Systematic Review

Self-esteem and its relationship with depression and anxiety in adults with intellectual disabilities: a systematic literature review

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Abstract

Background   In the general population, low self-esteem has been linked with poorer mental and physical health. This systematic literature review aimed to summarise and evaluate the findings of studies that examined self-esteem in adults with intellectual disabilities and links with mental health outcomes.
Method   A systematic search of PsycINFO, Web of Science and CINAHL was conducted to identify studies published between 1990 and 2021. The studies were appraised using the QualSyst tool.
Results   Twenty-six articles were identified of which two studies were removed from the review due to low quality. Studies reported mixed evidence regarding levels of self-esteem compared with the general population. Engagement in activities appeared to be linked with positive self-esteem, and perception of negative interpersonal life events as having a negative impact was associated with lower self-esteem. There was evidence of co-occurrence of low self-esteem and depression, but no studies examined the relationship between self-esteem and anxiety.

Conclusion   Reviewed studies provided mixed evidence on levels of self-esteem in this population, suggesting that factors such as engagement in life were related to higher self-esteem and demonstrating the co-occurrence of low self-esteem and depression. However, clear causal links have yet to be identified, and more research is needed using longitudinal designs to answer questions about trajectory.

Keywords adults, anxiety, depression, intellectual disability, self-esteem, systematic review

Introduction

Donnellan *et al.* (2011) defined self-esteem as an individual's subjective evaluation of her or his worth as a person. This means that if a person believes that they are of worth or value, then they have high self-esteem, regardless of whether this self-evaluation is validated by others and a person's objective abilities or skills. Rosenberg (1989) conceptualised self-esteem as the feeling that one is good enough and added that self-esteem involves feelings of self-respect and self-acceptance. Low self-esteem thus implies self-rejection, self-dissatisfaction and self-contempt. In addition, researchers make a distinction between global and domain specific self-esteem, with the

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former referring to the overall evaluation of his or her worth as a person and the latter referring to an evaluation of the specific area of the self, such as academic competence (Donnellan *et al.* 2011). Global self-esteem will be the focus of this review, as it is proposed to be more strongly linked with well-being (Rosenberg *et al.* 1995) and appears to have important links with affect, motivation and behaviour (Donnellan *et al.* 2011),

Nonetheless, research on explicit self-esteem is often hindered by factors such as biases in self-report measures (Heppner *et al.* 2015) and difficulties with establishing cause and effect, which cannot be established from correlational research designs. In addition, factors studied could both be causes and effects of each other.

Despite the challenges, studies have examined the basic demographic correlates of self-esteem. Gender effects for self-esteem have been found to be small, with men showing somewhat more positive self-esteem in a meta-analysis by Kling *et al.* (1999). In particular, the gender difference in self-esteem appeared to be more pronounced in adolescence but relatively trivial throughout most of the lifespan. In terms of ethnic differences, Bachman *et al.* (2011) found that young African American men showed somewhat higher self-esteem than young White men. There was a larger but modest difference between young African American men and young Asian-American men, with young Asian-American men showing lowest self-esteem. The explanations behind these differences, though modest, remain contentious. Bachman *et al.* (2011) suggested that the differences might be explained in terms of cultural norms and standards for expressing self-esteem. For example, African American youth may be encouraged to express high self-esteem as this may help them cope with discrimination (Hughes *et al.* 2006), while Asian Americans might be socialised to express humility given the importance of group harmony (Cai *et al.* 2007).

In terms of the importance of self-esteem, the evidence has been mixed as to whether self-esteem impacts on life outcomes. A qualitative review by Baumeister *et al.* (2003) concluded that apart from happiness, self-esteem was not a major predictor of life outcomes including school performance, task performance, interpersonal relationships, depression and antisocial behaviour. However, there were few prospective studies conducted on self-esteem then, and since the review, longitudinal studies have been carried out to investigate the prospective effects of self-esteem. There is now growing evidence on the association between self-esteem and long-term outcomes such as mental and physical health, economic prospects and criminal behaviour (Trzesniewski *et al.* 2006; Sowislo and Orth 2013; Keane and Loades 2017).

The link between low self-esteem and mental health is complex. Fennell (2016) suggested that low self-esteem could be both a vulnerability factor for developing mental health problems and a consequence of mental health difficulties. This is echoed by a systematic review showing the association between low self-esteem and clinically significant anxiety and depression among young people (Keane and Loades 2017). Self-esteem may be a buffer against depression or anxiety, or that experiences of depression or anxiety might threaten the self-concept and reduce self-esteem. Evidence from cross-lagged longitudinal studies indicates that self-esteem predicts depression, whereas depression does not predict self-esteem (Orth *et al.* 2009). More recent evidence has also shown the predictive effects of self-esteem on depression and anxiety (Sowislo and Orth 2013). Accordingly, low self-esteem can be seen as a vulnerability factor for depression and anxiety and not simply an alternative indicator.

Despite its importance as a psychological construct and its associations with mental and physical health in the general population, little is known about self-esteem in adults with intellectual disabilities. Maiano *et al.* (2019) reviewed studies published between 1979 and 2017 on the self-esteem of school-aged youth with intellectual disabilities. They found that youth with intellectual disabilities had lower global and domain specific cognitive-academic self-esteem compared with typically developing youth.

To our knowledge, no review examining self-esteem in adults with intellectual disabilities has been published. A review of the research conducted in understanding the correlates of self-esteem of adults with intellectual disabilities, and in particular, the relationship between self-esteem and mental health outcomes such as depression or anxiety may help us identify support needs and tailor interventions.

Aims and objectives

The review aimed to answer the following questions:

1 What is known about self-esteem in adults with intellectual disabilities?
2 Is there a relationship between low self-esteem and anxiety disorders and/or depression in adults with intellectual disabilities, similar to relationships observed in the general population?

Method

Search strategy

A systematic search was carried out across the electronic databases PsycINFO, Web of Science and CINAHL for years covered through September 2021. The terms 'intellectual disabilit*', 'intellect* impair*', 'learning disabilit*', 'learning difficult*', 'mental retard*', 'intellectual development disorder*', 'developmental disorder', 'developmental disabilit*' were combined using Boolean terms with the terms 'self-esteem', 'self-concept', 'self-image', 'self-perception', 'self-confidence', 'self-worth', or 'self-evaluation'. Relating to the second research question, a further search was conducted to locate any additional articles by combining 'anxiet*' or 'anxiety disorder*' or 'depress*', or 'internali?ing disorder*', or 'low mood' or 'mental health' or 'mental ill* with the previous two search terms. This search did not render further articles. The review was registered prospectively with the International Prospective Register of Systematic Reviews (PROSPERO, registration number CRD42021272271).

