

A systematic review of the efficacy of psychological treatments for people detained under the Mental Health Act.

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Abstract

Introduction

The efficacy of psychological interventions delivered under the Mental Health Act (MHA) (1983) in England and Wales is unclear. While meta-analyses have reviewed acute and forensic psychological interventions in wider geographical areas, there has been no review specifically in the unique MHA context.

Aim

A systematic review was conducted of psychological outcomes for inpatients detained under the MHA in England and Wales.

Method

Diagnoses and type of psychological intervention were not restricted, provided a psychological outcome measure was used. Studies were identified through APA PsychInfo, MEDLINE, CINAHL and Academic Search using a combination of key terms. Data extraction included effect direction, statistical significance, intervention type, format and duration, study size, inpatient setting, control group and study quality.

Results

High quality evidence was sparse. Some improvements were found in overall wellbeing, self-esteem, social functioning, problem solving, substance use, anger, offending attitudes, fire-setting, violence, anxiety, depression, personality disorder and psychosis. However, the overall evidence base is lacking.

Discussion

Larger scale RCTs are needed across secure, acute and LD inpatient settings in England and Wales with longer term follow-up, blind assessors and both self-report and clinician-rated measures, as well as incident, readmission and reoffending rates. Greater representation is needed of females, non-white groups and affective disorders.

Clinical Implications

The efficacy of psychological interventions for inpatients detained under the MHA in England and Wales remains unclear. Clinicians are encouraged to use relevant outcome measures in relation to treatment goals, to monitor the efficacy of interventions being offered to this client group.

Relevance to Mental Health Nursing

This paper highlights the current body of evidence for psychological interventions in inpatient settings within England and Wales, which is an environment in which mental health nursing plays an important role

in patients' recovery. This evidence is also particularly important as there is a shift in clinical practice to training nursing staff to deliver some of the low intensity psychological interventions, such as behavioural activation, solution focussed therapy and motivational interviewing.

Introduction

Two recent meta-analyses have reviewed the literature pertaining to psychological interventions and their associated outcomes in acute (Paterson et al., 2018) and forensic (McIntosh et al., 2021) inpatient settings. Other meta-analyses have also included forensic inpatient treatment outcomes (Papalia et al., 2019; Yoon et al., 2017) but these included prisoners and community forensic patients. This reduces the applicability of findings to inpatient care, as noted by Thomas et al. (2009) whereby the difference between mentally disordered offenders (MDOs) in prison compared to secure hospital may lead to a difference in efficacy of the same treatment.

In regards to the Paterson et al. (2018) and McIntosh et al. (2021) reviews, both found small or moderate improvements associated with inpatient psychological interventions (*i.e. any group or individual intervention following a structured format to address patients' mental health need*) for symptoms of psychosis, depression and anxiety. McIntosh et al. (2021) also found improvements in problem solving ability, attitudes towards offending and aggressive behaviour, whilst Paterson et al. (2018) also noted reduced readmission rates. However, both these meta-analyses synthesised the data irrespective of geographical location and Paterson et al. (2018) included patients who were not subject to compulsory treatment. Hence, the nature and duration of detention and the conditions of community release for inpatients involved in studies outside England and Wales, will have differed from the Mental Health Act (hereafter MHA) (1983), depending on local legislature. These variable conditions on detention and whether it is voluntarily, with or without mandatory treatment, offer a unique and important legislative layer when assessing the engagement and efficacy of psychological interventions.

The distinct legal system in England and Wales and environment for detentions in such locations under the MHA is likely to lead to differences in the nature of client groups admitted, as well as the subsequent decision-making for the provision of treatment. Furthermore, the wider clinical context of units

in England and Wales further suggest a specific and focused review of outcomes is required; provision of clinical care in such units is expected to reflect national clinical recommendations drawn from National Institute for Health and Care Excellence (NICE) guidance and are all inspected by the CdQuality Commission (CQC). Additionally, staff would be required to complete National Health Service (NHS) mandatory training **or a private sector equivalent**. These differences are important in light of findings that differences in inpatient environments can moderate the efficacy of psychological interventions by the extent to which they are experienced as safe and therapeutic (The Schizophrenia Commission, 2012). Therefore, it is difficult to conclude from any previous synthesis of data, how effective psychological interventions are for those detained under the MHA in England and Wales.

Paterson et al. (2018) and McIntosh et al. (2021) also filtered their reviews for higher quality controlled trials. Whilst this improved the quality of evidence synthesised, an initial scope of the literature – already observed to be sparse in forensic (Barnao & Ward, 2015) and acute (Paterson et al. 2018) – revealed almost half of trials involving psychiatric inpatients in England and Wales are uncontrolled ‘before and after’ (B&A) studies. Therefore, inclusion of these studies in a systematic review may begin to resolve the disconnect between therapies being practiced and those being published (Mallion et al., 2019) and offer some guidance for future funding allocation for higher quality controlled and randomised research, ideally with blind assessors.

No systematic review has yet been undertaken into the efficacy of psychological interventions specifically in England and Wales, for people detained under the MHA. This is a unique context, whereby inpatients are subject to compulsion in their treatment as a result of detention under the MHA. So whilst Cognitive Behavioural Therapy (CBT) is considered the gold standard for affective disorders including anxiety and depression, as well as other serious mental illnesses such as schizophrenia and personality disorder (Hofman et al., 2012), the majority of the evidence base come from community samples, with very few randomised controlled trials (RCTs) using participants detained under the MHA where there is the compulsion-to-treat element. It is also pertinent that the threshold for admission in England and Wales has risen in recent years - increasing the severity of symptoms and risk requiring psychological intervention - with alternatives to hospital being promoted and the number of mental health beds reducing (Brooker et al.,

2007; Department of Health, 2015). Thus, both the layers of coercion and the potential for resulting power dynamics affecting the therapeutic relationship (Molkenthin, 2016) and the complexity of **engaging** inpatients detained under the MHA **in psychological interventions**, contribute to the unique need to study the evidence base with this population.

It is also important that the current body of evidence in England and Wales is synthesised to inform evidence-based and cost-effective mental healthcare for those detained under the MHA. Milne (2019) reported that approximately a quarter of the NHS budget goes towards mental health, with around half of this amount spent on mental health services in hospitals. Durcan, Hoare and Cumming (2011) highlighted that a third of forensic secure beds (which are funded from the NHS budget) are provided by the independent sector; hence, small changes or improvements in effectiveness/outcomes of those detained under the MHA could result in significant savings. In addition to the insight a systematic review would offer clinicians, it would also offer researchers greater clarity on where evidence is particularly lacking or conflicting. This may inform future focus in terms of intervention models used, as well as the format and duration, study size, inpatient setting and nature of any control group.

This review therefore asks the question: What is the efficacy of psychological treatments for people detained under the MHA? It aims to add specific insight into the efficacy of psychological interventions taking place in concurrence with detention under the MHA, including inpatients in specialist learning disability (LD) inpatient settings. Due to the inherent difficulty of conducting randomised controlled trials in inpatient settings, within the current context in England and Wales of there being a dearth of evidence, and almost half of the evidence available is from B&A studies, this review will include uncontrolled trials in the synthesis of evidence; study quality ratings will acknowledge the limitations of this design.

Method

Protocol Registration

The systematic review protocol adheres to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher et al., 2009) and was registered on the international

prospective register of systematic reviews, PROSPERO (registration number: ANON123). **As only secondary data were obtained, formal ethical approval was not sought.**

Search Strategy

The full search string used can be found in Appendix A; alternative search terms were generated for ‘Psychological Treatment’, ‘Detained under Mental Health Act’ and ‘United Kingdom’. To **reduce the likelihood of additional studies in England and Wales being missed**, the reference lists from previous relevant reviews (McIntosh et al., 2021; Paterson et al. 2018) were also reviewed, as were the reference lists of all forty-three studies included. Only studies conducted in England and Wales were included, **as Scotland uses different legislation - the Mental Health (Care and Treatment) (Scotland) Act 2003 – that was not the focus of this review**. A scope of the literature also highlighted a significant number of B&A studies that would otherwise meet inclusion criteria, so the decision was made for the ‘outcome comparison’ search string to be omitted from the final search strategy. This omitted search string can still be found for reference in Appendix A.

Eligibility Criteria

Eligibility criteria is presented below using the PICO framework (Richardson et al., 1995). Additional exclusion criteria included screening for single case studies, feasibility studies, books, ebooks, commentaries or reviews.

Participants

Any psychiatric inpatients detained in England or Wales under a section of the MHA, between 1990 and 2021. This could include any adult detained in an acute unit, psychiatric intensive care unit, LD unit, or secure unit (low, medium or high). For dual studies (including prison/community, plus a secure inpatient setting), findings must be reported separately within the study.

