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Broken bridges—new school transitions for students with autism spectrum disorder: A systematic review on difficulties and strategies for success

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Abstract

Transitioning to a new school is often challenging for students with autism spectrum disorder. Few studies have examined the transition needs of students with autism spectrum disorder or the benefits of specific supports. This review synthesizes research findings on the *difficulties* that school transitions pose for students with autism spectrum disorder and their parents and teachers, and the *strategies* used to support students and parents during school transition. The review included 27 studies (10 examining the transition to primary school, 17 the transition to secondary school), with data from 443 students with autism spectrum disorder, 453 parents, and 546 teachers, across four continents (North America, Europe, Africa, and Australia). Studies reported that children with autism spectrum disorder struggled with anxiety and increased social pressure, their parents felt overwhelmed with complex placement decisions and worried about the well-being of their children, and teachers strove to provide appropriate supports to their students with autism spectrum disorder, often with inadequate resources. Findings indicated that the most useful strategies involved helping the student adjust to the new school setting, individualizing transition supports, clarifying the transition process for parents, and fostering communication both between the sending and receiving schools, and school and home.

Keywords

anxiety, autism spectrum disorders, home-school communication, inter-school coordination, interventions—psychosocial/behavioral, language barriers, parental advocacy, school resources, school transition, transition planning

For any child, school transitions place enormous pressure to adapt quickly to new settings, which can strain the child's physical and mental health, and stress the family (Blair, 2002; Cairns and Harsh, 2014; Cauley and Jovanovich, 2006). For younger students, the transition to primary school places demands on social-emotional, pre-literacy, and attention skills (Hausken and Rathbun, 2002; Rimm-Kaufman et al., 2000). The secondary transition creates more academic pressure as workload demands and social pressures increase (Barber and Olsen, 2004; Langenkamp, 2010; McCallumore and Sparapani, 2010). Several school transition programs have been designed to mitigate transition difficulties. Generally, primary school transition programs bolster school readiness skills, whereas secondary school programs increase school engagement, reduce conflicts, and prevent drug and alcohol use, with the goal of increasing graduation rates (Gonzales et al., 2014; McQuillin et al., 2011; Van Ryzin et al., 2012). Trials have examined these programs for children at risk of poor transition outcomes and school achievement, including children from low-income families (Berlin et al., 2011;

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Nix et al., 2013), and children who have behavioral difficulties (Pears et al., 2015), are in foster care (Pears et al., 2012, 2013), or are from ethnic minority families (Gonzales et al., 2014; Johnson et al., 2014).

Existing transition programs may not adequately address the needs of students with autism spectrum disorder (ASD). Difficulties with social communication, peer relationships, resistance to change (Cuccaro et al., 2003), and intolerance of uncertainty (Boulter et al., 2014) may make new school transitions particularly worrisome for students with ASD and their parents. Other concerns for this population include sensory hypersensitivities (e.g. strong reactions to lights and sounds; (Ben-Sasson et al., 2009), anxiety (White et al., 2015), and sleep problems (Veatch et al., 2017), which spike during school transitions (Cairns and Harsh, 2014; Cauley and Jovanovich, 2006).

These challenges for students with ASD also increase stress for their parents. The social aspects of school transition, such as friendships and bullying (Zeedyk et al., 2003) are common parent concerns, and stress in parents of children with ASD can be especially high (Hayes and Watson, 2013). Contributing factors may include gaps in organized supports provided by their child's school (Boyd et al., 2002; Tehee et al., 2009), experience of school systems as distant and bureaucratic (Darling-Hammond et al., 2007), late placements in the new school setting (Darling-Hammond et al., 2007; Neild, 2009), and limited communication about their child's interventions (Podvey et al., 2013). Much evidence supports that dynamic school–home partnerships are critical to promoting positive outcomes for all students (Epstein, 2011; Henderson et al., 2007; Sheldon, 2003). While this may be especially true for students with ASD, school staff may not be able to address student and parent concerns because of constrained resources (Darling-Hammond et al., 2007; Early et al., 2001; Neild, 2009).

Our goal in this review is to describe transition *difficulties* team members of children with ASD face and *strategies* currently available to support better transitions. Our review is designed to inform future research about school transitions and the development of transition interventions for students with ASD, their families, and school staff.

Methods

We searched PsycINFO and ERIC for the terms transition *and* school *or* primary school kindergarten *or* preschool *or* planning *or* strategies *or* practices *and* autism *or* Asperger *or* ASD *or* pervasive developmental disorder *or* PDD, with the search syntax: (ab(((school* odds ratio (OR) primary school* OR preschool* OR plan* OR strateg* OR practice*) NEAR/6 transition*) AND (autism* OR asperger* OR ASD* OR "pervasive developmental disorder*" OR PDD*)) AND. Exact ("English") AND peer (yes)). We found 156 articles (see Figure 1).

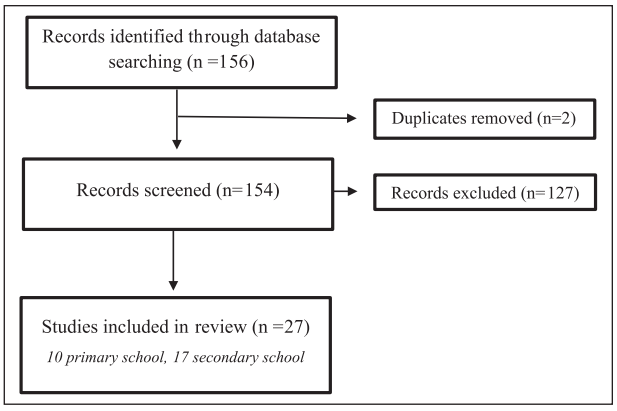

Figure 1. Article screening and inclusion.

Eligibility ratings

Two authors assessed eligibility for inclusion based on the following criteria: (1) study of strategies for successful student school transition (transition to primary or middle/high school) or quality of school transition, (2) students diagnosed with or at high risk of ASD, (3) article in a peer reviewed journal (i.e. no theses, book chapters, or general reports), and (4) article written in English. Exclusion criteria included (1) studies on transition from school to work or college or (2) student age group >18 years. Raters reached high inter-rater reliability (Cronbach's $\alpha=0.92$) in determining article eligibility. When raters disagreed, they discussed eligibility, agreeing on inclusion of 27 articles, with 10 on primary school transition and 17 on the high school transition. These articles incorporated data from 443 students with ASD, 453 parents, and 546 teachers, across four continents (North America, Europe, Africa, and Australia). The articles differed by methods: 12 qualitative, 6 quantitative, and 9 mixed method. Only one article reported on an intervention; all others were observational studies. See Supplementary material (Appendix table) for sample demographics, design, and methods. Authors were contacted for any information not reported.

