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Article in Journal of Applied Research in Intellectual Disabilities · October 2019

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Enhancing social inclusion of young adults with intellectual disabilities: A systematic review of original empirical studies

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Funding information

RESPECT; European Union's Seventh Framework Programme, Grant/Award Number: PCOFUND-GA-2013-608728

Abstract

Background: Social inclusion is regarded as an important determinant of health, particularly for young adults with intellectual disabilities. However, only a limited number of reviews report on the findings of original empirical studies on social inclusion of young adults with intellectual disabilities. This review provides a succinct synopsis of original empirical studies on social inclusion among young adults with intellectual disabilities for the period between January 2013 and January 2019.

Methods: Studies were drawn from three electronic databases: ScienceDirect, PubMed and PsycINFO. In addition, hand searches were carried out in several international journals focusing on intellectual disability research. The review included both qualitative and quantitative studies. In all, 24 key studies met the inclusion criteria for this review. The Methodological Quality Checklist developed by Downs and Black (*Journal of Epidemiology Community Health*, 1998, 52, 377) was used to independently assess study quality, and the Cochrane Collaboration Intervention Clinical Appraisal Form was used to extract data and outcome measures for each study.

Results: Among the key findings, structured and organized social inclusion interventions were reported to create better opportunities to engage in social interactions and improve social skills. Moreover, evaluating outcomes on the two core quality-of-life domains, that of interpersonal relationships and community participation, were reported to facilitate positive outcomes for social inclusion of young adults with intellectual disabilities.

Conclusion: There is a need to do an in-depth exploration of the potential impact of facilitators that promote social inclusion of young adults with intellectual disabilities, by conducting rigorous empirical investigations.

KEY WORDS

intellectual disabilities, participation, social inclusion, social media, social networks, young adults

1 | INTRODUCTION

Social inclusion is an important determinant of health, particularly for people with intellectual disabilities (World Report on Disability, 2012). However, people with intellectual disabilities are widely regarded as one of the most marginalized groups in society (Browne & Millar, 2016; UNICEF, 2013). They are often excluded from participating in

social environments and have limited opportunities to develop meaningful friendships with others. The United Nations Convention on the Rights of People with Disabilities (CRPD), in particular Article 30, emphasizes the importance of participation in cultural activities, recreation, leisure and sports (CRPD, 2006). In spite of this, people with intellectual disabilities still experience stigma, discrimination and lack of access to basic services, and they are often deprived of meaningful

social inclusive activities that give them the chance to network and build significant interpersonal relationships (UNICEF, 2013).

1.1 | Understanding the concept of social inclusion

Over the years, the concept of social inclusion has been understood in broad terms and regarded as similar to constructs such as social integration (McConkey et al., 2009), social networks (Clement & Bigby, 2009), community participation (Verdonschot, de Witte, Reichrath, Buntinx, & Curfs, 2009) and social capital (Phillips, Robison, & Kosciulek, 2014). Even though the promotion of social inclusion received great prominence within the CRPD, many researchers regarded the often contested and interchangeable use of the term social inclusion (Bigby, 2012; Cobigo, Ouellette-Kuntz, Lysaght, & Martin, 2012; Garrote, 2017; Gaskin, 2015; Overmars-Marx, Thomése, Verdonschot, & Meininger, 2014), as problematic. This, they noted, creates many challenges to conducting rigorous research and collecting reliable information on the key measures and outcomes related to social inclusion. However, among the various definitions of social inclusion, Simplican, Leader, Kosciulek, and Leahy (2015) in their definition observed two persistent themes of how social inclusion had been studied. The two themes, that of interpersonal relationships and community participation, are regarded as the two most fundamental domains of quality of life for people with intellectual disabilities (Verdugo, Schalock, Keith, & Stancliffe, 2005). Thus, this systematic review adopts an understanding of social inclusion as a constantly evolving process where individual experiences of social connectedness are based on the level of participation in society and the impact it has on an individual's personal interactions.

1.2 | Promoting social inclusion of young adults with intellectual disabilities

The literature on social inclusion of young adults with intellectual disabilities tends to vary widely as it relates to the overall objective and purpose of the studies.

A number of previous reviews (Dean, Fisher, Shogren, & Wehmeyer, 2016; Garrote & Dessemontet, 2015; Gaskin, 2015; Hästbacka, Nygård, & Nyqvist, 2016) focused on the promotion of social inclusion and an increase in social participation. However, these reviews included a broad spectrum of methodological approaches and theoretical viewpoints. For example, Gaskin (2015) conducted a review on fostering social inclusion for people with disabilities, but he wrote a conceptual piece that summarized various theoretical approaches and understandings targeted directly to research undertaken by psychological researchers. Similarly, Browne and Millar (2016) wrote a conceptual paper on the advancement of social inclusion where they propose using a rights-based theoretical framework, when conducting social inclusion research for people with intellectual disabilities. In their scoping review on the literature on intellectual disability, Dean et al. (2016) examined social participation across multiple domains, but with not much focus on individual aspects of participation such as meaning, responsibility and choice.

Hästbacka, Nygård, and Nyqvist (2016) on the other hand focused on identifying the barriers that hinder social inclusion and participation of all people with disabilities and the enablers of successful participation. Overmars-Marx et al. (2014) review investigated the indicators that expand social inclusion outcomes within the immediate environmental surroundings of people with intellectual disabilities. In their findings, they reported a series of complex interactions between environmental factors and personal characteristics that are needed to create more opportunities for people with intellectual disabilities to participate successfully in society. Though this series of conceptual publications is important, there is inadequate critical assessment of the empirical findings. Furthermore, a description of the efficacy of interventions that promote social inclusion of young adults with intellectual disabilities is also notably absent.