Intervention

Any non-medical intervention using a psychological model, including interventions focused on any aspects of mental health, behaviour change or other psychosocial need.

Comparison

In addition to randomised controlled trials (RCTs) and non-randomised controlled trials (NRCTs), this systematic review opted to include uncontrolled trials (B&A studies) with only pre-post intervention data. This was done to synthesise a spread of research and highlight this common methodological weakness in the summary of study characteristics in the current body of evidence.

Outcome

Any measure of mental health symptoms, psychological wellbeing, behaviour or attitude change.

Study Selection and Data Extraction

This part of the systematic review process was conducted by two reviewers, as recommended by Lipsey & Wilson (2001). The second reviewer took twenty percent of the studies screened by the primary reviewer at each stage. Out of the 4142 titles screened, the second reviewer screened 828 achieving an agreement rate of 87.31%; 105 differences were subsequently resolved. Out of the 430 abstracts screened, the second reviewer screened 86 with a 91.86% agreement rate and 7 differences resolved. Finally, of the 122 full text articles screened, the second reviewer screened 24 with a 100% agreement rate. Consensus was reached between the two reviewers for each case of initial disagreement by reviewing the inclusion/exclusion criteria. Figure 1 shows the process of systematic inclusion and exclusion of papers.

Identification of studies via databases and registers

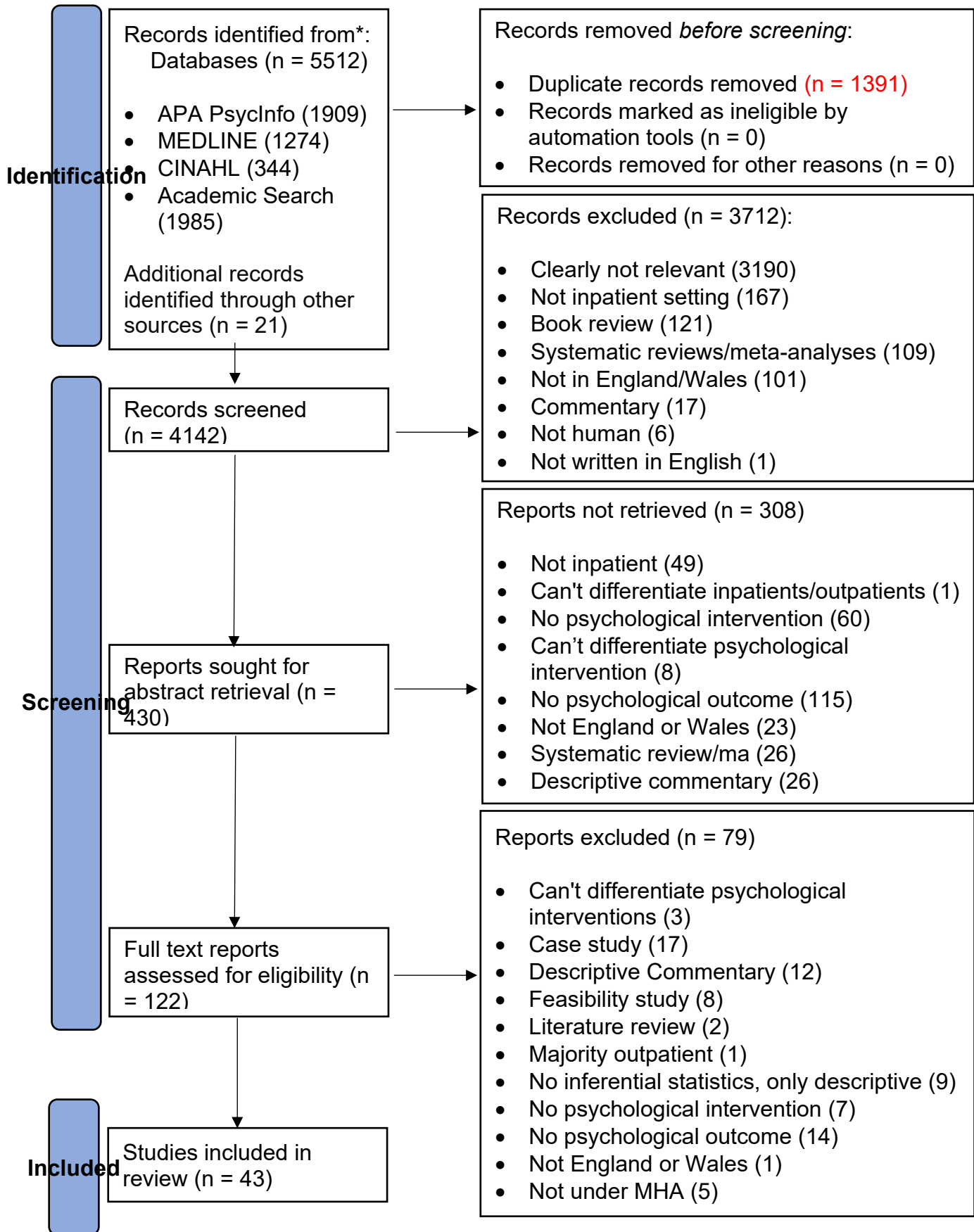


Figure 1. Prisma Flowchart showing systematic inclusion/exclusion criteria (n = 43).

Quality Assessment

To appraise the quality of each study included, the newly updated Critical Appraisal Skills Programme (CASP) (2021) guidelines for were used to generate high or low quality ratings. These guidelines consist of ten questions pertaining to the validity, methodology, relevance and results of the research. Where quality rating comments included responses of 'no', or 'can't tell' (indicating reduced quality) – the overall study quality was rated as low; whilst studies where all questions were satisfactorily answered, were rated as high.

Systematic Review Themes

Outcome measure constructs were generally defined in line with the categories used by McIntosh et al. (2021) including: anger, empathy, coping skills, criminal attitudes, impulsivity, insight, locus of control, psychiatric symptoms, problem-solving ability, observed ward behaviour, self-esteem and recorded incidents of violence and aggression. Some specific psychiatric symptom measures were collected under a separate headings in this systematic review and three clusters (domains) of outcome emerged: General/Cross Domain, Forensic/Anger and Clinical Symptoms, which are presented in separate effect direction plots guided by criteria laid out by Thomson and Thomas (2013) to synthesise data using arrows, indicating effect direction and statistical significance. This was the preferred approach to synthesise the current sparse body of literature, as opposed to a meta-analysis, due to the lack of heterogeneity of outcome measures.

Results

The study demographics are reported in Table 1 to provide an overview of the included studies, in regards to participants' age, gender and ethnicity, as well as study size, inpatient setting, study design, diagnoses, intervention type and outcome measures used.

Study Characteristics

Table 1. Participant Demographics (n = 43).

Participants	Total Studies
Mean Average Age (SD)	34.02 (4.46)
Male / Female %	77 / 23
White / Black / Other %	72 / 20 / 8
Study Size	
Mean Average N (SD, range)	48.04 (51.84, 7-315)
Mean Average Intervention n (SD, range)	31.96 (33.74, 7-209)
Mean Average Control n (SD, range)	27.46 (21.93, 9-106)
No. Small Studies*: 1-50 Intervention n	84% (37/44)
No. Medium Studies*: 50-300 Intervention n	16% (7/44)
No. Large Studies*: >300 Intervention n	0% (0/44)
Inpatient Settings	
Low Secure	7% (3/44)
Medium Secure	27% (12/44)
High Secure	36% (16/44)
Mixed Secure	14% (6/44)
Unspecified 'Secure'	2% (1/44)
Acute Psychiatric	9% (4/44)
Learning Disability	5% (2/44)
Study Designs	
RCT	23% (10/44)
NRCT	34% (15/44)
B&A (no control)	43% (19/44)
Blind Assessor	20% (9/44)
CASP Quality High	34% (15/44)
CASP Quality Low	66% (29/44)
Primary Diagnoses	
Serious Mental Illness	36% (16/44)

(mixed diagnoses, bipolar, MDD , schizophrenia, schizoaffective	23% (10/44)
or PD)	18% (8/44)
Specifically Psychosis / Schizophrenia	11% (5/44)
Specifically Personality Disorder	11% (5/44)
Dual Diagnosis	
LD & Mental Health Difficulties	

