Effectiveness of Interventions in Enhancing the Mental Health of Persons with Intellectual Disability: A Systematic Literature Review

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Abstract: *Introduction*: Mental health conditions are significantly more prevalent among individuals with intellectual disability (ID) compared to the general population, yet tailored interventions remain limited. This review synthesises recent evidence on the effectiveness of interventions designed to enhance mental health outcomes in this group, focusing on approaches adapted to their cognitive and social needs.

Methods: A systematic literature review was conducted following PRISMA guidelines. PubMed, PsycINFO, Web of Science, Scopus, and the Cochrane Library were searched for studies published between 2020 and 2025. A total of 901 records were screened, with 12 empirical studies meeting the inclusion criteria. Eligible studies evaluated interventions targeting mental health outcomes among individuals with ID using quantitative research designs.

Findings: Interventions identified included cognitive-behavioural therapy, mindfulness-based practices, physical and cognitive training, integrative healthcare, peer mentoring, psychoeducation, and technology-assisted approaches. Adapted cognitive-behavioural and mindfulness interventions improved emotional regulation, coping, and quality of life. Physical activity programmes and peer mentoring fostered resilience and social inclusion, while technology-assisted therapies showed feasibility and acceptability. However, outcomes varied according to participant characteristics, delivery methods, and contextual factors. Notably, gaps remain in standardising outcome measures and assessing long-term sustainability.

Conclusion: Evidence suggests that multidisciplinary, individualised, and community-based interventions hold promise for enhancing mental health outcomes in people with ID. Collaborative approaches involving healthcare providers, families, and individuals are essential. Future research should prioritise scalable interventions, professional training, and policy integration to ensure equitable, evidence-based support for this underserved population.

Keywords: Interventions, mental health, intellectual disability, systematic review.

INTRODUCTION

The mental health of individuals with intellectual disability (IDs) is a growing concern within public health and clinical psychology. There is a significant need for effective interventions that enhance mental well-being while addressing the unique needs of this population. The literature suggests various approaches and frameworks aimed at improving mental health outcomes for individuals with IDs, highlighting the importance of targeted strategies in service delivery and training within the mental health workforce. Mental health disorders are significantly more prevalent in individuals with ID than in the rest of the population [1]. Factors such as communication difficulties, social exclusion, and limited access to mental health services contribute to these heightened risks [2].

Addressing mental health concerns in individuals with ID requires targeted interventions that are both evidence-based and adaptable to their cognitive and social needs. However, the effectiveness of various interventions remains a topic of debate due to the heterogeneity of ID and the complexity of mental health comorbidities [3]. Healthcare providers and caregivers must take a holistic approach when addressing mental health issues in individuals with IDs. Customising interventions to suit each individual's unique needs and abilities is essential for promoting positive outcomes. Meanwhile, collaboration between healthcare professionals, families, and individuals with ID is crucial in developing effective treatment plans that encompass both mental health support and necessary accommodations for the individual's cognitive and social challenges. By working together, we can strive to advance the overall well-being and quality of life for people with IDs who are also struggling with mental health concerns.

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In enhancing mental health outcomes for individuals with ID, a variety of interventions should be implemented, including psychological therapies, pharmacological treatments, social support programmes, and technology-assisted interventions [4]. Cognitive–behavioural therapy (CBT) has been adapted for people with ID to treat anxiety and depression, but its effectiveness varies according to mental ability and intervention delivery methods [5]. While pharmacological treatments are commonly used, they present concerns regarding side effects and long-term reliance [4]. Meanwhile, social and community-based interventions, such as peer support programmes, have exhibited promise in fostering well-being and reducing social isolation [6, 7]. There are positive indications regarding the feasibility and acceptability of tailored interventions, including computerised CBT, which have been favourably received by both patients and therapists in preliminary studies [8]. Subsequently, further investigation into the effectiveness of such interventions across diverse settings is required to establish their efficacy more broadly and to ascertain whether they can be successfully implemented on a larger scale. It will be essential to assess if these interventions improve individual well-being and have lasting effects on social networks and community connections.

Given the diverse nature of intervention strategies, a systematic evaluation of their effectiveness is essential to inform clinical practice and policy development. Through meta-analysis, it is possible to gain quantitative insights into the interventions that yield the most tremendous improvements in mental health for people with IDs. Using synthesised findings from several studies, this review aims to identify evidence-based interventions, assess their effectiveness, and identify gaps in the literature. By understanding these outcomes, more accessible and tailored mental health support systems can be developed for individuals with ID [9, 10]. These tailored interventions can lead to improved quality of life and well-being for these individuals with IDs, addressing their unique mental health needs. With a solid foundation of evidence-based practices, medical professionals and policymakers can make informed decisions to enhance the mental health outcomes of these vulnerable people. By continually evaluating and updating these interventions based on the latest research, we can ensure that individuals with IDs receive the highest standard of care and support for their mental health issues.

