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Suliman S. Alothaim

Department of Special Education, College of Education, Qassim University, Buraydah, Saudi Arabia,
sothaim@qu.edu.sa

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The Effectiveness of Transition to School for Children with Autism Spectrum Disorder (ASD): A Systematic Review

Suliman S. Alothaim

Department of Special Education, College of Education, Qassim University, Buraydah, Saudi Arabia

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Abstract: Numerous factors, phases, stages, and stakeholders come into play when exploring the topic of transition to school for children diagnosed with autism spectrum disorder (ASD). Researchers interested in this topic must go through many procedures to eventually reach the end goals of their studies at the highest level possible of accuracy especially when their studies are built on the participation of children with ASD. Moreover, the transition to school is a multi-threaded topic and the possibilities that researchers can explore are endless. This study aimed to explore the issue of students with ASD transitioning to schools and scrutinize the multiple sub-topics associated with the process of transitioning. The study reviewed 16 studies that fell within the inclusion criteria to find out about (1) the main purpose of the studies, (2) what methodologies were used, and (3) whether researchers had pre-set hypotheses about ASD. Findings revealed that several topics and sub-topics were falling under the overarching umbrella of the issue of the *transition to school for children with ASD*. Researchers utilized many methodologies to examine the topics, some of which were common across some studies. Some studies were found to have included different groups of participants: children with ASD as well as other stakeholders for this group of children, such as parents, care providers, teachers, and workers of intervention programs. Most of the reviewed studies did not include prior hypotheses about ASD and speculations were not paramount elements.

Keywords: Autism spectrum disorder (ASD), school, transition, children with ASD.

1 Introduction

Autism spectrum disorder (ASD) is described as an ever-lasting condition that is distinguished by struggles in two main domains of life: social communication and repetitive behavior paired with the difficulty to adjust to expeditious and unexpected change (National Collaborating Center for Mental Health, 2012; National Institute of Mental Health, 2015). Lack of reciprocity in social communication and flexibility along with difficulty in carrying out executive functions, weak regulation of emotion and behavior as well as difficulty in controlling motor skills, language, and eating are also among the key characteristics of ASD (American Psychiatric Association, 2013). According to Boehm (2016), autism is referred to as a spectrum because there are many symptoms associated with it and various levels of severity, and the higher the severity the more support is going to be called for.

Signs of ASD are usually more noticeable through early childhood and early intervention is crucial for children with ASD and is considered one of the most effective approaches to ensure better results on the social and academic levels in the long term (Forest, Horner, Lewis-Palmer & Todd, 2004). The importance of early intervention and its positive long-term influences on individuals with ASD is evident in compelling pedagogy (Camarata, 2014) which makes the policy statement issued by the American Academy of Pediatrics calling for universal screening for autism by the age of 24 months understandable (Johnson & Myers, 2007).

Education can be the setting for future failure or success and regardless of the excellency of any given educational environment, students with ASD are prone to experience more challenges than their typical peers (Pratt, 2005). As important as it is to regular children, education is pivotal for those with ASD because it provides them with an environment where they learn things beyond reading, writing, and math (Sarah Dooley Center for Autism, 2015). Getting the needed skills for making friends, dealing/ coping with everyday situations as well as learning how to interact and communicate with adults are all valuable things that school and the educational environment provide for kids (Sarah Dooley Center for Autism, 2015).

*Corresponding author e-mail: sothaim@qu.edu.sa

Moreover, going to school, and most importantly the right school, will help children with ASD learn important socialization skills as well as have the chance to practice them (Sarah Dooley Center for Autism, 2015). For students with ASD, going to regular schools falls under the inclusion policy which refers to the possibility of integrating children with developmental disabilities (DD) into regular schools along with typically developing peers (Levy & Perry, 2008). This policy allows students with DD to learn in an environment resembling real-life contexts and eventually take part in a socially responsive and facilitative environment (Turnball & Blacher-Dixon, 1981).

Pratt (2005) believes that sending a child with ASD to a school and choosing the right one, whether it is a public or autism-specific school is a decision to not be taken before conclusive and careful consideration. According to Pratt (2005), parents need to be aware that sending their child with ASD to autism-specific schools will isolate them from the requirements and stresses of the social life and community and so may have unwanted results. It is a high probability in such a case that students with ASD may not be prepared to deal with life realities in their future neither will they be able to profit from whatever positive aspect a community may provide (Pratt, 2005). Standing on the other end of the spectrum are Levy and Perry (2008), who noted that the special characteristics associated with students with ASD and created by the nature of their disorder make them more susceptible to face unique challenges when transitioning to schools. Since children with autism do not imitate their peers, and their communication skills are more on the absent level, it will be hard for them to learn from their peers in regular school (Levy & Perry, 2005). Indeed, introducing children with ASD to inclusive schools is a keyway in challenging their refusal to accept changes and will help them cope with these unavoidable encounters (Mardiyanti, 2016).

