38]	High	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear
Yip 2013[71]	High	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear
Young 2010[35]	High	Unclear	Unclear	Unclear	High	High	Unclear
Young 2012[72]	High	Unclear	Unclear	Unclear	Unclear	High	Unclear

[1] Where High = high risk of bias, Low = low risk of bias, and Unclear = information not described in enough detail to assess

Table 2

Studies Evaluating UK High Secure Group Interventions

Authors	Focus of intervention and treatment modality (modalities) used	Overview	Treatment group	Control group	Measures	Results
Adshead et al.[93]	Moving on Psychodynamic	A retrospective quasi-experimental study to investigate the characteristics of and outcomes for patients who 'graduated' from a leavers' group in comparison to those who did not attend the leavers' group between August 2003 and July 2011	109 male patients referred by their clinical teams (reasons for referral included provision of support for anxieties about leaving, and promotion of a sense of hope or preparation of long-stay (>8 years) patients for moving on).	229 male patients who did not attend the leavers' group	Patient information (e.g. demographic information, index offence, length of stay, admission source, and diagnostic information were obtained from the hospital's Patient Administration System. Progress on trial leave was investigated by contacting the records office or responsible clinician at the placement to which group graduates were transferred. Data on patient returns were provided by the medical records department at the study site.	Patients referred to the group, compared to those not referred, had a significantly shorter length of hospital stay in their current placement, but were more likely to have already spent a period of admission in another UK high security hospital, and been admitted to the study site as part of a repatriation exercise. Referred patients were also more likely to have been admitted as a transferred prisoner, and have a primary diagnosis of schizophrenia than patients who had not been referred and gone on trial leave over the same period. Patients who were not referred were more likely to have previously refused groupwork. Failed trial leave occurred at about twice the rate as among leavers' group graduates. Although this difference was not statistically significant, the relative risk of return indicated a marginally increased risk of failed

						trial leave for non-leavers' group compared with leavers' group patients.
Annesley et al.[49]	Offence specific – firesetting Cognitive Behavioural Therapy (CBT) and Cognitive Analytic Therapy (CAT)	An evaluation of Arson Treatment Programmes, two types delivered to individuals and two types delivered within a group context (ATGP1 & ATGP2 - the focus within this review) between 2007 and 2015, for women firesetters in high secure mental healthcare at the UK's National Women's Service	22 females with histories of firesetting – 19 of which had arson/firesetting convictions. Participants were referred to Arson Treatment Programmes by their responsible clinician and assessed by two Arson Treatment Team members using a structured questionnaire developed by the team, which included assessment of participants' motivation to engage in arson treatment. Some motivation to engage in arson treatment was required.	None	ATGP1 Measures: Blame Attribution Inventory (GBAI)[91] Fire Interest Rating Scale (FIRS)[102] Functional Assessment of Fire Starting (Unpublished) Interpersonal Reactivity Index (IRI)[103] Personal Reaction Inventory (Unpublished) Emotional Loneliness Scale[104] ATGP2 Measures (changed in 2009 due to patients' struggles to understand some tests, difficulties administering numerous measures and researcher advice to use fewer measures): The Inventory of Altered Self Capacities[105] Social Problem-Solving Inventory Revised (SPSI-R)[143] Rosenberg Self esteem Scale (RSE)[82] Coping Responses Inventory (CRI)[106] Paulhus Deception Scales (PDS)[107]	Attendance rates were very high for programme completers. Post ATGP1 participants reported much less interest in fire, less use of fantasy, less personal distress and less loneliness. Socially desirable responding and blame attribution remained very similar pre and post treatment. Participants reported the important roles of social attention, depression and anger as motivators for fire setting and post treatment recognised anxiety as an additional important factor. ATGP2 participants showed improvements post treatment in all areas of self-capacities, all areas of problem solving, all areas of emotional problems and on self-liking and global self-esteem. Scores for impression management and self- deceptive enhancement varied slightly but remained with the average range. Six main feedback themes occurred across both groups; 'good group, great benefits', 'changing attitudes to the group over time', 'important role of the fire service, 'dislikes', 'suggested changes', and 'new additions to the group were well received'.

