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Running head: School connectedness and transition in autistic students

School Connectedness and the Primary-Secondary School Transition for Young People with
Autism Spectrum Conditions

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Abstract

Background: Young people with autism spectrum conditions (ASC) face many educational challenges, particularly in terms of academic achievement, social inclusion and mental health. School connectedness is linked to many positive outcomes and may be of particular salience at the primary-secondary school transition, when young people with ASC are expected to cope in new and unfamiliar settings. **Aims:** This study explores for the first time school connectedness across the primary to secondary school transition for young people with ASC. **Sample:** 28 students with ASC (23 male, 5 female) and a comparison group of 21 students with no additional needs (16 male, 5 female) participated. **Methods:** A longitudinal design was used to measure school connectedness across transition at four time-points from the end of primary school, into the first and second years of secondary school. Students completed the Psychological Sense of School Membership (Goodenow, 1993) questionnaire at each time-point, with responses analysed statistically. **Results:** Students with ASC reported positive levels of school connectedness across transition, although their scores remained lower than those of their typically-developing peers. The gap between the two groups narrowed significantly during the first year of secondary school, with students in the ASC group reporting improving levels of school connectedness, although there were non-significant signs of a decline for both groups in the second year. **Conclusions:** Transition can be a positive experience for students with ASC. However, their consistently lower levels of school connectedness compared to those of their peers highlight the need for on-going monitoring and support during secondary education.

Keywords: school connectedness, transition, autism spectrum conditions, inclusion; secondary education

School Connectedness and the Primary-Secondary School Transition for Young People with Autism Spectrum Conditions

Introduction

The transition from primary to secondary school is a challenging time for all young people (Zeedyk et al., 2003). Students move from the top of the primary school hierarchy to the bottom of the secondary one, and this frequently coincides with the onset of adolescence. It is a time of considerable change in social, structural and academic terms, and one to which young people are expected to adapt swiftly. Nevertheless, research suggests that negative effects associated with this transition are short-term for most students (e.g. Bloyce & Frederickson, 2012; Galton & Morrison, 2000). However, few studies have focused on specific groups of students who may be more vulnerable to a poor transition, such as young people with autism spectrum conditions (ASC), whose difficulties with change and social situations may make this move especially problematic (Tobin et al., 2012). It is reasonable to suggest that an increased focus on school connectedness at this transition may help to mitigate any negative effects and contribute to positive future psychosocial and educational outcomes. The current study is the first to specifically explore school connectedness among young people with ASC over an extended period (18 months) as they transition from primary to secondary school.

School connectedness

Social bonds, attachment and connections to others have long been acknowledged as a fundamental human need (Baumeister & Leary, 1995). Bowlby (1969) defined attachment as a “lasting psychological connectedness between human beings” (p.194), emphasising both its enduring and evolving nature according to developmental stage and context. Indeed research into school connectedness encompasses psychology, sociology, health and education (Blum &

Libbey, 2004). Goodenow (1993) defines school connectedness as “the extent to which students feel personally accepted, respected, included, and supported by others in the school social environment” (p. 80). This clear and concise definition is frequently used in research (e.g. Oldfield, Humphrey, & Hebron, 2016), and was the one adopted for the current study. School connectedness is often referred to using a range of related terms such as school membership, school belonging, school attachment and school engagement. While there are likely to be some definitional differences between them, there are also many similarities. In a review of measures of school connectedness, Libbey (2004) identified seven consistent themes: “a student’s sense of belonging and being a part of school, whether or not students like school, level of teacher supportiveness and caring, presence of good friends in school, engagement in current and future academic progress, fair and effective discipline, and participation in extracurricular activities” (p. 281).

School connectedness has its origins in understanding and addressing school dropout (e.g. Wehlage, Rutter, Smith, Lesko, & Fernandez, 1989), but more recent research has been consistent in finding strong associations with educational, psychosocial and mental health outcomes. For example, a positive sense of school connectedness is associated with greater academic motivation (Osterman, 2000) and engagement (Neel & Fuligni, 2013), reduced health-risk behaviour such as substance abuse (Bond et al., 2007), and higher levels of self-esteem (Furlong et al., 2003). In terms of mental health, a positive sense of school connectedness has been associated with lower levels of depression (Joyce & Early, 2014) and suicidality (Young, Sweeting, & Ellaway, 2011). Indeed, there is evidence of a directional association, with a positive sense of school connectedness established as a protective factor against future mental health problems (Shochet, Dadds, Ham, & Montague, 2006). This provides a compelling

rationale for promoting school connectedness in all young people, but particularly in those who may be more vulnerable to mental health problems (e.g., those with ASC in Hebron & Humphrey, 2014).

Transition from primary to secondary school

Young people are required to navigate a number of major educational transitions, all of which require adaptation to new social and academic environments, often coinciding with periods of developmental change. The primary to secondary school transition (henceforth referred to as transition) is one of the most important and presents a number of changes and challenges to all young people in structural, academic and social terms (Waters, Lester, & Cross, 2014). Typically, these include moving from a smaller primary to a much larger secondary school (average primary school size in England is 263, while that of a secondary school is 955, DfE, 2014b), adapting from having one main class teacher to multiple subject staff, changes in academic and behavioural expectations, and exposure to new peers and older students (Anderson, Jacobs, Schramm, & Splittgerber, 2000). As a consequence, secondary school requires higher levels of organisation and independence, as well as the social skills to forge new friendships and become an accepted member of the new peer group (Coffey, 2013).

