

REVIEW ARTICLE

The Utilisation of Adaptive Behaviour Assessment Among Children with Autism Spectrum Disorder: A Scoping Review

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ABSTRACT

Adaptive behaviour in children with Autism spectrum disorder (ASD) is defined as the degree to which the children can be self-reliant and function independently in real-life conditions. Assessing the adaptive behaviour is vital to provide insight and guide the diagnosis of ASD. Therefore, this scoping review aims to map the utilization of adaptive behaviour assessments conducted by occupational therapists for children with ASD. Published articles between 2006 and 2020 were retrieved from three databases, including Scopus, Cochrane Library, and the Web of Sciences, that included English, full-text published articles, reviews, or thesis which provide relevant highlights on adaptive behaviour assessment for ASD. Nineteen articles met the inclusion criteria. There are three themes emerged from the review: adaptive behaviour as an individual, adaptive behaviour as a society and utilising the instrument. Adaptive behaviour assessment has been used as a comprehensive monitoring tool for functional status among children with ASD. This scoping review mapped the utilization of adaptive behaviour assessment by an occupational therapist that directs future research and clinicians on potential future guidelines of adaptive behaviour evaluation for children with ASD.

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INTRODUCTION

Adaptive behaviour in children with Autism spectrum disorder (ASD) is defined as the degree to which the children can adjust themselves to be self-reliant and function independently in real-life conditions (1-2). It is a challenging concept and was mainly defined in accordance with the assessment tools used in each study (1-3). Initially, adaptive behaviour was proposed to depict three principal elements: (i) learning; (ii) social adjustment; (iii) maturation (4). Adaptive behaviour was then revised and defined as the abilities required to live independently and responsibly (1). In children, adaptive behaviour can be described as their behaviour to function independently, optimally, and appropriately in daily life (5-6). Following the revision of mental

health diagnosis, adaptive behaviour and intellectual functioning were equally essential to provide insight and guide the diagnosis of intellectual disability or related disease (1,7). Furthermore, adaptive behaviour skills were compulsory for independence, including self-care, socialisation, community integration, recreation, communication, education, and work (1,3,8). However, it was challenging to meet age-appropriate adaptive behaviour skills with limited talents in these life skills and subsequently needed more support to achieve optimal independence.

Autism spectrum disorder (ASD) was characterised by deficits in social communication and restricted and repetitive behaviours and interests (1). The impact and severity of symptoms manifested differently in each individual with ASD. Typically, individuals with ASD were first diagnosed in childhood, with many of the most obvious signs appearing around two to three years of age. For some children, their development will be normal by toddlerhood, and they will begin to gain or lose previously acquired skills. However, prolonged

isolation, lacking support and late intervention will increase their symptom severity, thus impeding their development (9-10). Subsequently, their development in communication, socialisation and daily living skills was lower than typically developing children. Nevertheless, this can be improved if interventions were done in their early childhood compared to later years (11-12).

Generally, there are several interventions that can improve the adaptive behaviour among children with ASD, such as video-based intervention (13-14), parent-mediated (parents are taught how to promote social interaction, communication, imitation and play skills to stimulate their child's development) intervention (15-16) hippotherapy (17), the Picture Exchange Communication System (PECS) (18-19), game technology (20). However, video modelling and prompts (21) and parent education (16) show no significance for improving adaptive behaviour among children with ASD. For instance, the key to having the most effective interventions is choosing a valid and feasible method to measure a child's adaptive behaviour.

In planning the most appropriate and comprehensive intervention, assessment and evaluation must be conducted (22). Assessment of adaptive behaviour will also facilitate comprehensive monitoring of improvement in adaptive behaviour. Occupational therapist is a health care professional who is often involved in assessing and treating children with ADS. Occupational therapy assesses the children's developmental, sensory and motor functions, perceptual performance in daily activities, play and school activities. In addition, the occupational therapist also assesses the adaptive behaviour to determine the ADS children's ability to perform the activities mentioned above successfully.

To date, there is no review article that provide information regarding the utilization of the adaptive behaviour assessment among occupational therapists for children with ASD. Thus, this scoping review aimed to map the utilization of adaptive behaviour assessments conducted by an occupational therapist for children with ASD. This review is essential in providing insight and guiding current occupational therapy practice in assessing adaptive behaviours in children with ASD.