Article coding

Coding methods were designed for qualitative and quantitative studies. Information about school transition (of student, parent, and school/school staff) and strategies (transition strategy used by parent or teacher) was extracted from the results sections of articles; for qualitative articles, themes and information provided in quotes were coded, for qualitative articles, findings from surveys (e.g. on child anxiety or transition strategies used by teachers) were coded. Coding was conducted in two stages (Boyatzis, 1998; Bradley et al., 2007): first, after establishing inter-rater agreement ($>80\%$) with the lead article coder on extracting transition difficulties and strategies of two articles, each article was

independently coded by two coders and then consensus coded in pairs. Second, themes and subthemes of transition difficulties and strategies were constructed through consensus. Disagreements in assignment or description of codes were resolved through discussion. The constant comparative method (Glaser and Strauss, 1967), involving constructing themes by examining commonalities and distinguishing characteristics of codes, was used to identify themes and subthemes reported in the results.

Evidence ratings

For articles reporting on transition strategies (20 of the 27), two authors independently rated level of evidence per article on a scale outlined in the study of Harbour and Miller (2001), from 1++ (highest quality, for example, systematic reviews of randomized controlled trials (RCTs)) to 4 (expert opinion). Ratings of studies included in this review ranged from 2+ (well-conducted case-control study) to 3 (non-analytic studies, for example, case reports), with acceptable inter-rater reliability (Cronbach's $\alpha = 0.82$). Raters discussed the six articles that they initially rated differently until they reached consensus on the ratings.

Results

Children with ASD, their families, and school staff experienced difficulties transitioning to kindergarten and secondary school. We provide tables, outlining identified themes and related subthemes in transition difficulties that emerged during the two-stage coding process for children (Table 1), for parents (Table 2), and for school staff (Table 3). Table 4 presents strategies for students, Table 5 strategies for parents, and Table 6 strategies for school staff, including evidence ratings for use of strategy, as per above. The Supplementary material Appendix table identifies all studies (Beamish et al., 2014; Connolly and Gersch, 2016; Cridland et al., 2014; Deacy et al., 2015; Denkyirah and Agbeke, 2010; Dixon and Tanner, 2013; Fontil and Petrakos, 2015; Forest et al., 2004; Fortuna, 2014; Foulder-Hughes and Prior, 2014; Hannah and Topping, 2012; Hebron, 2017; Levy and Perry, 2008; Makin et al., 2017; Mandy et al., 2015, 2016; Minnes et al., 2015; Neal and Frederickson, 2016; Parsons et al., 2009; Perfitt, 2013; Peters and Brooks, 2016; Quintero and McIntyre, 2011; Starr et al., 2016; Stoner et al., 2007; Strnadová et al., 2016; Tobin et al., 2012; Tso and Strnadová, 2017), which are referenced by numeral (#1–27) and correspond to numeral citations in the results section and tables (also provided after each starred reference in the reference list).

Transition difficulties for students

Children with ASD experience individual and interactional challenges that disrupt social adjustment and learning in their new settings. Two overarching themes emerged: (1) *student characteristics* (mental health and sensory, behavioral, and adaptive functioning) and (2) *student interactivity* (peer relations and social skills; communication; and physical setting, logistics, and daily structure). Below we highlight the main points that surfaced in the codes; see Table 1 for full breakdown of subthemes. Most of the articles that described student difficulties concerned secondary school students. For these articles, our coding of behavioral and adaptive functioning, as well as peer relations and social skills, solely reflected the experiences of secondary school participants. Also, articles about secondary school students reported on anxiety- and mood-related difficulties and difficulties functioning in the larger school environments than did studies of primary school students.

Student characteristics

Anxiety as a fundamental challenge. As reported by their parents, children transitioning to kindergarten experience difficulties managing anxiety, effectively communicating with peers and teachers and adjusting to new routines (#2). Anxieties increase through the secondary transition; children and parents report an increase in social and emotional fears from the pre- to post-transition period (#7,8,9,12,13,15,16). Children transitioning to secondary school faced additional challenges with their mental health, sensory, behavioral and adaptive functioning, academics, peer relations and social skills, engagement in transition and disorientation, and transportations challenges in their new schools (#7,8,9,12,13,15,16), which disrupted their adjustment and learning (#7,12,15,19). Regarding their feelings of uncertainty and worries about the new school, one student questioned "what's going to happen, who's going to be there, how long will they be there for?" and another said "I got a bit worried if I was going to get bullied or not" (#22). One parent noted, "it didn't occur to me that he would have such a massive drop in his learning because of his anxiety" (#7).

Student interactivity

Social pressure and disorientation. Findings suggest that children experience difficulties with friendships, communication, social skills, and increased anxiety also due to social demands post-transition (#7,12,13,15,16). Most students (87.5%) reported difficulties at school during transition, including bullying (#23). Parents and teachers identified that students with ASD were often disoriented and challenged by changes in building locations, physical configurations, and everyday routines, such as the organization of materials, lockers, new and multiple teachers, physical education classes, and transportation. One student explained that "now we're constantly…running around to different classrooms…which can be annoying sometimes." Another summed up his

Table 1. Transition difficulties for students with ASD.

Subtheme	Transition	Difficulties	References
Student characteristics: anxiety as an underlying challenge			
Student mental health	Both	• Anxiety and fear of post-transition • Anxiety about new routines, physical disorientation, and transportation	2,7,8,12,15,19,22,23, 26,27
	Secondary	• High emotional distress throughout transition • Anxiety about mainstream placement • Academic, behavior, and attention difficulties due to anxiety • Parent concerns for their child's social-emotional well-being • Student unhappiness at school • Extreme distress due to late placements	7,8,9,12,13,15,16,22, 23,26,27
Student behavioral and adaptive functioning	Secondary	• Sensory sensitivities in new situations made children feel fearful • Challenging behavior (e.g. aggression, self harm) increasing during the transition process • Reduction in adaptive functioning post-transition • Concerns about children's social difficulties affecting transition success • Homework difficulties a concern for many parents and students post-transition • Increased pressure on students to manage their personal effects and be otherwise more independent with less adult support	4,7,15,16,22,23,26,27
Student interactivity: social pressure and disorientation			
Peer relations and social skills	Secondary	• Concerns about developing personal relationships and friendship at the new school • Student and parent worries about bullying by peers post-transition • Difficulties with establishing friendships, communication, social skills in the new setting • Feeling unsupported by teachers in confrontations with other students • Concerns about being separated from primary school peers (and teachers) • Concerns about being different and not fitting in • Difficulty accepting placement in special education setting; personal identity conflict and confusion	7,12,13,15,16,22,23, 26,27
Student/teacher communication	Both	• Communication difficulties experienced with new teachers during transition	2,15,26
	Secondary	• Loss of close teacher–student relationships	
Physical setting, logistics, and daily structure	Both	• Concerns about small daily transitions in the new setting • Difficulties adjusting to new schedules, teachers, curriculum, and events	2,7,12,15,19,22,23, 26,27
	Secondary	• Larger, busier, noisier physical school environment a sensory challenge • Number of students and teachers daunting • Loss of structure and consistency of adult support • Student and parent concerns about lack of information about future supports, school placement, and new teachers	13,15,19,22,24,26,27