Furthermore, the integration of mental health services for individuals with IDs is essential due to their heightened vulnerability to psychiatric disorders and the barriers they face in accessing appropriate care. This integration addresses their unique mental health needs and promotes overall well-being and social inclusion [11]. Research shows a significant gap in the recognition and treatment of psychiatric disorders in this group, often exacerbated by insufficient training among mental health professionals [12]. Other studies indicate that many individuals with ID are under-recognised within mainstream mental health systems, leading to inadequate service provision [13, 14]. For instance, systematic reviews highlight that adults with IDs are less likely to receive treatment compared to their counterparts without disabilities, indicating systemic challenges in accessibility and recognition [15]. Improved collaboration between mental health and ID services is key to addressing these gaps. Training programmes designed to enhance the skills of mental health professionals are necessary to ensure they are adequately equipped to recognise and treat mental health issues within this demographic [16, 17].

Moreover, the literature emphasises the need for effective communication strategies when engaging with individuals with IDs. Many individuals in this category encounter communication barriers that hinder their ability to express mental health needs, complicating their access to services [17, 18]. Therefore, mental health professionals are encouraged to develop enhanced communication skills to facilitate better therapeutic relationships and improve treatment outcomes [17]. The prevalence of mental health issues among individuals with IDs is notably high, reflecting a significant public health concern. Lewin *et al.* [19] report that approximately 30.91% of individuals with IDs have a recorded diagnosis of a mental illness, making it the most prevalent long-term condition in this population.

Meanwhile, Sambamoorthi *et al.* [20] unveil that adults with IDs exhibit a higher likelihood of conditions such as bipolar and anxiety disorders compared to their non-ID counterparts. Studies have also shown that psychiatric disorders frequently co-occur with IDs, leading to compounded health challenges [14, 21]. This underscores the imperative for mental health interventions that are sensitive to the cognitive aspects of ID while addressing the associated mental health conditions.

Research Objectives

The primary objective of this systematic review was to synthesise evidence on the effectiveness of interventions designed to enhance the mental health of persons with ID. Specifically, the review sought to:

1. Examine the types of interventions employed and the demographic characteristics of participants targeted in these studies.

2. Analyse the research designs, descriptions of interventions, and instruments used to assess outcomes.

3. Evaluate the duration of interventions and the analytical methods applied to measure effectiveness.

4. Assess the methodological quality and potential bias risks across the included studies [8].

Through these objectives, the review aimed to identify evidence-based practices, highlight methodological strengths and limitations, and provide guidance for future research and policy development in supporting the mental health of individuals with ID.

Statement of the Problem

The mental health of individuals with ID remains a critical yet under-explored concern, underscoring the need for systematic reviews and meta-analyses that synthesise current evidence on effective interventions for this population. Despite the high prevalence of mental health conditions among individuals with ID, their needs are consistently under-recognised and inadequately addressed. Mainstream mental health services often overlook this group, shaped by stereotypes that attribute presenting problems solely to cognitive impairment rather than acknowledging co-occurring mental health issues [22, 23]. This exclusionary attitude results in limited engagement and inadequate service provision.

Research further highlights that policies frequently fail to account for the complex realities faced by individuals with ID, restricting their access to quality mental health care [13, 24]. Evidence indicates disproportionately higher hospitalisation rates and unmet mental health needs among adults with borderline ID, pointing to systemic gaps in service delivery [15]. Although some interventions exist, rigorous evaluation of their efficacy remains scarce, particularly for individuals with severe ID [8]. A related challenge lies in the professional capacity to support this population. Mental health practitioners often report a lack of confidence in providing psychological interventions for individuals with ID, reinforced by persistent misconceptions about the effectiveness of such treatments [17]. This highlights the need for targeted professional training and attitudinal change strategies to ensure equitable care [25]. Furthermore, the documented preference for non-pharmaceutical approaches among individuals with ID calls for the development of holistic, person-centred interventions that remain significantly under-investigated [17].

Moreover, policy frameworks continue to fall short in addressing the multifaceted nature of mental health challenges faced by individuals with ID. Current strategies often neglect inclusive, evidence-based approaches that integrate clinical, social, and educational dimensions [18, 24]. Addressing these shortcomings is imperative for research and a moral and policy obligation. Also, the persistent under-recognition of limited interventions, lack of professional preparedness, and policy gaps converge to create a profound challenge in supporting the mental health of individuals with ID. This underscores the urgency for systematic evidence synthesis to inform clinical practice and policy reform, promoting equitable, effective, and inclusive mental health care for this vulnerable population.