Inclusion and exclusion criteria

The article had to be a peer reviewed paper, published in English, reporting a quantitative or qualitative study. Papers before 1990 were excluded considering substantial changes to policy and living circumstances for people with intellectual disabilities, including deinstitutionalisation in several countries (Beadle-Brown et al. 2007). Non-original studies (e.g. comments, reviews and theoretical papers), case studies, conference papers and book chapters were excluded.

Participants had to be aged over 16 years old, presenting with intellectual disabilities, determined either based on an IQ score <70 as assessed with standardised tools, significant limitations in adaptive behaviour on adaptive behaviour tests, or administratively defined such as through use of education or health services for people with intellectual disabilities. Studies with participants who had specific learning difficulties (e.g. dyslexia) or other neurodevelopmental disorders (e.g. attention deficit hyperactivity disorder) in the absence of intellectual disabilities were excluded.

Articles were included if the primary purpose was to compare self-esteem of adults with intellectual disabilities and the typically developing population, or to examine the relationship between self-esteem and psychosocial functioning in the intellectually disabled population. Articles were excluded if they only measured one specific domain of self-esteem, for example, using a physical self-esteem measure focused on body concept and physical attributes (e.g. Pan and Davis 2019). Final judgements on whether articles would be included in the review were made in discussion between the first and third authors, in accordance to inclusion and exclusion criteria detailed earlier.

Quality assessment

The Standard Quality Assessment Criteria for Evaluating Primary Research Papers from a Variety of Fields (Kmet et al. 2004) was used for quality assessment of the articles. The QualSyst (Kmet et al. 2004) tool includes 14 items for quantitative studies and 10 items for qualitative studies, relevant to the study type (Table 1). The QualSyst instructions give an indication of how each criterion should be rated. On each criterion, studies were given a score of 0 = no, 1 = partially met, 2 = yes, or 'not applicable'. The total quality score was calculated by summing individual item scores and dividing by the sum of the total possible scores.

Kmet et al. (2004) suggested that out of a possible maximum score of 1, 0.75 represents a relatively conservative and 0.55 a relatively liberal threshold for inclusion. Two studies that did not meet the threshold of a minimum quality score of 0.55 were removed (Barber et al. 2000; Study 2 in Szivos 1990) to ensure that the conclusions of the systematic review

Table 1 QualSyst criteria for quantitative and qualitative studies

Item number	Criterion (quantitative)	Criterion (qualitative)
1	Question/objective sufficiently described?	Question/objective clearly described?
2	Design evident and appropriate?	Design evident and appropriate?
3	Method of participant selection described and appropriate?	Context for study clear?
4	Participant (and comparison group) characteristics or input variables/information sufficiently described?	Connection to theoretical framework/ wider body of knowledge?
5	Random allocation described?	Sampling strategy described, relevant, and justified?
6	Blinding of investigators to intervention reported?	Data collection methods clearly described and systematic?
7	Blinding of subjects to intervention reported?	Data analysis clearly described, complete, and systematic?
8	Outcome well defined and robust to measurement bias? Means of assessment reported?	Use of verification procedures to establish credibility?
9	Sample size appropriate?	Conclusions supported by results?
10	Analysis described and appropriate?	Reflexivity of account?
11	Some estimate of variance reported for main results?	
12	Controlled for confounding?	
13	Results reported in sufficient detail?	
14	Conclusions supported by results?	

were based on the best available evidence, in line with recommendations from Katikireddi *et al.* (2015). Two authors independently rated all articles. Cohen's κ was computed to determine if there was agreement between the two raters' scores. Apart from one item in the small number of qualitative studies where there was moderate agreement (κ = 0.500), all other items had substantial to very high agreement (κ = 0.725 to 1, $P < 0.001$). Discrepancies were resolved through discussion.

Results

As illustrated in Figure 1, a total of 3070 articles were identified, reduced to 2847 articles after duplicates were removed. The titles and where necessary abstracts were screened. The remaining 104 full text articles were retrieved and read in full to identify if they met the inclusion criteria. Of these, 26 articles met the inclusion criteria and formed the set of articles for the current review. They reported on 27 separate studies, with one article reporting on two studies (Szivos 1990), and were conducted mainly in the United Kingdom (*n* = 14), Australia (*n* = 5), the USA (*n* = 3), as well as one each in Canada, France, Hong Kong, Israel and Spain. Twenty-one studies

used quantitative methodologies, two used qualitative methodologies, and four studies used mixed methods.

Quality rating

Table 2 shows the quality scores for each article. The quality of the articles was variable, with scores ranging from 0.33 to 0.95, with an average quality score of 0.74. As noted earlier, the two studies scoring below 0.55 were excluded from further review.

Across the quantitative and mixed method studies, most fully met the quality standards for the following: description of study question, study design and participant characteristics, outcome measures defined, estimate of variance reported, results reported in sufficient detail and conclusions supported by the results. The quality of the reporting of studies was weaker in terms of method of participant selection, having an appropriate sample size, and description and appropriateness of the analytic methods used. Only two studies fully met the quality standard for describing their method of participant selection as well as their analytic methods (MacMahon and Jahoda 2008; Bouvet and Coulet 2016). Most studies were surveys, so random
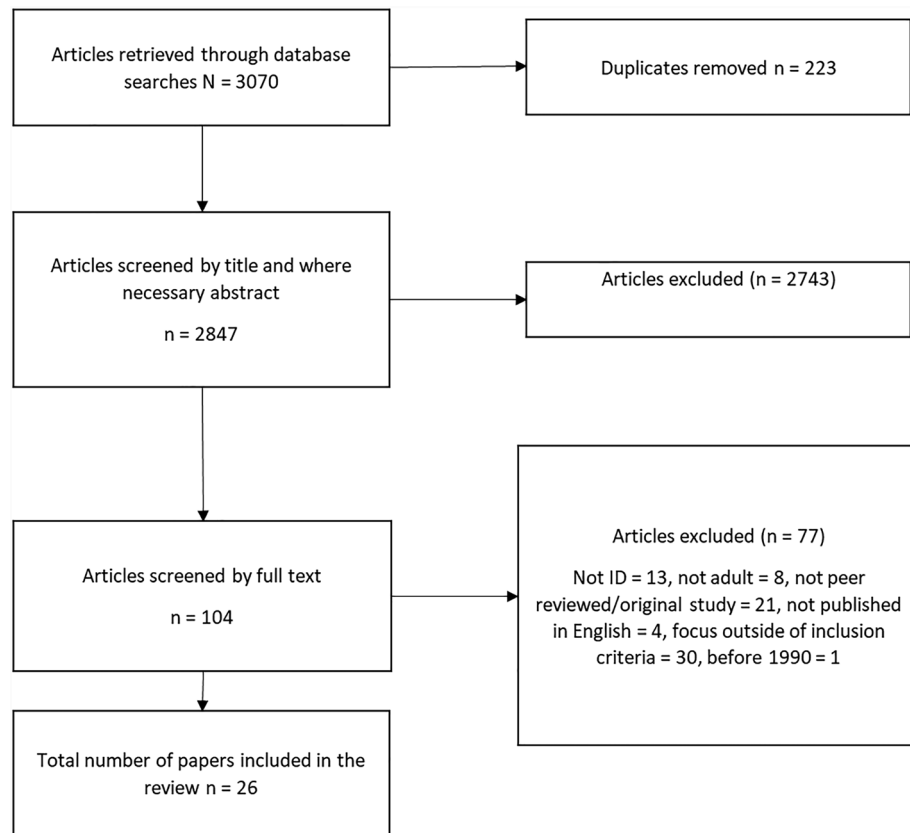
Figure 1. PRISMA diagram illustrating search process.