Rebello (2012) through the UNICEF Education Section defined school readiness on axes of two distinguishing features and three dimensions. While the features include "transition" and "gaining competence," the dimensions are concerned with the children's readiness for school, families' and communities' readiness for school, and schools' readiness for children, all of which should work in tandem (Rebello, 2012). Per Fabian and Dunlop (2007) and Volger et al., (2008), on the general level, the meaning of the term 'transition' depends on the setting, the nature of the psychosocial and cultural adjustments involved in the process as well as the role of the actors in shaping the transition. Pertaining to the purpose of this study, Rebello (2012) defined transition as "children moving into and adjusting to new learning environments, families learning to work with a sociocultural system (i.e., education), and schools making provisions for admitting new children into the system, representing individual and societal diversity." (Rebello, 2012, p. 8). Transition is a key concept in the Individuals with Disabilities Education Act (IDEA) and is referred to as a set of correlated activities designed for students and within an outcome-oriented process that encourages movement from a certain educational setting to the next one (Troup & Malone, 2002). According to Repetto and Correa (1996), these sets of activities are intended to not only promote physical transfer to the next educational setting but to facilitate a seamless system of services for the child and her family that promotes successful educational outcomes.

Per Forest et al., (2004), the transition to school is a paramount event in the life of children along with their parents and according to studies, both sides are expected to experience augmented levels of stress and psychological and physical symptoms are more likely to occur when transitioning to school. The reason why the transition to school is a stressful and life-size experience for children with ASD is that it is a "major ecological shift that poses considerable social, emotional, academic and organizational challenges" (Mandy et al., 2105, p.1). The deficits in social communication and social interaction are likely to put children with ASD along with their families under more difficult situations when facing changes such as transitioning to school (Mardiyanti, 2016). Some scholars (e.g., Neal and Frederickson, 2016) reported that with all the conditions associated with ASD, children diagnosed with ASD are one group that is exposed to showing poor transition outcomes. However, Mandy et al. (2016) in a recent study reported that children with ASD who go to mainstream schools, contrary to expectations, showed no significant difference in their psychopathology or maladaptive behavior throughout the transition period. Nonetheless, despite the no changes in behavior, all observed children experienced outstanding difficulties that remained stable throughout time (Mandy et al.2016).

Sterling-Turner and Jordan (2007) noted that because children diagnosed with ASD find it difficult to accept change, transitioning between diverse life settings as well as stages is particularly challenging for them, and accordingly, transitioning to primary school is so significant in the life students with ASD (Eapen et al., 2017). According to Hirst, Jervis, Visagi Sojo, and Cavanagh (2011), a successful school start is usually viewed within the lines of maintaining secure feelings, elevating academic and social skills, higher levels of dependence, positive relationships with people within the classroom: teachers and peers, and positive attitudes towards school.

Due to the discrepancies in primary and secondary school, the transition to the latter entails a chief ecological move and places demands on the children's social, organizational, and intellectual capacities (Mandy et al.2016). According to Mandy et al., (2016), school size, the level of demands that influence the independence of pupils, the number of teachers, students come to contact with, and whether they stay in one room or walk around the campus is among the core facets of differences between primary and secondary schools. Zeedyk et al. (2003) noted that transitioning to secondary school can be perceived as one of the most challenging experiences in a student's educational career. Understandably, children with ASD are prone

to experience particular challenges when transitioning to secondary school mainly because of the requirements of transition, such as “adaptation to new systems and procedures within a new environment amongst a significant number of unfamiliar students and adults” (Neal & Fridickson, 2016, p.356).

The purpose of this study is to do a literature review and systematically examine research studies designed to explore the issue of students with ASD transitioning to schools and scrutinize the multiple sub-topics associated with the process of transitioning. More specifically, I sought to address the following questions:

- 1) What purposes did the selected studies serve and how did the researchers’ interest vary across the observed studies?
- 2) Who were the participants of the studies and what methods did the scholars use?
- 3) Did research methodologies vary across the studies that selected parents of students diagnosed with ASD compared to those studies that chose students with ASD as their participants/sample?
- 4) Do scholars start their studies with pre-set hypotheses falling in the shadows of the conditions associated with ASD?

Because the transition to school for students with ASD transition to school is a multi-threaded topic and the process of transition is a multi-step one, this literature review will focus on the transition to kindergarten, primary, and to secondary school for students diagnosed with ASD.