Intervention Type

****46 interventions as Quayle & Moore (1998) and Tibber et al.**

(2015) both report data separately for 2 different interventions

Anger Management	4% (2/46)
CBT	24% (11/46)
DBT	9% (4/46)
Dramatherapy	2% (1/46)
ETS	2% (1/46)
FIP-MO	2% (1/46)
Functional Analysis	2% (1/46)
Living with/Understanding Mental Illness Programme	4% (2/46)
LMV-E	2% (1/46)
Mindfulness	2% (1/46)
Progressive Muscle Relaxation	2% (1/46)
R&R	7% (3/46)
R&R2 ADHD	2% (1/46)
R&R2 MHP	9% (4/46)
SFT	2% (1/46)
Social Problem Solving/Interpersonal Relations	4% (2/46)
Specific Drug & Alcohol Treatment	13% (6/46)
Transition Programme	2% (1/46)
VRP	2% (1/46)
Wellbeing Intervention	2% (1/46)
Manualised %	87% (40/46)
Group / Group & Individual / Individual %	59 / 24 / 17

Outcome Measures

Administered Pre-Post	64% (28/44)
Administered Pre-Post with Additional Follow Up	36% (16/44)

Clinical Symptom Measures

Anxiety	16% (7/44)
Depression	20% (9/44)
Personality Disorder Symptoms	5% (2/44)
Psychotic Symptoms & Insight	23% (10/44)

Forensic/Anger Measures

Anger/Verbal Aggression	45% (20/44)
Attitudes Towards Offending & Perceived Locus of Control	18% (8/44)
Empathy	5% (2/44)
Fire Setting	5% (2/44)
Sexual Offending Risk	0% (0/44)
Violence Risk	30% (13/44)

General/Cross Domain Measures

General Distress/Wellbeing	23% (10/44)
Global Daily Functioning	9% (4/44)
Impulsiveness/Mindfulness	11% (5/44)
Individual Problem Solving/Coping	18% (8/44)
Maladaptive Schemas	2% (1/44)
Readiness to Change	9% (4/44)
Self-Esteem	18% (8/44)
Social Functioning	14% (6/44)
Social Problem Solving/Interpersonal Style	39% (17/44)
Substance Use	11% (5/44)

*Study size thresholds were determined using the guidance laid out by Thomson and Thomas (2013), whereby small, medium and large arrow sizes are subsequently used in the effect direct plots.

Of the forty four studies included, eighty-six percent ($n = 38$) came from forensic ‘secure’ inpatient settings, compared to nine percent from ‘acute’ ($n = 4$) and five percent from LD ($n = 2$). Only twenty three percent of studies were RCTs ($n = 10$), compared to thirty four percent which were NRCTs ($n = 15$) and forty three percent which were uncontrolled B&A studies ($n = 19$); whilst only thirty four percent ($n = 15$) were rated as high quality and only twenty percent ($n = 9$) had blind assessors. Inpatients mean age was mid-thirties ($M = 34.02$, $SD = 4.46$), of which seventy seven percent of participants were male and seventy two percent were white. Thirty six percent of studies ($n = 16$) featured participants with serious mental illness (including bipolar, major depressive disorder, schizophrenia, schizoaffective disorder, or personality disorder), whilst twenty three percent ($n = 10$) specifically targeted psychosis/schizophrenia and eighteen percent ($n = 8$) targeted personality disorder. Only eleven percent of studies used participants with a diagnosed LD ($n = 5$) and similarly only eleven percent trialled a targeted intervention on inpatients with a dual diagnosis ($n = 5$).

There were a range of interventions reported, however CBT was the most commonly featured in twenty four percent of all studies ($n = 11$), followed by various R&R programmes making up eighteen

percent of studies (n = 8), drug and alcohol programmes making up thirteen percent (n = 6) and DBT used in nine percent of studies (n = 4). Similarly, a range of outcome measures were used. Notably, forty five percent of studies used a measure of anger/verbal aggression (n = 20), thirty nine percent measured social problem solving/interpersonal style (n = 17) and thirty percent measured risk of violence (n = 13). The most commonly used clinical symptoms measures were for psychosis (23%; n = 10) and depression (20%, n = 9), whilst general distress/wellbeing was also measured in twenty three percent (n = 10) of studies.

General/Cross Domain Outcomes

Table 2 shows the synthesis of data relating to general distress/wellbeing, global daily functioning, impulsiveness/mindfulness, individual problem solving, maladaptive schemas, readiness to change, self-esteem, social functioning, social problem solving and substance use.

Table 2. The effect direction plot for studies using General/Cross Domain outcome measures.

General/Cross Domain Outcome Measures	Effect Direction	Intervention (n)	Format	Duration	Setting	Study Design	Control Group (n)	Study Quality	
General Distress/Wellbeing									
Craven, R. & Shelton, L. (2020)	▲	CR	Mindfulness (7)	G	Not stated	LD	B&A	N/A	Low
Daffern et al. (2017)	▲	SR	LMV-E (33)	G & I	125	H	NRCT	TAU (42)	High
Ferguson et al. (2009)	▲	SR	WI (14)	G	4*	M	B&A	N/A	Low
Fox et al. (2014)	▲	CR	DBT (29)	G & I	Not stated	L	B&A	N/A	Low
Hall, L. & Long, C. (2009)	◀▶	SR	PMR (19)	G	40.7	M	B&A	N/A	Low
Long et al. (2010)	▲	CR	CBT (29)	G & I	12*	M	NRCT	NC (15)	Low
Tapp et al. (2009)	◀▶	SR	ETSP (83)	G	Not stated	H	B&A	N/A	Low
Vallentine et al. (2010)	▲	SR	UMI (31)	G	20	H	B&A	N/A	Low

Williams et al. (2014)	▼	SR	CBT (27)	G & I	25.5	H	RCT	NC (14)	High
Young et al. (2012)	▲	SR	R&R2-ADHD (16)	G & I	11*	M	NRCT	NC (15)	Low

Global Daily Functioning

Craven, R. & Shelton, L. (2020)	▲	CR	Mindfulness (7)	G	Not stated	LD	B&A	N/A	Low
Fox et al. (2014)	▲	CR	DBT (29)	G & I	Not stated	L	B&A	N/A	Low
Haddock et al. (2009)	▲	CR	CBT (38)	I	17	'Secure'	RCT	SAT (39)	High
Startup et al. (2004)	▲	CR	CBT (47)	I	12.9	Acute	RCT	NC (43)	High

Impulsiveness/Mindfulness

Ashworth, S. & Brotherton, N. (2018)	◀▶	CR	DBT (12)	G	Not stated	LD	B&A	N/A	Low
Craven, R. & Shelton, L. (2020)	▲	SR	Mindfulness (7)	G	Not stated	LD	B&A	N/A	Low
Doyle et al. (2015)	◀▶	SR	SFT (29)	I	72	H	RCT	TAU (34)	High
Newton et al. (2005)	▲	SR	RP (9)	G	Not stated	H	B&A	N/A	Low
Young et al. (2012)	▲	SR	R&R2-ADHD (16)	G & I	11*	M	NRCT	NC (15)	Low

Individual Problem Solving/Coping

Ashworth, S. & Brotherton, N. (2018)	▲	CR	DBT (12)	G	Not stated	LD	B&A	N/A	Low
Clarke et al. (2010)	▲	SR	R&R (18)	G	36	M	NRCT	TAU (17)	Low
Liddiard et al. (2019)	▲	SR	TP (18)	G	8	M	B&A	N/A	Low
Long et al. (2010)	▲	SR	CBT (29)	G & I	12*	M	NRCT	NC (15)	Low
Long et al. (2015)	▲	SR	LWMI (20)	G & I	10*	M	NRCT	NC (12)	Low
Tibber et al. (2015)	▲	SR	DDI – S 2 (37)	G	Not stated	L&M	B&A	N/A	Low
Yip et al. (2013)	▲	SR	R&R2-MHP (30)	G & I	12*	H	NRCT	NC (29)	Low
Young et al. (2010)	▲	SR	R&R2-MHP (58)	G & I	11*	M&H	NRCT	NC (12)	Low
Maladaptive Schemas									
Doyle et al. (2015)	▲	SR	SFT (29)	I	72	H	RCT	TAU (34)	High
Readiness to Change									
Daffern et al. (2017)	◀▶	SR	LMV-E (33)	G & I	125	H	NRCT	TAU (42)	High
Long et al. (2015)	▲	SR	LWMI (20)	G & I	10*	M	NRCT	NC (12)	Low
Tibber et al. (2015)	◀▶	SR	DDI – S1 (80)	G	Not stated	L&M	B&A	N/A	Low
Tibber et al. (2015)	◀▶	SR	DDI – S2 (37)	G	Not stated	L&M	B&A	N/A	Low