allocation to treatment group, as well as blinding of investigators and participants were not applicable. In addition, some studies could not be assessed on the criterion of controlling for confounds as they were cross-sectional surveys of a single group.

Considering the qualitative studies, quality of reporting of the studies was high in terms of description of study design and data collection method. The quality of the studies was low in terms of description of the context of the study, sampling strategy and use of verification procedures. Notably, no evidence of reflexivity was noted in any of the papers.

Sample characteristics and recruitment

Participants were recruited from community organisations working with individuals with intellectual disabilities (e.g. day centres, vocational or housing agencies) ($n = 23$), specialist mental health

services ($n = 4$), special schools or colleges ($n = 3$). Some studies recruited from more than one source. Three studies included a sample of participants without intellectual disabilities, recruited through convenience sample of existing databases or through social media.

Measurement of self-esteem

The studies measured self-esteem using measures designed for the general population or for children, with adaptations for the sample of individuals with intellectual disabilities. The most commonly used measure was the Rosenberg Self-esteem Scale (Rosenberg 1965). Previous research has reported adequate levels of internal consistency when used with the general population with Cronbach's α of 0.72 to 0.88 (Byrne 1996) and test–retest correlation of 0.85 (Silber and Tippett 1965). Of the studies reviewed, one did not report any adaptations to the

Table 2 Quality ratings using QualSyst criteria for the reviewed studies

Author(s) & date	Quantitative																Qualitative										
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Overall	1	2	3	4	5	6	7	8	9	10	Overall
Abraham et al. (2002)	2	2	1	2	NA	NA	NA	2	1	1	2	NA	2	2	0.85	-	-	-	-	-	-	-	-	-	-	-
Ajmal (2008)	2	2	1	0	NA	NA	NA	2	1	1	2	0	2	2	0.68	-	-	-	-	-	-	-	-	-	-	-
Barber et al. (2000)	1	0	NA	1	NA	NA	NA	1	NA	NA	NA	NA	NA	0	1	0.33	-	-	-	-	-	-	-	-	-	-
Barlow and Kirby (1991)	2	2	1	2	NA	NA	NA	1	1	1	2	0	2	2	0.73	-	-	-	-	-	-	-	-	-	-	-
Benson and Ivins (1992)	2	2	1	2	NA	NA	NA	2	2	1	2	1	2	2	0.86	-	-	-	-	-	-	-	-	-	-	-
Bouvet and Coulet (2016)	2	2	2	2	2	0	NA	2	1	2	2	2	2	2	0.88	-	-	-	-	-	-	-	-	-	-	-
Crawford et al. (2015)	2	2	1	2	NA	NA	NA	2	1	2	2	1	2	2	0.86	-	-	-	-	-	-	-	-	-	-	-
Dagnan and Sandhu (1999)	2	2	1	2	NA	NA	NA	2	1	2	2	NA	2	2	0.90	-	-	-	-	-	-	-	-	-	-	-
Davies et al. (2021)	2	2	2	2	NA	NA	NA	2	2	1	2	0	2	2	0.86	-	-	-	-	-	-	-	-	-	-	-
Esbensen and Benson (2005)	2	2	1	2	NA	NA	NA	2	2	1	2	2	2	2	0.90	-	-	-	-	-	-	-	-	-	-	-
Garaigordobil and Perez (2007)	2	2	2	2	NA	NA	NA	2	1	1	2	0	2	2	0.82	-	-	-	-	-	-	-	-	-	-	-
Gascon (2009)	2	2	2	2	NA	NA	NA	2	1	1	2	2	2	2	0.91	-	-	-	-	-	-	-	-	-	-	-
Griffin et al. (1996)	2	2	0	1	NA	NA	NA	2	2	1	2	0	2	2	0.73	-	-	-	-	-	-	-	-	-	-	-
Jiranek and Kirby (1990)	2	1	1	1	NA	NA	NA	1	1	2	2	0	2	2	0.68	-	-	-	-	-	-	-	-	-	-	-
Johnson (2012)	2	2	1	2	NA	NA	NA	2	1	2	0	0	2	1	0.68	-	-	-	-	-	-	-	-	-	-	-
King et al. (1999)	1	0	1	2	NA	NA	NA	2	1	1	2	0	2	1	0.59	-	-	-	-	-	-	-	-	-	-	-
Li et al. (2006)	1	2	1	2	NA	NA	NA	1	2	2	2	0	2	2	0.77	1	2	1	2	0	2	1	2	2	0	0.65
MacMahon and Jahoda (2008)	2	2	2	2	NA	NA	NA	2	1	2	2	1	2	2	0.91	-	-	-	-	-	-	-	-	-	-	-
Mahoney-Davies et al. (2017)	1	2	1	2	NA	NA	NA	2	1	2	2	1	1	2	0.77	-	-	-	-	-	-	-	-	-	-	-
McGillivray and McCabe (2007)	2	1	2	2	NA	NA	NA	2	2	1	2	2	2	2	0.91	-	-	-	-	-	-	-	-	-	-	-
Neuman and Reiter (2017)	2	2	0	2	NA	NA	NA	2	2	2	2	2	2	2	0.91	2	2	1	2	1	2	2	0	2	0	0.70
Paterson et al. (2012)	2	2	1	2	NA	NA	NA	2	2	2	2	NA	2	2	0.95	-	-	-	-	-	-	-	-	-	-	-
Pestana (2015)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	1	2	1	1	2	2	2	0	0.75
Petrovski and Gleeson (1997)	2	2	1	1	NA	NA	NA	2	1	1	1	0	2	1	0.64	2	2	2	1	1	2	0	0	1	0	0.55
Szivos (1990) – Study 1	1	1	1	1	NA	NA	NA	1	1	1	0	0	2	2	0.55	-	-	-	-	-	-	-	-	-	-	-
Szivos (1990) – Study 2	1	1	1	0	NA	NA	NA	1	1	2	0	NA	2	2	0.55	1	1	2	1	1	1	0	0	2	0	0.45
Whelan et al. (2007)	0	1	NA	2	NA	NA	NA	2	NA	NA	NA	NA	NA	1	0.60	-	-	-	-	-	-	-	-	-	-	-