While some negative outcomes have been found at transition, such as reduced school connectedness (O'Brennan & Furlong, 2010), greater anxiety (Hanewald, 2013), and social difficulties (Zeedyk et al., 2003), these appear to be short-term for most students (Bloyce & Frederickson, 2012). Nevertheless, the author argues that social issues may be intensified at transition, as students are also on the cusp of adolescence. At this time, young people typically begin to desire greater autonomy from their parents, and in doing so, form stronger bonds with

the peer group (Allen, 2008). For students who already struggle socially, transition may be a particularly challenging time.

Young people with ASC and transition

ASC is a life-long neurodevelopmental disorder, referred to as autism spectrum disorder¹ in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (APA, 2013). While heterogeneous in nature, diagnostic criteria relate to ‘social communication and social interaction,’ with affected individuals also displaying ‘restricted, repetitive patterns of behaviour, interests or activities’ (p. 50). ASC is estimated to occur at a rate of 1.7% among the primary school age population in the UK (Russell, Rodgers, Ukoumunne, & Ford, 2014).

Research into the educational experience of young people with autism has proliferated in recent years, with a focus on the challenges that these young people may encounter during their school years, as well as opportunities for intervention and increased teacher education. Key areas of concern compared to typically-developing (TD) peers relate to poorer academic outcomes and higher levels of exclusion (DfE, 2014a), behaviour problems (Macintosh & Dissanayake, 2006), mental health difficulties (Hebron & Humphrey, 2014), as well as social challenges, such as friendship formation (Calder, Hill, & Pellicano, 2013), bullying (Maïano, Normand, Salvas, Moullec, & Aimé, 2015), and social vulnerability (Sofronoff, Dark, & Stone, 2011).

At the time of conducting this research only nine studies had focused on the primary to secondary school transition of young people with ASC, all but one originating from the UK (the exception being Australia in Tso & Strnadova, 2016). Samples sizes vary but tend to be relatively small (average number 12, with a range of 5-28), with qualitative methodologies more

¹ ‘Condition’ rather than ‘disorder’ is used in this paper to acknowledge autism as a ‘difference’ rather than a ‘deficit’ (Baron-Cohen, 2012).

frequently employed. Parental response is the most commonly used report format in transition research to date: this was the case for eight of the nine studies, while students participated in five and teaching staff/professionals were involved in three. Despite the lack of research and variation in approaches, a number of common themes are nevertheless apparent.

The experience of transition for young people with ASC appears, in many ways, to be similar to that of their TD peers, such as adapting to new organisational/structural demands and understanding the expectations of multiple subject staff (e.g. Coles, 2014), as well as anxieties about forming relationships with a new peer group (e.g. Peters & Brooks, 2016). However, what may be qualitatively different for young people with autism is the level of intensity with which these concerns are felt, necessitating greater preparation for transition (Dann, 2011).

In particular, the social aspect of transition, including psychosocial adjustment, emerges from these transition studies. Positive peer relationships were found to be protective, with peer support and friendships linked to a more positive move to secondary school (e.g. Dillon & Underwood, 2012), while poorer relationships (including being bullied) were associated with more problematic experiences (e.g. Peters & Brooks, 2016). Nevertheless, there are inconclusive findings in terms of the extent to which anxiety may be heightened during transition (i.e. Hannah & Topping, 2012, reported no apparent trends while Peters & Brooks, 2016, highlighted its presence at unstructured times). Linked to this are recent findings published by Mandy and colleagues (2016b) which did not indicate any significant change in difficulties of students with ASC across transition, although they found high (and frequently undiagnosed) levels of psychopathology already present at primary school that persisted over transition.

Young people with ASC are known to experience significantly higher levels of mental health problems than their peers (Ghaziuddin, 2005), with psychiatric comorbidity a feature of

ASC throughout the lifespan (Buck et al., 2014). Given the protective nature of positive levels of school connectedness, it is surprising that no studies to date have specifically explored it among young people with ASC, and particularly at transition when psychosocial adjustment may be particularly fragile due to the significant developmental, social and educational changes taking place. If young people with ASC do indeed experience transition more intensely than their TD peers, then understanding and promoting school connectedness during this period may have substantial benefits for the future education and well-being of this group of young people.

Rationale

Previous research indicates that a positive sense of school connectedness is an important element in student well-being. However, it is likely to be challenged at transition due to the significant changes in students' structural, academic and social worlds, as well as representing a time of developmental change. The difficulties often associated with ASC suggest that these young people may be especially vulnerable at transition. To the author's knowledge, no research has yet explored these two important interlinking areas among this group of students. Therefore, the current study aimed to address this gap by specifically exploring school connectedness across the transition for young people with ASC compared with their TD peers. It was guided by the following two inter-related research questions:

- i) Do levels of school connectedness among young people with ASC differ from those of their TD peers across the transition?
- ii) Do levels of school connectedness change across the transition for young people with ASC compared to those of their TD peers?