The few intervention-based studies on social inclusion that do exist generally include a focus on younger children (Garrote & Dessemontet, 2015; Gray et al., 2014) or older individuals with intellectual disabilities (McCarron et al., 2011; Wilson, Jacques, Johnson, & Brotherton, 2017). For instance, Garrote and Dessemontet (2015) and Garrote's (2017) most recent work focused on interventions related to advancing social inclusion of primary and elementary school children with special needs. Beyond this, an extensive body of evidence-based research has been conducted among young adults between the age of 18 and 24 years, which focused on the implementation of social skills interventions. However, this body of research is targeted exclusively at young adults diagnosed with autism spectrum disorder (ASD; Laugeson, 2014; Laugeson, Ellingsen, Sanderson, Tucci, & Bates, 2014; Laugeson & Frankel, 2010; Reichow, Steiner, & Volkmar, 2013; Tint, Maughan, & Weiss, 2017; Tobin, Drager, & Richardson, 2014). The research also included a social skills training programme that reported positive outcomes in the areas of social communication, assertion and increased frequency of peer interactions through organized activities (Laugeson, Gantman, Kapp, Orenski, & Ellingsen, 2015) within a randomized controlled trial (RCT). Similar to this body of research on young adults with ASD, more research is needed that focuses specifically on understanding social inclusion of young people with intellectual disabilities. Furthermore, it is important that we gain more insight with regard to what the main facilitators and barriers to social inclusion are for this population that are in their transition into adulthood. For this reason, this review will include empirical studies where young adults between 18 and 30 years participated in. Thus, the purpose of this systematic review is to provide an in-depth overview of original empirical studies conducted in the field of intellectual disability of young adults with intellectual disabilities, to describe key factors that facilitate social interaction, and to make recommendations for future research.

2 | METHOD

2.1 | Eligibility criteria

To be included in the review, articles were required to meet the following criteria: (a) to have an original empirical research design

(qualitative, quantitative, longitudinal designs and/or intervention studies), (b) the sample to be inclusive of young adults with intellectual disabilities aged 18–30, (c) the study to include a form of social inclusion participation as it relates to developing interpersonal relationships and community engagement; (d) articles to have been published between the period of January 2013 and January 2019, (e) written in the English language and (f) published within a peer-reviewed journal. Studies were excluded if the outcome measures were not directly related to a level of social participation, if studies did not include participants aged between 18 and 30 years, or if studies included individuals diagnosed with challenging behaviour and excluding a diagnosis of intellectual disability.

2.2 | Search strategy

An extensive literature search was conducted to identify published articles that included original empirical studies that focused on social inclusion of young adults with intellectual disabilities. Searches were carried out in three databases—PsycINFO, PubMed and ScienceDirect for the period between January 2013 and January 2019. These databases were selected, as they each cover a large and distinct part of the relevant literature on social inclusion and intellectual disabilities. Within each database, four searches were conducted. The first, referred to as a *concept search*, had the following search words “social inclusion and intellectual disability.” This was followed by three additional literature searches using a combination of key words selected from the following themes: (a) the nature of social participation or interaction that includes key words such as “social inclusion, social integration/interaction, community participation, community involvement, social network/s”; (b) the nature and type of disability including key words like “intellectual disability, developmental disability,

learning disabilities”; and (c) the population of interest that included key words like “young people or young adults.” Finally, using only the *concept search* (mentioned above), hand searches were conducted in relevant journals including the American Association of Intellectual and Developmental Disabilities (AAIDD) journals, Journal of Intellectual Disability Research (JIDR), Journal of Applied Research in Intellectual Disabilities (JARID), Journal of Autism and Developmental Disabilities (JADD), Disability and Society and Journal of Learning Disabilities. All journals include research studies in the field of intellectual disabilities, and these include a broad range of scientific methodologies including group comparisons, cohort studies and single-subject designs.

The results of the initial “concept search” produced a substantially large number of hits, altogether 21,568 in number. With previous systematic reviews on social inclusion being published prior to 2013 (Bigby, 2012; Cleaver, Ouellette-Kuntz, & Sakar, 2010; Hall, 2016; Seekins et al., 2012), the authors reached consensus that this current systematic review will focus on the period from January 2013 to January 2019 and include only original empirical studies. Given this restricted period, altogether 4,066 potential peer-reviewed articles were identified for further review, including 876 duplicates across all three databases and selected journals. After reviewing each article title, a total of 248 publications were identified for a thorough abstract review, resulting in 72 articles being subjected to the eligibility criteria for this current review. In all, 24 studies met the inclusion criteria and were thus included in this current review (Figure 1).

2.3 | Data extraction and quality assessment

The studies that met the inclusion criteria underwent a quality assessment and extraction of data pertaining to the research aim and outcome of the paper.

Review funnel			
Database search	n	Journal hand search (Relevant Journals)	n
Articles identified through pilot scan (concept search)	21 182	Articles identified through pilot scan concept search	386
Total hits - 21 568			
Articles identified using additional search terms (period from 2013-2019)	5941		
Total number of potential articles for review = 4066			
17 506 (excluded)			
Article duplicates removed from databases and journals	876		
Articles screened by title after duplications removed	3190		
Articles subjected to abstract review	248 (2942 excluded)		
Articles subjected to the eligibility criteria of review	72 (176 excluded)		
Articles included and found relevant for current review	24 (48 excluded)		

FIGURE 1 Review funnel

2.3.1 | Quality assessment

To further determine each empirical study's methodological quality, studies were scored according to the Methodological Quality Checklist (Downs & Black, 1998). The 27 criteria were scored 1 point if the criterion was present, and 0 points if either the criterion was absent, or where criteria were partially answered (P) or unable to be determined (U/D). The criteria included details related to the aims and objectives, main outcome, sample characteristics, description of intervention, lost to follow-up, estimates of the random variability and probability values, main findings, external and internal validity and power analysis. Discrepancies were resolved by discussion and by referencing the original text between two authors. The level of evidence and appraisal score was recorded with 84% interrater reliability reached. An overall maximum score of 32 can be achieved, with higher scores indicating higher quality. Methodological quality assessment indicated that 18 studies were of high quality (24–32), four of good quality (16–23) and two of adequate or poor quality (0–15) (Table 1).