original 10-item scale using a 4-point response scale (Garaigordobil and Perez 2007), while most other studies reported using adapted versions. Mahoney-Davies et al. (2017) and Whelan et al. (2007) used simplified wording. Ajmal (2008) as well as Jiranek and Kirby (1990) had participants agree or disagree to the items, while Crawford et al. (2015) included pictorial representations of response items. These papers did not report on the psychometrics of the scale following their adaptations. Dagnan and Sandhu (1999) adapted the scale to a 6-item version, with simplified wording and added a 5-point visual analogue response scale, reporting Cronbach's α of 0.62 and test–retest correlation of 0.68 for the adapted scale. This adaptation was used in five other studies (McGillivray and McCabe 2007; MacMahon and Jahoda 2008; Johnson 2012; Paterson et al. 2012; Davies et al. 2021). A French version with good internal reliability with Cronbach's α of 0.83 to 0.90, (Vallieres and Vallerand 1990) was used by Bouvet and Coulet (2016) and Gascon (2009).

The Szivos-Bach (1993) 24-item Self-esteem Index with a 6-point response scale was used in two studies (Petrovski and Gleeson 1997; Abraham et al. 2002). While no reliability index was reported by Petrovski and Gleeson (1997), Abraham et al. (2002) reported that in their sample the measure showed very good reliability with a Cronbach's α of 0.90 and test–retest correlation of 0.66.

Neuman and Reiter (2017) used a Hebrew translation of the 100-item Tennessee Self-concept Scale Second Edition (Fitts and Warren 1996), with

the response reduced from a 5-point to a 3-point scale. For their sample they reported Cronbach's α of 0.90 for the total self-esteem score (Neuman and Reiter 2017). Griffin *et al.* (1996) and King *et al.* (1999) used the 25-item Coopersmith (1981) Self-esteem Inventory, with the former re-wording the response options to 'yes/no' instead of the original 'like me/not like me'. While the original Coopersmith Self-esteem Inventory has a Cronbach's α of 0.68 to 0.77 when used with the general population (Coopersmith 1981), Griffin *et al.* (1996) and King *et al.* (1999) did not report on reliability of the measure when used with participants with intellectual disabilities. The Chinese version of the Adult Source of Self-esteem Inventory (Tam and Watkins 1995) which uses a 10-point rating scale on 40 items was used by Li *et al.* (2006). While Li *et al.* (2006) did not report on the reliability of the measure in their sample, they noted that when the measure was validated with Hong Kong Chinese adults, it showed high reliability with Cronbach's α of 0.92 (Tam and Watkins 1995).

Of note, two studies used a self-esteem measure that was originally designed for use with children. Esbensen and Benson (2005) adapted the 80-item Piers-Harris Self-esteem Questionnaire (Piers 1984) by altering items referring to school to refer to work, but kept the yes/no response scale. Benson and Ivins (1992) adapted the 40-item, yes/no response McDaniel-Piers Young Children's Self-concept Scale (McDaniel 1973) by removing items which referred to siblings or did not have obvious workplace equivalents. Esbensen and Benson (2005) reported that their adapted measure had Cronbach's α of 0.87, but Benson and Ivins (1992) did not report on the reliability of their adapted measure.

Barlow and Kirby (1991) used an adaptation of the Satisfaction Questionnaire of the Community Adjustment Scale (Seltzer and Seltzer 1976), with the self-esteem section consisting a set of 14 items on a 2-point scale on self-esteem. There was no reference to reliability of the measure.

Semi-structured interviews were conducted in four studies (Petrovski and Gleeson 1997; Li *et al.* 2006; Pestana 2015; Neuman and Reiter 2017).

Overview of findings

The main findings of the studies are summarised in the following sections in relation to the questions guiding this review. See Table 3 for details of included studies.

What is known about the self-esteem of adults with intellectual disabilities?

There were 18 studies relevant to the first research question.

Domains of self-esteem. Among adults with intellectual disabilities in Hong Kong, Li *et al.* (2006) found that the family and social self were important to how participants viewed themselves, which appeared to be in line with Hong Kong culture which has roots in collectivist Chinese culture. In the United Kingdom, Pestana (2015) interviewed eight adults with mild intellectual disabilities, exploring the different domains of how they viewed themselves. Most participants identified positive social, occupational and psychological attributes such as being friendly, helpful, creative and independent. Nonetheless, some participants reported feeling 'not normal' and having physical limitations. The quality rating of these studies was between 0.65 and 0.77, indicating medium quality.