					Questionnaire feedback from patients was obtained at the end of each module and at the end of the programme overall. This was coded using a thematic approach. To assess the benefits and drawbacks of group versus individual treatments information on this theme was collated from team supervision records.	Advantages of group therapy included; participants learn from and gain motivation and support from other participants, and longer programme facilitates consolidation of learning and greater topic coverage. Disadvantages included that the pace of the group may not suit everyone.
Braham et al.[44]	Offence specific - Violence CBT	An evaluation of a pilot intervention (Violent Offender Treatment Programme) designed to address and reduce violence	13 male patients with an index offence of Assault Occasioning Actual Bodily Harm, Grievous Bodily Harm, attempted murder, or murder were referred to the programme, 10 completed treatment.	None	Violence Risk Scale (VRS)[45] The State Trait Anger Expression Inventory-2 (STAXI-2)[108] The Psychological Inventory of Criminal Thinking Styles (PICTS)[66] Barratt Impulsivity Scale (BIS)[111] Clinical Rating Form – Violence (CRF-V)[46]	10 patients completed the programme. Post-treatment, patients held a lower level of dynamic risk on the VRS, and self reported decreases in anger (STAXI-2), criminal thinking styles (PICTS), and impulsiveness (BIS). The CRF-V indicated key improvements in guilt and responsibility, minimisation, empathy, disclosure, participation, and motivation to change. No statistical significance testing was employed and no follow-up reported.
Daffern et al.[48]	Offence specific – violence CBT	An investigation into the impact of an intensive inpatient violent offender treatment programme, Life Minus Violence-Enhanced (LMV-E)	33 male patients referred by their Responsible Clinician (RC). Inclusion criteria were; a history of interpersonal violence, not actively psychotic, not cognitively impaired as determined by the RC, and not in	42 male patients who met the inclusion criteria for the LMV-E group but were unable to participate due to limited availability of treatment	Historical Clinical Risk-20 (HCR-20)[109] Total Score Universal Rhode Island Chance Assessment Scale (URICA)[110] Barratt Impulsivity Scale (BIS)[111] Interpersonal Reactivity Index (IRI)[103]	The original plan was to analyse pre, post, and follow-up data; however, only a single comparison group member participated in follow-up assessment. As such, the focus of evaluation is comparison of outcomes between pre and post treatment. Both groups showed reduced problems with impulsivity and

			complete denial of their aggressive behaviour.	places and thus received TAU.	Novaco Anger Scale – Provocation Inventory (NAS-PI)[141] Social Problem-Solving Inventory-Revised (SPSI-R)[143] The State Trait Anger Expression Inventory-2 (STAXI-2)[108] Number of aggressive incidents (including verbal and physical aggression as well as deliberate property damage) collated through file review of patient notes.	anger regulation, and improvements in social problem solving. Aggregate risk for future violence (HCR-20 Total Score) lessened in both groups, although by a significantly greater degree for the comparison group. The aggressive behaviour of both groups reduced. Neither group showed improvements in empathic responses, coping skills, or problematic interpersonal style. Follow-up data comparisons were completed for the treatment group; however results indicated that none of the improvements in the treatment group were extended between post-treatment ratings and follow-up.
Donnelly and Scott[61]	Thinking skills / problem solving Cognitive Skills	An evaluation of the Reasoning and Rehabilitation Programme (R&R)	12 male patients with a history of violent and antisocial behaviour identified as requiring psychological treatment were referred to the programme, 11 completed treatment.	12 patients selected from the same Wards and with a similar offence history as the treatment group were recruited as control participants, 10 completed their participation.	The Rosenzweig Picture-Frustration Study-Group Conformity Rating (ROS-PF: GCR)[63] The Means-End Problem Solving Procedure (MEPS)[64] The Culture-Free Self esteem Inventory-2nd Edition (CFSEI-2)[112] Social Comparison Scale (SCS)[113] The Nowicki-Strickland Internal/External Scale (N-S: LOC)[114]	11 patients completed R&R and 10 completed the control condition. Patients who completed R&R showed improved frustration tolerance on the ROS-PF: GCR and social problem solving on the MEPS. However, only the increase in social problem solving appeared to differentiate R&R completers from the control group. No other measure differences were statistically significant within or between groups. The authors report their findings, where possible, within the context of pre existing norms. However, no follow-up testing is reported.