2 Method

To locate studies for this literature review, the author searched some of the well-known available online databases such as google scholar, web of science, Scopus, and PubMed. Nevertheless, not all the results were accessible to the public. In order to find articles on the respective topic, I electronically searched all possible combinations of words that could yield related studies. The first group of word combinations was *autism transition to school*, the results were not sufficient, however, and the search did not result in officially published articles. Accordingly, I went on adding a few other sets of terms to the original group such as *kindergarten, primary-to-secondary, preschool-to-kindergarten, elementary-to-secondary, kindergarten-to-primary, scholarly articles, studies, strategies, and difficulties*. (Note: the abbreviation *pdf* was added after each single search entry in Google scholar to have resulted in a downloadable form). The different sets of words were searched on Google as well as three main database websites: Sage Journals and Research Gate and ERIC. For example, Entering the combination “*autism transition to school*” into the search window in the Sage Journal Host resulted in 2822 individual entries. Nevertheless, not all were directly related to the topic, and out of this number, only 3 of the articles open for public access were included in this review. Adding the abbreviation *pdf* to search entries on Google brought about results of articles on the topic that were not counted in as they were not scholarly articles and hence the following inclusion/exclusion criteria were applied. Articles were included if they (1) were in the English Language, (2) were peer-reviewed studies published in journals or studies published under a renowned academic/educational entity, and (3) included students diagnosed with ASD or at least a parent of a child diagnosed with ASD. As stated above, several topics unfold when addressing the issue of transition to school for students with ASD, and therefore I needed to delve deeper into the abstracts and scan the method sections of the studies I could find upon searching. Thereof, studies were excluded if they: (1) focused only on the teachers of children with ASD and any other component or factor of the transition process and (2) focused on the literature related to this topic or examined the system and process of transition without including students or parents as participants. It is worth mentioning that applying these inclusion/exclusion criteria resulted in excluding a considerable body of research of importance to the respective topic (e.g., Levy & Perry, 2008; Denkyirah & Agbeke, 2010; McCumber, 2011; Janus, Lefort, Cameron & Kopechanski, 2007).

After applying the inclusion/exclusion criteria, a total of 16 studies were eventually selected for this review study. Pertaining to the sample, 5 of the selected studies had parents as participants, 6 of the studies had students with ASD as participants and 5 studies had parents and students as two groups of participants. Some of the selected studies had combined more than one group of participants who were commonly referred to as major stakeholders of students diagnosed with ASD including, but not limited to, teachers, caretakers, parents, and early intervention providers or workers. For these types of studies, this literature focused only on the parts that had either students or parents regarding the measures and methods adopted. As for the various school stages, 3 of the studies selected for this literature review examined the transition to kindergarten, 2 studies focused on the transition to primary school, and finally, 11 of them focused on the transition to secondary school. In this study, I chose to include these various stages and the two sets of participants because the term transition per se implies within a broad topic many factors which come into play when examining it. Focusing on one factor or one stage means leaving behind a substantial volume of literature that is of pivotal significance to the process of transition.

3 Results

Researchers in the counted in studies examined divergent topics related to the topic of transitioning to school for children diagnosed with ASD. These topics included factors that influence the transition process, children's level of anxiety associated with transitioning, the impact of transition on children with ASD, school connectedness, focus on accounts of positive transition, giving parents a platform to share their perspective on the process of transition, and many others.

Most of the studies examined here were descriptive and some of them examined post-transition experiences (e.g., Gumaste, 2011; Makin et al., 2017) and gave into account whether the transition was positive (e.g., Neal & Frederickson, 2016) and what factors influenced the overarching process (e.g., Ackerley, 2017). In the following section, the study described the overall findings from the review apropos the process of transitioning to school for students with ASD, what methods were used, whether researchers came into studying the topic equipped with a pre-set hypothesis, and what transition-specific factors were examined. Since the current study focuses on two groups of participants, children with ASD and parents of children diagnosed with ASD, this section will be divided into three parts. The first of which will provide the findings regarding the first group of participants, the second part will provide answers concerning the latter group: parents, and the third part will summarize findings on the studies that had both groups of participants. Answers to the third and fourth questions will be presented after answering the first two questions for each group of studies.

3.1 Studies that focused on students with ASD

3.1.1 Purpose of the studies

Points of interest were so various starting with providing an empirical account of the transition from primary school to secondary school in mainstream schools through examining the impact of the transition on students diagnosed with ASD (e.g., Mandy et al., 2015) and not ending with studying what strategies that could be deemed important for a successful transition (Mardiyanti, 2016). While Neal and Fredrickson (2016) took a different path where they wanted to give examples of building research on "strengths-based" approaches where they invited students diagnosed with ASD to share their positive transition experience, Hannah, and Topping (2012) attempted to investigate the level of anxiety of students with ASD during the transition as well as the factors that influence these levels. According to the authors, there is evidence in other studies that the level of anxiety drops during the first year of transition for the general population, but there are no studies examining the anxiety levels of students with ASD (Hannah & Topping, 2012). Mardiyanti (2016) was doing a more focused approach through performing a case study of one student to eventually determine what could be designated as effective strategies for a successful transition. However, Ackerley (2017) endeavored to give voice to the children with ASD and had them talk about their transition experiences. Examining whether students with ASD were able to use any skill that could be designated as a self-advocacy-related skill was also one of Ackerley's study purposes. Transition to school in general is a multi-threaded topic and school connectedness is one of the pole issues. Per Hebron (2018), students with ASD are even more predisposed to experiencing vulnerability during the transition process. Thereof, Hebron (2018) attempted to study school connectedness across the transition period due to the extreme paucity of studies examining these two interlacing zones of transition.