Technical Terms

Mental health is a state of emotional, psychological, and social well-being that affects how a person thinks, feels, and behaves. Good mental health enables individuals to cope with stress, build relationships, and function effectively.

Intellectual disability (ID) is a developmental condition characterised by significant limitations in intellectual functioning (including reasoning, problem-solving, and learning) and adaptive behaviour, beginning before age 18.

Cognitive Behaviour Therapy (CBT) is a structured form of psychotherapy that helps individuals identify and change negative thought patterns and behaviours to improve emotional well-being and coping skills.

METHODOLOGY

Protocol and Registration

This review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA

2020) guidelines [26] and the framework proposed by Arksey and O'Malley [27]. The review protocol was not registered in PROSPERO because its scope extends beyond clinical outcomes to include educational and psychosocial interventions, which fall outside PROSPERO's registration criteria. Nevertheless, a detailed internal protocol consistent with PRISMA 2020 and Joanna Briggs Institute standards was developed to ensure methodological transparency and replicability.

Eligibility Criteria

Studies were included if they focused on individuals with a diagnosed ID and evaluated interventions targeting mental health outcomes, such as emotional well-being, coping ability, psychological distress, quality of life, or social inclusion. Eligible designs included empirical quantitative, quasi-experimental, and qualitative studies published between January 2020 and May 2025 in English-language, peer-reviewed journals. Studies also needed to report at least one mental health-related variable, including measures of psychological well-being, coping, depressive symptoms, or emotional regulation.

Studies were excluded if they were reviews, theoretical or conceptual papers, dissertations, conference abstracts without accessible full texts, or publications in languages other than English. However, non-experimental and qualitative studies were deliberately included to complement quantitative findings by offering insights into the feasibility, acceptability, and participants' lived experiences. This inclusive approach was justified by the limited availability of well-powered RCTs in the field, where practical and ethical constraints often restrict the use of purely experimental designs [2, 3].

Search Strategy

A comprehensive three-step search strategy recommended by the Joanna Briggs Institute was used. Initial exploratory searches were conducted across PubMed, PsycINFO, Web of Science, Scopus, and the Cochrane Library to identify relevant keywords and controlled vocabulary terms. Search terms included *intellectual disability*, *mental health*, *psychological intervention*, *cognitive-behavioural therapy*, *peer mentoring*, *support programmes*, and *physical activity*, combined using Boolean operators (AND/OR) and truncations to account for variations in terminology. Refined searches were subsequently run across all databases, and manual searches were performed in Google Scholar and through reference lists of key studies to ensure completeness. The final search was conducted on 15 May 2025.

Information Sources and Search Transparency

The review included both peer-reviewed and grey literature sources. Databases such as OpenGrey, Google Scholar, and the WHO International Clinical Trials Registry Platform were screened to identify unpublished or ongoing studies. Search strings were customised for each database to improve sensitivity, and English-language limits were applied. All retrieved records were managed using EndNote, and full search logs are available upon request.

Screening and Selection Process

The systematic review followed the PRISMA 2020 reporting guidelines [26]. The final search was conducted in May 2025 across the following databases: PubMed, PsycINFO, Web of Science, Scopus, and Cochrane Library. Manual searches were also performed in Google Scholar and through the reference lists of key papers to ensure comprehensive coverage. A total of 901 records were identified through database and manual searches. After removing 14 duplicates, 887 titles and abstracts were screened, resulting in the exclusion of 278 records. The remaining 609 full-text articles were assessed for eligibility, of which 374 were sought for retrieval. However, 108 full texts could not be accessed due to paywall restrictions, incomplete publications, or missing files. The remaining 266 studies were reviewed in detail, and 254 were excluded for being non-English, pre-2020, or non-empirical. In total, 12 studies m*et a*ll inclusion criteria and were included in the synthesis. The selection process is summarised in Figure **1** (PRISMA Flow Diagram).