Evershed et al.[39]	Anger Dialectical Behaviour Therapy (DBT)	An evaluation of the effectiveness of an 18 month treatment based on DBT targeting anger	8 male patients who met the criteria for Borderline Personality Disorder recruited from a specialist Personality Disorder Service within the hospital	9 male patients receiving treatment as usual, recruited from other wards within the hospital	Frequency and Seriousness of Observed Behaviours Scale (locally developed) Buss-Durkee Hostility Inventory, Dutch Version (BDHI-D)[40] State-Trait Anger Expression Inventory (STAXI)[41] Novaco Anger Scale (NAS)[42]	The patients receiving the DBT treatment showed greater gains across a number of measures. The patients in this group were better able to reduce the cognitive, covert, and dispositional aspects of hostility and anger, and were significantly better at managing outwards expressions of anger and hostility in comparison to the control group. The frequency of violence for both groups decreased over time; however, no significant differences between the groups were evident. The seriousness of violence related behaviours reduced more in the group receiving DBT treatment.
Jennings et al.[51]	Enhancing insight and understanding of mental illness Psycho-education	An evaluation of a pilot psycho-educational group on insight into mental illness for patients with schizophrenia	7 male patients with a primary diagnosis of schizophrenia	None	General Knowledge of Illness Questionnaire (GKI)[115] Drug Attitude Inventory (DAI-30)[116] The Insight Scale (IS)[117] Rosenberg Self esteem Scale (RSE)[82]	All patients completed the programme. The majority of patients reported improvements in knowledge of schizophrenia (GKI) and mental health insight (IS) post treatment and six months post treatment. Approaches to medication also appeared more positive six months post group (DAI-30). No statistical significance testing was employed.
Jones and Hollin[20]	Anger CBT	An evaluation of an anger management programme	8 male patients with a diagnosis of personality disorder and previous violent convictions	None	State-Trait Anger Expression Inventory-2 (STAXI-2)[108] Novaco Anger Scale (NAS)[42] Emotion Control Questionnaire (ECQ)[118] Aggression Questionnaire (AQ)[119]	All 8 patients completed the programme. Upon treatment completion patients showed positive shifts on the majority of self report measures except anger control inwards (STAXI-2). There was a notable reduction in both the intensity and frequency of anger incidents as behaviourally

					Behavioural Rating Questionnaire completed by nursing staff	rated by staff, and this was maintained at the 8-week follow-up stage. No statistical significance testing was employed.
Laithwaite et al.[87]	Self-esteem and wellbeing CBT	An evaluation of a group intervention aimed at improving self esteem in patients with psychosis	15 male patients experiencing low self esteem with a primary diagnosis of schizophrenia	None	Rosenberg Self esteem Scale (RSE)[82] Robson Self-Concept Questionnaire (RSQ)[120] The Self-Image Profile for Adults (SIPA)[121] The Positive and Negative Syndrome Scale (PANSS)[108] The Psychotic Symptom Rating Scales (PSYRATS)[58] Beck Depression Inventory (BDI)[123]	All 15 participants completed the intervention. Self report measures were administered at four time-points (pre, mid, post, and follow-up). Self esteem (RSE) and depression (BDI) appeared improved post treatment but only the improvement in depression was maintained at three month follow-up. No significant overall effects were found on the PANSS, suggesting minimal intervention effect on psychiatric symptomology. Reported improvements were statistically significant but not consistent across measures. Indices of clinical or reliable change were not reported.
Laithwaite et al.[88]	Self-esteem and wellbeing Compassion Focussed Therapy (CFT)	An evaluation of the effectiveness of a recovery group intervention for individuals with psychosis	19 male patients with a primary diagnosis of schizophrenia, schizoaffective disorder or bipolar affective disorder	None	Social Comparison Scale (SCS)[113] External Shame Scale (ESS)[124] Self Compassion Scale (SCS)[125] Beck Depression Inventory (BDI)[123] The Self-Image Profile for Adults (SIPA)[121] Rosenberg Self esteem Scale (RSE)[82]	18 patients completed the group. Improvements were reported post treatment for self esteem (SCS), depression (BDI), and general psychopathology (PANSS). These improvements were maintained at 6-week follow-up. Improvements from baseline to 6-week follow-up were reported on the ESS and the RSE. Reported improvements were statistically significant but not consistent across measures. Indices of clinical or reliable change were not reported.