METHODS

This scoping review was followed the framework by Arksey and O'Malley (23) and reported according to the Preferred Reporting Items for Systematic review and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) (24). This framework is comprised of five stages: (i) identifying the research question; (ii) identifying relevant studies; (iii) selecting studies; (iv) data charting; (v) collating, summarising and reporting the results (23).

Identifying the research question

Adaptive behaviour is one of the focuses of occupational therapy's practice. Therefore, occupational therapists

emphasise the assessment of adaptive behaviour problems among children with ASD. Due to adaptive behaviour difficulties, children with ASD may have difficulty engaging in typical childhood occupations, such as activities of daily living, social participation, play, and education. Hence, this scoping review aimed to answer the question: What is the utilization of adaptive behaviour assessments conducted by an occupational therapist on children with ASD?

Identifying relevant studies

A thorough search of the literature was done separately by all authors (ET, MT, SS, and LA) who are paediatrics occupational therapists in May 2021 in order to discover a wide range of literature that precisely reflected the perspectives of the use of adaptive behaviour assessments among children with ASD. Comprehensive search keywords were used to ensure that all studies that employed potentially relevant to the adaptive behaviour assessment were included. The main keywords used to search in the databases of Scopus, Cochrane Library, and the Web of Sciences include adaptive behaviours, tools and autism. ET manually eliminated the duplicates. The teams meet to discuss their finding every two weeks for four months. Any discrepancies were discussed and resolved accordingly. This review was completed in December 2021.

Selecting studies

All articles retrieved through searching were added to Mendeley and listed in a master citation table. The full text of all publications was then reviewed to determine the article's eligibility. Articles were considered possibly acceptable if they satisfied all of the following requirements; (i) original research or study protocol published in peer-reviewed journals or peer-reviewed conference proceedings, (ii) English language, (iii) using adaptive behaviour assessment, (iv) inclusion of participants include the parent of children with ASD and individuals with ASD. The articles published in non-peer-reviewed journals, conference papers, abstracts, or reviews were excluded. The articles without the term adaptive behaviour or self-help skill in the abstract, keywords or title, which provide relevant highlights on adaptive behaviour assessment among children with ASD, are also discarded. ET and MT separately filtered the findings using the criteria in two steps: title and abstract screening, followed by full-text screening. Figure 1 illustrates the procedure. If the opinions of both writers were not similar, SS and LA were called in to resolve the disagreement. As Levac (25) advised, all authors met weekly during screening to address problems, uncertainties, and progress related to study selection.

Data charting

A preliminary finding charting tool was created to record essential information from each article and to ensure consistent review. The data charting tool and the