ASD: autism spectrum disorder.

feelings about the upcoming transition: "I am not ready yet to go" (#26). Some students had concerns about the change in curricula at secondary school, "[the] lessons will be different, they will be harder." Another student expressed a different opinion, "[academic achievement was often] the last thing on my mind" (#24). Some children focused on social difficulties at the new school "[I] found it difficult to make friends" (#24). Pre-transition child characteristics, such as ASD symptoms, verbal abilities, anxiety symptoms, and sensory responsiveness, as well as educational setting (general education, special education), were found to not relate to school transition success (#26), suggesting that difficulties were common across children with ASD.

Table 2. Transition difficulties for parents.

Subtheme	Transition	Difficulties	References
Parent characteristics: worry, alienation and discontent			
Concerns, stress, and anxiety	Primary	• Anxiety and stress due to feelings of guilt and powerlessness • Stress caused by financial hardship and adverse social judgment • Feeling of not being listened to by school staff and district authorities	14,20,26
Cultural differences	Primary	• Additional burdens on immigrant families due to lack of informal extended family supports • Information sharing adversely impacted by family communication that restricted how mothers communicated with school staff during meetings (e.g. fathers as spokesmen, though mothers as primary caregivers) • Discomfort in challenging school authority; unwillingness to discussing child's issues outside of the family, sometimes resulting in fewer services	14,17
Language barriers	Primary	• Compromised communication and advocacy due to limited native language skills	17
Family resources: feeling "powerless"			
Parent knowledge of child's individual issues	Secondary	• Challenges associated with adjusting expectations about their child's future due to difficulties experienced during transition • Challenges due to lack of knowledge and training about ASD	4,7
Family impact	Primary	• Overburdened care provision because transition impacted all aspects of daily living	7,26
Familiarity with clinical/ legal language	Primary	• "Jargon," legislation, and procedures "overwhelming" during transition	17
Parent interactivity: picking your battles			
Engagement with school staff	Primary	• Conflicts while managing advocacy to ensure child's needs met • Home/school relationships adversely impacted by infrequent communication with school staff • Reduced parent engagement with school staff during post-transition	7,9,21,26
	Secondary	• Lack of collaborative communication with teachers • Little evidence of staff support for parent engagement • Lack of awareness among school staff about individual child's needs and accommodations	11,14,17,26
Engagement with service providers	Primary	• Over-reliance post-transition on service providers that were not affiliated with school or connected to school staff	17
Advocacy at school	Primary	• Parents felt "powerless" due to language barriers • Parents experienced difficulties determining which "battles" to fight • Schools refused supports during transition	17,20,21
Engagement in school choice	Secondary	• Placement decisions were challenging due to lack of information about programs and accommodations at potential schools • Parents conflicted about academic versus social needs • Delays in district placement caused planning difficulties at home • Complexity of each child's needs made school choice more challenging • Parents felt secondary provisions were insufficient to meet their child's needs • Few school choices often led to conflicts with local school districts • Difficulties around child disagreeing on the best placement	4,7,21,26,27
Perceptions about inclusion	Secondary	• Difficulties balancing mainstream education and needs of child	7

ASD: autism spectrum disorder.

In the only study comparing school transitions of students with ASD with those of typically developing students, a lower sense of school membership was found in students with ASD, especially during the last half of the pre-transition school and the first half of the year at the new school (#25).

Transition difficulties for parents

Many parents of students with ASD experienced stress and anxiety as they struggled to support their children with ASD during transitions. Three main themes with 11 embedded subthemes of parent transition difficulties emerged

Table 3. Transition difficulties for school staff.

Subtheme	Transition	Difficulties	References
School characteristics			
School location	Primary	• Pre- and post-transition schools located far apart	6
School inclusion	Secondary	• Inclusion prioritized academic skills, not social skills • K-12 special education schools may decrease opportunities for inclusive programs • Difficult for mainstream schools to provide accommodations	7,9,24
District logistics for ASD students	Primary	• Students transitioned to various school districts	17
School/staff resources: lack of training opportunities, lack of knowledge of and attention to individual needs			
Staff knowledge about transition	Both	• Staff did not have strategies for transition	2,23
	Primary	• Staff did not understand individual transition needs	2
	Secondary	• Some transition tactics (e.g. stating in groups what each student is worried about regarding the transition) exaggerated the stress of transition and made students anxious • Some secondary teachers felt primary school teachers were not fully aware of organizational differences	9,26
Staff knowledge of individual issues of ASD students	Both	• Did not always provide accommodations for students • Staff were not aware of the needs of students with ASD • General education staff did not know how to provide accommodations for ASD students	2,7,9,14,17,23
	Secondary	• Teachers were not always informed of a student's diagnosis and thus could not provide accommodations for them	7
School/staff knowledge about ASD	Primary	• Staff in specialized classes lacked knowledge about ASD • Teachers used early intervention providers for information about ASD • Staff had little knowledge and training regarding ASD	14,17,26
	Secondary	• Mainstream staff not trained to assist students with ASD • Staff's views of ASD could influence student treatment	7
Staff expectations for students with ASD	Primary	• Staff had low expectations for students	17
School/staff resources and support	Primary	• Schools lacked resources for students with ASD • Pre-transition school more supportive	14,17
	Secondary	• Academic transitioning difficult because of no support	9
School staff interactivity: broken bridges—school coordination gaps during school transitions			
School–home collaboration	Both	• Collaboration between schools was difficult, and sometimes unwanted by receiving school	6,17,24
	Primary	• Parents did not know receiving school staff, so sending school staff was asked to act as a voice for parents to receiving school staff • Administrators who may be unfamiliar with the class could make important classroom decisions • Staff and families did not meet before transition	17
	Secondary	• Staff did not always share students' diagnoses	7
Staff engagement in transition	Primary	• Staff did not have the time to get involved in transition • School staff participation in transition was not a priority • Transition participation for teachers differed by school and administration preferences	6,17
	Secondary	• Transition preparation roles and responsibilities varied by teacher	24

ASD: autism spectrum disorder.