					The Positive and Negative Syndrome Scale (PANSS)[122]	
Low et al.[79]	Self-harm DBT	A pilot study evaluating the effectiveness of a DBT group intervention for self-harm in female patients who met the DSM-IV criteria for borderline personality disorder.	13 female patients with a diagnosis of borderline personality disorder and current self-harming behaviour.	None	Irritability, Depression and Anxiety Scale (IDAS)[126] Dissociative Experiences Scale (DES)[127] Reasons for Living Inventory (RFL)[128] Beck Hopelessness Scale (BHS)[123] Beck Scale for Suicide Ideation (BSI)[129] Beck Depression Inventory (BDI)[130] Eysenck Personality Scale (EPS)[131]	10 patients completed the group. Patients showed significant improvements post treatment for rates of deliberate self-harm, dissociation (DES), survival and coping beliefs (RFL), and suicidal ideation (BSI). Improvements for rates of deliberate self-harm, dissociation and survival and coping beliefs were maintained six months post treatment. Indices of clinical or reliable change were not reported.
Moore et al.[84]	Relationships Narrative therapy, Psychodynamic therapy, CBT	An evaluation of a family awareness group work intervention	8 males suffering from personality disturbance with a history of childhood trauma and/or complex family relationships.	None	Family Relations Test (FRT)[85] Placement at 12 month follow-up	All 8 patients completed the post group assessments (one patient did not fully complete the final group component). On the FRT, using statistical significance testing, patients reported significantly less negative feelings towards their mother, and were less likely to think that their fathers perceived them in a negative way post intervention. However, patients continued to report generally negative feelings associated with their fathers. At 12 month follow-up two patients had progressed to conditions of medium security. Indices of clinical or reliable change were not reported.

Morris and Moore[73]	Substance misuse CBT, Psychodrama	An exploration of the effectiveness of a substance misuse intervention	30 male patients with an established history of alcohol or drug abuse. The majority of patients had a diagnosis of schizophrenia	None	Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES)[74] Psychological Inventory of Drug-Based Thinking Styles (PIDTS)[75] Incident Report Forms completed by staff Semi-Structured Interview	22 patients completed the intervention. Post group, patients reported a statistically significant improvement in their awareness of the association between personal problems and substance abuse (SOCRATES). However, no significant improvements were noted for the SOCRATES subscales of recognition and taking steps. On the PIDTS, patients reported statistically significant improvements in four of the eight subscales (mollification, cut-off, entitlement, and cognitive indolence). The authors provided mean Reliable Change Indexes although only 10 patients held full records of pre-post group data. Incident Report Forms indicated that no patient experienced an incident involving substances during the study period. A small number of individuals provided data via interview (n = 4). Group completers (n = 3) voiced generally positive views about the group.
Newton et al.[89]	Relapse prevention CBT	An evaluation of a relapse prevention group	12 male patients with a history of repetitive problem behaviour. Index offences included: sexual offences, homicide, violence, and arson	None	Impulsiveness, Venturesomeness and Empathy Questionnaire (IVEQ)[90] Gudjonsson Blame Attribution Inventory (GBAI)[91] The Psychological Inventory of Criminal Thinking Styles (PICTS)[66]	9 patients completed the programme. Patients demonstrated a significant increase on the guilt subscale of the GBAI and a significant decrease in overall criminal thinking styles and the entitlement and discontinuity subscales of the PICTS. No shifts were evidenced

						on the IVEQ. A notable strength of this study was that patients' questionnaire data was interpreted in the context of pre-existing reference data obtained with non-offending populations. Two years following intervention, the authors noted that 56% of patients (n = 5) had moved to conditions of medium security.
Quayle and Moore[37]	Relationships CBT, Interpersonal, Psychodynamic Anger CBT, Psychodynamic	An evaluation of the impact of two structured group work interventions – Interpersonal Relationships Group and Anger Management Group	16 male patients; 8 in the Interpersonal Relationships Group, 10 in the Anger Management Group, and 2 in both groups. Index offences included violence and sexual offences	None	Interpersonal Relationships Group: Inventory of Interpersonal Problems (IIP)[86] Anger Management Group: An in-house self report inventory consisting of 25 potentially provoking situations within the hospital setting Simple Rathus Assertiveness Schedule (SRS)[132] Staff Ratings of Relationships with Peers and Staff Members	All 8 patients completed the Interpersonal Relationships Group. On the IIP post-treatment, patients reported statistically significant reductions on interpersonal problems in terms of assertiveness, responsibility and control. However, no significant reductions were detected for areas of interpersonal sociability, submissiveness, or intimacy. No follow-up, or indices of clinical or reliable change were reported. All 10 patients completed the Anger Management Group. Statistically significant increases in scores of assertiveness (SRS) and relationships with peers were reported. No other significant effects were reported. No follow-up, or indices of clinical or reliable change were reported.
Reiss et al.[43]	Anger Dramatherapy (psychodrama)	A study examining changes in levels of anger associated with a therapeutic theatre project	12 male patients recruited from the hospital's Young Persons Unit. Seven patients were legally	None	Anger Inventory (locally developed) State-Trait Anger Expression Inventory (STAXI)[41]	All 12 patients completed the group. Results from the Anger Inventory showed significant improvements on the 'How angry' and 'How react' scales