2.3.2 | Data extraction

Data related to study design and outcome measures were extracted using the Cochrane Collaboration Intervention Clinical Appraisal Form. Two investigators independently assessed the final 24 articles that met the inclusion criteria. Establishing reliability required comparison of extracted data between authors until consensus was achieved. Thus, after determining that the two authors' procedure was reliable, the third author did a final overall review of the assessment procedures conducted. Specific data pertaining to study design, sample size, participant demographics, intervention and control characteristics (duration, frequency, provider, setting and adherence), outcome measures, statistical analyses and results, intervention and follow-up measures as well as study conclusions were extracted and recorded.

3 | RESULTS

Figure 1 below presents the review funnel for selecting the final articles for the review and also shows the number of articles excluded at each point. A total of 24 articles were found eligible for this current review.

3.1 | Overview of original empirical studies

The 24 studies included in the review are summarized in Table 1. Across the 24 studies, recruitment was conducted through family care centres, advocacy groups, service providers and organizations providing services to people with disabilities. One particular study recruited participants via a link on the website, but the researchers mainly worked through the structures of an existing organization that provided the disability services to their clients. In terms of

where participants were residing, the majority of participants were reported to be living with their family in rural as well as urban areas, residing in their local communities, and a small number of participants lived independently. The location in which the 24 studies were conducted was in the United States (9), Australia (5), Canada, the Netherlands and Romania (2 studies each) and one study each in Spain, Ireland, Scotland and Malta.

The specific diagnoses or nature of disability of participants in the study included mild, moderate, severe and profound intellectual disabilities based on DSM-IV; some participants had co-morbid developmental disabilities including difficulty in communication related to speech, mental illness and ASD.

The data collection tools for the qualitative design approaches were semi-structured and individual interviews, open-ended questions, focus group discussions, photovoice technique, digital tools and platforms (including social media, email use and video-based instruction). A range of standardized survey instruments were used to measure study outcomes including the GENCAT scale, Integral Quality Scale, Leisure Assessment Inventory, Index of Social Competence, etc. In addition, researchers developed new questions or modified existing questionnaires based on the purpose of their study (Bota, Teodorescu, & Ţerbănoiu, 2014). One study used an online survey using SurveyGizmo software to collect data. Qualitative analysis included analytic report writing (Iconaru & Ciucurel, 2014), phenomenological, thematic analysis using Nvivo (Hall, 2016; Wilson et al., 2017) and photovoice technique (Overmars-Marx et al., 2019; Robinson, Hill, Fisher, & Graham, 2018). Descriptive and inferential statistics were performed for survey results. To compare differences among groups, ANOVA was conducted and regression models were analysed. One study used an ecogram to analyse social networks (Van Asselt-Goverts et al., 2015) and another study (Gilson & Carter, 2016) used interval recording and coded the frequency of social interactions of participants.

Fifteen of the 24 studies had an intervention that varied from implementing a training module on personal development, to using social media to increase social networking, to activities related to leisure participation, sports activity and employment. The types of interventions included the following: a sports training programme to examine social bonding (Bota et al., 2014), a longitudinal cohort study monitoring participation in daytime activity (Gray et al., 2014) and a coaching package on task engagement and social interactions (Gilson & Carter, 2016). In addition, a training module for developing social competence (Iconaru & Ciucurel, 2014), studies using digital platforms, for example email use, a home-based social media intervention, video-based instruction to increase social network and task engagement (Cihak et al., 2014; Davies et al., 2015; Gibson & Carter, 2018; Raghavendra, Newman, Grace, & Wood, 2015; Walsh, Holloway, & Lydon, 2018), a dog-walking programme to gain confidence to engage socially (Bould, Bigby, Bennett, & Howell, 2018), and a community employment and education programme (Schneider & Hattie, 2016). Others included the following: a research project named GO4KIDD (Great Outcomes for Kids Impacted by Severe Developmental Disabilities) that

TABLE 1 Overview of empirical studies

Author/s	Design	Sample/ Location	Aim/Purpose	Measures	Key findings	Quality rating
Asmus et al. (2016)	Intervention study	9 participants, aged 15–18, male and female United States	To explore the effect and social validity of two peer-mediated interventions	Observations, social interactions, academic engagement and prox- imity measures	Both peer support and peer network interven- tions led to increased social contacts and more friendships. New connections were made with peers without severe intellectual disabilities	High
Asmus et al. (2017)	Randomized con- trol trial (RCT)	47 partici- pants, aged 15–18, male and female United States	To examine the efficacy of peer net- work interventions to improve social connections	Social Connections and Relationships Assessment, Social Skills Improvement System (SSIS), Social Validity Questionnaire— four waves of data collection	Social connections made were maintained over time. However, this was not extended beyond the school setting. Identified a need for structured and planned social interventions for individuals with severe intellectual disabilities and peers without disabilities	High
Badia et al. (2013)	Cross-sectional design	125 partici- pants, aged 17–65, male and female Spain	To explore relation- ship between objec- tive and subjective quality of life	Subjective scale of Integral Quality Scale, Leisure Assessment Inventory; staff com- pleted “the GENCAT Scale” to assess qual- ity of life	A predictive rela- tionship found between leisure participation and material, emotional and physical well-being but no association with personal and environ- mental variables	High
Bota et al. (2014)	Mixed-method design	92 par- ticipants; 46 with intel- lectual dis- abilities aged 11–46 years and 46 part- ners aged 11–21; male and female Romania	To identify self-con- cept and self-es- teem perception of athletes with intel- lectual disabilities in relation to social integration	Participant observa- tion, two question- naires with 32 multiple questions including qualitative questions	Regular training and participation in sports competition leads to greater social inclusion, positive self-con- cept and self-esteem perception	Good
Bould et al. (2018)	Intervention study—mixed- method design	16 partici- pants; aged 18–64, male and female Australia	To evaluate the effectiveness of a visiting dog-walk- ing programme to facilitate encounters with community members	Questionnaire based on “People we sup- port questionnaire” (Mansell, Beadle- Brown, & Bigby, 2013). Online survey with open-ended questions	Dog-walking programme facilitates pleasant encounters giving participants greater confidence to engage in social exchanges	Good
Callus (2017)	Qualitative study	7 partici- pants; aged 20s–50s; 5 females and 2 males Malta	To understand how people with intel- lectual disability experi- ence friendship	Focus group discussion	Participants identified friendships as relation- ships that had an element of reciprocity, while linking a lack of reciprocity with the absence of friendship	Adequate