(see Table 2): (1) *parent characteristics* (family concerns, stress and anxiety, cultural differences, and language barriers), (2) *family resources* (knowledge of child's individual needs, family impact, and familiarity with clinical/legal language), and (3) *parent interactivity* (engagement with school staff, engagement with service providers, advocacy at school, and school placement choice and perceptions about inclusion).

Table 4. Strategies for students.

Subtheme	When[a]	Description // rationale	References	Evidence rating[b]
Planning				
Visit new school	Before	Visiting the new school setting with student and meeting the new teacher and other school staff (visit can be with the parent or pre-transition teacher). More than once if possible // to establish a partnership and reduce student, parent and new teacher anxiety and stress	1,2,6,7,9,14,15,17, 18,23,24,26,27	C
Include students	Throughout	Child-centered planning including open, supportive discussions with student, check for understanding of transition and value input of the student // help to address problems in a supportive environment where's student's voice is heard	2,15,18,26	D
Visual supports				
School map	Before	Map of the new post-transition school // provides familiarity with the new environment	2,7,9,13,15,18	D
Photos/pictures	Before	Photos of the new school building, new teachers or other areas, or pictures representing the school change (e.g. in the format of a social story or induction booklet) // prepares student for the new environment	2,7,9,13,15,18	D
Checklists	Before, At	Checklists (e.g. packing school bag, homework) // helps orientate and prepare the student before the transition to new setting	2,18,24	D
Schedules/calendars	At	Picture schedule of day in the new school, calendar/diaries, or color-coding of timetables // provides predictability of routines for student	1,2,7,9,15,18,24,26	C
Social supports				
Peer buddies	At	Student buddy or social skills groups in the new school // provides the student with support in navigating the new school and make new friends	13,15,18,26	C
Safe person or space	At	A peer/adult mentor that gets along with/can guide students, when needed (safe person) or physical area the student can go to (safe space) // a person or place the student can go to for support at school	9,10,13,18,23,26	C
Recess/lunch time structure	At	Structured playtime support such as timetabled activities // to support students around making and keeping friends and to support cooperative group work	15,26	D
Staff relationships	Throughout	Trusting relationships with adults and peers // to ensure student feels support in their new learning environment	26	D
Self-regulation				
Coping strategies	Throughout	Allowing student time/space to cope with stress with allocated time for preferred or relaxing activities (e.g. listening to music or playing a computer game) or alone time (when needed) // to empower the student to calm themselves when stressed and to maintain class harmony	9,18,23,26	C
Emotion thermometer	Throughout	Provides students with opportunity to monitor their emotional states with the help of their parent/teacher // to allow students to become more familiar with their own emotional states	18	D

[a]In relation to transition.
[b]Grades of recommendation, as per Harbour and Miller (2001).

Parent characteristics

Worry, alienation, and discontent. Parents felt overwhelmed by school jargon, understanding their rights, and coping with complicated bureaucratic procedures (#7,17). Parents believed that schools "did not appreciate the daunting task [they] faced in choosing an appropriate school for their child" (#7) and felt they lacked information about their child's academic and social needs (#4,7); one parent remarking, "I think they'd need to believe, believe what we're telling them" (#21). In another case, "the list began with 160 schools, and through a process of 'sifting' and 'culling' this was eventually whittled down to a short list

Table 5. Strategies for parents.

Subtheme	When[a]	Description // rationale	References	Evidence rating[b]
Information				
Transition workshops	Before	Attending of any information sessions held by schools or outside organizations // to find out more about the school transition process and to ask any unanswered questions	17,27	D
Meeting with principal, special education coordinator, and/or other key school staff	Before	Meeting to provide parents with information regarding the school transition process // to ask questions regarding the school transition process and access any required supports	9,17,27	D
Transition binder	Throughout	Keeping a binder with information about the transition to help orient to the practical steps throughout the year prior to and after transition, including numbers to call for available community resources // to empower parents and limit confusion regarding the school transition process	6,14,17,18	C
Communication with school staff[c]				
Informal contact with receiving teacher before first formal meeting	ASAP (when teacher identified)	Contacting the receiving teacher prior to the start of the next school year // to start building a good working relationship with the new school and to relieve some of the stress parents often feel about the transition	9,17	D
Support				
Community organizations	Throughout	Seeking informal supports, particularly in the form of community organizations. Especially important for non-native speakers // to inform parents about how the special education system worked and parental rights and responsibilities	17,27	D
Parent support networks	Throughout	Parent to parent support networks, through schools or community organizations // to facilitate relationships between parents and increase assess to supports	14	D
Advocacy				
Advocating to ensuring student's needs met	Throughout	Parents believed they were viewed as forceful but they felt this was the only way to be heard // fighting for resources is thought to be effective	7,17	D

[a]In relation to transition.
[b]Grades of recommendation, as per Harbour and Miller (2001).
[c]See also Table 5—"Strategies for Teachers."
ASAP: As soon as possible.

of seven that were appropriate, however, the closest of these schools was two hours away" (#7).

Parents also reported concerns relating to adverse judgment from others (#14) and difficulties adjusting their expectations about the future for their child, given the difficulties that their child faced during the secondary transition (#7). In addition, families who are experiencing financial hardship reported being unable to base their decisions on what is best for their child, but rather what they could afford (#14). Financial hardship predicted parenting distress over and above child adaptive behavior delays (#20).

Family resources

Feeling "powerless". Two studies suggested that interactions with school staff are especially fraught for parents who primarily speak a language that is different from the native language of the country they live in and who have cultural differences (#17,20). Some families, disconnected from relatives in their home countries, reported few informal supports (#17). Some parents with limited native language skills also posed challenges such as making it difficult for parents to advocate for their child, leaving them feeling "powerless" (#17). While the parents felt they were obliged to give reasons as to their preferred school placement, there was a perception that there was no such obligation on school staff to explain their decisions, which elicited feelings of hopelessness and powerlessness in the parents (#7).

Parent interactivity

Picking your battles. Many parents reported challenges in striking a balance between nurturing the parent–teacher relationship and advocating for children's rights (i.e. determining which "battles to fight") (#11,14,17) and thought that school staff often perceived them as "over protective" (#17). Parents were concerned about how confrontations

Table 6. Strategies for teachers.