			classified as suffering from 'psychopathic disorder', whilst the remaining five were classified as 'mental illness'		Patients rating of the workshop on a five-point scale	between pre-intervention and post-intervention measures. This significant result was maintained at three month follow-up. No significant differences were reported on the STAXI on the state anger scale; however, the trait anger scale showed significant improvement from the before to the follow-up measures. Patients also rated the workshop on a five-point scale with the maximum score of four representing very great benefit. The mean score across the patient group was 3.2. The patients also mentioned a number of things they found positive, such as being shown they had anger 'deep down' and the trust and support of everyone working together.
Ritchie et al.[76]	Substance misuse Psycho-education	A study examining the efficacy of an eight week drug and alcohol education awareness programme in increasing knowledge, enhancing internal control, and increasing motivation of patients with a history of substance misuse	51 male patients with a history of substance misuse	None	Drug Knowledge Questionnaire (locally developed) Alcohol Knowledge Questionnaire (locally developed) Stages of Change Questionnaire (SOC)[77] Multidimensional Locus of Control (MLOC)[78]	Pre-intervention and post-intervention measures reported a significant increase in patients' knowledge of drugs and alcohol. No significant differences between pre-intervention and post-intervention measures were reported for stages of change of locus of control. The main hypothesis that the intervention would enhance internal control and increase motivation was not supported. No follow-up or indices of clinical or reliable change were reported.
Ritchie et al.[80]	Substance misuse	An evaluation of the Saying No: Coping and Social Skills	82 male patients with a history of substance misuse who started	None	The Inventory of Drug taking Situations (IDTS)[133]	74 patients completed the intervention. Pre-post intervention measures showed that patients

	Psycho-education, Social skills	Programme for substance use.	the group between 2003 and 2009.		Drug Taking Confidence Questionnaire (DTCQ)[81] Multidimensional Locus of Control (MLOC)[78] Stages of Change Questionnaire (SOC)[77] Rosenberg Self esteem Scale (RSE)[82]	reported a significant increase in their confidence to resist substance use in the future (DTCQ). No significant improvements were reported for stages of change (SOC), locus of control (MLOC), or self esteem (RSE). No follow-up or indices of clinical or reliable change were reported.
Tapp et al.[65]	Thinking skills / Problem solving CBT, Social Problem Solving	An evaluation of the Enhanced Thinking Skills programme	83 male patients referred for the Enhanced Thinking Skills programme between 2001 and 2006	None	Clinical Outcomes in Routine Evaluation – Outcome Measure (CORE-OM)[68] The Psychological Inventory of Criminal Thinking Styles (PICTS)[66] Social Problem Solving Inventory (SPSI)[67]	62 patients completed the intervention. Patients who completed ETS reported statistically significant improvements for externalising blame, frustration tolerance, power orientation, critical thinking, and aggressive problem solving (PICTS and SPSI). However, patients also reported increases in passive (or dysfunctional) problem solving. For clinical change, participants showed notable change on problems /symptoms and social functioning (CORE-OM). Small numbers of participants evidenced reliable change across the measures. No follow-up was reported.
Vallentine et al.[54]	Enhancing insight and understanding of mental illness Psycho-education, CBT	An evaluation of a psycho-educational group work intervention on mental health	42 male patients assessed as having the potential to benefit from gaining a better insight into their mental health diagnosis. The majority of patients	None	Clinical Outcomes in Routine Evaluation – Outcome Measure (CORE-OM)[68] Robson Self-Concept Questionnaire (RSQ)[120] Observational reports from staff	31 patients completed the group. No statistically significant pre-post treatment shifts were observed on the CORE-OM or SCQ. While a small proportion of patients showed clinically meaningful change on these measures (approximately one