Self-Esteem

Craven, R. & Shelton, L. (2020)	▲	CR	Mindfulness (7)	G	Not stated	LD	B&A	N/A	Low
Hall, P. L., & Tarrier, N. (2003)	▲	SR	CBT (12)	I	7	Acute	RCT	TAU (13)	High
Long et al. (2011)	▲	SR	SPS (15)	G	7*	M	NRCT	NC (9)	Low
Long et al. (2015)	▲	SR	LWMI (20)	G & I	10*	M	NRCT	NC (12)	Low
McInnis et al. (2006)	◀▶	SR	CBT Psychoed (9)	G	9	L	B&A	N/A	Low
Taylor et al. (2002)	▲	SR	FA (14)	G	40	L	B&A	N/A	Low
Tyler et al. (2017)	▲	SR	FIP-MO (63)	G & I	84	L&M&H	NRCT	NC (72)	High
Vallentine et al. (2010)	▲	SR	UMI (31)	G	20	H	B&A	N/A	Low

Social Functioning

Fox et al. (2014)	▲	CR	DBT (29)	G & I	Not stated	L	B&A	N/A	Low
Hall, P. L., & Tarrier, N. (2003)	▲	SR	CBT (12)	I	7	Acute	RCT	TAU (13)	High
Startup et al. (2004)	▲	SR	CBT (47)	I	12.9	Acute	RCT	NC (43)	High
Tapp et al. (2009)	▲	SR	ETSP (83)	G	Not stated	H	B&A	N/A	Low
Tyler et al. (2017)	◀▶	SR	FIP-MO (63)	G & I	84	L&M&H	NRCT	NC (72)	High

Young et al. (2012)	▲	SR	R&R2-ADHD (16)	G & I	13.33	M	NRCT	NC (15)	Low
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Social Problem

Solving/Interpersonal Style

Ashworth, S. & Brotherton, N. (2018)

Clarke et al. (2010)	▲	CR	DBT (12)	G	Not stated	LD	B&A	N/A	Low
Cullen et al. (2011)	▲	SR	R&R (18)	G	36	M	NRCT	TAU (17)	Low
Daffern, et al. (2017)	▲	SR	R&R (44)	G	36	M	RCT	TAU (40)	High
Doyle et al. (2015)	▲	SR	LMV-E (33)	G & I	125	H	NRCT	TAU (42)	High
Jotangia et al. (2013)	◀▶	CR	SFT (29)	I	72	H	RCT	TAU (34)	High
Long et al. (2011)	▲	SR	R&R2 (18)	G	14.6	L & M	NRCT	TAU (20)	High
Moore et al. (2000)	▲	SR	SPS (15)	G	7*	M	NRCT	NC (9)	Low
Quayle, M. & Moore, E. (1998)	▲	SR	FAw (8)	G	28	H	B&A	N/A	Low
Quayle, M. & Moore, E. (1998)	▲	SR	IPR(8)	G	Not stated	H	B&A	N/A	Low
Rees-Jones et al. (2012)	▲	SR & CR	AM (10)	G	Not stated	H	B&A	N/A	Low
Tapp et al. (2009)	▲	SR & CR	R&R2-MHP (67)	G	15	L&M	NRCT	NC (54)	High
Tyler et al. (2017)	▲	SR	ETSP (83)	G	Not stated	H	B&A	N/A	Low
Williams et al. (2014)	◀▶	SR	FIP-MO (63)	G & I	84	L&M&H	NRCT	NC (72)	High

Yip et al. (2013)	▲	SR	CBT (27)	G & I	25.5	H	RCT	NC (14)	High
Young et al. (2010)	▲	SR & CR	R&R2-MHP (30)	G & I	12*	H	NRCT	NC (29)	Low
Young et al. (2012)	▲	SR & CR	R&R2-MHP (58)	G & I	11*	M&H	NRCT	NC (12)	Low
	▲	SR	R&R2-ADHD (16)	G & I	13.33	M	NRCT	NC (15)	Low
Substance Use									
Cullen et al. (2012)									
Derry, A. & Batson, A. (2008)	◄►	SR & CR	R&R (44)	G	36	M	RCT	TAU (40)	High
Miles, H. (2015)	▲	CR	SUTP (19)	G	18*	M	NRCT	TAU (9)	Low
Morris, C. & Moore, E. (2009)	▲	SR	SUTP (33)	G	Not stated	M	NRCT	NC (12)	High
Tibber et al. (2015)	▲	SR	CBT (10)	G	Not stated	H	B&A	N/A	Low
	▲	SR	DDI – S1 (80)	G	Not stated	L&M	B&A	N/A	Low

Key per column:

1. Outcome Measures:

- General Distress/Wellbeing: Any measure of overall psychological wellbeing/levels of distress.
- Global Daily Functioning: Any measure of overall daily functioning.
- Impulsiveness/Mindfulness: Any measure of ability to notice what is happening in the present.
- Individual Problem Solving/Coping: Any measure of ability to solve problems/life stressors.
- Maladaptive Schemas: Any measure of the construct ‘schema’.
- Readiness to Change: Any measure of readiness to engage in meaningful change.
- Self-Esteem: Any measure of the construct ‘self-esteem’.

- Social Functioning: Any measure of general social engagement/isolation.
- Social Problem Solving/Interpersonal Style: Any measure of ability to interact with others and verbally manage conflict.
- Substance Use: Any measure of substance misuse.

2. Effect Direction - Self Report (SR); Clinician Rated (CR):

- Arrow size: Small (N = 0-50), Medium (N = 50-300), Large arrow (N >300)
- Arrow shade: Black (over 60% of stats significant for effect direction), Grey (less than 60% of stats significant for effect direction)
- Arrow direction: Up (over 70% of subscales indicate a positive effect direction), Down (over 70% of subscales indicate a negative effect direction), Sideways (less than 70% of subscales indicate the same effect direction)

3. Interventions:

- AM: Anger Management.
- CBT: Cognitive Behavioural Therapy
- CBT Psychoed: Cognitive Behavioural Psychoeducation (not therapy)
- DBT: Dialectical Behaviour Therapy
- DDI – S 2: Dual Diagnosis Intervention (Stage 2)
- ETSP: Enhanced Thinking Skills Programme
- FA: Functional Analysis
- FAW: Family Awareness Group
- FIP-MO: Firesetting Intervention Programme for Mentally Disordered Offenders
- IPR: Interpersonal Relationships Group
- LMV-E: Life Minus Violence-Enhanced
- LWMI: Living with Mental Illness Programme
- Mindfulness
- PMR: Progressive Muscle Relaxation
- RP: Relapse Prevention
- R&R: Reasoning and Rehabilitation Programme
- R&R2: Reasoning and Rehabilitation Programme 2
- R&R2-ADHD: Reasoning and Rehabilitation for Youths and Adults with ADHD
- R&R2-MHP: Reasoning and Rehabilitation Mental Health Programme
- SFT: Solution Focussed Therapy
- SPS: Social Problem Solving Group
- SUTP: Substance Use Treatment Programme

- TP: Transition Programme
- UMI: Understanding Mental Illness Group
- WI: Wellbeing Intervention

4. Treatment Format: Group (G); Individual (I)
5. Treatment Duration: Mean Average Sessions *indicates minimum attended, where mean average was not reported
6. Setting: High Secure (H), Medium Secure (M), Low Secure (L), “secure”, Learning Disability (LD),”acute”,
7. Study Design: Randomised Controlled Trail (RCT), Non-randomised Controlled Trial (NRCT), Before and After (B&A),
8. Control Group:
 - N/A: Not applicable
 - TAU: Treatment as usual
 - NC: Non-completers
 - SAT: Social Activity Therapy
9. Study Quality: Low/High using Critical Appraisal Skills Programme (CASP) tool

General Psychological Distress/Wellbeing

Generally, psychological interventions were associated with improvements ($n = 7$), however a number did not meet statistical significance ($n = 3$). Most studies were uncontrolled B&As ($n = 6$) and the only RCT (Williams et al., 2014) showed a negative effect on psychological distress/wellbeing. The largest study (Tapp et al. (2009) also showed no improvement. Interventions varied with only CBT being used in more than one study ($n = 2$) and treatment always included a group component and half of the studies ($n = 5$) also included concurrent individual sessions. The mean number sessions (or minimum sessions offered) varied considerably and it was not always clearly reported ($n = 3$). All of the studies, of which only two were categorised as high quality (Daffern et al., 2017; Williams et al., 2014) took place in forensic secure settings, apart from one which was carried out on an LD ward.