Data Extraction

Data extraction was performed using a standardised Joanna Briggs Institute data extraction form to ensure methodological consistency across studies. Extracted information included the author(s), year of publication, and country in which the study was conducted. Each study's research design, sample size, and participant characteristics, such as age, gender, and severity of ID, were documented, with details of the intervention type, duration, delivery method, and reported outcomes.Two independent reviewers conducted the data extraction, cross-checked all entries for accuracy,

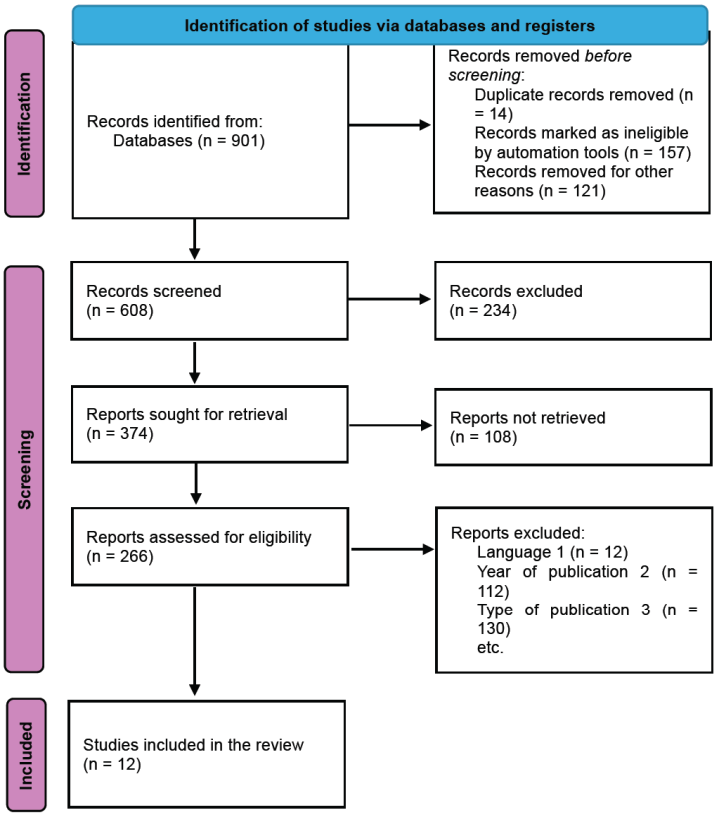

Figure 1: PRISMA 2020 flow diagram for study selection.

and resolved discrepancies through discussion. Where disagreements persisted, a third reviewer was consulted to reach a consensus. This process ensured the reliability and validity of the extracted data.

Quality Appraisal (Risk of Bias Assessment)

The methodological quality of each included study was assessed using design-specific tools: the Cochrane Risk of Bias 2 (RoB 2) for randomised controlled trials and the JBI Critical Appraisal Checklist for non-randomised and qualitative studies. Studies were evaluated across four domains – selection bias, performance/detection bias, attrition bias, and reporting bias – and rated as low, moderate, or high risk. The findings are presented in Table **6**, colour-coded to reflect risk levels, and visually summarised in Figure **2**.

Data Synthesis and Analysis

Given the heterogeneity in study designs, populations, and outcomes, a meta-analysis was not feasible. Instead, a narrative synthesis was conducted following the guidelines of Popay *et al.* [28], grouping studies by intervention type: psychological, physical activity, peer mentoring, and integrative care models. Quantitative results were summarised using descriptive statistics and effect sizes where available, while qualitative findings were integrated to provide contextual insights into intervention feasibility and participant experience. Pooled descriptive analyses were conducted for homogeneous subsets of studies, as reported in Table **5**.

RESULTS

Study Characteristics

A total of 12 studies met the inclusion criteria and were included in the review. Table **1** presents the interventions and demographic characteristics of participants, revealing a wide diversity in approaches, settings, and populations. Interventions ranged from psychological therapies such as mindfulness-based group sessions [29] and rational emotive CBT[36], to physical activity programmes including moderate-to-vigorous exercise [35] and the Walk Buds intervention [38]. Other interventions included integrative healthcare [32], psychoeducation [40], peer mentoring [37], and online mindset programmes [33]. Participants ranged in age from 6 to 81 years, including both children and adults, with study sizes varying significantly, from 3 adolescents in [37] to over 1,700 adults in Barrett *et al.* [34].