			suffered from schizophrenia or schizotypal and delusional disorders		Medication Amendments Ward Progression Semi-Structured Interview	fifth), up to 38% reported little or no change. A comparison of treatment completers and non-completers showed little change on other measures of treatment success. No significant differences were observed across completers and non-completers on observational reports from staff, medication amendments or ward progression. A total of 21 treatment completers engaged in interviews; all reporting the group to be "valuable".
Walker et al.[52]	Enhancing insight and understanding of mental illness Psycho-education, CBT	A pilot study investigating the effectiveness of a psycho-education programme (Coping With Mental Illness) for patients suffering from psychosis	28 male patients who had a diagnosis of severe and enduring mental illness and required education about their illness.	20 controls matched on gender and psychiatric diagnosis receiving treatment as usual. Controls were tested at only two time points (pre and six months post treatment). The treatment group were tested pre, post and six months post treatment	Forensic Assessment and Knowledge Tool (FAKT)[52] Understanding of Medication Questionnaire (UMQ)[134] The Positive and Negative Syndrome Scale (PANSS)[122] Schedule for Assessment of Insight (SAI)[135]	All 28 patients completed the programme. In comparison to the control group, patients in the treatment group demonstrated significantly increased knowledge of (FAKT) and insight into mental illness (SAI), and an increased understanding of their medication at six month follow-up (UMQ). The magnitude of change is unclear and changes in medication may have influenced results. Although t-scores are presented for the PANSS, indices of reliable change are not presented.
Walker et al.[34]	Enhancing insight and understanding of mental illness	A randomised controlled trial examining the effectiveness of a	46 male and female patients recruited across all four services who had a	35 male and female waiting list controls recruited	Schedule for Assessment of Insight (SAI)[135]	Pre-post treatment patients who attended the group reported significant improvements in their knowledge of mental illness

	Psycho-education, CBT	psycho-education programme (Coping with Mental Illness) for patients suffering from psychosis compared to treatment as usual across four forensic centres (2 medium security, 1 high security and 1 low security).	diagnosis of severe and enduring mental illness and required education about their illness.	across all four services receiving treatment as usual. Controls were tested at only two time points (pre and post treatment). The treatment group were tested pre, post and six months post treatment.	Forensic Assessment and Knowledge Tool (FAKT)[52] The Positive and Negative Syndrome Scale (PANSS)[122] The Calgary Depression Scale for Schizophrenia (CDSS)[136] The Schizophrenia Quality of Life Scale Revision 4 (SQLS-R4)[137] Behaviour Status Index (BEST-Index)[138]	(FAKT) and empathy (BEST-Index) in comparison to the control group. Although patients who attended the group reported positive reductions post-treatment for insight (SAI), symptoms of mental illness (PANNS) and quality of life (SQLS-R4) this did not reach statistical significance. Indices of clinical or reliable change are not presented.
Walker and Trenoweth [53]	Enhancing insight and understanding of mental illness Psycho-education, CBT	A study investigating patient's perspectives of personal change following attendance at a psycho-educational programme – Coping with Mental Illness	A purposive sample of 20 male participants (selected by their RCs) who had engaged in the final year of a randomised control trial of a Coping with Mental Illness intervention across. Participants were either residing at The State Hospital (high secure) or the Orchard Clinic (medium secure). Patients were excluded if they had a primary diagnosis of Learning Disability or were too unwell to	None	Repertory Grid completed at baseline and post intervention. In the Grid, all patients rated on a seven-point scale (1 – strongly agree, to 7 – strongly disagree) on seven supplied constructs; have hope to move on, have confidence to engage in groups, understand my own illness and how it affects me, don't realise others have the same problems, realise I am a valuable person in society, have little or no control over how I think and feel, and feel normal. Interviews with participants	2 participants terminated the interview early due to difficulties incurred in completing the repertory grid. No scores reached a significant level when exploring how participants feel (now) at baseline and post group. Due to these findings, the null hypothesis indicating there will be no difference in the patient's impression of why things might change following attendance at the Coping with Mental Illness group was accepted. Perception at post group stage revealed significant differences in three areas: have confidence to engage in groups, understand my

			take part (as decided by the RC).			own illness and how it affects me, and feel normal. Feeling normal was closely correlated with feeling valued, having hope, feeling confident, understanding your illness, and realising others have the same problem. Qualitative data gained through interviews highlighted the importance of maintaining a degree of hope and feeling normal.
Williams et al.[55]	Enhancing insight and understanding of mental illness CBT	A study comparing the efficacy of Cognitive Behavioural Therapy (CBT) and treatment as usual to treatment as usual only in reducing positive and negative symptoms associated with schizophrenia, and improving functioning of patients with schizophrenia	27 male patients with a diagnosis of either schizophrenia or schizoaffective disorder.	14 male patients also with a diagnosis of either schizophrenia or schizoaffective disorder receiving treatment as usual.	Scale for the Assessment of Positive Symptoms (SAPS)[56] Scale for the Assessment of Negative Symptoms (SANS)[57] Psychotic Symptom Rating Scale (PSYRATS)[58] Depression Anxiety Stress Scale (DASS)[139] Inventory of Interpersonal Problems (IIP)[86]	All 27 patients completed the programme. Although reductions in both negative (affective flattening, alogia, anhedonia) and positive (delusions and hallucinations) symptoms were reported for the CBT group, these reductions were not significant when compared to the control group. Furthermore, results from the PSYRATS reported no improvements in positive symptoms for either patient group. Disconcordant with results from the SAPS, the results of the PSYRATS demonstrated a slight increase in reported hallucinations for the CBT group. Patients in the CBT group reported significant improvement in depression and anxiety in comparison to the control group. Additionally, the CBT group