3.1.2 Participants and methodologies:

For this group of studies, there was a total of 81 students selected to participate in the respective studies. Five of the six studies mentioned the age of the participants (e.g., Mandy et al., 2016; Mardiyanti, 2016; Hebron, 2018), and only one study touched upon the ethnicity of the participants (i.e., Neal & Frederickson, 2016). Five of the studies elaborated on the gender of the participants and most were male participants across the studies. According to Van Wijngaarden-Cremers et al., (2014) the small ratio of female participants across the studies is undoubted since males are 10 times more likely to be diagnosed with ASD. According to Howlin (1998), prevalence levels of ASD diagnosis from male to female range from 4.7:1 to 10.3:1. Moreover, four studies of the total six discussed the inclusion/ exclusion criteria of selecting the sample (i.e., Mandy et al., 2016; Ackerley, 2017; Hannah & Topping, 2012; Neal & Frederickson, 2016), five of them provided either a detailed or brief description of the participant. Specific sampling approaches were briefly touched upon in four studies, three of which mentioned the samples were purposively selected (i.e., Ackerley, 2017; Hannah & Topping, 2012; Hebron, 2018).

Researchers used a wide array of methods to collect data from participants, questionnaires, scales, and interviews were common across the studies. Mandy et al., (2016) used several questionnaires and scales of high reliability including, but not limited to child characteristics before transition, change and continuity across the transition, the Beck Youth Inventory, The Vineland Adaptive Behavior Scales, and the Strength and Difficulties Questionnaires. These questionnaires yield results about the sample in terms of autistic symptoms, intelligence before school transition, conduct problems, hyperactivity, emotional problem, peer problems, and pro-social behavior. Self-report measures of self-concept, anxiety, anger, and disruptive behavior are also among the areas these questionnaires and scales examined. Ackerley (2017) used interviews that were conducted during the first term after transition and were held in a quiet room that students find recognizable attempting

to cut down on the level of anxiety during the event of the interview. Studying school connectedness, Hebron (2018) used the Psychological Sense of School Membership (PSSM) questionnaire that helps measure school connectedness as it is able to measure the scope of students’ sense of belonging to their school.

Neal and Frederickson (2016) used semi-structured interviews. The researchers made the necessary measures to warrant that their student sample is comfortable and able to go on with the interviews. Such measures involved presenting visual aids to students that outlined each stage, as well as using the introduction phase where researchers made sure students can define certain terms, such as happy and worried. Finally, an adaptive version of the Spence Children's Anxiety Scale was used by Hannah and Topping (2012) that yielded results regarding the student’s level of anxiety before and after the transition as shown in table 1.

Table 1: Studies with children’s participants

Study	Method/Measures
Mandy et al. (2016)	*Child characteristics before transition. *Change and continuity across the transition * The Strengths and Difficulties Questionnaire. * Beck Youth Inventories – second edition. * The Vineland Adaptive Behavior Scales, second edition * Schwartz Peer Victimization Scale (SPVS).
Hebron (2018)	*The Psychological Sense of School Membership (PSSM) (Goodenow, 1993)
Ackerley (2017)	*Interviews carried out with children
Mardiyanti (2016)	*Case study
Hannah & Topping (2012)	*Spence Children’s Anxiety Scale (SCAS; Spence, 1997)
Neal & Frederickson (2016)	*Semi-structured interview schedules

3.2 Studies focusing on parents of students with ASD:

3.2.1 Purpose of the studies:

Similar to the first section above, researchers who opted to focus on the parents of children with ASD investigated divergent topics in relation to the school transition for students with ASD. The interest in Hamilton and Wilkinson (2016) study on the transition of students with autism sprang from the lack of research discussing the between-school transition of this group of children. Thereof, the authors attempted to examine out of the students with SEN who made successful transitions to students diagnosed with ASD. Nonetheless, Forest et al., (2004) adopted a broader scope for their research and worked to serve three end purposes of their research. First, the authors wanted to identify and amalgamate crucial factors during the transition from the already available literature, and second to develop a practical tool that could help families, schools, and agencies assess the transition process. The ultimate goal of their study was to engage parents of students with ASD and have them speak their opinion on their perception of the crucially of every element of transition as well as the degree to which each element was practiced during recent transitions. A wider perspective was the basis of Starr, Martini, and Kuo (2016) study where the authors attempted to examine the issue of school transition but from the perspective of stakeholders who originally come from ethnically diverse backgrounds, parents in this case, who stand in the frontline of the overarching process of their kids transitioning to school. And finally, Fleming (2014) endeavored to build on the base of the current body of literature on the transition of students with ASD to kindergarten through offering experimental evidence that examined what practices parents believe are employed during transition compared to those practices they believe are the most important for a successful transition experience. Moreover, Eapen et al., (2017) aimed to assess the outcomes of transitioning to schools for students with ASD who were enrolled in early intervention programs as well as examine what characteristics of students with ASD could be linked to and associated with a successful transition.