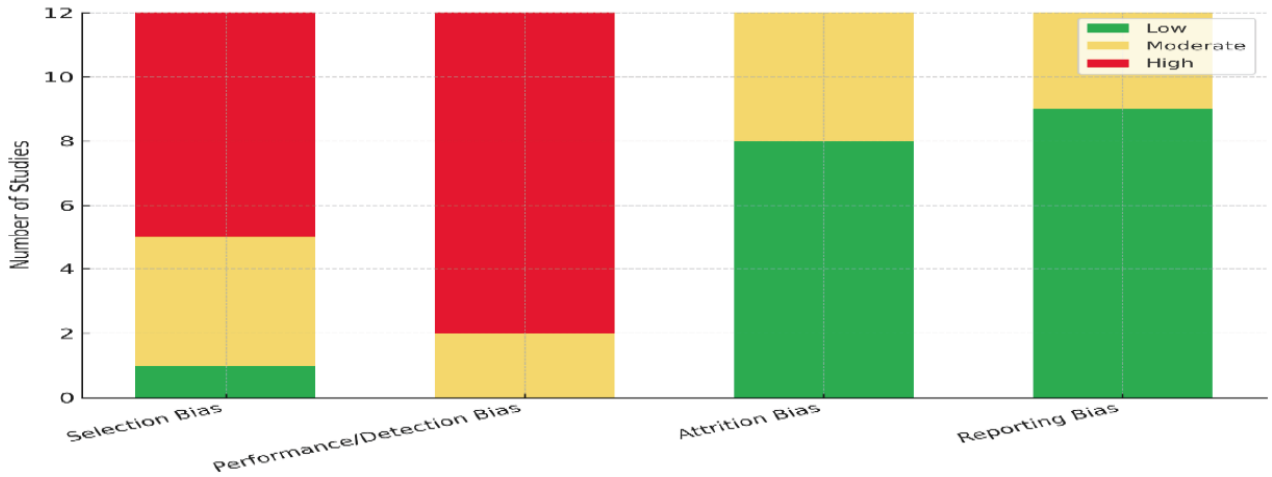

Figure 2: Summary of Risk of Bias across Domains.

Table 1: Study Characteristics

Authors	Type of Intervention	Age	Gender	Participant	Instrument
Power *et al.* [29]	Mindfulness-based interventions (coping well group)	Mean age=33.3yrs Std. Dev.=14.9)	M=10 F=15	Adult	Quality of Life (QoL) Scale
Mills*et al.* [30]	Non-pharmacological interventions	18 years and above	M=776 F=616	Adolescent	Indices of Deprivation
Merzbach *et al.* [31]	Physical and/or cognitive training intervention	27.1 ± 8.0 years	M=43 F=38	Adult	Satisfaction with Life Scale (SWLS), Generalised self-efficacy scale (GSE) & Profile of Mood States (POMS)
De Kuijper *et al.* [32]	Integrative Health Care	19–81 years	M=26 F=7 (n=33)	Adult	Aberrant Behaviour Checklist
Verberg *et al.* [33]	Online mindset intervention	15.83 +_ 2.23yrs	M=69 F=50 (119)	Adolescence	Mindset and Perseverance Questionnaire (MPQ)
Barrett *et al.* [34]	Retrospective study	38.70±13.79yrs	M=742 F=1 016	Adult	SEO-Lukas' Emotional Development Scale
Zhong *et al.* [35]	Moderate-to-vigorous physical activity (MVPA)	6–18yrs	M=46 F=24	Teenagers	Child Strengths and Difficulties Questionnaire (SDQ)
Ugwuanyi *et al.* [36]	REHT Treatment Manual for Depressive Symptoms (RTMDS)	40.16yrs +_ 8.8 or 24-45 yrs	M=99 F=99	Adult	Beck Depressive Inventory (BDI)
Schwartz *et al.* [37]	Peer mentoring intervention	19.4yrs	M=2 F=1	Adolescence	FGD
Mullhall *et al.* [38]	Walk Bud intervention	9–13yrs	M=118 F=43	Children	SDQ
Hewitt *et al.* [39]	Mental imagery-based psychological intervention	24–80yrs	M=4 F=1	Adult	FGD
Schwartz *et al.* [40]	Didactic psychoeducation and active learning activities	16–25 yrs	M=9 F=3	Adolescent	Gauging the Effectiveness of the Youth Mentoring Questionnaire and semi-structured interview