Levels of self-esteem in participants with intellectual disabilities compared with the general population. The studies reviewed reported mixed results about levels of self-esteem in participants with intellectual disabilities compared with the general population. Li *et al.*'s (2006) Hong Kong study found that participants with intellectual disabilities had more positive self-concepts than the comparison group of people without disabilities. They posited that this might be due to almost 75% of the participants with intellectual disabilities in this study having attended special education and segregated vocational settings. Accordingly, in-group comparisons were likely used to enhance their self-concept. In the United Kingdom, Davies *et al.* (2021) found that their sample of participants with intellectual disabilities recruited from community intellectual disability teams, colleges and voluntary organisations reported higher levels of self-esteem than the control participants. Conversely, Jiranek and Kirby (1990) Australian sample drawn from employment agencies and sheltered workshops, as well as Garaigordobil and Perez (2007) Spanish sample drawn from a public organisation found that

Table 3 Summary of studies

Author (year), country	Design	Focus	Sample	Measure of self-esteem	Key findings
Abraham et al. (2002), UK	Cross sectional	Community participation	50 adult participants from day centres (28 women and 22 men), participants were split into older (aged 48–65) and younger group (aged 23–35) by top and bottom age quartiles.	Self-esteem Index. Also measured community participation, stigma and social support.	Higher self-esteem associated with lower perception of stigma. Age moderated relationship between community participation and self-esteem.
Ajmal (2008), UK	Cross sectional, between groups	Forensic population	79 men with ID detained under Mental Health Act, 30 men using community mental health service with mild ID	Rosenberg Self-esteem scale. Also completed mental health measure.	Forensic sample had higher self-esteem than community sample. Self-esteem negatively correlated with mental health.
Barlow and Kirby (1991), Australia	Cross sectional, between groups	Accommodation	31 adults with mild ID: 16 living in residential institution (10 women and 6 men), 15 living in community (5 women and 10 men). Matched in age.	Self-esteem measured using questions developed from a section of the Satisfaction Questionnaire of the Community Adjustment Scale. Also measured satisfaction with residential situation, leisure, training, work, finances, interpersonal relationships, future aspirations, and locus of control.	Self-esteem close to maximum score, no significant difference between institutionalised and community participants.
Benson and Ivins (1992), USA	Cross sectional	Mood	130 adults with ID living in community (67 women and 63 men), drawn from community agencies providing vocational and residential services. Informants were vocational/ residential supervisors who knew person for at least 3 months, family member, or case manager	McDaniel-Piers Young Children's Self-Concept Scale, informant scale composed of 5 items from self-report scale. Also measured anger and depression.	Individuals with higher depression scores tended to report lower self-esteem. Informants tended to rate self-esteem and depression similar to self-report, but self-report and informant ratings of anger not correlated.
	RCT	10 weeks relaxation group	30 participants with mild to moderate ID (16 women and	Measures at pre- and post-intervention:	At baseline, self-esteem found to be within norm of general

Table 3. *(Continued)*

Author (year), country	Design	Focus	Sample	Measure of self-esteem	Key findings
Bouvet and Coulet (2016), France		for anxiety and emotional regulation issues	14 men), randomised to intervention and control group	French version of Rosenberg Self-esteem scale. Also measured emotional regulation and anxiety.	population. Self-esteem increased following intervention in relaxation group, and was higher than control group.
Crawford et al. (2015), UK	Cross sectional	Sport	101 participants (44 women and 57 men) participants from 3 groups: involved in sports via Special Olympics (SO), involved in sport but not via SO, not involved in sports	Rosenberg Self-esteem scale. Also measured stress, social networks, and quality of life.	Association between involvement in SO and reduced stress, increased quality of life, and higher self-esteem. Participation in sports was associated with higher levels of self-esteem.
Dagnan and Sandhu (1999), England	Cross sectional	Mood	43 participants (18 women and 25 men) from 4 adult training centres (ATCs). 24 lived with family, 12 in group home, 3 independently, 2 with foster family, 2 not known.	Rosenberg self-esteem scale. Also measured depression and social comparison.	No differences in self-esteem based on gender, type of accommodation, or ATC attended. Self-esteem negatively correlated with depression, and positively with social comparison. Total self-esteem correlated with total social comparison score.
Davies et al. (2021), UK	Cross sectional, between groups	Adverse interpersonal experiences	47 people with ID (29 women and 18 men) recruited from community ID teams, higher education colleges, and voluntary organisations and 50 comparison sample without disabilities (36 women and 14 men), matched on age, gender, and ethnicity.	Rosenberg Self-esteem scale. Also measured perceived social support, self-compassion and shame.	People with ID did not report greater number of adverse interpersonal experiences prior to age 18 than controls, but greater impact. People with ID reported higher levels of self-esteem than controls.
Esbensen and Benson (2005), USA	Cross sectional, between groups	Mood	73 adults with ID, of these 12 (6 women and 6 men) with major depression and 12 adults with ID and no psychiatric diagnosis (6 women	Piers-Harris Children's Self Concept Scale. Also measured depressive symptoms, attributional styles, automatic thoughts, and hopelessness.	Adults with ID and depression displayed lower self-esteem, more negative automatic thoughts, less positive attributional styles. Individuals

Table 3. *(Continued)*

Author (year), country	Design	Focus	Sample	Measure of self-esteem	Key findings
			and 6 men), matched on gender, age, level of ID.		diagnosed with major depression reported lower self-esteem.
Garaigordobil and Perez (2007), Spain	Cross sectional, between groups	Mood	42 users of ID organisation that facilitates integration of people with mild ID (9 female and 33 male), 128 comparison sample with no ID matched in age.	Rosenberg Self-esteem Scale. Also measured psychological distress.	Individuals with ID showed lower self-esteem and more distress compared with control sample.
Gascon (2009), Canada	Cross sectional, between groups	Work	27 adults with mild ID in regular work environment (15 women and 12 men) and 28 in sheltered workshops (17 women and 11 men). Matched on age, sex, marital status and revenue.	Rosenberg Self-esteem Scale French modified version. Also measured loneliness in the workplace.	No differences in self-esteem between samples. People with ID integrated in regular work environment felt lonelier than those working in sheltered work place.
Griffin et al. (1996), USA	Cross sectional, between groups	Work	2 groups of 100 individuals with mild ID each who attended either sheltered workshop settings (43 women and 57 men) or supported employment programmes (25 women and 75 men)	Coopersmith Self-esteem Inventory. Also measured job satisfaction and place of residence.	Participants in supported employment scored higher in self-esteem than those in sheltered workshops. Those living in semi-independent settings showed highest self-esteem, and those living with families scored lowest.
Jiranek and Kirby (1990), Australia	Cross sectional, between groups	Work	44 adults with ID: 14 unemployed (7 women and 7 men), 15 employed in sheltered workshop (7 women and 8 men), 15 employed in community (5 women and 10 men). Comparison group of 29 adults without disabilities matched by gender and job: 14 unemployed (7 women and 7 men), 15 employed (5 women and 10 men)	Rosenberg Self-esteem Scale. Also measured job satisfaction, social activities, and negative moods.	Adults with ID in community and sheltered employment had higher self-esteem than those who were unemployed.