Subtheme	Teacher	When[a]	Description // rationale	References	Evidence rating[b]
Communication					
Team transition planning meeting	Pre, post	Before	Meeting between pre- and post-school transition team and family to discuss transition, set goals, and identify challenges prior to transition. In person preferred, phone conference if not possible // to address challenges, placement, review, and build relationships	1,3,5,6,7,9,11,14, 18,23, 24,26	C
Student key information page	Pre	Before	Completed by parents and pre-teachers for post-teacher. Gather information about student (interests, needs, successful strategies, behaviors, and preferences). Disseminate to new school team members // to inform new staff with key important information	2,5,6,7,9,11,18,26	C
Sharing of student-specific information between schools	Pre, post	Throughout	Informal information sharing between pre-transition teachers and post-transition teachers // to help post-transition teacher best support and teach the new student	5,9,11,15,26	D
Transition facilitator identification	Pre, post	Throughout	A point of contact or patron identified early in the transition process at the sending school and, later, at the receiving school, to help guide the parents and student through the transition process // to ensure parents and student always have someone to help them, to simplify communication channels	1,9,17,18,26	C
Frequent parental communication	Pre, post	Throughout	Frequent (daily) face to face, home–school journal, phone, text, or e-mail contact with parents // to alert team to any issues to address, and foster positive relationships	2,6,9,21,24,26,27	C
Open, caring, parental communication	Pre, post	Throughout	Quality, open, positive, warm, caring, and unreserved communication between both school teams and family // to build trust and collaborative school–home partnerships	7,14,15,17,21,26,27	D
Everyday language with parents	Pre, post	Throughout	Using colloquial, everyday language with parents // consensus between parents was that phrasing things in a "more professional" way could be stressful and emotionally exhausting	7,17	D
Planning					
Identify–observe–explore	Post	Before	Identifying the new classroom situation, observing the student's reaction to the new classroom and allowing the student the opportunity to explore the new classroom // allows student to get used to new class. Teacher and parent establish a connection and work on a strategy using both their experiences and expertise	2,17,26	D
Home visits	Pre	Before	Teachers visit home prior to transition // parents felt supported when teachers shared their knowledge, can observe student and provide resources for the family	5,14	D
Student-centered planning	Pre	Before	Individualized transition plan to meet student's needs, including involving the student in transition planning // plan designed and individualized for student	2,7,18,22,23,26,27	C
Increasing demands at pre-transition school	Pre	Before	Increasing homework demands and fading off teacher support at pre-transition school // to prepare the student for higher academic demands and less 1:1 adult support, to increase independence	22,26	D

(Continued)

Table 6. (Continued)

Subtheme	Teacher	When[a]	Description // rationale	References	Evidence rating[b]
Digital reports	Pre	Before	Digital version of student reports accessible to all team members // ease of accessibility	14	D
Training/knowledge					
Training on ASD	Post	Before	Attending a training or information session on ASD, and read student's documents prior to transition and important meetings (IEP) // knowledge and understanding of student's diagnosis, student's reactions to transitions in general, and then applying that knowledge to transition situations	2,7,18,23,26	C
Placement					
Pairing of faculty	Post	At	Faculty with common interest of student is given role of "patron" teacher based on student strengths // relationship between the student and a key staff member is crucial for successful transition	9,15	D
Continuity of class grouping	Post	At	Student allocation to a specific class grouping for the entire year // to limit confusion of changing classes throughout the day	9	D
Preparing accommodations					
Sensory adaptations	Post	At	Reasonable adjustments to sensory environment (e.g. noise level) and student requirements (e.g. wearing a school uniform) // to account for children's sensory differences and increase their comfort level at school	18,26	C

[a]In relation to transition.
[b]Grades of recommendation, as per Harbour and Miller (2001).
ASD: autism spectrum disorder, IEP: Individualized Education Program.

with school personnel might affect their child's program (#17). Parents and teachers agreed that sporadic, guarded, or incomplete communication impeded transition success (#7,9,11,14,17). One parent commented, "I want to stop fighting now. I want to be able to put my feet up and concentrate on my other children instead of dreading a phone call that it's the school and I am going to have to go up" (#26).

Transition difficulties for school staff

Three main themes with nine embedded subthemes related to difficulties for school staff materialized from the codes (Table 3): (1) *school characteristics* (school location, school inclusion and district logistics for students with ASD), (2) *school/staff resources* (staff knowledge about transition, staff knowledge of individual issues of ASD students, school/staff knowledge about ASD in general, staff expectations for students with ASD, and school/staff resources and support), and (3) *school/staff interactivity* (school–home collaboration and staff engagement during the transition process).

School/staff resources

Lack of training opportunities. Teachers were sometimes unprepared to help students with ASD transition. Studies reported that some teachers in specialized classes lacked knowledge about ASD (#14,17). One study reported that no training opportunities were provided for any school staff member to learn about ASD (#17).

Lack of knowledge of and attention to students' individual needs. Due to these knowledge gaps, parents felt that their children were not receiving the individualized modifications that they needed to succeed during and after the school transition (#2,7,14); one parent explained, "Some teachers don't recognize that he requires a few extra minutes. And so they are not prepared to meet his needs" (#2). Parents asserted that this also led to behavioral problems in the classroom and less willingness to engage with the school, one parent noting, "I don't really feel that I have a very strong relationship with them. I think it's because I am disappointed … I don't really participate that much with them anymore because I don't find the service that great" (#14). Parents thought that preschools provided more individualized care for students with ASD than did primary schools (#14). Teachers' lack of knowledge about students' needs undermined efforts to identify strategies to assist with transition (#2,14) and led to lower teacher expectations for students at the post-transition school

(#17). These lower expectations increased parents' and preschool staff's concerns that students might lose skills in primary school (#17).

School/staff interactivity

Broken bridges—school coordination gaps during school transitions. Staff from pre-transition schools and parents reportedly did not always collaborate with staff from post-transition schools, and school staff also reported concerns regarding collaboration within the same school (#6,17). Staff did not think that administrators prioritized their involvement in the transition, which led to frustration and not feeling valued (#17). Time constraints limited staff's involvement in their students' transitions as well (#6). Teachers also found some transition strategies hard to implement. For example, parents and sending teachers had difficulty visiting multiple placements together (#11). Oftentimes, staff was not able to meet transitioning students and their families before the school year began (#17).

School transition strategies

We found only one evaluation of a school transition program—the Systemic Transition in Education Program for Autism Spectrum Disorder (STEP-ASD, #18). STEP-ASD is a manualized program targeting students with ASD who are transitioning to mainstream (i.e. regular education) secondary schools. The key underlying principle of the STEP-ASD program is environmental modifications to support students' challenges in an individually tailored transition program. A non-randomized study reported STEP-ASD was associated with a reduction in school-reported emotional and behavioral difficulties among the ASD students. To date, no such program exists for students with ASD with more significant challenges or for primary school transitions.