3.2.2 Participants and methodologies:

The total number of parents participating in these four studies were 57 the majority of whom were females. Two studies did not provide a specific number of parent participants, only mentioning that the participants were the parents of three young children diagnosed with ASD (i.e., Forest et al.,2004.; Eapen, et al., 2017). Nonetheless, the study done by Eapen et al. (2017) provided the number of participants: 21 children but did not refer to the number of participating parents. Three of the studies did not mention the age of parents and two of them have not included ethnicity in the description of the participants. However,

only one study included the age range of participating parents (i.e., Fleming, 2014) and two discussed the diverse ethnicities of the parents who took part in the studies. And all but one study (i.e., Hamilton and Wilkinson (2016) included inclusion criteria

Methods were mostly common across the studies reviewed in this part. As Fleming (2014) used multiple measures to ultimately reach the study goals, other researchers sought using interviews as their study measures. Forest et al., (2004) used face-to-face interviews which originally used the Elements for Transition to Kindergarten originally developed by the study authors which comprised 26 items: 25 of which were transition elements, and 1 item was intended for evaluating the transition process. A similar method was used by Starr et al., (2014) and Hamilton and Wilkinson (2016) who also conducted interviews with the participants with the definitive goal of collecting data for their respective studies. Among the measures, Fleming (2014) utilized is the Concerns Scale which was developed to examine parents' concern zones of their kids transitioning to kindergarten. The author also used the Families of Children with ASD Kindergarten Transition Experiences (FCATE) combined with other surveys such as Elements for Transition to Kindergarten to create scales that measure transition activities implemented by preschools or kindergartens (see table 2). Participants reported on the practices that were implemented as well as the practices they believe are the most important using open-ended questions. Moreover, the author used the Barriers to Kindergarten Transition Practices Checklist: a scale designed to assess common obstructions to what could be perceived as a positive transition. Finally, the Background Information Questionnaire was developed by the author to facilitate further understanding of the “background characteristics of families and their child with ASD” (Fleming, 2014, p. 20). Moreover, Eapen et al., (2017) used several standardized scales and questionnaires like the social communication questionnaire, Mullen scales of early learning, the repetitive behavior scale, and the teacher-child relationship and children’s early school adjustment to mention a few as illustrated in table 2. These scales and questionnaires aimed to provide measures of certain areas, such as the motor development in children from birth to around five years, autism symptoms, as well as adjustment to the classroom or school.

Table 2: Studies with parent participants.

Studies	Methodologies
Hamilton & Wilkinson (2016)	*Focus group methodology: Semi-structured interviews
Forest et al. (2004)	*Face-to-face interviews using the Elements for Transition to Kindergarten
Starr et al. (2016)	*Focus group methodology: interviews with participants
Fleming (2014)	*Concerns scale: adapted from Family Experiences and Involvement in Transition Survey *Elements for Transition to Kindergarten Survey *Kindergarten Transition Parent Interview *Families of Children with ASD Kindergarten Transition Experience survey *Barriers to Kindergarten Transition Practices Checklist *Background Information Questionnaire
Eapen et al. (2017)	*MSEL: Mullen Scales of Early Learning. Circle Pines *VABS *Social communication questionnaire *RBS: The Repetitive Behavior Scale-Revised *SSIS: Social skills improvement system *TRSSA: The teacher-child relationship and children’s early school adjustment

3.3 Studies that focused on students and parents

3.3.1 Purpose of the study

Researchers who included both groups of participants: students with ASD and parents, have explored different topics and created pieces of research that could add up to the existing literature. Attempting to address the shortcomings of the current

literature, Makin, Hill, and Pellicano (2017) carried out a mixed methods multi-informant study that aimed to comprehensively examine the process of transition from primary to secondary school. A few examples of the limitations the authors attempted to address are the number of informing factors: child factor, small scales, narrow methodologies, as well as one-phase data collection. Mandy et al., (2015) developed a manualized intervention that aims to facilitate a successful transition process for students with ASD. The authors conducted a study for the final purpose of acquiring the needed evidence regarding the practicability of the intervention: Systemic Transition in Education Program for ASD (STEP-ASD). Mandy et al., (2015) also sought to know the effectiveness of STEP-ASD in reducing emotional and behavioral problems.

Jindal-Snape, Douglas, Topping, Kerr, and Smith (2006) made the effort to "examine the perceptions of transition of children/young people with ASD and their parents in-depth" (p.18). Dann (2011) wanted to address the gap in research on transition as it principally focused on the typically developing children and those with a certain range of special needs and so decided to study the transition experiences closely focusing on the students with ASD. Finally, Gumaste (2011) tried to investigate the factors that both support and deter what could be perceived as a successful transition. The study focused on the inner factors of children with ASD as well as the systemic factors that have a prominent impact on the transition.