Table 3. *(Continued)*

Author (year), country	Design	Focus	Sample	Measure of self-esteem	Key findings
Johnson (2012), UK	Cross sectional	Forensic	44 men with mild to borderline ID in secure forensic hospital	Rosenberg Self-esteem scale	Majority had moderate to high self-esteem. No difference in self-esteem by offence type (sexual, fire setting, violent).
King et al. (1999), Australia	Repeated measures	Cognitive behavioural therapy intervention for anger control	11 adults with mild ID (4 women and 7 men), referred for anger problems	Measures at pre-, post-treatment and 12-week follow-up: Coopersmith Self-esteem Inventory. Also measured self- and caregiver-reported anger control, and caregiver-reported emotional and behavioural difficulties.	Increases in self-esteem found from pre- to post, and pre- to follow up.
Li et al. (2006), Hong Kong	Mixed methods	Domains of self-esteem	135 adults with ID (70 women and 65 men), 146 (unmatched) comparison group without disabilities (88 women and 58 men).	Chinese version of Adult Source of Self-Esteem Inventory and interview	Adults with ID showed higher total self-concept scores than control group. Family and social self were important to self-concepts.
MacMahon and Jahoda (2008), Scotland	Cross sectional, between groups	Mood (depressed vs not)	18 participants with ID and depression (10 women and 8 men) recruited through specialist mental health services. 18 gender matched participants with ID and no depression recruited through day centres.	Rosenberg Self-esteem scale. Also measured depression and social comparison.	Depressed participants reported more negative social comparisons than non-depressed participants when comparing self to both a general other target and to identified real-world target. High levels of self-esteem associated with low levels of depression.
Mahoney-Davies et al. (2017), UK	Repeated measures	10 week skills group aiming to improve well-being	12 participants with ID (1 woman and 11 men) attending day centre	Measures at pre-, mid-, and post-intervention: Rosenberg Self-esteem Scale. Also measured mental well-being, and questionnaire designed by authors to	Scores on self-esteem and well-being were within normal range at baseline, no significant increase post-intervention.

Table 3. *(Continued)*

Author (year), country	Design	Focus	Sample	Measure of self-esteem	Key findings
				measure implementation of skills taught.	
McGillivray and McCabe (2007), Australia	Cross sectional, between groups	Mood	151 participants with mild to moderate ID (68 women and 83 men), recruited through vocational and supported employment services	Rosenberg Self-esteem Scale. Also measured depression, social support, social comparison, and automatic negative statements about the self.	Negative association between social comparison and symptoms of depression, and self-esteem and symptoms of depression.
Neuman and Reiter (2017), Israel	Mixed methods	Intimate relationships	80 participants with mild to moderate ID living in supported living (40 women and 40 men). Half of sample lived in intimate relationship for > a year, matched by gender and age.	Tennessee Self-Concept Scale 2nd ed. translated into Hebrew. Also conducted semi-structured interviews and measured quality of life.	Qualitative study suggested that people with ID in intimate relationships showed positive self-esteem. Quantitative study suggested that people in intimate relationships had higher self-esteem compared with those who had close friends but no intimate relationship.
Paterson et al. (2012), UK	Cross sectional	Stigma	43 participants with ID (25 women and 18 men) recruited from community centres	Rosenberg self-esteem scale. Also measured stigma perception and social comparison.	Greater perception of stigma related to lower self-esteem. More negative social comparisons with service user and community groups, lower reported self-esteem.
Pestana (2015), UK	Qualitative interview, analysed using interpretative phenomenological analysis	Domains of self-esteem	8 adults with mild ID (2 women and 6 men)	Semi-structured interview	Explored domains of self-esteem including social, physical, occupational, cultural, and psychological aspects. Participants reported mainly positive attributes of themselves in social, occupational and psychological domains. Negative attributes in physical domain, neutral attributes in cultural domain.

Table 3. *(Continued)*

Author (year), country	Design	Focus	Sample	Measure of self-esteem	Key findings
Petrovski and Gleeson (1997), Australia	Mixed methods	Work	31 workers with mild ID (16 women and 15 men)	Self-esteem Index and semi-structured interviews. Also measured job satisfaction, stigma, loneliness, and life aspirations.	Workers with most job satisfaction felt least stigmatised and less lonely at work. No relationship between job satisfaction and self-esteem. No significant difference between men and women in job satisfaction, self-esteem, stigma, or aspirations.
Szivos (1990), UK	Cross sectional, between groups	Work	26 participants with ID in further education courses (14 women and 12 men), 24 in work placement course (6 women and 18 men).	Constructed own self-esteem questionnaire. Also measured experiences of stigma and life aspirations.	High self-esteem related to high aspirations in life, but self-esteem not related to age, gender, or type of placement.
Whelan et al. (2007), UK	Repeated measures	Cognitive behaviour therapy intervention to improve self-esteem	5 participants with ID and poor self-esteem (3 women and 2 men) as reported by carers	Rosenberg Self-esteem Scale	Inspection of descriptive data showed that 5 participants, 2 showed increase in self-esteem, 3 no change.

the levels of self-esteem of the group with intellectual disabilities were lower than those in the general population group.

The quality ratings of the studies were moderate with an average of 0.74. However, in all studies, matching of the target sample with a comparison general population sample was either not carried out or fraught with difficulties. Comparison groups were not matched on key demographic variables such as age, gender and ethnicity (Li *et al.* 2006; Garaigordobil and Perez 2007). Most participants in the comparison sample tended to have higher education and occupation levels (Li *et al.* 2006; Garaigordobil and Perez 2007; Davies *et al.* 2021), as one would expect by virtue of one group having intellectual disabilities, though there was an attempt to match the comparison group in terms of education and occupation levels in Jiranek and Kirby (1990)'s study. Overall, it remains difficult to draw conclusions regarding comparisons between levels of self-esteem in people with intellectual disabilities and the general population. Accordingly, and in view of the apparent importance of self-esteem, further research is warranted.

The two studies conducted with adults with intellectual disabilities in forensic settings (Ajmal 2008; Johnson 2012) concluded that self-esteem in this population was moderate to high, with scores even higher than in community samples. While both papers suggest that this could be in part due to the relatively safe supportive environment, Johnson (2012) acknowledged that participants were held for treatment and rehabilitation and could have presented themselves in a more compliant and positive light in order to be seen to be doing well. Quality ratings of these two studies were moderate (0.68). However, of note neither study reported how the community sample was matched (Ajmal 2008), and the conclusion that the self-esteem levels were moderate to high in Johnson (2012) was not based on any statistical comparison, but on a cut off score decided by the author.