For the other 22 studies reviewed, numbered evidence ratings per study were first given (see "Evidence ratings," *Methods*) and then, based on the study rating, were applied to the specific strategies coded so to determine which strategies had the strongest evidence (of use, not efficacy, that is, they were reported to be used across studies) in the reviewed literature, with possible ratings ranging from A (e.g. at least one meta-analysis, systematic review, or RCT rated as 1++ and directly applicable to the target population) to D (e.g. study evidence level 3 or 4); see the study og Harbour and Miller (2001) for a full description. Lettered evidence ratings per strategy are given in Tables 4 to 6.

Strategies for students

Students, parents, and teachers described many student-level strategies for helping students with ASD adjust to their new learning environment. Four student strategy themes with 11 embedded subthemes emerged: (1) *planning* (visit new school, include students), (2) *visual supports* (school map, photos/pictures of school or teachers, checklists, and schedules/calendar), (3) *social supports* (peer buddies, safe person or space, recess/lunch time structure, and staff relationships), and (4) *self-regulation* (coping strategies and emotion thermometer). See Table 4 for a description of each strategy, including the timeline, rationale, references, and evidence rating.

Strongest evidence for use: exposure, predictability, social support, and coping. Student strategies from studies with the highest evidence ratings were the following: (1) a visit to the new school before the start of the new school year, with pre-transition teachers and/or parents and multiple times if possible, (2) schedules or timetables, (3) a peer buddy system, (4) safe person or space, and (5) coping strategies. Visiting the school reportedly alleviated students' anxiety by exposing them to the new school environment and enabling them to meet their new teacher(s). This also decreased parental stress by giving them an opportunity to establish an early partnership with the new teacher. Schedules/timetables were said to make routines predictable for students. A peer buddy system gave students social support to help navigate the new setting. A safe person or place reassured students that they always have a person/place where they can go for support at school. Coping strategies empowered students to calm themselves and manage their negative emotions at school.

Strategies for parents

Parents and teachers described many specific strategies that would be helpful for students with ASD and their families. Four parent strategy themes with eight subthemes emerged: (1) *information* (transition workshops, meeting with principal, special education coordinator and/or key school staff, and transition binder), (2) *communication* (informal contact with new school teacher before first formal meeting), (3) *support* (community organizations and support groups or networks) and (4) *advocacy* (advocating to ensuring student's needs met/necessary resources provided). See Table 5 for a description of each strategy including timeline, rationale, references, and evidence rating.

Strongest evidence for use: parent logistics. The parent strategy from studies with the highest evidence ratings was keeping a transition organization binder throughout the transition. The transition binder was used in many studies to help parents stay on top of the many steps related to the transition process by providing information and an organizational system.

Strategies for teachers

Five main teacher strategy themes with 15 embedded subthemes were mentioned in the studies reviewed: (1)

communication (team transition planning meeting involving pre- and post-transition school teachers, student key information page, informal sharing of student-specific information, transition facilitator identification, frequent parental communication, open and caring parental communication, and everyday language with parents), (2) *planning* (the identify–observe–explore method (identifying the new classroom situation, observing the student's reaction to the new classroom, and allowing the student the opportunity to explore the new classroom), home visits, student-centered planning, increasing demands at pre-transition school, and digital reports), (3) *training/knowledge* (ASD-specific training), (4) *placement* (pairing of faculty with student based on interests and continuity of class groupings), and (5) *preparing accommodations* (sensory adaptations). See Table 6 for a description of each strategy, including which teachers, the timeline, rationale, references, and evidence rating.

Strongest evidence for use: inter-school and home-school communication, transition facilitator and student-centered planning, knowledge and adaptations. The strategies in papers with the strongest evidence of use were (1) holding a team transition planning meeting prior to the end of the school year (where possible, with staff from the new school), (2) frequent parental communication (e.g. daily), (3) developing a student key information page with child-specific important information (strengths, interests, communication, behaviors) to be written by the sending school teachers/staff and the parents, to be given to the receiving school teacher, (4) identifying a transition facilitator, a point person parents can contact throughout the transition process, (5) student-centered planning, (6) training on ASD, and (7) sensory adaptations. The first four teacher strategies therefore were focused on *communication*, both between the sending and receiving school staff and the school and home, addressing two core difficulties raised both by parents and teachers, as noted above (#6,17,24). The last three strategies all refer to individualization of transition supports, including identifying a particular student's needs, training staff to be aware of such needs, and making adaptations where necessary to accommodate at the new school.

Discussion

Students with ASD experience many difficulties transitioning to a new school, such as heightened anxiety and challenging behavior. These difficulties are also commonly reported for other students (Ladd and Price, 1987; Sirsch, 2003), but may be more overwhelming for students with ASD because of their communication challenges and poor peer support (e.g. Emam and Farrell, 2009; Gonzalez-Lopez and Kamps, 1997), and may be a by-product of unmet needs in other areas such as adaptive functioning, executive functioning, processing speed, sensory sensitivities, emotion regulation, attention control, and repetitive behaviors.

Many articles recommended strategies to prepare the student for the transition, with the strongest support for exposure to the new school before the transition, predictability through visual supports and designated social supports at the point of transition, and teaching coping strategies throughout the transition. Therefore, strategies target areas of school transition difficulty that reflect the common characteristics of ASD, intolerance of uncertainty, difficulties establishing peer networks, and emotion regulation (Boulter et al., 2014; Locke et al., 2010; Mazefsky et al., 2013). However, school visits can be difficult or impossible in some school districts due to logistical issues such as late placements and limited teacher/parent time. Given the success of peer-mediated school interventions for students with ASD (Chang and Locke, 2016), examining the effect of peer-mediated strategies on classroom acceptance of neurodiversity and inclusion success is an important area of future research on school transitions.

Home–school communication often is problematic. Studies reviewed support the use of caring, open, and frequent home–school communication. School professionals who actively encourage parental involvement in the schooling of their child with ASD are more successful in engaging parents (Benson et al., 2008) and improving child outcomes (e.g. Moes and Frea, 2002). Parents may help themselves by establishing shared values with teachers, continuing productive discussions and focusing on positive solutions, all of which encourage teachers to welcome their involvement (Dornbusch et al., 1996). Recent studies indicate that when families share specific goals with teachers, their students' academic and behavioral skills improve (Van Voorhis et al., 2013). For students with ASD, sharing goals between sending and receiving schools, community and home could be particularly important because it creates more opportunities for generalization and maintenance of skills (Matson et al., 1996). Having the sending teacher share information about a student with the receiving teacher is likely to help prepare the new school staff to support the student. Unfortunately, many parents and teachers reported that this critical exchange of information did not occur, despite the potential benefits for all involved (Atkinson et al., 2007). A designated transition facilitator may help with this process.

Another recommended practice with consistent support of use across studies was use of a transition binder to clarify the many steps of the transition process and to connect parents with community supports. Informed and connected parents are equipped to advocate successfully for appropriate services and modifications for their children (Trainor, 2010).