3.3.2 Participants and methodologies:

For these five studies, there was a total of 114 participants, 77 are children/young people with ASD, and 37 are parents. Despite having parents participate and provide data for the study, two studies provided only the number of participating children and did not provide reference to the number of contributing parents (i.e., Jindal-Snape et al., 2006; Mandy et al., 2015). Out of the total number of partaking children, only five girls were included. As for the sampling method, while two studies had their sample purposively selected (i.e., Makin et al., 2017; Jindal-Snape, 2006), the rest relied on criterion sampling (Mandy et al., 2015; Dann, 2011; & Gumaste, 2011). Four studies mentioned the inclusion/exclusion criteria, and all provided either short or detailed descriptions of their participants (Gumaste, 2011; Dann, 2011; Mandy et al., 2015; & Makin et al., 2017). Out of the five studies, only two studies referred to the ethnicity of their participants (i.e., Makin et al., 2017; Gumaste, 2011), three studies mentioned the age of the children's participants but did not include the age of the parents, one study did not mention the age of the participants (i.e., Dann, 2011), and one study talked about the children age range at general (Mandy et al., 2015).

Researchers in the five studies included in this part have used methods in order to amass the needed data from participants varying between interviews and high-reliability scales and questionnaires (Makin et al., 2017; Mandy et al., 2015; Jindal-Snape et al., 2006; Dann, 2011; & Gumaste, 2011). Nonetheless, researchers had to slightly modify some of the utilized scales and questionnaires to best fit the purpose of their respective studies. Makin et al., 2017 used several scales and questionnaires both during pre-transition and post-transition as well as face-to-face interviews. A few of the scales and questionnaires used in this study include the Social Responsiveness Scale, Spence Child Anxiety Scale for Parents, and The Sensory Profile as well as Effective Preschool, Primary and Secondary Education (EPPSE) transitions. These scales are intended to yield measures of children's social and behavioral difficulties, and frequency of behaviors associated with observable sensory and offer a guide to transition success. The Social Communication Disorders Checklist, the Wechsler Intelligence Scale for Children, and the SDQ were the three measures Mandy et al., 2015 decided to use in their study to assess the children's emotional and behavioral problems and measure the children's intelligence. The children's participants of this study were divided into intervention and control groups. Therefore, researchers used the Social Communication Disorders Checklist and administered it to both groups to eventually examine whether both groups scored similarly regarding autistic social communication difficulties.

Jindal-Snape selected the interview schedules strategy as their research method that helped them identify the arrangement employed to support the primary-secondary transition from the parent's perspective as well as test the children's perception of their new school. Similarly, Dann (2011) selected a similar path and chose to conduct semi-structured interviews with parents and held individual interviews with pupils with ASD. To overcome the difficulties of language comprehension usually associated with ASD and the conditions associated with it, the author resorted to using Talking Mats during the process of interviews which offer visual structures to help pupils answer interview questions about their school as well as their anticipations for secondary school. Gumaste (2011) used a combination of scales and questionnaires for each phase of the transition. For the pre-transition phase, the author used the Wechsler Abbreviated Scale of intelligence, the Sensory Profile, the Spence Child Anxiety Scale for Parents, and the Social Responsiveness Scale. The purpose of these scales has been mentioned earlier. For the post-transition assessment, Gumaste (2011) used a slightly modified version of Effective Preschool, Primary and Secondary Education whose main purpose was also mentioned above. Semi-structured interviews were administered to both children and parents during pre-transition and post-transition as well as shown in table 3.

Table 3: Studies with parents and children's participants

Study	Method/Measure
Makin et al. (2017)	<ul style="list-style-type: none"> *Pre-transition: *Social Responsiveness Scale *The Sensory Profile *Spence Child Anxiety Scale for Parents *Face-to-face interviews *Post transition: *Questionnaire derived from a largescale, *National transitions study, the Effective *Preschool, Primary, and Secondary Education *(EPPSE) transitions sub-study. *Face-to-face interviews
Mandy et al. (2015)	<ul style="list-style-type: none"> *The Social Communication Disorders Checklist *The Wechsler Intelligence Scale for Children, Fourth UK Edition *The SDQ
Jindal-Snape et al. (2006)	<ul style="list-style-type: none"> *Interview schedule
Dann (2011)	<ul style="list-style-type: none"> *Semi-structured interviews with parents *Individual interviews with pupils
Gumaste (2011)	<ul style="list-style-type: none"> *Pre-transition: *Wechsler Abbreviated Scale of Intelligence *The Social Responsiveness Scale *The Sensory Profile *The Spence Child Anxiety Scale for Parents *Post-transition *Slightly modified Effective Preschool, *Primary and Secondary Education (EPPSE)