Global Daily Functioning

Relatively few small studies ($n = 4$) in a mixture of secure, acute and LD settings measured global daily functioning and whilst all were associated with improvements, only two studies reported statistical significance. Within this small collection of studies, two RCTs (Haddock et al. (2009); Startup et al. 2004) measured the efficacy of CBT interventions using only individual sessions. Notably, CBT was shown to be associated with a statistically significant improvement compared to non-completers in an acute inpatient setting. It is not clear how many sessions were attended in the DBT (Fox et al., 2014) or mindfulness (Craven & Shelton, 2020) studies.

Impulsiveness/Mindfulness

No associated improvements were found by Ashworth & Brotherton (2018), or the only RCT (Doyle et al., 2015). The only statistically significant improvement is reported by Young et al. (2012) in relation to the efficacy of the R&R2-ADHD programme in a medium secure setting, using a small sample. Group interventions were most common ($n = 4$), with attendance inconsistently reported and omitted.

Individual Problem Solving/Coping

All studies measuring individual problem solving showed associated improvements and the majority were statistically significant ($n = 6$). Interventions and duration of attendance ranged considerably, with R&R2-MHP the only one intervention featured in multiple studies ($n = 2$). All studies, which took place in secure settings apart one on an LD ward (Ashworth and Brotherton, 2018) featured a group intervention,

with half ($n = 4$) having individual sessions running concurrently. All studies were considered low in quality, mainly due to the lack of randomisation and small sample sizes.

Maladaptive Schemas

Only one study (Doyle et al. 2015) reported this specific cross-domain construct. The evidence from this small scale RCT was rated as high quality, showing Solution Focussed Therapy (SFT) to be associated with improvements in maladaptive schemes compared to treatment as usual, however these improvements were not statistically significant in at least seventy percent of subscales.

Readiness to Change

The majority of the studies ($n = 3$) in this small subset found no change in readiness to change in association with group psychological interventions. Long et al. (2015) did find statistically significant improvement following the Living with Mental Illness (LWMI) programme compared to non-completers. All studies in this area were completed in forensic secure settings.

Self-Esteem

All studies apart from McInnis et al. (2006) found improvements in self-esteem to be associated with a range of psychological interventions ($n = 7$), of which four were statistically significant. Hall and Tarrier (2003) was the only study to use an individualised format to deliver CBT in a small scale RCT, which found statistically significant improvement in an acute setting. All of studies were completed in forensic inpatient settings; only Tyler et al. (2017) was rated as high quality.

Social Functioning

Only Tyler et al. (2017) found no associated improvement in social functioning. Three of the five other studies (Fox et al., 2014; Hall & Tarrier, 2003; Startup et al., 2004) showed statistically significant improvement, two of which were RCTs measuring the efficacy of CBT. All interventions involved a forensic group element apart from the CBT interventions delivered individually in an acute setting. Mean number of sessions ranged from seven (Hall & Tarrier, 2003) to eighty four (Tyler et al., 2017).

Social Problem Solving/Interpersonal Style

The vast majority of evidence ($n = 15$) of which two were RCTs and eight were NRCTs, indicate an improvement in social problem solving following various psychological interventions. However, only six of

these studies showed statistically significant improvement (Ashworth & Brotherton, 2018; Clarke et al., 2010; Cullen et al., 2011; Moore et al., 2000; Tapp et al., 2009; Yip et al., 2013). It is also noteworthy that Tyler et al. (2017), a medium sized NRCT, found no improvement. All studies included a group format with considerable variation in attendance, apart from by Doyle et al. (2015) which found no change associated with individualised Solution Focussed Therapy in an RCT.

Substance Use

All studies were group interventions in forensic settings and improvements were generally reported (n = 4), with three studies reporting statistical significance. However, the only RCT (Cullen et al., 2012) showed no associated change. Attendance was also not reported in three of the studies.

Forensic/Anger Outcomes

Table 3 shows the synthesis of data relating to anger/verbal aggression, attitudes towards offending and perceived locus of control, empathy, fire setting, sexual offending risk and violence risk.

Table 3. The effect direction plot for studies using Forensic/Anger outcome measures

Forensic/Anger Outcome Measures	Effect Direction	Intervention (n)	Format	Duration	Setting	Design	Control Group (n)	Study Quality
Anger/Verbal Aggression								
Craven, R. & Shelton, L. (2020)	▲ CR	Mindfulness (7)	G	Not stated	LD	B&A	N/A	Low
Cullen et al. (2012)	▲ CR	R&R (44)	G	36	M	RCT	TAU (40)	High
Cullen et al. (2011)	▲ SR	R&R (44)	G	36	M	RCT	TAU (40)	High
Daffern et al. (2017)	▲ SR	LMV-E (33)	G & I	125	H	NRCT	TAU (42)	High
Doyle et al. (2015)	◀ SR	SFT (29)	I	72	H	RCT	TAU (34)	High
Evershed et al. (2003)	▲ SR	DBT (8)	G	Not stated	H	NRCT	TAU (9)	Low
Fox et al. (2014)	▲ CR	DBT (29)	G & I	Not stated	L	B&A	N/A	Low
Haddock et al. (2009)	◀ SR	CBT (38)	I	17	'Secure'	RCT	SAT (39)	High

Jotangia et al. (2013)	◄►	SR & CR	R&R2 (18)	G	14.6	L & M	NRCT	TAU (20)	High
Long et al. (2010)	▲	CR	CBT (29)	G & I	12*	M	NRCT	NC (15)	Low
Novaco, R. & Taylor, J. (2015)	▲	SR & CR	CBT (50)	I	18	L&M&R	B&A	N/A	Low
Quayle, M. & Moore, E. (1998)	▲	SR	AM (10)	G	Not stated	H	B&A	N/A	Low
Rees-Jones et al. (2012)	▲	SR	R&R2-MHP (67)	G	15	L&M	NRCT	NC (54)	High
Reiss et al. (1998)	▲	SR	DT (12)	G	5	H	B&A	N/A	Low
Taylor et al. (2002)	▲	SR	FA (14)	G	40	L	B&A	N/A	Low
Taylor et al. (2005)	▲	SR	CBT (16)	I	Not stated	L&M&R	RCT	NC (20)	High
Tyler et al. (2017)	▲	SR	FIP-MO (63)	G & I	84	L&M&H	NRCT	NC (72)	High
Wilson et al. (2013)	▲	SR	AM (70)	G	17	H	NRCT	NC (16)	High
Yip et al. (2013)	◄►	SR	R&R2-MHP (30)	G & I	12*	H	NRCT	NC (29)	Low
Young et al. (2012)	▲	SR	R&R2-ADHD (16)	G & I	13.33	M	NRCT	NC (15)	Low
Attitudes Towards Offending									
& Perceived Locus of Control									
Clarke et al. (2010)	▲	SR	R&R (18)	G	36	M	NRCT	TAU (17)	Low
Cullen et al. (2011)	▲	SR	R&R (44)	G	36	M	RCT	TAU (40)	High

Jotangia et al. (2013)	▲	SR	R&R2 (18)	G	14.6	L & M	NRCT	TAU (20)	High
Newton et al. (2005)	▲	SR	RP (9)	G	Not stated	High	B&A	N/A	Low
Rees-Jones et al. (2012)	▲	SR	R&R2-MHP (67)	G	15	L&M	NRCT	NC (54)	High
Tapp et al. (2009)	▲	SR	ETSP (83)	G	Not stated	H	B&A	N/A	Low
Taylor et al. (2002)	▲	CR	FA (14)	G	40	L	B&A	N/A	Low
Tyler et al. (2017)	◀▶	SR	FIP-MO (63)	G & I	84	L&M&H	NRCT	NC (72)	High

Empathy

Cullen, et al. (2011)	◀▶	SR	R&R (44)	G	36	M	RCT	TAU (40)	High
Daffern et al. (2017)	◀▶	SR	LMV-E (33)	G & I	125	H	NRCT	TAU (42)	High

Fire Setting

Taylor et al. (2002)	▲	SR	FA (14)	G	40	L	B&A	N/A	Low
Tyler et al. (2017)	▲	SR	FIP-MO (63)	G & I	84	L&M&H	NRCT	NC (72)	High