						reported a significant reduction in interpersonal problems when compared to the control group. No follow-up or indices of clinical or reliable change were reported.
Wilson et al.[38]	Anger CBT	An evaluation of an anger management intervention	86 male offender patients with anger management difficulties and violent behaviour who had been referred for anger management groups over a period of 10 years	Incident data was collected for 64 patients referred to a waiting list for this group and these patients acted as a control	RAMAS Anger Assessment Profile (RAAP)[140] State-Trait Anger Expression Inventory-2 (STAXI-2)[108] Institutional incidents of verbal/physical aggression or self-harm electronically recorded by staff	70 men completed the programme. Completers reported significant reductions in feelings of anger and positive changes in anger duration and control, aggressive acts, as well as trait and dispositional anger. Clinical and reliable change measures also indicated gains in anger intensity and duration, anger control and inward expression, and dispositional anger. On institutional incidents of aggression, no significant differences were observed between patients who completed treatment and waiting list controls. Although institutional incidents of aggression were subject to follow-up testing, the self report measures were restricted to completion at two time points (i.e., pre and post treatment).
Yip et al.[71]	Thinking skills / Problem solving CBT	An evaluation of the effectiveness of the Reasoning and Rehabilitation 2 programme adapted for offenders with severe mental illness (R&R2 MHP; Young & Ross, 2007a).	30 male patients with a history of serious mental illness (i.e. schizophrenia, schizoaffective disorder, bipolar disorder) and violent or antisocial behaviour	29 matched male controls receiving treatment as usual. These patients were not permitted to attend R&R2 MHP	Maudsley Violence Questionnaire (MVQ)[69] Novaco Anger Scale – Provocation Inventory (NAS-PI)[141] Ways of Coping Scale (WAYS)[142]	24 patients completed the programme. In comparison to the control group, Intention to Treat analyses showed that R&R2 MHP patients self reported significant improvements in violent attitudes (MVQ), social problem-solving SPSI-R: Short) and coping processes (WAYS). No notable

				or similar interventions	Social Problem-Solving Inventory-Revised: Short (SPSI-R:S)[143] Disruptive Behaviour and Social Problems Scale (DBSP)[70]	shifts were observed on the NAS-PI. However, ward behaviour as rated by staff on the DBSPS had also significantly improved. Although statistical significance testing and power analyses were reported, no indices of clinical or reliable change were calculated and there was no follow-up testing post treatment.
Young et al.[35]	Thinking skills / Problem solving CBT	An evaluation of the effectiveness of the Reasoning and Rehabilitation 2 programme adapted for offenders with severe mental illness (R&R2M; Young & Ross, 2007a) across a medium and high secure service.	34 male patients with a diagnosis of a diagnosis of a serious mental illness (i.e. schizophrenia, schizoaffective disorder, bipolar disorder) and a history of violent behaviour (53% from medium secure services, 47% from high secure).	12 male patients receiving treatment as usual. These patients were on a waiting list to attend R&R2M (92% from high security).	Maudsley Violence Questionnaire (MVQ)[69] Ways of Coping Scale (WAYS)[142] Social Problem-Solving Inventory-Revised: Short (SPSI-R:S)[143] Disruptive Behaviour and Social Problems Scale (DBSP)[70]	22 patients completed the programme. Patients who completed R&R2M demonstrated significant improvements on self-rated attitudes towards violence (MVQ) and also on staff ratings for behaviour and social interactions (DBSP). No significant improvements were noted for the control group. Due to the small sample size statistical analyses between the groups were not conducted. No follow-up or indices of clinical or reliable change were reported.
Young et al.[72]	Thinking skills / Problem solving CBT	A controlled trial evaluating the effectiveness of the Reasoning and Rehabilitation 2 programme adapted for youths and adults with ADHD with a group of personality disordered offenders	16 male patients with a primary diagnosis of a personality disorder and history of violent (including sexual) offending who were detained within a DSPD unit.	15 male patients receiving treatment as usual. These patients were on a waiting list to attend R&R2 ADHD.	Maudsley Violence Questionnaire (MVQ)[69] Novaco Anger Scale – Provocation Inventory (NAS-PI)[141] Social Problem-Solving Inventory-Revised: Short (SPSI-R:S)[143] R&R2 ADHD Training Evaluation Self report Scale (RATE-S)[5]	12 patients completed the group. Intention to Treat analyses showed that, in comparison to the control group, patients who completed R&R2 ADHD self reported significant improvements in social problem solving (SPSI-R:S), violent attitudes (MVQ), arousal and behavioural domains of anger (NAS), and significant reductions in self reported ADHD symptoms (RATE-S). No indices of clinical or reliable change were

	calculated and there was no follow-up testing post treatment.