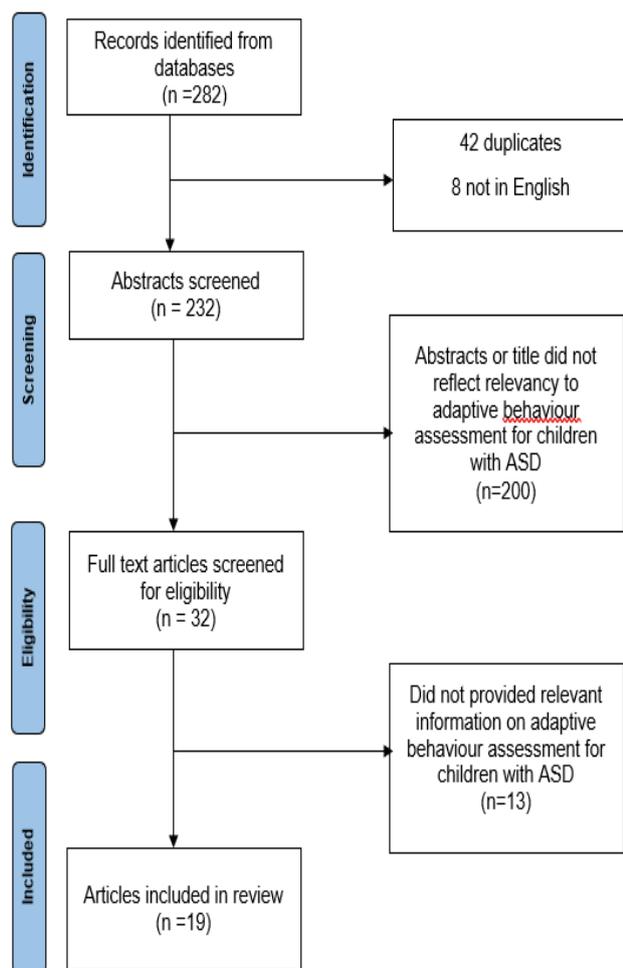


Figure 1: PRISMA Flow Diagram for selecting studies

established data extraction criteria were then revised. We developed a standardised Microsoft Excel (Microsoft Corp.) template for data extraction to tabulate key information from the included studies. Key information extracted from each article included the author, year, design, sample size, instrument, and summary of findings in Table 1. All authors met weekly to discuss data charting throughout the review; whenever there was uncertainty regarding an article, the article will be reviewed again according to the data charting tool.

Collating, Summarising and Reporting the Results

Tables were used to present specific details of the domains in the adaptive behaviour assessment. The scoping results were summarised, and themes were established using thematic analysis. ET and MT analysed the eligible articles to identify the context that frequently appears prior to the theme development.

RESULTS

Nineteen articles met the inclusion criteria and were labelled with an asterisk in the reference section. The findings were presented based on knowledge contributions related to utilising adaptive behaviour assessments among children with ASD. The Preferred

Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram for the study selection is illustrated in Figure 1.

Overview of study characteristics

i. Study Design

Seven studies use cross-sectional, and another seven studies use randomised control trial design. The remaining five studies were the pilot study (n=3) and follow up study (n=2), as shown in table 1.

ii. Study location

The studies were conducted across various countries, including the United States (n=10), Canada (n=3), France (n=2), Italy (n=2), Brazil (n=1) and Taiwan (n=1). The studies ranged from the year 2006 to 2020.

iii. Sample Size

The sample size of studies ranged from 6 to 180 participants. The participants included children with ASD, parents, caregivers, and teachers of children with ASD.

iv. Adaptive behaviour assessment tools used in the articles

Various standardised adaptive behaviour assessments were reported (see Table 1 for a more detailed description). More than half (n=14) of the reviewed studies use the Vineland Adaptive Behaviour Scale (VABS). Four studies (n=4) use the Adaptive Behavior Assessment System (ABAS) and others such as the Bayley Scales of Infant Development (n=1), the Psychoeducational Profile (PEP) (n=1), the Behavioral Assessment System for Children (BASC) (n=1) and the Child Activity Card Sort (n=1).

v. Reviewed findings

Three main themes were established from the analysis of articles: (i) adaptive behaviour as an individual; (ii) adaptive behaviour as a society; (iii) utilising the instrument. The first main theme consisted of five subthemes: (i) communication skills; (ii) daily living skills; (iii) academic performance skills; (iv) motor skills; (v) maladaptive behaviour. The second main theme consisted of two subthemes: (i) socialisation skills; (ii) community skills. The third main theme consisted of three subthemes (i) intervention indicator; (ii) adaptive behaviour as a benchmark; (iii) identifying prevalence.

Theme 1: Adaptive behaviour as an individual

Communication skills

Nineteen articles assessed communication skills to identify adaptive behaviour in children with ASD. Communication skills are expressive such as ability to answer questions, ask information and commenting (13,15,17-19,26-38), receptive such as ability to understand facial expression, gesture, and body language (13,15-19,26-38) and written (13,16-19,26,28-31,33,36-38) subdomain.