Factors relating to self-esteem. The reviewed studies suggested that the more individuals are engaged in life and activities around them, the higher their self-esteem. For example, individuals who participated in the Special Olympics or general sports tended to show higher self-esteem than those who were not involved in sports (Crawford *et al.* 2015). In another study, individuals with mild intellectual disabilities involved in an intimate relationship had more positive self-esteem than those with only close friend relationships (Neuman and Reiter 2017). According to people with intellectual disabilities, involvement in an intimate relationship was found to be meaningful in providing company, intimacy, partnership for life and plan the future with. The quality of these studies was generally high, with an average rating of 0.82.

Similarly, engagement in work was associated with higher self-esteem. Individuals with intellectual disabilities engaged in employment showed higher self-esteem than those who were unemployed (Jiranek and Kirby 1990). Results were mixed when comparing the types of employment individuals engaged in (Szivos 1990; Griffin *et al.* 1996; Gascon 2009), but they proposed that regardless of work environment, being able to work, having contact and support from other people, and belonging to a group may contribute to higher self-esteem. These studies had generally good quality ratings, averaging 0.72. Their conclusions were echoed by Abraham *et al.* (2002), Paterson *et al.* (2012), and Petrovski and Gleeson (1997), in that self-esteem was linked with feeling non-stigmatised and valued.

Results were mixed in terms of the link between independent living and self-esteem. In one study, higher independence in living environment was linked with higher self-esteem (Griffin *et al.* 1996). Individuals who were responsible for their activities of daily living and had choice over how to spend their time showed higher self-esteem than those whose lives were closely supervised. However, this conclusion needs to be treated with caution as groups were not matched on any demographic variables, meaning that differences in self-esteem may not necessarily be due to different living arrangements. Contradictory findings were found in Barlow and Kirby (1991), who observed no differences in self-esteem between participants living in the community and those living in an institution with less independence. Nonetheless, this study only included participants from one particular institution, which suggests that findings are unlikely to be generalisable. More research is warranted to establish the potential effects of independence in living environments on self-esteem. Both studies had similar quality ratings of 0.73.

Interestingly, one study suggested that age moderated the effect of participating in the community on self-esteem (Abraham et al. 2002). When comparing the top and bottom age quartiles of their participants, they found that frequent activities were associated with higher self-esteem in the older group, but with lower self-esteem in the younger group. While the study did not indicate if there were other differences in the types of activities engaged in between the groups, they noted a negative correlation between activities with peers and self-esteem in the younger group (Abraham et al. 2002). One possible hypothesis raised by Abraham et al. (2002) is that younger adults could be more sensitive to comparisons with others, which may be inadvertently occurring in peer activities. This suggests that younger adults with intellectual disabilities may need more support in interpreting and managing their social experiences.

In terms of negative life experiences, the number of perceived negative interpersonal life events perceived as having a negative impact was proposed as having a predictive effect on self-esteem, mediated by shame and self-compassion (Davies et al. 2021). Although this study relied on self-reported negative interpersonal life events before the age of 18, which the authors noted can be a difficult task for adults with intellectual disabilities to reliably do, the results point to the importance of building up self-compassion and reducing shame, in reducing the relationship between the number of perceived negative interpersonal life events and self-esteem.

Response to intervention. Four intervention studies were included in the review, of which only one (Whelan et al. 2007) had a specific focus on improving self-esteem while the others included self-esteem as an outcome measure following skills training on well-being (Mahoney-Davies et al. 2017), relaxation (Bouvet and Coulet 2016) and managing anger (King et al. 1999). Crucially, most studies were very small in scale and did not include a control group. Of note, one study did not run statistical analyses on outcome measures and only relied on descriptive observations of scores (Whelan et al. 2007). In addition, for the study which included the control (Bouvet and Coulet 2016), it is unclear if the group gains were made due to specific elements in the intervention, as the controls were not engaged in any activity. Gains may be due to common group factors such as the opportunity to meet regularly, rather than the specific intervention. Together, results remain inconclusive if self-esteem can be improved with intervention. Larger scale studies with proper control groups would need to be conducted.

Question 2: Is there a relationship between low self-esteem and depression and/or anxiety disorders?

There were six studies relevant to the second research question. Individuals with intellectual disabilities appear to show higher levels of psychological distress when compared with the general population (Garaigordobil and Perez 2007; McGillivray and McCabe 2007), with one study identifying 39.1% of a community sample as displaying symptoms of depression (McGillivray and McCabe 2007). The reviewed studies presented consistent results that individuals with intellectual disabilities who have low self-esteem tend to be more vulnerable to depression (Benson and Ivins 1992; Dagnan and Sandhu 1999). A similar pattern was found in studies involving samples of people with clinical depression (Esbensen and Benson 2005; MacMahon and Jahoda 2008).

In particular, it appears that social comparison may be an important dimension in predicting depression (Dagnan and Sandhu 1999). Those who were depressed tended to make more negative social comparisons than non-depressed individuals (MacMahon and Jahoda 2008). In one study, social comparison and low self-esteem distinguished between individuals who were deemed to be at risk, or met criteria for depression, from those who did not (McGillivray and McCabe 2007).

However, one major limitation of the findings is that all studies were cross sectional in design, which means that causality cannot be concluded. In addition, two studies used measures designed for children, and the adapted versions used were not validated for an intellectual disability population or had poor internal consistency (Benson and Ivins 1992; Esbensen and Benson 2005). Comparisons made between individuals with and without depression were based on unmatched participant groups (Garaigordobil and Perez 2007; MacMahon and Jahoda 2008). Therefore, further study into the nature and development of the

relationship between self-esteem and depression is warranted.

Discussion

Key findings

The results from the 25 studies included in this review indicate that the social, occupational and psychological attributes considered were important to how individuals with intellectual disabilities view themselves. Findings on levels of self-esteem among individuals with intellectual disabilities as compared with the general population were mixed and preliminary evidence suggests moderate to high self-esteem among individuals with intellectual disabilities in forensic settings compared with individuals in the community. Comparatively, school-aged youth with intellectual disabilities appear to have lower self-esteem than typically developing youth (Maiano *et al.* 2019). One explanation could be that school-aged youth are more sensitive to social comparisons with their peers and have compared themselves with peers who may be doing better academically in school. Such social comparisons may be less salient for adults and the social groups they choose to partake in. Nonetheless, it is noted that the conclusions from the studies reviewed are based on comparisons with unmatched samples and as such are inconclusive.