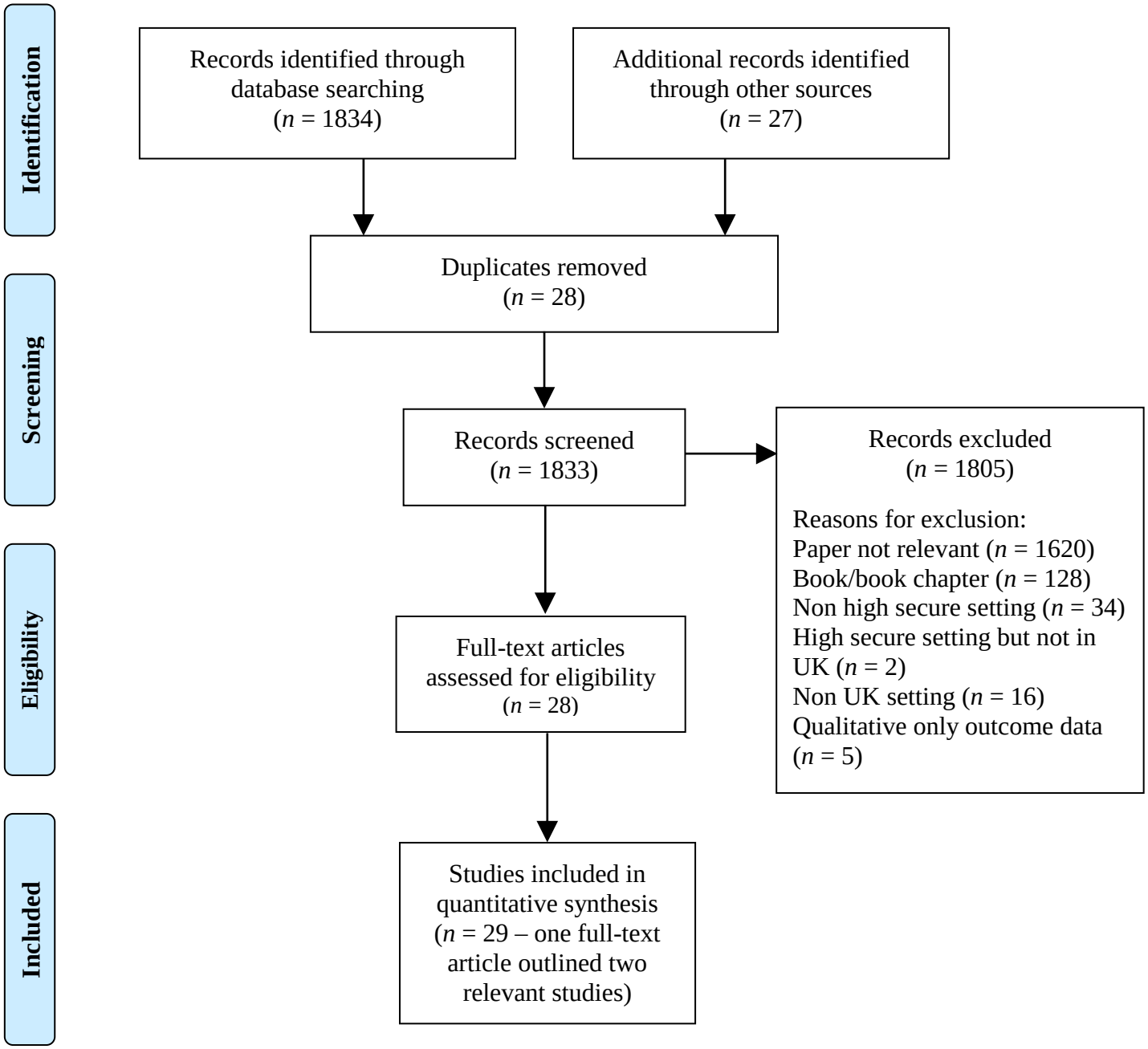

Figure 1. Identification and Selection Process of Eligible Studies Included for Review.

Declaration of Interest

The authors have no declarations of interest.

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