(Continues)

TABLE 1 (Continued)

Author/s	Design	Sample/ Location	Aim/Purpose	Measures	Key findings	Quality rating
Cihak et al. (2014)	Intervention study (multiple-probe design)	4 participants; aged 21–23, 3 males and 1 female United States	To examine the effects of digital literacy skills to email across multiple platforms	Event recording procedures	Email use as another form of communica- tion may ease social isolation and advance networking skills for people with intellectual disabilities	High
Davies et al. (2015)	Intervention study	5 participants; aged 21–23, 3 males and 2 females United States	To describe the de- velopment and initial testing of a cogni- tively accessible pro- totype interface for Facebook (Endeavor Connect)	Observation and online recording procedures	Results indicates that, when using Endeavor Connect, young adults with intellectual dis- abilities completed more tasks on their own with fewer errors and required fewer prompts	High
Gray et al. (2014)	Longitudinal study	536 par- ticipants, aged 4–19 in Wave 1 and 21–38 in Wave 5; male and female Australia	To investigate changes in living ar- rangements and par- ticipation in daytime activity over time	Index of Social Competence questionnaire, Developmental Behaviour Checklist (DBC-P and DBC-A), parental well-being survey	A small proportion of young people were in paid employment. Majority of young adults engaged in structured activities. Parents caring for their adult child reported high levels of mental health problems	High
Gilson and Carter (2016)	Multiple-probe, single-case ex- perimental design	3 participants; aged 18–26; only males United States	To examine the ef- fects of a coaching package (covert audio coaching- CAC) on task en- gagement and social interactions	Partial-interval recording to code interactions and task engagement. Statements of social validity	Social interactions increased, and engage- ment in tasks was main- tained. Participants reported the interven- tion beneficial	High
Gibson and Carter (2018)	Intervention study—single- case experimen- tal design	5 participants; aged 18–21; 3 females and 2 males United States	To examine the effects of video- based instruc- tion ONEder App (SpecialNeedsWare, 2016) on the indi- vidualized employ- ment-related social behaviours (ERSB) of students with intel- lectual disabilities with severe levels of impairment	Partial-interval data collection—proxim- ity, social validity and observations	Task engagement main- tained at high levels. In spite of concern previously noted, the frequency of self-initi- ated social interactions was not suppressed in the absence of proxim- ity of a support	High
Hall (2016)	Phenomenological qualitative study	14 partici- pants; aged 21–35; male and female United States	To describe the com- munity involvement of young adults with intellectual disability	Semi-structured interviews with open- ended questions	Young adults' involve- ment in work, volun- teering, recreation and leisure activities influ- enced the development of social relationships. These experiences either facilitated or hin- dered their community involvement	High

(Continues)

TABLE 1 (Continued)

Author/s	Design	Sample/ Location	Aim/Purpose	Measures	Key findings	Quality rating
Iconaru and Ciucurel (2014)	Intervention study	10 participants; aged 18–20; male and female Romania	To implement and evaluate a training module for developing social and civic competencies in people with intellectual disabilities	Pre-post measures. Qualitative assessment instrument for quality-of-life diagnoses	Quality of life of people with intellectual disabilities is associated participation as citizen, understanding civil rights and civic engagement	High
Nicholson and Cooper (2013)	Comparison study	39 rural; 633 urban participants, aged 18–80, male and female Scotland	To compare measures of social exclusion to identify whether double disadvantage exists	Semi-structured interview, Scottish Index of Multiple Deprivation (SIMD), British Institute of Learning Disabilities questionnaire, modified Interview Measure of Social relationships questionnaire, Vineland Adaptive Behaviour Scale	Participants in rural areas were significantly more likely to have regular daytime employment and were more likely to have been on holiday; however, they were less likely to use community facilities on a regular basis. Both groups had similar number of networks but the quality of relationships less close in rural areas	Good
Raghavendra et al. (2015)	Sequential mixed-method design	8 participants; aged 12–18, male and female Australia	To investigate the effectiveness of a home-based intervention using social media to enhance social networks of young people with disabilities and communication difficulties	Canadian Occupational Performance Measure (COPM). Goal Attainment Scale (GAS). Circles of Communication Partners (CCP), Observations. Pre-post measures	A significant increase in the number of online communication partners observed. Increased social connections, improved communication frequency, speech intelligibility and literacy reported	High
Robinson et al. (2018)	Qualitative study (photovoice technique)	30 participants; aged 12–25, male and female Australia	To investigate lived experiences of belonging and felt exclusion	Interviews and pictorial mapping	Feeling comfortable and accepted increase a sense of belonging. Fear of negativity or harm leading to feelings of exclusion	Good
Schneider and Hattie (2016)	Mixed-method design	76 participants; aged 17–31, male and female Canada	To investigate outcomes of the Community Employment and Education (ACEE) programme and to capture lived experiences of participants' social networks	Survey instrument and interviews	The ACEE programme contributed to developing long-lasting relationships. Active social participation in networks reported	High
Shpigelman (2017)	Qualitative study	16 participants; aged 18+, 7 male and 9 females United States	To understand and describe social capital benefits of using Facebook	In-depth semi-structured interviews	Facebook use regarded as a potential for social capital and empowerment. Guidelines needed for social media best practice for people with intellectual disabilities	Good

(Continues)

TABLE 1 (Continued)