Table 1: The Summary of The Articles Included in The Scoping Review

Authors	Study Design	Sample Size	Instrument	Summary of findings
(McDonald et al. 2015) (33) USA	Quantitative (Cross sectional)	ASD (n=71)	Vineland Adaptive Behavior Scales, Second Edition (Vineland-II)	The adaptive functioning of the sample fell significantly below their cognitive level. Age was a significant inverse predictor of adaptive communication and socialisation skills, and IQ was a significant positive predictor of communication and daily living skills. After accounting for age and IQ, ASD-social and ASD-communication symptoms did not predict adaptive behaviours; however, ASD-restricted and repetitive symptoms was a significant inverse predictor of adaptive socialisation skills.
(Chang et al. 2013) (27) Taiwan	Quantitative (Cross sectional)	ASD (n=94)	Adaptive Behavior Assessment System-II (ABAS II)	In high-functioning school-aged children with ASD, cognitive abilities had a positive correlation with adaptive functioning, diagnostic age had a positive relationship on current severity of symptoms, and autistic severity had a weak negative relationship with adaptive functioning.
(Plitt et al. 2015) (35) USA	Quantitative (Cross sectional)	ASD (n=56)	Adaptive Behavior Assessment System-Second Edition (ABAS-II)	Connectivity involving several brain networks previously implicated in ASD could predict improvements in adaptive behaviours several years after the scan with a high degree of sensitivity
(Ajzenman, Standeven, and Shurtleff 2013) (17) USA	Quantitative (Pilot Study)	ASD (n=6)	Vineland Adaptive Behavior Scales, Second Edition– (Vineland-II) Child Activity Card Sort	Significant increases were observed in overall adaptive behaviours (receptive communication and coping) and participation in self-care, low-demand leisure, and social interactions.
(Bremer and Cairney 2018) (26) Canada	Quantitative (cross-sectional)	ASD (n=26)	Vineland Adaptive Behavior Scales, Second Edition– (Vineland-II)	The correlation analyses indicated that manual dexterity was positively related to daily living skills, and overall motor coordination was positively related to daily living skills and overall adaptive behaviour.
(Hall and Graff 2011) (30) USA	Quantitative (correlational, cross-sectional)	ASD (n=75)	Vineland Adaptive Behavior Scales, Second Edition (Vineland-II)	An association between low adaptive functioning in children with autism and increased parenting stress creates a need for additional family support as parents search for different coping strategies to assist the family with ongoing and new challenges.
(Gabriels et al. 2007) (29) USA	Quantitative (follow-up study)	ASD (n = 17)	Vineland Adaptive Behavior Scales, Second Edition (Vineland-II)	This five-year follow-up study of two previously defined groups of children diagnosed with ASD revealed adaptive skills were significantly below Non-verbal intelligence (NVIQ) scores in both groups.
(Kim 2008) (32) USA	Quantitative (cross-sectional)	ASD (n=32)	Vineland Adaptive Behavior Scales	The onset of babbling and the onset of the first vocabulary were significantly related; however, the onset of babbling was unrelated to later language ages or the gross and fine motor ages. There was no significant correlation between the onset of crawling and later language ages.
(Beaudoin, Sebire, and Couture 2019) (15) Canada	Quantitative (Randomised crossover trial)	Potentially ASD (n=19)	Bayley Scales of Infant Development—3rd edition	The parent-mediated intervention resulted in improved toddlers’ motor skills and a trend toward improvement in social adaptive behaviours.
(Lerna et al. 2012) (19) Italy	Quantitative (Randomised control trial)	ASD (n=18)	Vineland Adaptive Behavior Scales, Second Edition (Vineland-II)	Findings showed that **PECS intervention (Phases I–IV) can improve social-communicative skills in children with ASD.
(Williams et al. 2006) (38) New Orleans, USA	Quantitative (Randomised control trial)	ASD (n=101)	Vineland Adaptive Behavior Scales (VABS)	The risperidone may improve adaptive skills in children with ASD accompanied by serious behavioural problems. Vineland age-equivalent scores appear to be most useful in assessing change with treatment over time.
(Oswald et al. 2018) (34) USA	Quantitative (Pilot Randomized control trial)	ASD (n=44)	Adaptive Behavior Assessment System— Adult Form, Third Edition (ABAS-3)	Participants in *Acquiring Career, Coping, Executive control, Social Skills (ACCESS) Program significantly improved in adaptive and self-determination skills, per caregiver report, and self-reported greater belief in their ability to access social support to cope with stressors.
(Bordini et al. 2020) (13) Brazil	Quantitative (Randomised clinical pilot trial)	ASD (n=67)	Vineland Adaptive Behaviour Scale (VABS)	There was a non-statistically significant decrease in autism symptomatology (Autism Behaviour Checklist total scores) and a significant increase in the non-verbal IQ in the intervention group (parent-training intervention with video modelling). After the false discovery rate correction was applied, IQ remained statistically significant under both paradigms.
(Lerna et al. 2014) (18) Italy	Quantitative (a follow-up study)	ASD (n=14)	Vineland Adaptive Behavior Scales, Second Edition (Vineland-II)	The **PECS group showed significant improvements in communication and social domains.
(Jordan et al. 2019) (31) USA	Quantitative (Cross-sectional)	ASD (n=103)	Adaptive Behavior Assessment System, Third Edition (ABAS-3)	Teacher scores were significantly higher (indicating better functioning) than parents for the ***GAC and practical domain. Parent and teacher scores were moderately correlated and no systematic differences in parent-teacher agreement across the range of scores. None of the tested variables moderated the parent-teacher difference scores.
(Tanet et al. 2020) (37) France	Quantitative (Randomise, single-blind controlled trial)	ASD (n = 72).	The Psychoeducational Profile, third edition (PEP-3) Vineland Adaptive Behavior Scale Second Edition (Vineland-II)	The study did not show that Developmental and Sequenced One-to-One Intervention (DS1-EI) was superior to treatment-as-usual (TAU) in treating children with ASD over 24 months. However, the low dropout rate shows that DS1-EI is feasible and well accepted.
(Saint-Georges et al. 2020) (36) France	Quantitative (Randomized, single-blind multicentric controlled trial)	ASD (n=72)	Vineland Adaptive Behavior Scale Second Edition (Vineland-II)	DS1-EI did not improve communication or social skills in children with ASD compared with TAU. However, DS1-EI enhanced school skills in four domains (language, mathematics, inter-modality, and school autonomy), favouring inclusion in mainstream classrooms more than TAU.
(Frye et al. 2018) (28) USA	Quantitative (Two-arm double-blind randomized placebo-controlled parallel study)	ASD (n=48)	Vineland Adaptive Behavior Scale Second Edition (Vineland-II) Behavioral Assessment System for Children 2nd Edition (BASC)	Treatment with high dose folic acid for 12 weeks resulted in significantly greater improvement in verbal communication for children with ASD who are glutathione and folate receptor- α autoantibody (FRAA) positive.
(Scahill et al. 2016) (16) USA	Quantitative (Randomised multicentric controlled trial).	ASD (n=180)	Vineland Adaptive Behaviour Scales, Second edition (Vineland-II)	The parent training group shows an improvement in the daily living and socialisation domain compared to no change in parent education. Gains in the Communication domain were similar across treatment groups.

