Data supplement to Koslowski et al. Effectiveness of interventions for adults with mild to moderate intellectual disabilities and mental health problems: systematic review and meta-analysis. Br J Psychiatry, doi: 10.1192/bjp.bp.114.162313

Table DS1 Search strategy key terms describing indications, interventions and study types	
1.	(mental* and retard)
2.	(mental* and disab*).
3.	(mental* and impair*)
4.	(intellectual* and impair*)
5.	(intellectual* and developmental* and disorder*)
6.	(learning and disab*)
7.	(learning and difficult*)
8.	1 or 2 or 3 or 4 or 5 or 6 or 7
9.	(psychiatric and disorder*)
10.	(psychiatric and illness*)
11.	(psychiatric and disabilit*)
12.	(mental* and disorder*)
13.	(mental* and ill*)
14.	(mental and health and problem*)
15.	(depression or (depressive and disorder*) or (affective and disorder*))
16.	(schizophrenia or psychotic* or paranoid or schizophrenic* or psychosis)
17.	((bipolar and disorder*) or (bipolar and affective and disorder*) or (manic and depression) or (bipolar and depression))
18.	((personality and disorder*) or (obsessive and compulsive and disorder*))
19.	((behavioural and disorder*) or (behavioural and disorder*))
20.	((anxiety and disorder*) or anxiet*)
21.	(somatoform and disorder*)
22.	(dementia or alzheimer*)
23.	9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22
24.	(mental and health and care)
25.	(mental and health and service*)
26.	(psychiatric and care)
27.	(psychiatric and treatment*)

28.	Psychotherapy
29.	(psychotherapeutic and care)
30.	(psychotherapeutic and treatment*)
31.	(psychosocial and therap*)
32.	(psychosocial and intervention*)
33.	(psychosocial and treatment*)
34.	24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33
35.	8 and 23 and 34
36.	randomized controlled trial
37.	controlled clinical trial
38.	exp Randomized Controlled Trials/
39.	random allocation.ab,hw,ot,sh,ti.
40.	exp Random Allocation/
41.	random$.ti.
42.	exp Double-Blind Method/
43.	exp Single-Blind Method/
44.	((singl$ or doubl$ or tripl$ or trebl$) and (blind$ or mask$ or dummy$))
45.	(random$ and (trial or study))
46.	36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45
47.	35 and 46
48.	47 and 2013:2014.(sa_year).
49.	48 and "Humans".sa_suba.
50.	limit 49 to full text
51.	limit 50 to adult <18 to 64 years>
52.	limit 51 to english

Table DS2 Characteristics of the included studies and their participants

Study (country)	Design; follow-up time points	Sample *n* (% female) age	Diagnosis	Intervention	Outcome	Results
Benson *et al* (USA)[32]	CT; discharge and 4-5 weeks	54 (31) 17–57 years	Mild or moderate ID (information obtained from training centre records and based on the AAMD system); self-control problems	Anger management programme (*n*=9) Control: relaxation training (*n*=9), self-instructions (*n*=10), problem-solving (*n*=11)	Anger/self-control (AI, CST)	No statistically significant difference between the groups
Chan *et al* (China)[22]	RCT; discharge and 5 weeks	89 (60) 11–70 years	DSM-IV diagnosis of ID (mild to severe); aggressive and maladaptive behaviour in the past 3 months	Multisensory therapy sessions (*n*=48) Control: standardised activity sessions (*n*=41)	Challenging behaviour (CAB), stereotypic self-stimulating behaviour (BC SSB)	No statistically significant difference between the groups
Coelho *et al* (USA)[16]	RCT; discharge, 2 years,3 years	47 (40) 20–67 years	Mild to moderate ID (information given by the authors); DSM-III-R diagnosis of mental illness or behavioural complications concerning mental illness	Active treatment (*n*=24) Control: standard treatment (*n*=23)	Maladaptive behaviours (AAMD Scale, Michigan Maladaptive Behavior Scale)	Active treatment more effective, with significantly increased functional behaviours and decreased maladaptive behaviours
Gagiano *et al* (Canada, UK, South Africa, Belgium)[23]	RCT; discharge (4 weeks)	77 (39) 18–59 years	DSM-IV Axis I diagnosis of conduct disorder, oppositional defiant disorder, antisocial personality disorder, disruptive behaviour disorder or intermittent explosive disorder; DSM-IV Axis II diagnosis of borderline intellectual	Risperidone (*n*=39) Control: placebo (*n*=38)	Severity of disruptive behaviour (ABC, BPI, VAS), severity of symptoms (CGI-S)	Risperidone demonstrated significant improvement in managing disruptive behaviour compared with placebo

			functioning or mild to moderate ID (measured with the Wechsler or Stanford-Binet IQ tests)			
Hassiotis *et al* (UK)[24]	RCT; discharge and 6 months	32 (62) 20–67 years	Mild to moderate ID (as recorded in the service register); presence of depression, anxiety or mixed affective states based on clinical or ICD-10 diagnosis	M-iCBT (*n*=16) Control: TAU (*n*=16)	Depression and anxiety (BDI/BAI Youth), quality of life (MANSA)	No statistically significant difference in main effects or interactions between the trial arms; only significant trend along the expected direction of effect (BDI Youth scores reduced by 3.21 in the intervention arm *v*. 1.92 in the TAU arm)
Martin *et al* (UK)[25]	RCT; 6 months after treatment began	20 (50) 20–63 years	ICD-10 criteria for mild/moderate ID; presence of psychiatric disorder (ICD-10 F20-29) or mood/affective disorders (F30-F39)	ACT-ID (*n*=10) Control: SCT-ID (*n*=10)	Functioning (GAF-S and GAF-D), quality of life (QoL-Q), behavioural problems (ABC), severity and improvement in symptoms (CGI)	No statistically significant difference between ACT-ID and SCT-ID in terms of unmet needs, carer burden, functioning or quality of life
McCabe *et al* (Australia)[26]	RCT; discharge and 3 months	49 (55) 22–58 years	Mild/moderate ID (information given by the authors); clinical depression evidencing depressive symptoms with risk of developing depression	CBT (*n*=34) Control: TAU/WCG (*n*=15)	Depression (BDI-II, ATQ-R)	CBT group showed significantly lower depressive scores and significantly fewer negative automatic thoughts; changes maintained at 3-month follow-up
McGillivray *et al* (Australia)[27]	RCT; discharge and 3 months	47 (32) 20–65 years	Mild ID (IQ 50–70) (information given by agency managers); symptoms of depression	CBT (*n*=20) Control: TAU/WCG (*n*=27)	Depression (BDI-II, ATQ-R)	Active treatment more effective: lower depression scores, fewer automatic negative thoughts; changes maintained 3 months subsequently