Author/s	Design	Sample/ Location	Aim/Purpose	Measures	Key findings	Quality rating
Shpigelman and Gill (2014)	Mixed-method—online survey	58 participants; aged 18+, male and female United States	To explore the use of social media from perspective of individual with disabilities	Self-report online survey using SurveyGizmo—software program designed for Internet surveys and open-ended questions	Participants with intellectual disabilities visit Facebook less frequently than other Facebook users. Less frequent use of Facebook related to the inaccessibility of Facebook in relation to the interface and participant level of reading skills	High
Taheri et al. (2016)	Secondary data analysis	628 participants (parents of); 210 = typically developing children (TD), 186 = children with intellectual disabilities only; and 232 = children with ASD plus intellectual disabilities; children aged 3–19; male and female Canada	To examine the social participation and friendships of children and adolescents with severe developmental disabilities, with and without ASD, compared with peers without developmental disabilities	Survey	Children and adolescents with intellectual disabilities only and intellectual disabilities and ASD were reported to participate in significantly fewer activities and less frequent than typically developing peers. They also reported to have fewer friends and poorer quality of friendships. Individuals with intellectual disabilities and ASD participated even less frequently in some activities and had fewer friends relative to those compared to individuals with intellectual disabilities only.	High
Overmars-Marx et al. (2019)	Qualitative study—photovoice technique	18 participants; aged 24–65, male and female Netherlands	To investigate perspectives on neighbourhood social inclusion	Interviews	Public familiarity contributed to a sense of belonging in the neighbourhood. Photovoice technique empowered people with intellectual disabilities to tell their own stories—a platform to have their voices heard	Good
Van Asselt-Goverts et al. (2015)	Comparison study	105 participants; 33 with mild to borderline intellectual disabilities, 30 with ASD, 42 reference group, aged 19–37; male and female Netherlands	To determine similarities and differences in social network characteristics, social network among 3 groups: people with intellectual disabilities, people with ASD and a reference group	Maastricht Social Network Analysis (MSNA) to map structural and functional characteristics of social networks, Satisfaction and Wishes with regard to Social network	People with intellectual disabilities and people with ASD reported less network members on their ecograms compared to the reference group. People with intellectual disabilities have more professionals listed compared to both the ASD as the REF group	High

(Continues)

TABLE 1 (Continued)

Author/s	Design	Sample/ Location	Aim/Purpose	Measures	Key findings	Quality rating
Walsh et al. (2018)	Intervention study	7 participants; aged 19–22, 3 females and 4 males Ireland	To evaluate the effectiveness of the Walker Social Skills curriculum and video modelling to increase social communication	Social Responsiveness Scale, Social Skills Improvement System (SSIS), ACCESS Placement Test, Observations	Social skills training intervention enhanced overall social com- petence. As a result, problem behaviour de- creased. Improvement found in peer-related, adult-related and self- related social skills for all participants	High
Wilson et al. (2017)	Qualitative study	10 partici- pants; aged 19–48, 7 female and 3 males Australia	To explore and bet- ter understand the lived experiences of adults with intel- lectual disability who were members of the structured social group	Interviews	Two key themes emerged—(a) sup- ported engagement fosters well-being, and (b) structured social groups develop social belonging and connect- edness. Participants acknowledged support is needed to participate and that social group changed their personal lives in many ways	Adequate

Note: Disclaimer: there may be additional articles that have been excluded from this review prematurely. This is due to insufficient information contained in the abstracts when reviewed for inclusion.

examined the social participation and friendships among kids (Taheri, Perry, & Minnes, 2016), a structured supported social group (Wilson et al., 2017), a peer-supported intervention including a randomized control trial (RCT) (Asmus et al., 2017, 2016) and a social skills programme to improve employment-related social competence (Walsh et al., 2018). The majority of the 15 intervention studies did a follow-up with participants after the intervention was implemented and examined pre-post measures. Finally, the one longitudinal cohort study followed participants over an 18-year period collecting outcome measures of daily activity and living arrangements over five intervals (five Waves).

4 | DISCUSSION OF KEY FINDINGS

The key findings are discussed based on the relevant data and themes that emerged across all the 24 studies.

4.1 | Emerging themes

4.1.1 | Structured social inclusion activities

A number of positive outcomes were reported when the social inclusion activity was done through structured facilitation done by staff members or researchers, or when a social activity was implemented through a detailed training programme. The majority of the studies reviewed reported outcomes through a structured

group or social activity (Asmus et al., 2017, 2016; Bota et al., 2014; Bould et al., 2018; Gilson & Carter, 2016; Overmars-Marx et al., 2019; Robinson et al., 2018; Schneider & Hattie, 2016; Wilson et al., 2017).

The Bota et al. (2014) study reported greater social inclusion, an optimistic self-concept and positive self-esteem perception of young people participating in a sports project that focused on social bonding. This mixed-method study reported a positive correlation between high levels of athletic training and expressing personal opinions freely, to enhance personal empowerment. This sports project involved athletes with intellectual disabilities and athletes from mainstream schools that participated in group-training sessions, attendance in educational sessions and scheduled competitions that were supervised by a physical education teacher. The researchers concluded that projects that include sports events have the potential to help young people embrace positive constructs such as acceptance, self-confidence, sharing and friendships.

In a 10-month transition programme named Access to Community Employment and Education (ACEE), Schneider and Hattie (2016) reported active social engagement with as high as 84% who reported spending time with friends several times a month, and 76% engaging in leisure activities after the programme prepared them for employment and further education. The inclusion criteria to participate in the ACEE programme were that each participant followed an Individualized Program Plan (IPP) together with a transition plan while still in high school. In the qualitative analysis of this study, participants described new ways of communication and social

networking, by using social media to connect with friends and playing video games.

Wilson et al. (2017) explored the lived experiences of adults with intellectual disabilities who were members of a structured social group, who met weekly for 2 hr to discuss new social activities of interest that appeal to all of them. In follow-up interviews, participants described an increase in their health, their well-being and a sense of belonging (Cobigo et al., 2012; Rimmerman, 2013). Furthermore, participation in this social group led to a growth in the size of participants' social networks. Therefore, researchers stress the importance of staff support to help with the coordination of more structured social groups to increase opportunities for social participation.