A significant barrier to successful parent advocacy occurs when the parent's primary language is not the same as the school staff. Such situations can reduce parents' ability to secure necessary supports for their child at school (Chisholm, 1994; Stanton-Salazar, 1997). Since youth with ASD of discrepant-language-speaking families are especially at risk of losing needed services as they transition (Thomas et al., 2014), such families are in need of accommodation of meetings in their language or access to translation services.

Given the heterogeneity of ASD symptom presentation and idiosyncratic needs of children across the spectrum, individualization of supports is key (Stahmer et al., 2011). Parents, teachers, and students unanimously agreed that tailoring transition planning to a particular student is critical to ensure a smooth transition to the student's new learning environment. For younger children, previous educational structure (formal vs more play-orientated preschool) and child age of primary school entry may play a role, and across ages, other school system factors, culture, educational provision, school/class/community size, and locality differences may affect the transitions of children with ASD, and should be investigated in future research.

Limitations

A number of study limitations should be mentioned. First, the literature on school transitions for students with ASD is limited in both volume and quality. According to the guidelines set by Harbour and Miller (2001), the strategies currently used were allocated a "C-level" rating and all others were given a "D-level" rating, based on the study design. These poor ratings were due to small samples, no control groups, and lack of quantitative measures. As Harbour and Miller (2001) note, however, "A-level" ratings (e.g. including a meta-analysis or systematic review of RCTs) are relatively rare. The qualitative studies included in this review have produced findings that are contextually sensitive, persuasive, and relevant (Henwood and Pidgeon, 1992), and allow for a rich understanding of the perspectives of each member of the student's team. Given the scarcity of literature, rather than a comprehensive and conclusive summary of all transition difficulties and strategies, the body of work summarized in this systematic review provides a starting framework from which school transition strategies for students with ASD can be derived, and then tested.

Conclusion

Few studies have examined the support needs of transitioning students with ASD and intervention development has only recently begun. Children with ASD struggle with anxiety and increased social pressure, their parents feel overwhelmed with complex placement decisions and worry about the well-being of their children, and teachers strive to provide appropriate supports to their students with ASD, often with fewer resources than required. Strategies that adjust the student to the new setting, starting before and continuing throughout the transition, that individualize transition supports, that clarify the transition process for parents, and that foster communication among the sending and receiving schools and school and home, may be particularly useful. There is a pressing need for community-based, rigorously tested interventions to examine the effectiveness of different school transition strategies to ensure the success of students with ASD.

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Appendix. Summary of All Articles Reviewed.

Author (year)	Type of transition	Location: country; geographical area	Participants: sample number and type	Child placement type	Child age range	Child functioning level (LF, MF, HF)*	Family SES** (low, middle, high)	Family race/ ethnicity	Research design	Evidence rating***
1. Forest et al (2004)	Primary	USA	4 parents of 3 students with ASD and their 6 teachers (primary and secondary)	Mainstream and hybrid (mainstream plus special ed./autism only)	5-6 years	MF, HF	Not reported	Not reported	N = 13; observational; quantitative/ qualitative; cross-sectional; no child comparison group	3
2. Stoner et al (2007)	Primary	USA; urban	8 parents of 4 students with ASD	N/A	6-8 years	N/A	Middle SES	Not reported	N = 12; observational; qualitative; longitudinal; no child comparison group	3
3. Levy & Perry (2008)	Primary	Canada; rural, suburban, and urban	26 intensive behavior intervention staff, 11 primary school staff	N/A	N/A	N/A	N/A	N/A	N = 37; observational; quantitative/ qualitative; cross-sectional; no child comparison group	2-
4. Parsons et al (2009)	Secondary	UK; geographical area not specified	125 parents of students with ASD	N/A	5-25 years	N/A	Middle – high SES	97% white British 1% Caribbean 2% other	N = 125; observational; quantitative/ qualitative; cross-sectional; ASD with and without disability groups	N/A (focused on difficulties)
5. Denkyirah & Agbeke (2010)	Primary	Ghana and USA	Primary school teachers: 65 from Ghana, 210 from USA	N/A	N/A	N/A	N/A	Not reported	N = 275; observational; quantitative/ qualitative; cross-sectional; no child comparison group	3
6. Quintero & McIntyre (2011)	Primary	USA; urban	95 parents of 19 students with ASD and 76 students with DD, and 43 of their preschool teachers	Special ed.	4 years	LF – HF (Mean = MF)	Low – high SES	84% white/ Caucasian 16% mixed	N = 233; observational; quantitative; longitudinal; matched DD comparison group	2+
7. Tobin et al (2012)	Secondary	UK	7 parents of 6 students with ASD	Mainstream	N/A	N/A	Not reported	Not reported	N = 13; observational; qualitative; longitudinal; no child comparison group	3

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Appendix. (Continued)

Author (year)	Type of transition	Location: country; geographical area	Participants: sample number and type	Child placement type	Child age range	Child functioning level (LF, MF, HF)*	Family SES** (low, middle, high)	Family race/ ethnicity	Research design	Evidence rating***
8. Hannah & Topping (2012)	Secondary	Scotland; urban	8 students with ASD	Pre-transition: mainstream; post-transition: 3 mainstream, 5 in secondary communication support unit	11.3-12.4 years	HF (Asperger's diagnoses)	Low SES (based on recruitment area)	90% white	N = 8; observational; quantitative; longitudinal; no child comparison group	N/A (focused on difficulties)
9. Dixon & Tanner (2013)	Secondary	Australia; semi-rural	2 students with ASD and their parents and 4 secondary school staff	Mainstream	14-15 years	HF (Asperger's diagnoses)	Middle to high SES	Not reported	N = 6; observational; qualitative; cross-sectional; no child comparison group	3
10. Perfitt (2013)	Secondary	UK	15 students with ASD	Not reported	11-14 years	Not reported	Low – high SES (27% low)	80% white British, 13% black, 7% Asian	N = 15; observational; qualitative; cross-sectional; free school meals (low SES) comparison group	2-
11. Beamish et al (2014)	Primary	Australia; rural, suburban, and urban	91 teachers of early child developmental programs	N/A	N/A	N/A	N/A	N/A	N = 91; observational; quantitative/ qualitative; cross-sectional; no child comparison group	3
12. Fortuna (2014)	Secondary	UK; Urban, Suburban	5 students with ASD and their parents and teachers (primary and secondary)	Mainstream (pre and post transition)	11-12 years	Low – high (only 1 with special ed. needs)	High SES	100% white British	N = 15; observational; quantitative/ qualitative; longitudinal; no child comparison group	N/A (focused on difficulties)
13. Foulder-Hughes & Prior (2014)	Secondary	UK	6 students with ASD	Mainstream	10-11 years	MF (based on answer format of child)	Low SES (based on recruitment area)	Not reported	N = 6; observational; qualitative; cross-sectional; no child comparison group	3
14. Fontil & Petrakos (2015)	Primary	Canada; urban	10 students with ASD and their 11 parents	Pre-transition: home daycare, special ed. placements; Post-transition: special ed. and segregated programs	4.5-7.25 years	Low – high on adaptive behavior	Low – middle SES	50% immigrant families from: Jamaica, China, Peru, Haiti, and the Philippines); 50% sample was Canadian born	N = 21; observational; qualitative; longitudinal; no child, but immigrant family comparison group	2-