* a group intervention tailored for young adults with ASD to enhance critical skills and adult functioning, including social and adaptive skills, self-determination skills, and coping self-efficacy
 ** Picture Exchange Communication System
 ***General Adaptive Composite

Daily Living Skills (DLS)

Fifteen articles assessed the daily living skills domain to identify the children with ASD's adaptive behaviour. DLS comprises self-care such as toileting, bathing and dressing skills (15-17,26-28,30-31,33-38) and domestic activities such as meal preparation, laundry and money management (15-17,26,28-30,33,36-38) subdomain.

Academic Performance Skills

Six articles assessed academic performance to identify the children with ASD's adaptive behaviour. The academic performance comprises functional academics such as foundations for mathematics, reading, writing and self-directed skills (27,31,34-35), cognitive such as exploration of object relatedness, concept formation and memory (15) and participation in education (17) subdomain.

Motor Skills

Three articles assessed motor skills to identify the children with ASD's adaptive behaviour. Motor skills comprise fine motor such as picking up small objects, lacing and using scissors (15,17,26), a gross motor such as walking, jumping and kicking the ball (15,17,26) and imitation (37) subdomain.

Maladaptive Behaviour

One article assessed maladaptive behaviour skills to identify the children with ASD's adaptive behaviour. Maladaptive behaviour skills comprise affective expression, social reciprocity, characteristic motor behaviours and characteristic verbal behaviours (37) subdomain.