Sexual Offending Risk

No studies found

Violence Risk

Craven, R. & Shelton, L. (2020)	▲	CR	Mindfulness (7)	G	Not stated	LD	B&A	N/A	Low
Cullen et al. (2012)	▲	CR	R&R (44)	G	36	M	RCT	TAU (40)	High
Daffern et al. (2017)	▲	CR	LMV-E (33)	G & I	125	H	NRCT	TAU (42)	High
Evershed et al. (2003)	▲	CR	DBT (8)	G	Not stated	H	NRCT	TAU (9)	Low
Haddock et al. (2009)	◀▶	CR	CBT (38)	I	17	'Secure'	RCT	SAT (39)	High
Horgan et al. (2019)	▲	CR	VRP (27)	G	Not stated	M	B&A	N/A	Low
Jotangia et al. (2013)	▲	SR	R&R2 (18)	G	14.6	L & M	NRCT	TAU (20)	High
Novaco, R. & Taylor, J. (2015)	▲	CR	CBT (50)	I	18	L&M&R	B&A	N/A	Low
Rees-Jones et al. (2012)	▲	SR	R&R2-MHP (67)	G	15	L&M	NRCT	NC (54)	High
Wilson et al. (2013)	▲	CR	AM (70)	G	17	H	NRCT	NC (16)	High
Yip et al. (2013)	▲	SR	R&R2-MHP (30)	G & I	12*	H	NRCT	NC (29)	Low
Young et al. (2010)	▲	SR	R&R2-MHP (58)	G & I	11*	M&H	NRCT	NC (12)	Low
Young et al. (2012)	▲	SR	R&R2-ADHD (16)	G & I	13.33	M	NRCT	NC (15)	Low

Key per column:

1. Outcome Measures:

- Anger/Verbal Aggression: Any measure of anger or verbal aggression.
- Attitudes towards Offending/Perceived Locus of Control: Any measure of beliefs around responsibility for behaviour.
- Empathy: Any measure of empathy towards those affected by behaviour.
- Fire Setting: Any measure of risk regarding fire setting behaviour.
- Sexual Offending Risk: Any measure of risk regarding inappropriate sexual behaviour.
- Violence Risk: Any measure of risk regarding inappropriate sexual behaviour.

2. Effect Direction - Self Report (SR); Clinician Rated (CR):

- Arrow size: Small (N = 0-50), Medium (N = 50-300), Large arrow (N >300)
- Arrow shade: Black (over 60% of stats significant for effect direction), Grey (less than 60% of stats significant for effect direction)
- Arrow direction: Up (over 70% of subscales indicate a positive effect direction), Down (over 70% of subscales indicate a negative effect direction), Sideways (less than 70% of subscales indicate the same effect direction)

3. Interventions:

- AM: Anger Management.
- CBT: Cognitive Behavioural Therapy
- DBT: Dialectical Behaviour Therapy
- DT: Dramatherapy
- FA: Functional Analysis
- FIP-MO: Firesetting Intervention Programme for Mentally Disordered Offenders
- LMV-E: Life Minus Violence-Enhanced
- Mindfulness
- RP: Relapse Prevention
- R&R: Reasoning and Rehabilitation Programme
- R&R2: Reasoning and Rehabilitation Programme 2
- R&R2-ADHD: Reasoning and Rehabilitation for Youths and Adults with ADHD
- R&R2-MHP: Reasoning and Rehabilitation Mental Health Programme
- VRP: Violence Reduction Programme

4. Treatment Format: Group (G); Individual (I)
5. Treatment Duration: Mean Average Sessions *indicates minimum attended, where mean average was not reported
6. Setting: High Secure (H), Medium Secure (M), Low Secure (L), “secure”, Learning Disability (LD),”acute”,
7. Study Design: Randomised Controlled Trail (RCT), Non-randomised Controlled Trial (NRCT), Before and After (B&A),
8. Control Group:
 - N/A: Not applicable
 - TAU: Treatment as usual
 - NC: Non-completers
 - SAT: Social Activity Therapy
9. Study Quality: Low/High using Critical Appraisal Skills Programme (CASP) tool

Anger/Verbal Aggression

Out of the twenty studies reported, improvements in anger/verbal aggressions (n = 16) were commonly associated with psychological interventions, which varied in group/individual format and all took place in forensic inpatient settings. Out of these studies, only six reported statistically significant associated improvements. Twelve of the studies reporting improvements only used self-report measures, whilst four did also include clinician ratings. Psychological interventions were varied, whilst R&R (n = 6) and CBT (n = 4) made up half the body of evidence. The largest RCT (Haddock et al., 2009) found no change associated with CBT, when compared to Social Activity Therapy (SAT). Intervention duration was inconsistently reported and often omitted.

Attitudes Towards Offending

Improvements were generally reported (n = 7) whilst only two studies showed statistically significant change. Tyler et al. (2017), the largest controlled trial, found no change across low, medium and high secure settings. All studies included a group format in a forensic setting and the treatment duration varied considerably from a mean of fifteen sessions (Rees-Jones et al., 2012) to eighty four sessions (Tyler et al., 2017). Half of the studies (n = 4) were measuring the efficacy of variations of the R&R programme.

Empathy

Only two studies measured empathy (Cullen et al., 2011; Daffern et al., 2017). Both were rated as high quality studies and neither found reliable change in forensic inpatient settings.

Fire Setting

Only two studies measured risk of fire setting in forensic inpatient settings (Taylor et al., 2002; Tyler et al., 2017) using self-report measures. Both found associated improvements, whilst only Taylor et al. (2002), rated as lower quality without a control group, reported statistically significant improvements across at least seventy percent of subscales.

Sexual Offending Risk

No studies in England and Wales between 1990-2021 were found to measure the efficacy of psychological interventions to reduce sexual offending risk.

Violence Risk

Thirteen studies were included in relation to violence risk and improvements were generally reported (n = 12). Only six of these studies which varied in group/individual format were reported to be statistically significant, with a 50/50 split in clinician outcome measure ratings as opposed to self-report. Psychological interventions were varied, however similarly to findings in relation to anger and verbal aggression, a closely related construct, R&R (n = 6) and CBT (n = 2) made up over half the body of evidence. The largest RCT (Haddock et al., 2009) found no change associated with CBT, when compared to Social Activity Therapy (SAT) – again, similarly to anger and verbal aggression.

Clinical Symptoms Outcomes

Table 4 shows the synthesis of data relating to anxiety, depression, personality disorder and psychosis.

Table 4. The effect direction plot for studies using Clinical Symptoms outcome measures.

Clinical Symptoms Outcome Measures	Effect Direction	Intervention (n)	Format	Duration	Setting	Design	Control Group (n)	Study Quality	
Anxiety									
Craven, R. & Shelton, L. (2020)	▲	CR	Mindfulness (7)	G	Not stated	LD	B&A	N/A	Low
Ferguson et al. (2009)	▲	SR	WI (14)	G	4*	M	B&A	N&A	Low
Hall, L. & Long, C. (2009)	▲	SR	PMR (19)	G	40.7	M	B&A	N&A	Low
Hall, P. L., & Tarrier, N. (2003)	◀▶	SR	CBT (12)	I	7	Acute	RCT	TAU (13)	High
Liddiard et al. (2019)	▲	SR	TP (18)	G	8	M	B&A	N/A	Low
Long et al. (2010)	▲	CR	CBT (29)	G & I	12*	M	NRCT	NC (15)	Low
Williams et al. (2014)	▲	SR	CBT (27)	G & I	25.5	H	RCT	NC (14)	High
Depression									
Craven, R. & Shelton, L. (2020)	▲	CR	Mindfulness (7)	G	Not stated	LD	B&A	N/A	Low
Ferguson et al. (2009)	▲	SR	WI (14)	G	4*	M	B&A	N/A	Low
Hall, L. & Long, C. (2009)	▲	SR	PMR (19)	G	40.7	M	B&A	N/A	Low
Hall, L. & Tarrier, N. (2003)	◀▶	SR	CBT (12)	I	7	Acute	RCT	TAU (13)	High

Long, et al. (2010)	▲	CR	CBT (29)	G & I	12*	M	NRCT	NC (15)	Low
Long et al. (2011)	▲	SR	SPS (15)	G	7*	M	NRCT	NC (9)	Low
Low et al. (2001)	▲	SR	DBT (10)	G & I	Not stated	H	B&A	N/A	Low
Taylor et al. (2002)	▲	SR	FA (14)	G	40	L	B&A	N/A	Low
Williams et al. (2014)	▲	SR	CBT (27)	G & I	25.5	H	RCT	NC (14)	High

Personality Disorder Symptoms

Fox et al. (2014)	▲	CR	DBT (29)	G & I	Not stated	L	B&A	N/A	Low
Low et al. (2001)	▲	SR & CR	DBT (10)	G & I	Not stated	H	B&A	N/A	Low