Appendix. (Continued)

Author (year)	Type of transition	Location: country; geographical area	Participants: sample number and type	Child placement type	Child age range	Child functioning level (LF, MF, HF)*	Family SES** (low, middle, high)	Family race/ ethnicity	Research design	Evidence rating***
15. Deacy et al (2015)	Secondary	Ireland	30 teachers of primary and secondary schools	N/A	N/A	N/A	N/A	N/A	N = 30; observational; quantitative & qualitative; cross-sectional; no child comparison group	3
16. Mandy et al (2015)	Secondary	UK; urban	28 students with ASD	Mainstream (pre and post transition)	Mean (SD) = 11.29 years (0.4)	LF – HF (Mean = MF)	Not reported	77.8% white British	N = 28; observational; quantitative; longitudinal; no child comparison group	N/A (focused on difficulties)
17. Starr et al (2016)	Primary	Canada; urban	11 parents of students with ASD, 6 teachers, and 18 service providers	N/A	5 – 14 years	N/A	Middle – high SES	Language preference noted: 58% English, 18% Mandarin, 18% Arabic	N = 35; observational; qualitative; cross-sectional; no child comparison group	3
18. Mandy et al (2016)	Secondary	UK	37 students with ASD (17 intervention group, 20 control group)	Mainstream (pre and post transition)	Mean (SD) = 11.47 years (0.44)	LF – HF (Mean = MF)	Not reported	67.6% white British	N = 37; intervention (quasi-experimental); quantitative; longitudinal; no child comparison group	2+
19. Cridland et al (2014)	Secondary	Australia; suburban	5 parents and their 3 daughters with ASD	Specialized ASD unit; supported employment program	12-17 years	Low – high (3 with Asperger's diagnoses)	Low – high SES (Mean = middle)	100% white/ Anglo-Saxon	N = 8; observational; qualitative; cross-sectional; no child comparison group	N/A (focused on difficulties)
20. Minnes et al (2015)	Primary	Canada	155 parents of students with ASD	N/A	3 - 6.9 years	N/A	Mean = low SES (58.1% experienced financial hardship)	Not reported	N = 310; observational; quantitative; cross-sectional; no child comparison group	N/A (focused on difficulties)
21. Connolly & Gersch (2016)	Primary	Ireland	6 parents of students with ASD	N/A	5 years	N/A	Not reported	Not reported	N = 6; observational; qualitative; cross-sectional; no child comparison group	3
22. Neal & Frederickson (2016)	Secondary	UK	6 students with ASD	Mainstream	Not reported, but participants in year 7	HF	Not reported	100% white British	N = 6; observational; qualitative; cross-sectional; no child comparison group	3

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Appendix. (Continued)

Author (year)	Type of transition	Location: country; geographical area	Participants: sample number and type	Child placement type	Child age range	Child functioning level (LF, MF, HF)*	Family SES** (low, middle, high)	Family race/ ethnicity	Research design	Evidence rating***
23. Peters & Brooks (2016)	Secondary	UK	17 parents of 17 students with ASD	Mainstream	Not reported, but students in year 7 or 8	HF (all with Asperger's diagnoses or HFA)	Not reported	100% white British	N = 34; observational; quantitative and qualitative; cross-sectional; no child comparison group	2-
24. Strnadová et al (2016)	Secondary	Australia	14 parents and primary caregivers and 13 teachers of students with DD and/or ASD	Special ed.	9 – 18 years	LF (all children with ASD had intellectual disability)	Low – high SES (43% of parents unemployed)	Not reported	N = 27; observational; qualitative; cross-sectional; no child comparison group	3
25. Hebron (2017)	Secondary	UK	28 students with ASD and 21 typically developing students	28 primary schools (26 mainstream, 2 special ed.) and 29 secondary schools (24 mainstream, 5 special ed.)	10-11 years	Not reported	Not reported	98% white British	N = 49; observational; quantitative; longitudinal (over 1.5 years); typically developing comparison group	N/A (focused on difficulties)
26. Makin, Hill & Pellicano (2017)	Secondary	UK	15 students with ASD, 15 parents/ caregivers, 18 teachers (13 primary, 5 secondary)	7 mainstream and 8 special ed. (secondary)	10-11 years	MF - HF	In recruitment catchment, 8% are eligible for free school meals	100% white British	N = 48; observational; quantitative and qualitative; longitudinal; no child comparison group	2+
27. Tso & Iva Strnadová (2017)	Secondary	Australia	15 parents/ caregivers of 12 students with ASD	4 mainstream, 3 special ed. and 5 mainstream/special ed.	14 – 17 years (M= 16 years)	MF – HF (based on school placement)	Not reported	Not reported	N = 15; observational; qualitative; cross-sectional; no child comparison group	3

ASD = Autism Spectrum Disorder, DD = developmentally delayed, HFA = high-functioning autism. * LF = low functioning (IQ < 70), moderate functioning (IQ = 70 – 84) and high functioning (IQ ⩾ 85). If IQ scores were not reported, based on other clinical information provided in article, noted above. ** Based on maternal education level, or if not reported, other indices of family SES (e.g. family income, free or reduced lunch status). *** Level of evidence for use of transition strategy per article grading based on those specified in Harbour and Miller (2001), based on research design, where 1++ = high quality meta-analyses, systematic reviews of RCTs, or RCTs with a very low risk of bias, 1+ = well conducted meta-analyses, systematic reviews of RCTs, or RCTs with a low risk of bias, 1- = meta-analyses, systematic reviews or RCTs, or RCTs with a high risk of bias, 2++ = high quality systematic reviews of case-control or cohort studies or high quality case-control or cohort studies with a very low risk of confounding, bias, or chance and a high probability that the relationship is causal, 2+ = well conducted case-control or cohort studies with a low risk of confounding, bias, or chance and a moderate probability that the relationship is causal, 2- = case-control or cohort studies with a high risk of confounding, bias, or chance and a significant risk that the relationship is not causal, 3 = non-analytic studies, e.g. case reports, case series and 4 = expert opinion