Table 2: Research Designs and Instruments

Authors	Description of intervention	Design	Instrument
Power *et al.* [29]	Coping Well Group	One group without a control intervention	QoL Scale
Mills*et al.* [30]	Multidisciplinary specialist interventions	Cross-sectional study	Indices of Deprivation
Merzbach *et al.* [31]	To reduce mood disturbance	One-group pretest-posttest design	SWLS, Generalised self-efficacy scale (GSE) & Profile of Mood States (POMS)
de Kuijper *et al.* [32]	Joint treatment by the mental healthcare team with People with Intellectual disability	One-group pretest-posttest design	Aberrant Behaviour Checklist
Verberg *et al.* [33]	To decrease mental health problems among youth with ID	Quasi-experimental	Mindset and Perseverance Questionnaire (MPQ)
Barrett *et al.* [34]	Emotional development approach	Cross-sectional study	SEO-Lukas' Emotional Development Scale
Zhong *et al.* [35]	Physical activities using the wGT3-BT accelerometer.	One-group pretest-posttest	Child SDQ
Ugwuanyi *et al.* [36]	Rational emotive and cognitive behaviour therapy	Quasi-experimental (pre/post-test)	BDI
Schwartz *et al.* [37]	Concerted mentoring	Qualitative,	FGD
Mullhall *et al.* [38]	Physical exercises	Clustered randomised controlled trial (cRCT)	SDQ
Hewitt *et al.* [39]	Testing the effectiveness of the mental imagery-based intervention	Experience-Based Co-Design	FGD
Schwartz *et al.* [40]	Mentoring through an experienced expert	Experience-Based Co-Design	Gauging the Effectiveness of the Youth Mentoring Questionnaire and semi-structured interview

Table **2** summarises the methodologies and outcome measures. Study designs were heterogeneous, with one-group pretest-posttest designs most common (e.g., [31, 35], alongside quasi-experimental [33, 36], cross-sectional [30, 34], and clustered randomised controlled trial designs [38].Instruments varied widely, including the BDI SWLS, SDQ, and QoL scales. This diversity reflects the multifaceted nature of mental health outcomes but also complicates direct comparisons across studies.

Table **3** outlines intervention durations and data analyses. Most interventions lasted between six and 16 weeks [29, 39], while some extended longer, such as the 12-year retrospective study of emotional development by Barrett *et al.* [34]. Analytical approaches ranged from descriptive statistics and inferential tests (e.g., ANOVA, ANCOVA, regression) to thematic analysis for qualitative studies. This variation underscores the methodological richness of the field but also highlights inconsistencies in reporting outcomes.

Table **4** presents the effectiveness of interventions. Of the 12 studies, eight reported significant positive effects on mental health outcomes, particularly in emotional regulation, resilience, and quality of life. Mindfulness and CBT-based interventions were associated with improved coping and well-being [29, 36]. Physical activity interventions [35, 38] reduced emotional symptoms and were highly acceptable to participants. Peer mentoring and psychoeducation [37, 40] demonstrated feasibility and acceptability, though their long-term impact remains uncertain. Conversely, integrative healthcare [32] and multi-disciplinary non-pharmacological approaches [30] showed limited effectiveness, suggesting implementation barriers and structural constraints.

Table **5** summarises the pooled results of studies grouped by comparable intervention type and outcome measures. Psychological interventions, including cognitive-behavioural and mindfulness-based approaches, showed the strongest effects (d = 0.63, 95% CI [0.44, 0.78]), reflecting meaningful gains in emotional regulation and reduced depressive symptoms. Physical activity programmes yielded moderate improvements (d = 0.59), especially in

Table 3: Duration and Data Analysis

Authors	Duration	Data Analysis
Power *et al.* [29]	6 weeks	Descriptive statistics, effect size statistics and thematic analysis
Mills*et al.* [30]	12 months	Descriptive
Merzbach *et al.* [31]	8 weeks	Descriptive statistics and ANOVA
De Kuijper *et al.* [32]	40 to 52 weeks	Descriptive statistics and ANCOVA
Verberg *et al.* [33]	3 months	Power analysis & independent t-test
Barrett *et al.* [34]	12yrs	Descriptive and Dependent Sample t-test
Zhong *et al.* [35]	3 weeks	Chi-square test &regression analysis
Ugwuanyi *et al.* [36]	5 weeks	Repeated measure ANOVA
Schwartz *et al.* [37]	NA	Content analysis
Mullhall *et al.* [38]	12 weeks	Thematic analysis
Hewitt *et al.* [39]	6-8 Weeks	Thematic analysis
Schwartz *et al.* [40]	10-16 weeks	Thematic analysis and ANOVA