Gilson and Carter (2016) used what they refer to as partial-interval recording in a job-coaching intervention package. In this single-case experimental pilot study, data were collected on students' social and work task-related interactions. They found that participants needed explicit prompting to encourage social interactions. Only thereafter did participants' social interactions increase while their work task management was maintained. Thus, the authors highlighted that social interaction does not always occur naturally for people with intellectual disabilities, even though a workplace setting may be regarded as an integrated and inclusive environment. As a result, young people with intellectual disabilities have often reported losing their jobs because of the lack of on-the-job prompting and coaching to help encourage appropriate social interactions.

Asmus et al. (2016) explored the effect and social validity of two peer-mediated interventions in a pilot study conducted with young adults with severe intellectual disabilities. Peer network interventions led to increased social contacts and more friendships. In a follow-up, multi-year randomized control trial, they examined the efficacy of peer network interventions to improve social connections (Asmus et al., 2017) and found social connections made earlier were maintained over time. Effect sizes for students participating in peer networks were larger than the comparison group, and increases in social contacts and friendships were reported.

Bould et al. (2018) implemented a supported dog-walking programme to facilitate encounters with other community members. Greater confidence to engage in social exchanges was reported in open-ended questions. Both Overmars-Marx et al. (2019) and Robinson et al. (2018) used photovoice technique to investigate lived experiences within communities where participants reside. Public familiarity contributed to a sense of belonging, and fear of negativity or harm was reported to lead to feelings of exclusion.

4.1.2 | Quality of life

Two of the studies (Badia, Orgaz, Verdugo, & Ullán, 2013; Iconaru & Ciucurel, 2014) focused on participants' quality of life, a construct that is understood to refer to general well-being of individuals in relation to their physical health, family relations, education, employment, safety, security to freedom, religious beliefs and their environment. In the first study, Iconaru and Ciucurel (2014) implemented a 7-day training module for the development of social and

civic competencies. In a qualitative assessment, participants reported their quality of life to be in direct relation with their overall life participation in their communities and their engagement in public duties.

In the second study, Badia, Orgaz, Verdugo, and Ullán (2013) explored the relationship between participants' leisure participation in their communities and the impact on their quality of life. The findings indicated a predictive relationship between material, emotional and physical well-being and quality of life, and their leisure participation. Personal and environmental factors had no moderating effect on leisure participation and quality of life. However, societal attitudes were reported to have a bigger impact on participants' preferences of the different types of leisure activities.

4.1.3 | Impact of location and setting

Two studies explored whether a specific location or setting could lead to social exclusion or could result in a possible double disadvantage for young adults with intellectual disabilities. Nicholson and Cooper (2013) compared measures of social exclusion for young adults with intellectual disabilities living in a rural area versus those living in an urban area. They found that adults with intellectual disabilities in rural areas (23.1%) were more likely to have opportunities to be employed with or without support in a job, compared to urban-based (6.2%) young adults with intellectual disabilities. In addition, the young adults in rural areas were reported to participate more successfully outside of their home environment. On the other hand, young adults with intellectual disabilities living in urban areas reported more community participation on a regular basis and with far better quality of friendships with others in their social networks.

Raghavendra et al. (2015) implemented an individualized home-based intervention with young people in two rural towns using social media to enhance social networks. Researchers highlighted a number of benefits related to participation in this intervention, including improvements in speech intelligibility due to using dictation software, as well as an increase in social networks with extended family members, staff members and a few acquaintances. However, in parent interviews, concerns were raised related to unequal distribution of resources between rural and urban areas including information communication technology (ICT) programmes and access to assistive technology (AT). In spite of these different findings based on location, Simplican et al. (2015) argued that an individual's interpersonal space (e.g., a private home) and the public dimension (e.g., a community environment) need to be mutually supportive, irrespective of a specific location or setting, to foster greater outcomes to social inclusion.

4.1.4 | Social interaction through social media and digital platforms

The importance of digital tools and social media is a key factor when discussing the topic of social inclusion, and how it relates to new pathways of social interaction and social networking. A few studies

in this review focus on the use of and the impact of social media, digital platforms such as email use, as well as video-based instruction among young adults with intellectual disabilities. Shpigelman and Gill (2014) conducted an online survey to explore the impact of social networking sites to support social interaction for young adults with intellectual disabilities. In this mixed-method study, participants highlighted the challenges they face when using Facebook. These challenges include the difficulty with navigating typical computer interfaces as well as web browsers that require a lot of reading. Thus, they expressed the need for text-based literacy support (Iconaru & Ciucurel, 2014; Shpigelman & Gill, 2014). Davies et al. (2015) described the development and initial testing of a cognitively accessible prototype interface for Facebook (Endeavor Connect). The performance of young adults with intellectual disability when completing five common Facebook tasks was compared when using the Endeavor Connect and Facebook interfaces. Results demonstrated that more tasks were completed independently with fewer errors and required fewer prompts. Shpigelman (2017) also followed up with conducting semi-structured interviews with family members and direct support staff on the use of Facebook by the young adult with intellectual disabilities in their care. They described the potential of social capital benefits in terms of integrating young adults with intellectual disabilities into the broader society. Participants' less frequent use of Facebook, for example, was not the "digital divide" often noted by researchers, but rather, the inaccessibility to suitable and appropriate language programmes, as well as participants' own level of reading ability, was reported as stumbling blocks.

Raghavendra et al. (2015) in their study reported an increase in the length in communication, and more meaningful messages after the implementation of a targeted social media intervention. Similarly, Cihak et al. (2014) reported email use as another form of communication that may ease social isolation. Walsh et al. (2018) evaluated the effectiveness of a social skills curriculum and video modelling to increase social communication and reported overall social competence, and as a result, problem behaviour decreased. Gibson and Carter's (2018) study included the use of video instruction on the individualized employment-related social behaviours (ERSB), with task engagement reported to be maintained at high levels. This confirms the potential of social media, digital platforms and video-based instruction to expand and increase social networking via online communication with others, and which needs to be explored in more depth.