Psychotic Symptoms & Insight

Craven, R. & Shelton, L. (2020)	▲	CR	Mindfulness (7)	G	Not stated	LD	B&A	N/A	Low
Ferguson et al. (2009)	▲	CR	WI (14)	G	4*	M	B&A	N/A	Low
Haddock et al. (2009)	▲	CR	CBT (38)	I	17	'Secure'	RCT	SAT (39)	High
Haddock et al. (1999)	▲	CR	CBT (10)	G	10.2	Acute	RCT	SC (11)	High
Hall, P. L., & Tarrier, N. (2003)	▲	CR	CBT (12)	I	7	Acute	RCT	TAU (13)	High
Lewis et al. (2002)	▲	CR	CBT (209)	I	16.1	Acute	RCT	SC (106)	High
Long et al. (2015)	▲	SR & CR	LWMI (20)	G & I	10*	M	NRCT	NC (12)	Low
McInnis et al. (2006)	▲	SR & CR	CBT Psychoed (9)	G	9	L	B&A	N/A	Low
Startup et al. (2004)	▲	CR	CBT (47)	I	12.9	Acute	RCT	NC (43)	High
Williams et al. (2014)	▲	CR	CBT (27)	G & I	25.5	H	RCT	NC (14)	High

Key per column:

1. Outcome Measures:

- Anxiety: Any measure of clinical symptoms of an anxiety disorder.
- Depression: Any measure of clinical symptoms of a depressive disorder.
- Personality Disorder: Any measure of clinical symptoms of a personality disorder.
- Psychotic Symptoms & Insight: Any measure of clinical symptoms and/or changes in insight into symptoms of a psychotic disorder.

2. Effect Direction - Self Report (SR); Clinician Rated (CR):

- Arrow size: Small (N = 0-50), Medium (N = 50-300), Large arrow (N >300)
- Arrow shade: Black (over 60% of stats significant for effect direction), Grey (less than 60% of stats significant for effect direction)
- Arrow direction: Up (over 70% of subscales indicate a positive effect direction), Down (over 70% of subscales indicate a negative effect direction), Sideways (less than 70% of subscales indicate the same effect direction)

3. Interventions:

- CBT: Cognitive Behavioural Therapy
- CBT Psychoed: Cognitive Behavioural Psychoeducation (not therapy)
- DBT: Dialectical Behaviour Therapy
- FA: Functional Analysis
- LWMI: Living with Mental Illness Programme
- Mindfulness
- PMR: Progressive Muscle Relaxation
- SPS: Social Problem Solving Group
- TP: Transition Programme
- WI: Wellbeing Intervention

4. Treatment Format: Group (G); Individual (I)

5. Treatment Duration: Mean Average Sessions *indicates minimum attended, where mean average was not reported
6. Setting: High Secure (H), Medium Secure (M), Low Secure (L), “secure”, Learning Disability (LD),”acute”,
7. Study Design: Randomised Controlled Trail (RCT), Non-randomised Controlled Trial (NRCT), Before and After (B&A),
8. Control Group:
 - N/A: Not applicable
 - TAU: Treatment as usual
 - NC: Non-completers
 - SAT: Social Activity Therapy
 - SC: Supportive Counselling
9. Study Quality: Low/High using Critical Appraisal Skills Programme (CASP) tool

Anxiety

Improvements were reported in the majority of studies (n = 6) which all featured a group format, apart from an RCT by Hall and Tarrrier (2003) which showed no change associated with individual CBT compared to treatment as usual. Only two studies reported statistically significant change (Hall & Long, 2009; Long et al., 2010). There was a range of interventions included, but CBT (n = 3) was the most common. Most of the studies were rated as low quality, with neither of the RCTs rated high quality showing statistically significant improvements. Studies in forensic inpatient settings were the most frequently included (n = 5) compared to LD (n = 1) and acute (n = 1).

Depression

Similarly to interventions for anxiety, improvements were reported in the majority of studies (n = 8) where interventions were delivered in a group format, apart from the RCT by Hall and Tarrrier (2003) which showed no change associated with individual CBT compared to treatment as usual. Only two studies reported statistically significant change (Hall & Long, 2009; Long et al., 2010) and the mean treatment duration differed between studies. Similarly again to the studies measuring efficacy of psychological interventions for anxiety, the majority were forensic inpatient settings (n = 7) compared to LD (n = 1) and acute (n = 1).

Personality Disorder Symptoms

Only two studies measured symptomology associated with personality disorder, both in forensic inpatient settings (Fox et al., 2014; Low et al., 2001). Both found statistically significant improvements associated with Dialectical Behavioural Therapy (DBT) interventions. Both studies were rated as low quality without a control group.

Psychotic Symptoms & Insight

All studies included featured clinician ratings (n = 10) and improvements were reported in all of these studies, of which six studies measured the efficacy of CBT and one other featured group CBT psychoeducation. Only four studies reported statistically significant improvements though (Haddock et al., 1999; Hall & Tarrrier, 2003; Long et al., 2015; Startup et al., 2004). The majority of studies were RCTs (n = 6), with one NRCT and three B&A studies.

Discussion

On the whole, the limited evidence base available indicates that psychological interventions are associated with improvements in overall psychological distress and wellbeing, individual problem solving/coping, self-esteem, social functioning, social problem solving, substance misuse, anger/verbal aggression, attitudes towards offending, fire setting, violence risk, symptoms of anxiety, depression, personality disorder and psychosis. This generally fits with previous evidence syntheses from Paterson et al. (2018) and McIntosh et al. (2021) which included data outside of England and Wales. However it should be noted that the limited evidence base synthesised in the current review, does not suggest that psychological interventions for those detained under the MHA are effective in improving: global daily functioning, impulsiveness/mindfulness, readiness to change, empathy, or sexual offending risk. **The limited number of controlled trials included in this review makes it impossible to draw firm conclusions on the efficacy of psychological interventions, as multiple treatments such as pharmacological interventions will often be delivered in inpatient settings simultaneously.**

It is important to emphasise the context in which this review is presented, with evidence generally being sparse across all settings for all outcome measures. Anger, verbal aggression and risk of violence garnered the most attention of studies included, however this evidence too is sparse and limited in nature with few RCTs, of which even fewer exceed an intervention group size of fifty. Moreover there has been particularly little research outside the forensic context, especially on acute psychiatric wards, with few studies reporting psychiatric symptom measures. This sparsity makes it difficult to make meaningful comparisons between intervention types and formats to ascertain which interventions may be most effective. It was surprising that no third wave CBT interventions featured in the systematic review at all, despite the growing application in clinical practice (Hayes and Hofmann, 2017). Even CBT (n = 10) and R&R programmes (n = 8), which are arguably the current gold standard in acute and forensic settings respectively (Hofmann et al., 2012; Tong & Farrington, 2006), have a limited evidence base currently in inpatient settings in England and Wales, whilst many other intervention types are represented in this review by a single study. This also makes comparison with community outcomes limited, and means that primarily, psychological interventions delivered in these settings must make assumptions about applicability drawn from the broader clinical literature and evidence base. This sparsity in data may be somewhat due to the

variable accessibility to therapy observed within inpatient settings (Association of Clinical Psychologists UK, 2021). It has been estimated that only 29% of inpatients receive some form of ‘talking therapy’ (BPS, 2012) and a review by The Regulation and Quality Improvement Authority (2015) found a high prevalence of poor organisation and governance of psychological therapies and unclear referral pathways. Which may, in addition to methodological challenges associated with inpatient settings, be contributing to the sparsity of outcome data for psychological interventions that take place under the MHA.

There are a number of other notable study characteristics that warrant discussion, to inform how future research may address the current gaps in the evidence base. Firstly, the evidence base lacks studies from low secure, acute and LD inpatient wards – so whilst all participants included in this review are detained under sections of the MHA, their inpatient experience will be variable depending on the facility where they reside and receive psychological interventions. There is also a limited number of RCTs in relation to all settings and interventions and most studies were small in size and rated as low quality ($n=29$). Moreover, the RCTs that are reported in this review typically only measure the efficacy of CBT interventions. This is particularly problematic when drawing conclusions from the synthesised data, as B&A study designs included often reported statistically significant results, but they do not control for the effect of being admitted to an inpatient ward and the potential therapeutic gains from treatment experiences outside of the psychological intervention. The Schizophrenia Commission (2012) highlighted the important mediating role of ward environment in patients’ therapeutic recovery. Whilst NRCT designs do account for this, the lack of randomisation or inclusion of blind assessors is likely to increase bias and therapy-attributed improvements in the results reported (Paterson et al., 2018). There was also a general theme, whereby positive changes on outcome measures were highlighted, however this change was often not found to be statistically significant on seventy percent or more of the outcome measure subscales, which was the threshold used from Thomson and Thomas (2013) in this review for statistical significance.