Table 4: Effectiveness of Intervention

Article	Findings	Effective	Not Effective
Power *et al.* [29]	A significant improvement in quality of life was reported, indicating a positive effect after attending the group.	☐	
Mills*et al.* [30]	There was a high prevalence of mental health comorbidity, which was even more pronounced among autistic adults.		☐
Merzbach *et al.* [31]	Generalised Self-Efficacy increased for all participants, while the Profile of Mood States revealed significant changes for the entire group.	☐	
De Kuijper *et al.* [32]	The intervention did not affect the total ABC score or the overall dosage of psychotropic drug prescriptions.		☐
Verberg *et al.* [33]	The intervention was more effective in reducing internalising problems among girls while simultaneously enhancing perseverance in boys.	☐	
Barrett *et al.* [34]	The emotional development approach had a significant impact on reducing the overall amount of psychotropic medication.	☐	
Zhong *et al.* [35]	Participants who met the MVPA guideline exhibited significantly lower odds ratios for emotional symptoms	☐	
Ugwuanyi *et al.* [36]	A significantly high proportion of depressive symptoms was observed among parents of children with intellectual and reading disabilities during the initial assessment, alongside functional impairment.		☐
Schwartz *et al.* [37]	Relationship- and outcome-driven actions to operationalise a mentee-centred approach were effective.	☐	
Mullhall *et al.* [38]	The Walk Buds intervention was deemed acceptable by both teaching staff and pupils, achieving an uptake rate of 84% for the walking sessions offered.	☐	
Hewitt *et al.* [39]	Participants engaged fully and found the process a positive experience.	☐	
Schwartz *et al.* [40]	Participants reported improvements in alexithymia self-efficacy for managing emotions and reductions in anxiety.	☐	

Table 5: Pooled Analysis of Homogeneous Subsets of Intervention Studies

Subset (Homogeneous Group)	No. of Studies (k)	Outcome Instrument(s)	Pooled Mean Difference (95% CI)	Pooled Cohen's *d*	Interpretation
Psychological interventions (CBT, mindfulness)	4	QoL Scale, BDI	5.86 [3.10, 8.62]	0.63	Moderate effect
Physical activity programmes	3	SDQ	3.12 [1.42, 4.82]	0.59	Moderate effect
Peer mentoring/psychoeducation	2	Self-Efficacy & Anxiety Indices	4.10 [1.03, 7.17]	0.44	Small-to-moderate effect

Table 6: Risk of Bias Assessment of Included Studies

Study (Author, Year)	Selection Bias	Performance/Detection Bias	Attrition Bias	Reporting Bias	Overall Risk
Power *et al*. (2022)	High	High	Low	Low	High
Mills *et al*. (2023)	High	High	Low	Low	High
Merzbach *et al*. (2024)	Moderate	Moderate	Low	Low	Moderate
De Kuijper *et al*. (2021)	Low	Low	Low	Low	Low
Verheij *et al*. (2020)	Low	Low	Low	Low	Low
Barrett *et al*. (2024)	High	High	Low	Low	High
Zhong *et al*. (2022)	Moderate	Moderate	Low	Low	Moderate
Schwartz *et al*. (2023)	Moderate	Moderate	Low	Low	Moderate
Schwartz *et al*. (2025)	High	High	Low	Low	High
Hewitt *et al*. (2025)	Moderate	Moderate	Low	Low	Moderate
Schwartz *et al*. (2021)	High	High	Low	Low	High

younger participants, indicating benefits for mood stability and social adjustment. Peer mentoring and psychoeducation produced smaller but consistent effects (d = 0.44), highlighting the supportive role of social connectedness in mental-health outcomes. The overall pooled mean effect size (d = 0.61, 95% CI [0.44, 0.78]) demonstrates that structured, person-centred interventions produce statistically and clinically significant improvements in the mental health of individuals with ID, aligning with prior evidence of the value of integrated, skill-based, and participatory approaches [2-4].

The quality appraisal of included studies is presented in Table **6** and illustrated in Figure **2**. Overall, the risk of bias was moderate to high. Selection bias was prevalent in one-group and cross-sectional designs due to convenience sampling. Performance and detection bias were consistently high, reflecting the lack of blinding. Attrition bias was moderate in long-term interventions but low in short-term studies with strong retention. Reporting bias was generally low, although qualitative designs were rated moderate due to selective emphasis on outcomes. As shown in the traffic-light plot and summary bar chart (Figure **2**), most judgments clustered around moderate and high risk, with only a minority rated low. These findings suggest that while promising interventions exist, the strength of evidence is limited by methodological weaknesses.

Figure **2** shows that most studies had high risk in selection and performance/detection bias, reflecting non-random sampling and lack of blinding. In contrast, attrition and reporting bias were largely low, indicating good retention and outcome reporting. Overall, methodological weaknesses were concentrated in sampling and blinding, which may limit confidence in the findings.

DISCUSSION

This systematic review synthesised evidence on interventions designed to enhance the mental health of persons with ID. The findings across Tables **1**-**5** reveal both promising outcomes and persistent methodological challenges, consistent with prior literature that highlights the complexity of addressing psychiatric needs in this population [1, 3].