Theme 2: Adaptive behaviour in a society**Socialisation Skills**

Seventeen articles assessed socialisation skills to identify the children with ASD's adaptive behaviour. Socialisation skills comprise four subdomains of play and leisure (17-18,26-31,33-38), coping skills such as controlling anger, asking for help and obeying time (16-19,26-31,33-38), social interaction such as gathering with family, talking on the telephone and attending birthday parties (15-19,26-31,33-38), social-emotional such as happy when receives birthday present, being sad when loss pet and excited to answer a question in class (15) and leadership skills such as making decisions, creativity in giving an opinion, and getting others to work together effectively (28).

Community Skills

Fourteen articles assessed community skills to identify the children with ASD's adaptive behaviour. Community skills comprise community mobility such as using public transport, recognising the direction and figuring out how to reach the destination (16-17,26,28-30,33,35,37-38) and community use such as the child's interest in activities outside the home and ability to recognise various community locations (15-17,26-30,33-38)

subdomain.

Theme 3: Utilising the Instrument**Intervention Indicator**

Ten articles aimed to utilise the instruments as an indicator for adaptive behaviour intervention, such as individual or group training (17-19,34,37), parent training or parent involvement (13,15-16) and medication prescription (28,38).

Adaptive Behaviour as Benchmark

Seven articles aimed to use the instrument as the intervention benchmark, such as examining the association of adaptive behaviour and cognitive level, autistic severity, family support and treatment (26-27,29-30,33,36) and examined informant discrepancies (31).

Identifying Prevalence

Three articles aimed to use the instrument as a prevalence indicator, examining the adaptive profile (33) and predicting variance in behavioural and communication outcomes (32,35).

DISCUSSION

This scoping review aimed to map the utilization of adaptive behaviour assessments in children with ASD. Adaptive behaviours were mainly assessed quantitatively; thus, it warrants a need for a broader exploration of adaptive behaviour using qualitative study, especially from a parent, therapist, or teacher's perspective. This flexible approach allowed for the integration of various design studies "central organising concept" to attempt to articulate the conceptualisation of a theme more clearly (39). Western countries dominated our current findings. However, adaptive behaviour was a culturally sensitive concept (40), hence emphasised a need for more exploration of adaptive behaviour in other cultures such as African, Arabian, Asian, and Persian.

The use of the VABS to assess the adaptive behaviour dominated current literature despite no established gold standard in assessing the adaptive behaviour among children with ASD. There are numerous possibilities of this comprehensive assessment of Vineland's adaptive behaviour scale, as it is an evolving assessment to this day, and this is one of the most widely used adaptive behaviour assessments available (2). This assessment is efficient and provides detailed information on adaptive functioning in a variety of domains. In addition, the VABS-3 provides detailed information in the manual, and the manual as a whole can be used to monitor progress by examining changes in adaptive behaviour composite (ABC) and domain scores over time (41).

Theme 1: Adaptive behaviour as an individual

The communication domain dominated the most of articles reviewed in the findings. Communication

impairment is fundamental in diagnosing ASD and a significant focus of interventions to improve children's abilities, adaptability and participation in all life activities (42). Social and symbolic communication played a more significant role in explaining expressive and receptive language performance differences. Several studies showed that it is challenging to change children's developmental trajectories when they enter school with low or below-average language skills (43-45).

Identifying young children at risk for chronic language delay allows them to receive early intervention and support that improves their outcomes (46), which is probably the reason for the communication domain being assessed in almost all articles reviewed. However, the most significant adaptive deficits in high-functioning ASD were in the areas of socialisation and daily living skills, with communication affected to a lesser extent. The pattern was consistent across sites for the different adaptive domains, with the socialisation domain being the most impaired, followed by daily living skills and communication (47).

Maladaptive behaviours were the least addressed in the articles because they are core symptoms of ASD that are persistent and pervasive (48). In addition, the maladaptive behaviours in children with ASD fluctuate significantly and are situation-specific (49). This makes the change in maladaptive behaviours a challenging task. Thus, children's maladaptive behaviours are unlikely to improve significantly in a short period of time and might give poor significance in that particular study.

Consistent with the literature, there are strong connections between maladaptive behaviours and atypical sensory processing (50-51). Furthermore, atypical sensory processing often co-occurs with maladaptive behaviours (or problem behaviours) in children with ASD (51-52). Future research is suggested to investigate why maladaptive behaviour is less sensitive to be captured in the adaptive behaviour assessment for children with ASD.