Other concerns pertaining to the characteristics of studies featured include the danger of using non-completers as the control group, as this can create a biased comparison with an arbitrary cut-off for what quantifies non-completion determined by researchers (Armijo-Olivo et al., 2009). ‘Intention to treat’ approaches to analysis may particularly address this bias in future research, but will rely on a much more

robust and developed literature of trial-based research. Additionally, only 37% of studies followed up on inpatients after the pre-post measures were obtained in relation to a psychological intervention. Studies have shown (Knekt et al., 2007) that short-term therapies result in quicker benefits, but longer term therapy may yield better outcomes after long-term follow up, so the relative absence of this data limits our insight into how psychological intervention translates to long term outcomes, on the ward and in the community.

Interestingly, no studies analysed the mediating effect of length of inpatient stay on psychological intervention efficacy, nor was duration of symptom acuity reported, which may affect opportunity to treat in cases of acute psychosis for instance.

There is finally a particular issue in regard to measures. Many measures used appear to be focussed primarily on variables which may not directly translate to the clinical or behavioural changes which are of greatest importance to the reasons for detention in hospital. For instance, concepts such as problem solving or social functioning may be clinically important in many respects, but it is speculative whether, on a group level, such improvements translate into more concrete outcomes such as reduced length of stay. Additionally, in some cases, attitudinal measures, for instance, often seem to be favoured over behavioural ones, some of which (e.g. empathy, violent attitudes) may be criticised further for demonstrating significant demand characteristics. Further, many measures have not been validated in the inpatient population (Chambers et al., 2009) and so this, in conjunction with limited community follow up in the studies included, also limits what conclusions can be drawn from this synthesis of the data. The nature of detention under the MHA is also likely to interact with self-report measures (given there is often an inherent incentive to minimise reporting of symptoms), however many studies reported did not use a combination of self-report, clinician-ratings and/or behavioural data such as readmission or reoffending rates. Studies did not consistently report the average number of sessions attended and 'treatment as usual' was often loosely defined, again limiting the conclusions that can be drawn despite most interventions being manualised, and thus in theory, more easily replicable.

Furthermore, participants included in the studies were mainly working age white males and few had a primary diagnosis of affective disorders such as depression or anxiety. This is despite figures from NHS Digital (2021) showing black people are more than four times as likely as white people to be detained under

the Mental Health Act (321.7 detentions per 100,000 people, compared with 73.4, respectively), so there may be differences in outcomes of psychological interventions depending on factors of social difference, which the current body of evidence cannot speak to. Additionally, the evidence lacks findings regarding the efficacy of third wave CBT interventions, highlighting the dissonance between the therapies being practiced and current research being conducted (Mallion et al., 2020).

Limitations

A major limitation of this form of evidence synthesis is that effect size cannot be inferred from the effect direction plots. Whilst guidance from Thomson and Thomas (2013) was adhered to in visualising effects found, the inclusion of B&A studies risks this being misleading as the arrow size doesn't automatically correspond with study quality ratings. Whereby, an intervention group including 50-300 participants (medium arrow) may be rated as low quality if it has adopted a B&A design, whilst a smaller RCT study may have a smaller sized arrow, but be rated as high quality. **Given the multiplicity of treatments in inpatient settings, uncontrolled data from B&A studies gives limited insight into the efficacy of psychological interventions specifically.** In addition to the benefits linked to reporting synthesised effect size, a meta-analysis would also have provided more insight into differences between self-report and clinician rated measures where bias may arise (Althubaiti, 2016), as well as any effect of blind ratings as previously shown by Paterson et al. (2018). The overlap in outcome measure groups is another factor that means the data should be considered as a whole rather than in isolation. Arguably, anger/verbal aggression and social problem solving are both indicators of violence risk and could have been grouped together, however this was opted against in this review due to some violence measures being recorded violent behaviour on the ward, and so considered a separate operationalisable construct to non-violent aggression. The exclusion criteria also skewed the interventions synthesised, as single case studies were not included, resulting in this review predominantly featured group-based interventions, with a few individualised CBT exceptions. **Additionally, future reviews may wish to consider whether the rate of attrition is reported in included studies.**

Future reviews may also benefit from not grouping forensic, acute and LD settings together, as has been done in this review. As the average stay on a medium and high secure forensic units before discharge

into the community is fourteen years (Vollm et al., 2018), while acute admissions can vary significantly, but are typically less than ninety days (NHS Confederation Mental Health Network, 2012). Hence, the duration of stay and therapeutic focus makes these forms of detention under the MHA distinctly different, in a similar vein to how treatment in the community may last longer and not be interrupted by discharge.

Conclusions

From this evidence synthesis, it is not possible to conclude the extent to which efficacy of community psychological interventions is mirrored in inpatient settings, in those detained under the MHA. The sparse literature in England and Wales does however provide a very preliminary indication that efficacy of psychological treatment whilst detained under the MHA is similar to that synthesised using studies from other countries. It is recommended that to begin to plug the identified gaps in the literature, there needs to be larger scale (intervention N >300) multi-site RCTs with risk of bias minimised through blind assessors and a combination of measures including self-report, clinician rated and behavioural indicators (such as incident, readmission and reoffending rates). Measures need to focus on outcomes that are of most paramount importance to the reasons for a person's admission and direct clinical symptomatology. Control groups, where possible, would benefit from being 'intention to treat' rather than 'non-completers' to further reduce bias and more detailed information when defined as 'treatment as usual'. Preferably, RCTs will administer follow up measures that enable outcomes to be measured once participants are no longer detained under the MHA. Clear reporting of sessions offered and attended will also help analyses of cost-effectiveness between interventions.

This suggested research needs to take place across a broader range of inpatient settings than the current body of evidence contains, particularly more low secure, acute and LD inpatient settings. Some studies are also needed with stratified sampling of under-represented female and non-white groups. The primary diagnostic focus of future research (and corresponding outcome measures) also needs to give more consideration to treatment efficacy for affective disorders.

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Appendix A. Full Search Strategy

1. Psychological Treatment

("psychotherap*" OR "person centred" OR "cognitive behavio*" OR "CBT" OR "cognitive therap*" OR "cognitive analytic therap*" OR "ACT" OR "acceptance and commitment*" OR "CFT" OR "compassion focus*" OR "mindfulness" OR "stress reduction" OR "treatment program*" OR "program* development" OR "program* evaluation" OR "relapse prevention" OR "dialectic* behavio*" OR "DBT" OR "schema focus*" OR "schema therap*" OR "interpersonal therap*" OR "mentalisation-based therap*" OR "mentalisation based therap*" OR "family therapy*" OR "systemic therap*" OR "psychodynamic therap*" OR "motivational interviewing" OR "solution focussed therap*" OR "group therap*" OR "therapy group" OR "group intervention" OR "intervention group" OR "group program*" OR "cognitive skills" OR "psychological therap*" OR "psychological intervention*" OR "psychological treatment*" OR "counselling")

2. Detained Under Mental Health Act

("mental health act" OR "MHA" OR "section 2" OR "section 3" OR "section 37" OR "section 37/41" OR "section 38" OR "section 45a" OR "section 47" OR "section 47/49" OR "forensic" OR "secure* unit*" OR "secure service*" OR "secure facility" OR "secure hospital" OR "special hospital" OR "state hospital" OR "psychiatric hospital" OR "Broadmoor" OR "Ashworth" OR

“Rampton” OR “Carstairs” OR “low secure” OR “medium secure” OR “high secure” OR “regional secure” OR "forensic psychiatr*" OR "forensic mental health" OR "forensic service*" OR "forensic inpatient*" OR "forensic patient*" OR "mentally ill offender*" OR "mentally disordered offender*" OR "personality disordered offender*" OR “psychiatric hospital* OR “acute hospital” OR “acute unit” OR “intensive unit” OR “PICU” OR “psychiatric intensive” OR “inpatient psychiatric” OR “inpatient setting” OR “psychiatric inpatient” OR “acute care” OR “psychiatric ward” OR “locked rehab*”)

3. United Kingdom

United Kingdom OR UK OR England OR Wales OR Britain

4. Additional limitations applied

1980-current and journal articles only, so SRs and MAs filtered out before screening

Final Search Strategy

“1 and 2 and 3 and 4” [manually filter: human, English language]

Outcome Comparison (omitted from final search strategy)

(“Compar*” or “matched” or “control*” or “untreated” or "treatment as usual" or "usual treatment" or "standard care" or “waitlist” or “waiting-list” or “allocate*” or “assign*” or “random*” or “trial” or “RCT” or "randomi* control* trial*" or “experiment*” or “quasi*” or "control* trial*" or "clinical trial*")