4.1.5 | Comparing social inclusion across populations

Two studies (Taheri et al., 2016; van Asselt-Goverts, Embregts, Hendriks, Wegman, & Teunisse, 2015) compared outcomes of social networks and friendships among populations that include young people with intellectual disabilities, ASD and typically developing young people. Van Asselt-Goverts et al. (2015) found that young adults with intellectual disabilities and young adults with ASD had more restricted social networks, compared to typically developing

young people living in the community when they compared similarities and differences in social network characteristics. The three groups differed with respect to affection for their family members versus the professional staff. A high preference to have contact with the professionals was reported by young people with intellectual disabilities and ASD ($p = .009$), compared to typically developing young people ($p = .020$). This, the researchers explained, was due to the dependence on the necessary support from professionals. Therefore, professional staff need to be acutely aware of the important role they play in the lives of people with intellectual disabilities and ASD. Furthermore, with regard to knowing acquaintances, participants with intellectual disabilities knew their acquaintances for a shorter period of time than participants with ASD ($p < .048$) and typically developed individuals ($p < .001$).

Taheri et al. (2016) examined the social participation and friendships of three groups: children and adolescents with intellectual disabilities only, children and adolescents both with intellectual disabilities and ASD, and children and adolescents without intellectual disabilities or ASD. A significant pattern was found among the groups ($p = .001$) with 93% typically developed participants reporting having school friends, compared to 76% of participants with intellectual disabilities and 53% of participants with intellectual disabilities and ASD. As a result, participants with intellectual disabilities only and those with intellectual disabilities and ASD were reported to have fewer friends and poorer quality of friendships. Children and adolescents with intellectual disabilities only and those with intellectual disabilities and ASD were reported to participate in significantly fewer activities and to participate in society much less frequently than their typically developing peers. Finally, participants with intellectual disabilities and ASD participated even less frequently in some activities and had fewer friends relative to those with intellectual disabilities only. These findings indicate that young adults diagnosed with comorbid conditions may be at greater risk of social exclusion. Future studies comparing group outcomes may identify key areas to focus on and inform more tailored approaches for service delivery and research in such cases.

4.1.6 | Interpersonal relationships and community participation life domains

Nine studies examined social inclusion in relation to the two major life domains, that of interpersonal relationships and community participation (Simplican et al., 2015). Seven out of the nine studies have already been discussed above, under the different themes (Badia, Orgaz, Verdugo, & Ullán, 2013; Bota et al., 2014; Nicholson & Cooper, 2013; Overmars-Marx et al., 2019; Robinson et al., 2018; Schneider & Hattie, 2016; Taheri et al., 2016). All of the seven studies included outcome measures on both the interpersonal relationship and community participation domains. The remaining two studies not discussed as yet, focused on each one of these domains respectively. In addition, both these studies adopted qualitative design approaches (Callus, 2017; Hall, 2016).

In Hall's (2016) study, interviews were conducted with young adults with intellectual disabilities to better understand their personal experiences of community involvement. Participants described their involvement in areas of their jobs, volunteering, recreational events and leisure activity. A key finding emerging from the data was the sense of belonging that participants experienced in settings where people with intellectual disabilities were highly valued and where people's differences were well accepted. In addition, the findings indicated that more spontaneous, generic activities in society fostered more opportunities to develop participants' social roles. However, it was reported that within the wider community, participants often experienced more restrictions when trying to develop new relationships.

Callus (2017) focused on the interpersonal relationship domain and conducted focus group discussions to understand the fostering of meaningful friendships. Participants regarded their co-workers, support workers, family members and their intimate partners as their close friends. All of these friends, however, were the people whom participants met within a more structured and formal setting and less so from informal and unprompted social engagements. A striking feature of what participants regarded as a more meaningful relationship was when the friendship was built on an equal basis and where friends often helped each other when in need. This emphasizes the importance of a degree of reciprocity and mutual exchange, especially where friends have mutual respect for each other's needs.

4.2 | Key predictors and barriers to social inclusion

Based on the findings for this review, a number of predictors of greater social inclusion have been noted for young adults with intellectual disabilities. Firstly, participation in a sports activity or a guided training programme promoted feelings of empowerment and self-confidence (Bota et al., 2014). This is particularly true when young adults with intellectual disabilities interact with their peers without disabilities during these activities (Asmus et al., 2017; Bota et al., 2014). They reported development of new networks beyond that of the close circle of family members or the professionals they most often regard as the only friendships they have (van Asselt-Goverts et al., 2015). In turn, this presents a great opportunity for peers without disabilities to extend their friendships to their peers with disabilities (Asmus et al., 2017). Secondly, interventions that focus on social skills as they relate to task management, interactions within school settings (Asmus et al., 2017) or in preparation for employment (Schneider & Hattie, 2016; Walsh et al., 2018), create more chances and opportunities to connect, network and bond with peers and colleagues, to help build mutual relationships that extend beyond the school or workplace (Walsh et al., 2018). It is these friendships with an element of reciprocity that have been regarded as most valued by young adults with intellectual disabilities (Callus, 2017). Thirdly, a new emerging facilitator to social inclusion of young adults with intellectual disabilities is the use of social media and participation in various digital platforms. Though family members and caregivers have expressed great concern about the risks of social

media (Davies et al., 2015; Shpigelman, 2017), the findings clearly indicate increased social connections and improved communication skills when using social media (Raghavendra et al., 2015). However, there is a need for more training, language simplification and development and testing of a cognitively accessible prototype interface to support young adults with intellectual disabilities in this regard (Davies et al., 2015).