Oliver *et al* (UK)[28]	RCT; discharge (12 weeks)	30 (57) 20–66 years	Mild or moderate ID (DSM-IV multi-axial assessment); serious mental health problems, challenging behaviour or both	ACT (*n*=15) Control: SCT (*n*=15)	Clinical and social functioning (GAF), quality of life (WHOQOL-Bref)	No significant difference between ACT and SCT
Tyrer *et al* (UK, Australia)[29,37]	RCT; discharge and 26 weeks	86 (38) 26–56 years	ID and IQ<75 (information given by consultants); challenging behaviour and aggression	Risperidone (*n*=29) Control: haloperidol (*n*=28); placebo (*n*=29)	Aggression (MOAS, ABC) quality of life (QoL-Q), severity of illness (CGI)	Both drug treatments reduced aggression without significant benefits over placebo
Willner *et al* (UK)[30,38,39]	RCT; discharge and 3 months	179 (29) 38 years (median)	Mild to moderate ID (assessed with the WASI and the BPVS-III); presence of problems in managing anger identified by service staff	CBT (*n*=90) Control: TAU/WCG (*n*=89)	Anger (PI, PACS-IPT), depression (GDS), anxiety (GAS), quality of life (ComQoL-ID), challenging behaviour (ABC-H/I, MOAS)	No significant difference on the primary outcome, self-reported anger; significantly higher anger coping skills and significantly decreased challenging behaviour in the intervention group
Willner *et al* (UK)[31]	RCT; discharge and 10 months	14 (36) 18–57 years	Mild ID (assessed using the WASI); anger management problems	CBT (*n*=7) Control: TAU/WCG (*n*=7)	Aggression (AI, PI)	CBT more effective with significant improvements in anger ratings which were maintained at a 3-month follow-up

AAMD, American Association for Mental Deficiency; AAMD Scale, AAMD Adaptive Behavior Scale; ABC, Aberrant Behavior Checklist; ABC-H/I, ABC Hyperactivity and Irritability; ACT, assertive community treatment; ACT-ID, ACT in intellectual disability; AI, Anger Inventory; ATQ-R, Automatic Thoughts Questionnaire – Revised; BAI, Beck Anxiety Inventory, BC, Behavior Checklist; BDI-II, Beck Depression Inventory II; BPI, Behaviour Problems Inventory; BPVS-III, British Picture Vocabulary Scale III; CAB, Checklist of Challenging Behaviour; CBT, cognitive–behavioural therapy; CGI, Clinical Global Impressions; CGI-S, Clinical Global Impressions – Severity scale; ComQoL-ID, Comprehensive Quality of Life Scale – Intellectual Disability; CST, Conflict Situations Test; CT, controlled trial; GAF, Global Assessment of Functioning; GAF-D, GAF Disability scale; GAF-S, GAF Symptoms scale; GAS, Glasgow Anxiety Scale; GDS, Glasgow Depression Scale; ID, intellectual disability; MANSA, Manchester Short Assessment of Quality of Life; M-iCBT, manualised Individual Cognitive Behaviour Treatment; MOAS, Modified Overt Aggression Scale; PACS, Profile of Anger Coping Skills; PACS-IPT, PACS Imaginal Provocation Test; PI, Provocation Index; QoL-Q, Quality of Life Questionnaire; RCT, randomised controlled trial; TAU, treatment as usual; SCT. standard community treatment; SCT-ID, standard community treatment in intellectual disability; SSB, stereotypic self-stimulating behaviour; VAS, Visual Analogue Scale; WASI, Wechsler Abbreviated Scale of Intelligence; WCG, waiting-list control group, WHOQOL, World Health Organization Quality of Life.

Table DS3 Risk of bias summary: review authors' judgements about each risk of bias item for each included study

	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias)	Blinding of outcome data (reporting bias)	Incomplete outcome data (attrition bias)	Selective reporting (reporting bias)	Other bias
Benson *et al*[32]	–	–	?	+	–	?	?
Chan *et al*[22]	+	?	?	+	–	?	+
Coelho *et al*[16]	?	?	?	?	+	?	+
Gagiano *et al*[23]	+	?	+	+	+	?	+
Hassiotis *et al*[24]	?	+	?	+	+	?	+
Martin *et al*[25]	+	+	?	+	–	?	+
McCabe *et al*[26]	?	?	?	?	–	?	+

McGillivray *et al*[27]	?	?	?	+	?	?	+
Oliver *et al*[28]	+	+	?	?	+	?	+
Tyrer *et al*[29,37]	+	+	+	+	+	+	+
Willner *et al*[31]	?	?	?	?	+	?	+
Willner *et al*[30,38,39]	+	+	?	+	+	+	+

Key: +, low risk of bias; ?, unclear risk of bias; −, high risk of bias.