One of the main purposes of the current study was to investigate the existence of noteworthy variances in the methodologies that scholars used with their diverse groups of participants. As noted, this review comprised studies that included two diverse groups of participants: students with ASD, and parents of children diagnosed with ASD. And while some studies focused on either of the groups, some other studies included both groups in their sample. High-reliability questionnaires, scales, and semi-structured interviews were the most common methodologies across all the reviewed studies. Of the sixteen studies, only one used the case study method where the results were produced from the observation of a sole participant. The study done by Makin et al., (2017) was one of the studies that had both groups of participants take part in the questionnaires and interviews employed. Parents were mostly asked to rate certain autism symptomology-related questionnaires, such as sensory profile and the children's trait of anxiety, both parents and children were administered. Both parents and children were administered a few post-transition questionnaires as well as pre-and post-transition interviews. And still, the authors reported on the certain measures they implemented when going over the questionnaires and interview questions with the children with ASD to ascertain the highest level possible of accuracy. Such measures were visual support reached by using emotion cards and mind maps. Similarly, Ackerley (2017) also worked on ensuring the existence of a ground level of a shared language to eliminate any misunderstanding and consequently used visuals aimed at supporting

children with ASD to process the information they are given. These visuals also guaranteed that children sustained their focus and engagement.

Hannah and Topping (2012) adopted drastically different procedures for their study. Although they had children do some questionnaires, the questionnaires were sent home to the children, and parents were asked to let their kids do the questions all on their own and offer no help, other than that clarifying any ambiguities. Following a similar process, Jindal-Snape et al., (2006) also did interviews and scales with the children with autism but did not elaborate on whether certain measures were taken when doing the interviews or administering the scales with the selected children. Parents also participated in their study and were also interviewed for the broader concepts, opinions, and observation of the transition arrangements. Neal and Frederickson (2016) also ran interviews with children with ASD and used what they referred to as the "introduction phase" that ascertained children could identify the emotions of happiness and worry which ultimately were recorded in a visual format. Finally, Gumaste (2011) also interviewed parents and children alike for the purpose of their study. Nevertheless, the author used visual support that helped accommodate the children's communication, language, and social complications. This visual support contained face cards and a simple mind map, the latter of which helped students write their answers on the map. Students were also granted the choice to nominate the researcher to do the process for them.

Based on the above-mentioned, the author of this study did not point out any significant differences between methodologies researchers used with parents and those used with children with ASD. Both groups of participants were administered scales and questionnaires, and both were interviewed. However, the sole noteworthy difference is that some of the researchers (e.g., Ackerley, 2017; Gumaste, 2011; Neal and Frederickson, 2016; Jindal-Snape, 2006) have employed some techniques that assisted them to ascertain they collect accurate data from these children. On the other hand, other researchers (i.e., Hebron, 2018) did not detail whether particular procedures were applied when having the students do the questionnaires except for doing the questionnaires in a quiet room and helping with clarifying the meanings of any item.

The last question of this study aimed to examine if researchers started their studies equipped with pre-set hypotheses influenced by various conditions associated with ASD. Reviewing all the studies revealed that only two studies out of the sixteen included studies (i.e., Starr et al., 2014; Gumaste, 2011) had hypotheses that were clearly mentioned. Gumaste (2011) hypothesized that children who showed higher ability of verbal communication, less autistic symptoms, sensory abnormalities, and lower anxiety level would be able of making a more successful primary to secondary school transition. Starr et al. (2014) attempted to explore the experiences of ethnically diverse parents in the transition process of their children diagnosed with ASD. In light of the title, the authors started their study with the hypothesis that ethnically diverse parents are expected to experience common concerns and experiences of their children with ASD transitioning to kindergarten regardless of how various their cultural and linguistic backgrounds are. It is worth mentioning that Makin et al., (2017) did not start with any firm hypotheses but expected that low verbal communication abilities, higher levels of autistic symptoms, higher levels of anxiety, and sensory responsiveness will result in less successful outcomes of transition to school. Regarding legal aspects and ethical considerations for reviewed studies, considering the children with ASD high vulnerability, the issue of keeping participants' consent to participate in the study and follow the ethical considerations was a remarkable part. Most of the reviewed studies mentioned the procedures taken to ensure ethical considerations are counted and consent forms are sent and collected back for every included participant as shown in table 4.

Table 4: Ethical considerations and consent

Studies	Ethical consideration/ Consent
Mandy et al., (2016)	UK National Health Service + parental consent
Makin et al., (2017)	Ethical approval granted by the Institute's Research Ethics Committee Parental consent obtained
Hebron (2018)	Ethical approval from the host university (University of Leeds, UK) Consent is maintained through the personal choice of participating
Mandy et al., (2015)	UK National Health Service Parental consent + child assent
Ackerley (2017)	Ethical approval granted by the University of East London Informed consent is given by all participants before data analysis
Mardiyanti (2016)	No information is included.
Hannah & Topping (2012)	The first author was bound by the British Psychological Society and affiliated