On the other hand, barriers to social inclusion have also emerged from the findings. Firstly, experiences of negative attitudes and, at times, discriminatory behaviour have been reported (Sullivan & Masters-Glidden, 2014). This makes young adults with intellectual disabilities feel that they do not belong (Overmars-Marx et al., 2019), and they thus feel excluded from participating in various social groups that share the same interests (Robinson et al., 2018). Even though some studies have been examining participation in more structured social groups, often the members of these groups are staff or family with whom they are already interacting on a daily basis (van Asselt-Goverts et al., 2015). A practical barrier is related to physical access to leisure events in the community, specifically in rural areas (Nicholson & Cooper, 2013). Also, the lack of or limited access to public transport to connect with their peers, coupled with appropriate information services that address the linguistic needs of young adults with intellectual disabilities (Cihak et al., 2014; Shpigelman, 2017), is reported as an obstacle to independently navigating their way in the community. Thirdly, the lack of digital literacy skills (Iconaru & Ciucurel, 2014; Shpigelman & Gill, 2014) related to social media use creates a barrier to connecting with others.

4.3 | Limitations

Several limitations in the literature of these reviews need to be highlighted, in order to inform similar reviews to be undertaken. Although the review focused on capturing empirical studies related to social inclusion of young adults with intellectual disabilities, the criteria for inclusion were overall too broad and expansive. For instance, the age range of inclusion of the study population in the review was not "exclusive" but rather fell within a wider age range, varying from as young as 4 years up to 80+ years. This inadvertently broadens the interpretation of findings to that of a wider population than the intended focus on young adults. Furthermore, a wide variation in measures and methodologies is used across the studies. This has a direct impact on the robustness of the measures to develop key indicators that effectively measure social inclusion. For example, a number of studies measured concepts such as quality of life and social participation (Badia et al., 2013; Iconaru & Ciucurel, 2014) using different data collection methods, instruments and tools. However, they report on a different set of indicators for each, thus concluding different findings and outcomes. In future reviews, this needs to be refined to be more methodologically specific.

Even though a high percentage of overall interrater reliability (84%) was achieved for assessing the quality of selected articles, a checklist that specifically adopts qualitative research design

criteria would have been more appropriate, particularly for the studies that adopted qualitative methodologies. Only two studies in this review reported on longitudinal data (Asmus et al., 2017; Gray et al., 2014), which is imperative to gain an understanding of fundamental changes in social interaction for young adults with intellectual disabilities, and to understand how the relationships between key variables are influenced based on personal and environmental changes. Hence, more scientifically rigorous approaches are needed to measure the long-term impact of the interventions across larger samples.

Another gap in the literature reviewed is examining people's characteristics, to gain an understanding of how gender differences may impact on social-related outcomes for this group. Moreover, it is important to view how their individual level of functioning impacts on their successful participation in social activities and networking with peers with and without disabilities. For example, individuals presenting with challenging behaviours will need interventions that measure more individualized and discreet social goals (Asmus et al., 2017). Only one study (Nicholson & Cooper, 2013) examined the environmental context as it pertains to rural areas, to understand social inclusion for young adults with intellectual disabilities. Greater insight is needed to understand the universal experiences versus culturally specific experiences to social inclusion for young adults with intellectual disabilities.

5 | CONCLUSION AND DIRECTIONS FOR FUTURE RESEARCH

Based on this systematic review, it was highlighted that outcomes for social inclusion of young adults with intellectual disabilities will be strengthened when social interactions are supported and streamlined through structured and guided social activities. Such structured activities will increase the chances for young people with intellectual disabilities to foster new and stronger social bonds while at the same time participating in the wider community. Important to note is that participation in more spontaneous and voluntary engagements was reported to foster more valued accounts of social interaction and helped develop social roles with people without disabilities much better, compared to the more organized social activities. Even though different in nature, both these approaches, structured versus spontaneous, have great potential to enhance social inclusion of young adults with intellectual disabilities to connect and interact with others. However, is important to keep in mind that the type of activity may be influenced or selected by supporting staff or the family, and not necessarily be the choice of the young adult with intellectual disabilities. Therefore, this important aspect of personal "choice" needs to be further explored in future research. Furthermore, there is a shortage of studies on public and community views and attitudes of social inclusion of young people with intellectual disabilities. It is therefore deemed important to understand the intricacies that may hinder the fostering of social connections with young people with intellectual disabilities. Future empirical studies should include community members' participation as well, and this

will foster opportunities for acceptance, awareness of and respect for young people with intellectual disabilities.

Future empirical studies that evaluate outcomes on the two domains of interpersonal relationships and community participation will give a more in-depth understanding of how young people with intellectual disabilities view and interpret their social involvement and interactions with others (Tint, Maughan, & Weiss, 2017).

A number of studies in this review captured the individual "voices" of young adults with intellectual disabilities who were active participants reporting their personal experiences of social inclusion, which is an important element often missed in disability research (Callus, 2017; Hall, 2016). However, Gray et al. (2014) noted that some parents that participated in their study did report high levels of mental health problems and difficulty with the long-term care arrangements for their children. Though this study did not review parent views, it does not take away the significant role of parents, caregivers or staff members on how they view the person with disability's social inclusion experiences. Thus, it is imperative that future research involves parents in a more meaningful role in the research process to understand their needs to best support their son or daughter. Such participatory approaches have been proven most beneficial when parents have input and understand the potential benefits of research being conducted (Bergold & Thomas, 2012; Whyte, 1991).

Furthermore, multiple factors shape experiences and outcomes of young adults with intellectual disabilities; therefore, caution should be noted when comparing studies undertaken in different countries with different cultures. Also, the differences in service provision for people with intellectual disability that include special schooling such as special needs schools or training centres and institutional care, and that vary from group home settings to supported living accommodations, need to be taken into account.

ACKNOWLEDGMENTS

This research was supported by funding from the charity RESPECT and the People Programme (Marie Curie Actions) of the European Union's Seventh Framework Programme (FP7/2007-2013) under REA grant agreement no. PCOFUND-GA-2013-608728.

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How to cite this article: Louw JS, Kirkpatrick B, Leader G. Enhancing social inclusion of young adults with intellectual disabilities: A systematic review of original empirical studies. *J Appl Res Intellect Disabil*. 2020;33:793–807. <https://doi.org/10.1111/jar.12678>