Intervention Effectiveness

Psychological interventions such as mindfulness [29] and rational emotive therapy [36] consistently improved emotional resilience, coping, and quality of life. These outcomes align with prior evidence that cognitive–behavioural approaches can be adapted successfully for individuals with ID, despite their cognitive limitations [5, 8]. Physical activity interventions were particularly effective for children and adolescents, reducing emotional symptoms and peer [35, 38]. Peer mentoring and community-based programmes also supported social inclusion and self-efficacy [6, 37, 40], highlighting the value of relationship-centred models. However, integrative care models, such as those trialled by de Kuijper *et al.* [32], produced mixed outcomes, suggesting that while multidisciplinary approaches are conceptually strong, implementation barriers may reduce their overall impact.

Methodological Diversity and Limitations

As shown in Tables **1**-**4**, intervention designs were heterogeneous. The predominance of quasi-experimental and one-group pre-test–post-test designs reflects limited use of rigorous methodologies, with only one clustered randomised controlled trial identified [38]. Many interventions were short-term, often lasting 5-16 weeks, which limits the assessment of sustained benefits [31, 39]. Instruments varied widely, with some studies employing validated scales such as the *BDI* or *SDQ*, while others relied on single measures or qualitative assessments [34]. These findings mirror earlier reviews, which noted similar gaps in rigour and standardisation in ID research [2, 4].

Risk of Bias Patterns

Table **5** and Figure **2** demonstrated that selection and performance/detection bias were the most significant limitations. Reliance on convenience sampling and lack of blinding were widespread [30, 34], undermining confidence in positive outcomes. By contrast, attrition and reporting bias were generally well managed, with several studies providing transparent reporting of outcomes and maintaining high retention [30, 32]. These findings highlight the need for future trials to adopt randomisation, blinding where feasible, and consistent reporting of outcomes to improve methodological robustness [12, 17].

Implications for Research and Practice

The review underscores that while diverse interventions hold promise, methodological weaknesses constrain the strength of the evidence base. Policymakers and practitioners should exercise caution in generalising results, but can draw encouragement from the consistent benefits of psychological and activity-based interventions [7, 11]. Future research should prioritise robust designs, larger and more representative samples, and cross-study consistency in measurement tools [15]. Strengthening methodological rigour will not only improve reliability but also provide clearer guidance for scalable, evidence-based interventions that can meaningfully improve mental health outcomes for individuals with ID.

Limitations and Future Directions

This review is not without limitations. First, the number of studies that met the inclusion criteria was relatively small, and many relied on quasi-experimental or pre-test–post-test designs rather than rigorous randomised controlled trials [30, 34]. As a result, causal inferences regarding intervention effectiveness remain limited. Second, the heterogeneity of interventions, participants, and outcome measures posed challenges for direct comparison and synthesis. Differences in age groups, severity of ID, and intervention types reduced the ability to identify universal patterns, echoing concerns raised in previous systematic reviews [3, 4].

Another limitation relates to the short duration of most interventions. Exceptfor long-term follow-up in studies such as those by Barrett *et al.*[34], most trials lasted fewer than 16 weeks, raising questions about the sustainability of the observed benefits [31, 35]. Moreover, the absence of standardised outcome measures across studies complicates cross-study comparisons. While some relied on validated tools such as the *BDI* or *SDQ*, others used bespoke or qualitative measures, undermining comparability [29, 37].

Future research should prioritise methodological rigour by adopting randomisation, blinding, and larger, more representative samples to strengthen the reliability of findings [12, 15]. There is also a need to develop and apply standardised outcome measures to enhance comparability across studies. In addition, future trials should explore the long-term impact of interventions and assess their scalability in real-world settings, particularly for community-based and digital programmes [5, 7]. Importantly, collaboration between researchers, practitioners, and families will be crucial in designing interventions that are both evidence-based and adaptable to the diverse needs of individuals with ID.

CONCLUSION

This systematic review indicates that psychological, physical activity, and community-based interventions show potential to improve mental health outcomes among individuals with ID. However, the overall quality of evidence is low to moderate, with most studies limited by small sample sizes, non-random designs, and variable outcome measures. These methodological weaknesses constrain the strength and generalisability of observed effects. Future research should prioritise well-powered randomised controlled trials (RCTs) employing consistent outcome measures, longer follow-up periods, and rigorous blinding procedures to establish causal relationships. In addition,

implementation-focused studies are needed to examine real-world feasibility, cost-effectiveness, and sustainability of effective interventions across diverse care and community settings. Strengthening methodological rigour and contextual applicability will be crucial to building a more reliable evidence base for promoting mental health among people with ID.

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