	university codes of practice for research on human participants. Consent is maintained through verbal and written means.
Jindal-Snape (2006)	No information included
Eapen et al., (2017)	Approval of the University of New South Wales Human Research Ethics Committee. Written consent was granted by either participants or their legal guardians
Neal & Frederickson (2016)	No information on ethical considerations Consent is maintained after information sheets and consent forms are sent to parents
Dann (2011)	No information included on ethical consideration Parental consent was maintained as well as pupils' consent through visual packs.
Hamilton & Wilkinson (2016)	Ethical permission was granted, and two local branches of Autism New Zealand agreed to send invitations to parents. Five parents ended up responding to calls for participation.
Forest et al., (2004)	No information on ethical consideration Family consent as a condition to be included/ participate
Starr et al., (2016)	Institutional ethics board approval was maintained No information on maintaining consent.
Fleming (2014)	Approval granted by The UBC Behavioral Research Ethics Board Consent was a condition to participate
Gumaste (2011)	Ethical approval was granted by both the Faculty Research Ethics Committee at the Institute of Education & by the LA. Informed consent was obtained from the parents of the participating children

4 Discussion

There was considerable diversity in the topics researchers approached and the purposes of the studies they carried out. Most of the researchers explained that the main reason they focused on their perspective topic is due to the lack of studies that informed the public knowledge about it (e.g., Hebron, 2018; Hannah & Topping, 201; Fleming, 2014). Therefore, they attempted to add to the already existing body of research on the transition to school for students with ASD through examining unexplored areas of the field and tracking untouched aspects. Authors of the reviewed studies used and employed several methodologies and measures to gather information and took the necessary arrangements to ascertain that children with ASD can understand and respond to researchers which ultimately reflects the researchers' keen desire to enrich the available body of literature. Furthermore, it was noteworthy that some researchers (e.g., Gumaste, 2011; Dann, 2011; Makin, 2017; Hannah & Topping, 2012) applied a few edits to the scales they chose to employ reflects that standardized scale is flexible and future researchers can find a wide array of possibilities of measures that could be adopted when deciding to study school transition for children with autism no matter what topic they chose under this forked topic.

There were some measures and research procedures common across a few studies, such as the Wechsler scale, the sensory profile, the Spence child anxiety scale, and the social responsiveness scale which all produce data for certain traits associated with ASD. Most of these scales as well as other scales were modified by researchers so that they could produce the needed data without going through unnecessary steps. However, it was notable that many of the researchers recourse to few measures like a mind map, visual support, and emotion cards when administering scales, questionnaires, and/or interviews with the children diagnosed with ASD bearing in mind the struggle they usually encounter with verbal communication (e.g., Mandy et al. 2015; Gumaste, 2011). Such procedures manifest that data collected from children with special needs is attainable with the right tools, materials, and procedures. Giving the children with ASD to speak their voices gave even more strength to the studies since they use information elicited from the respective group of interest rather than exploring the topic from the

perspective of the prominent stakeholders solely. Additionally, as shown in the results section of this study, the vast majority of the children included in the reviewed studies were males which may also serve as proof that a diagnosis of autism is more prevalent in males than in females.

Parents were administered questionnaires, scales, and semi-structured interviews as well that principally were intended to solicit information on rating transition activities, plans, strategies, elements, factors, and/or answering questions on conditions as well as symptoms associated with ASD. Eliciting such information from the stakeholders helped researchers collect the utmost knowledge possible that otherwise would take long periods to collect. It was also important to have the parents' voices heard in these methods which proved vital to the opinions concluded and recommended since parents are one of the key stakeholders for this group of children and will always look for better experiences for their children.

It was significantly imperative to carefully check and read through all the method sections along with the sub-sections of procedures/ measures and participants to eventually determine who were the actual participants of the study. Some studies introduced their participants as children diagnosed with ASD who met the inclusion criteria but ended up having the parents do the questionnaires, scales, and/ or semi-structured interviews to collect data. Authors of some studies (e.g., Makin et al., 2017) needed to clarify precisely who the participants are and who is to be assigned to do what procedure/measure early in the method section. Finally, considering the special conditions that affect children with ASD and their ability to communicate, and their high vulnerability, the issue of maintaining participants' consent to participate and follow the ethical considerations was a remarkable part of the majority of the reviewed studies. Most of the studies referred to the procedures taken to ensure ethical considerations are counted for and consent forms are sent and collected back for every included participant as shown in table 4.

5 Conclusion

There proved to be countless areas where researchers could keep exploring and adding up to the available body of literature on the transition to school for children diagnosed with ASD to eventually assist all factors of the educational process and provide a better educational environment and easier transition activities and periods. However, considering the different ages they were, and the various levels of experiences they obtained, there could be more explanation of what methods could be more effective for children transitioning into kindergarten, elementary and secondary school.

Ethical Approval

This study was a systematic review does not contain any studies with human or animal participants performed by the author.

Informed Consent

This was a systematic review for previously published studies no informed consent was needed in this study.

Conflict of Interests

The author has not any conflict of interests with the information presented within this article.

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