Theme 2: Adaptive behaviour in a society

In this study, adaptive behaviour skills in society were also assessed. Socialisation and community are essential skills in the adaptive behaviour assessment among children with ASD (53). It is consistent with the previous studies that individuals with high functioning ASD have social skills deficiencies that have been well explored (47,54). Additionally, the nature and clinical representation of ASD often associated with social and communications problems are the earliest signs of ASD (1,55-56), and restrictions on participation in social activities should be expected. Persons with ASD show substantial difficulties in adaptive behaviour, particularly in socialisation, even with normal intelligence (57).

The socialisation skills domain is one of the essential skills in adaptive behaviour in addressing ASD diagnosis, and it is no surprise that adaptive skill assessments are informative in making diagnostic decisions. In particular, adaptive socialisation skills are apparently relevant for the social interaction deficiencies at the core of ASD. In several studies, the adaptive behaviour profile in ASD consistently reveals impairment in socialisation skills while reporting more variable findings regarding other adaptive domains (47,58-59).

Adaptive skills in community use measure the individual's capacity to function appropriately within a community (57). Some people develop the skills they need to function in the community as a result of their participation in the general education curriculum, parental guidance, or involvement in community activities; however, for those who do not develop these skills through traditional means, more intensive and structured instruction may be required (60). As perceived by their parents, children with ASD participated less in community-related activities than children without ASD due to barriers and limitations in the social and physical context, including a scarcity of resources (61). This decline in participation as children move into adolescence is concerning. Further, reduced participation at this phase of development may potentially limit future participation opportunities throughout adolescence and into adulthood (62).

Theme 3: Utilising the Instrument

In this study, the instrument is utilised as an intervention indicator and identifying prevalence. Adaptive behaviour assessment is typically used as an intervention indicator to assess the effectiveness and feasibility of the intervention. Our finding showed that parental involvement in the diagnostic and therapeutic process of children had been emphasised since it is currently considered an essential component of their children's treatment plan (15).

Parents and teachers are two essential informants in the assessment of adaptive behaviours and symptoms in children with ASD (due to their training, experience, and observations of the children in school settings) (63). Usually, in this assessment, parents act as resources for interviewing child development because parents know better than anyone and can provide any information that will be valuable in their child's education and therapeutic approach (64).

However, significant inconsistencies in crucial information from several sources have been noted (31). Different and increasing demands for certain of these abilities at home may make the impairments more visible to parents but less visible to professionals in the school context (65). Therefore, the informant report differs in terms of opportunities for the child to demonstrate the

skills in different settings.

Limitations

In this scoping review, some relevant material may be neglected despite a comprehensive search procedure and extra citation monitoring by adopting the methodology suggested by Arksey and O'Malley (23). Following that, we searched just three databases and did not aggressively seek grey literature, preprints, or literature published in languages other than English. As a result, our investigation may not have been comprehensive. Because of the small number of papers included in this review, the authors adopted a consensus technique at each decision-making stage rather than conducting a formal inter-rater reliability analysis.

Besides, there was a scarcity of occupational therapist papers. This might be owing to the search keywords employed in this scoping study, which were not specific to occupational therapy. However, any publication referencing occupational therapy or adaptive behaviour should have been included in this search. Furthermore, the scope of the study is limited only to the utilization of adaptive behaviour assessment and cannot be generalised beyond the ASD population.

CONCLUSION

Academicians, therapists, and other professionals attempting to comprehend adaptive behaviour toward ASD require common and practical tools. Adaptive behaviour assessment is used as an intervention indicator to assess the effectiveness and feasibility of the intervention, identifying the prevalence and as a benchmark of the intervention for children with ASD. The use of adaptive behaviour assessment could become comprehensive monitoring of improvement in adaptive behaviour among children with ASD. As research and study of adaptive behaviour skills continue to grow and evolve, this field will remain essential in assessing the development of children with ASD.

This scoping review highlights the various ways to utilise adaptive behaviour assessment for children with ASD. Additionally, these measures are critical in predicting the functioning of children with ASD. This review should assist future research and clinical practice on the patterns and gaps in adaptive behaviour assessment for children with ASD in occupational therapy practice.

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