Despite evidence from the general population that sociodemographic variables such as age and ethnicity predict self-esteem (Kling *et al.* 1999; Bachman *et al.* 2011), the few available studies with adults with intellectual disabilities found generally no relationship between self-esteem and gender (Petrovski and Gleeson 1997; Dagnan and Sandhu 1999; Garaigordobil and Perez 2007; Paterson *et al.* 2012), and mixed findings with regard to age, with a positive association reported by Abraham *et al.* (2002) and Davies *et al.* (2021) but no association found by Paterson *et al.* (2012). None of the studies examined the relationship between ethnicity and self-esteem in this population.

In general, engagement in activities appeared to be linked with positive self-esteem. Increased participation in activities likely provided individuals with opportunities to be independent, experience achievement and mastery. This is in line with findings from the general population. For example, engagement in sports and extracurricular activities has been found to be positively linked with self-esteem (Williams and McGee 1991). Participation in activities leads to engagement in wider social networks, adding to the psychological well-being and perceived competence of the participant (McGee *et al.* 2006). While results were inconclusive in terms of association between living situation and self-esteem, firmer results were found with regard to occupation in meaningful work. Regardless of work environment, the reviewed evidence suggests that being able to work, have contact with other people, and feel valued may contribute to higher self-esteem. This importance of feeling valued and non-stigmatised links to the conceptual model of the relationship between stigma and self-esteem, whereby those who are aware of being viewed negatively by others because they belong to a stigmatised group will incorporate negative social attributions into their sense of self, resulting in lower self-esteem (Crocker and Major 1989).

In addition, the perception of negative interpersonal life events as having a negative impact was associated with lower self-esteem. Individuals with high shame and low self-compassion tended to have lower self-esteem. This is consistent with the general literature on the mediating effects of shame and the clinical implications of working with a compassion-focused therapy framework (Shorey *et al.* 2010). However, the studies reviewed that looked into improving self-esteem through interventions were generally small scale and did not have a control group.

Evidence for the co-occurrence of low self-esteem and depression in individuals with intellectual disabilities was found. This is in line with previous findings on the general population (Keane and Loades 2017). In addition, a meta-analysis on studies in the general population found (a) consistent support for the vulnerability model of low self-esteem and depression, according to which negative evaluations of the self are a causal risk factor of depression, and (b) weak support that low self-esteem is a consequence of depression (Sowislo and Orth 2013). Of note, none of the studies reviewed examined the link between anxiety and low self-esteem. In the general population however, a large body of studies has demonstrated the relationship between low

self-esteem and symptoms of anxiety and found negative, medium to strong correlations (Lee and Hankin 2009; Sowislo and Orth 2013). Further research investigating if these relationships hold true for individuals with intellectual disabilities is warranted.

Limitations of the review

Limitations of this review include using relatively narrow search parameters. Only studies published in English were included, and dissertations and non-published studies were excluded to ensure quality control from the outset. In addition, to limit the number of studies found, studies tagged with keywords involving children were excluded at the search phase. This may have resulted in studies being unduly removed.

Limitations of the evidence

There are several limitations to the evidence presented in this review. First, 23 out of the 25 studies were conducted in predominantly White Western societies. The other two studies were from Hong Kong and Israel. It is difficult to determine if the findings would be replicable in other settings, especially considering that feeling 'good enough' involves some level of comparison and self-evaluation (Rosenberg 1989), and that different societies value different domains of self, as shown in this review.

Secondly, most of the studies reviewed relied on administrative definitions of intellectual disability and did not document if participants had other co-morbid conditions, which may well affect self-esteem (e.g. physical or sensory disabilities or autism spectrum disorders). Therefore, it is not possible to conclude if findings might differ for different groups and if additional co-morbidities might account for some of the discrepancies in the results. In addition, most studies did not account for the potential confounding effects of differences in cognitive and adaptive functioning, or communication abilities, which could well affect social interactions and opportunities available to the individual, and the meaning the individual attributes to their experiences.

Thirdly, as noted earlier, most of the studies were cross sectional in nature. Therefore, conclusions cannot be made about causality, or trajectories of self-esteem or depression. In addition, the reviewed studies used a range of questionnaires to measure self-esteem. While some of the authors demonstrated the use of psychometrically sound questionnaires, many did not. Of note, many studies made adaptations to the measures used, while others did not and/or used scales originally developed for children.

Implications for future practice and research

Following from the limitations identified, more research should be conducted in diverse world regions and cultures. Nonetheless it is acknowledged that more evidence may be presently available, but may have been overlooked due to this review's limitations of only including studies reported in English. It is recommended for research to report more on participants' sociodemographic characteristics and for studies of a longitudinal nature to be able to answer questions about trajectory and causality. Studies should report on the validity and reliability of the measures used.

Nonetheless, the evidence reviewed highlights that although clear mechanisms has yet to be identified, the association between self-esteem and variables such as participation in social activities for persons with intellectual disabilities are similar to the general population. This lends support to educational and societal policies that seek to provide persons with intellectual disabilities with opportunities to engage in a meaningful life. However, it is noted that the picture is not straightforward; clinical practice and service delivery generally has to be carried out in a person-centred, individual manner, given the variability in the findings presented.

In addition, the co-occurrence of low self-esteem and depression, though does not confirm that low self-esteem predates depression, points to the importance of clinicians being mindful of these two correlated outcomes. It is noteworthy that no studies found examined the link between self-esteem and other internalising disorders such as anxiety. It is crucial for further research to better understand correlates of self-esteem and to understand if people with intellectual disabilities will benefit from interventions on self-esteem. Psychological interventions for the general population have seen benefits in enhancing self-esteem, for healthy, depressed, or anxious individuals, with medium to large effect sizes for cognitive behavioural therapy

(Kolubinski *et al.* 2018), and small effect sizes for reminiscence-based interventions (Pinquart and Forstmeier 2012).

Conclusion

In summary, the results of this systematic review provide mixed evidence on self-esteem in adults with intellectual disabilities and suggest that factors such as engagement in sports and work are related to higher self-esteem in adults with intellectual disabilities. Results demonstrated the co-occurrence of low self-esteem and depression, but the link between self-esteem and anxiety has not yet been examined. More research using longitudinal designs to answer questions about trajectory would be warranted.

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Conflict of interest

No conflicts of interest have been declared.

Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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