Material and methods

Design

A longitudinal natural variation design was adopted for this project, in the context of a larger UK-based study focusing on transition for young people with ASC (Hebron, 2017). There were two participant groups: the ASC group and a comparison group of TD students (i.e. with no-known additional needs), with four time-points for data collection: T1 = third and final term of Y6 (final year of primary school); T2 = end of the first term of Y7 (first year of secondary school); T3 = end of third and final term of Y7; T4 = end of first term of Y8 (second year of secondary school).

Participants

Fifty-seven schools were purposefully recruited for the research: 28 primary schools (26 mainstream and 2 special) and 29² secondary schools (24 mainstream and 5 special) across 11 local authorities in North West England and North Wales. Students with a confirmed diagnosis of autism (N = 32) and students with no known additional needs (N = 22) took part in the completion of questionnaires. Only students who completed a questionnaire at each of the time-points were retained for the final analyses, resulting in 28 students in the ASC group (23 male, 5 female) and 21 in the TD group (16 male, 5 female)³. As the school year in England and Wales starts in September, students move from the top year of primary (Y6) to the first year of secondary (Y7) during the academic year in which they turn 12, meaning that the students were aged 10/11 at T1 and 12/13 at T4.

² Three students in the ASC group attended two secondary schools during the project.

³ One student in the TD group did not complete a questionnaire at T4, while four students in the ASC group did not complete the questionnaire at a specific time point.

All students in the ASC group were in receipt of support available for students with special educational needs (SEN), as set out in the SEN Code of Practice (DfE, 2014c), ranging from School Support (in-school provision) to a full statement of special educational needs⁴ (involving the use of external professionals). Students had a primary need of ‘autism spectrum disorder’ disclosed by the special educational needs co-ordinator (SENCo) at each school. A clinical diagnosis was subsequently confirmed by a parent of each young person in the ASC group. Further inclusion criteria were that the young person be aware of his/her diagnosis as well as the aims of the project in order to ensure fully informed consent.

Materials

The Psychological Sense of School Membership (PSSM) (Goodenow, 1993) questionnaire was selected for use in this project, as it is an accessible, widely used and well-validated measure of the construct of school connectedness. It is able to capture the extent to which a young person feels a global sense of belonging to his/her school (i.e. through a combination of items eliciting information on how connected, included, accepted and supported a young person feels in the school context). In addition, scores on this scale have been found to correlate with predictors of future mental health difficulties (Shochet et al., 2006). It is a self-report measure taking no more than 10 minutes to complete for pupils aged 10-14, comprising 18 items (e.g. I feel proud of belonging to my school) which are scored on a 5-point Likert scale (from not at all true to completely true), summed and then the mean score calculated. Internal reliability values range from .77 to .88 (Goodenow, 1993), with moderate test-retest reliability of

⁴ In England and Wales, the statement of SEN is document detailing the support to which a young person is entitled. These statements are currently being replaced by Education, Health and Care Plans.

.78 over 4 weeks (Hagborg, 1994). Internal reliability for the current study was .89 for all students (ASC group = .90, TD group = .74).

Procedure

Following ethical approval from the host university, consent to participate was sought on an opt-in basis. Due to the longitudinal nature of the study, secondary schools were initially recruited. Once consent had been obtained, primary schools in the catchment area of participating secondary schools were contacted. If primary school head teachers wished to participate and had eligible students in Y6, information and consent packs were sent to families via the schools. Parents and students interested in participating contacted the author directly or informed the contact teacher at the primary school⁵. Visits were subsequently arranged and made to each school at the four time-points, which were approximately six months apart, meaning that the visits covered an eighteen-month period overall. The author visited schools in person to complete the PSSM with participating students. Questionnaires were completed in quiet areas of the school at a time of day convenient to the student. Assistance was provided if necessary (e.g. reading the statements or clarifying the meaning of an item).

Analysis

Data were comprehensively screened prior to analysis. Where there were two or fewer missing items⁶, the mean score was taken for the remaining items and used as the score. This is a similar approach to that taken for other established psychological measures, such as the Strengths and Difficulties Questionnaire (Goodman, 1997 and www.sdqinfo.com). If more than two items

⁵ 246 secondary schools were invited to participate, of which 71 agreed. Of the 444 feeder primary schools contacted, 43 with eligible students subsequently agreed.

⁶ This was the case for two questionnaires, each one at a different time-point and involving a different student in the ASC group.

were missing, the questionnaire was disregarded⁷. No patterns of concern were found in the data, with only one questionnaire having more than two items missing, and just four of the original participants not completing a valid questionnaire at a specific time-point, making the dataset fit for purpose. Mean scores of 3 or above (range 1-5) are considered indicative of a positive sense of school connectedness (Goodenow, 1993). To explore the differences between and within groups over time, data were investigated firstly by mixed between-subjects ANOVA followed by one-way repeated measures ANOVA. Using G*Power software (Faul, Erdfelder, Lang, & Buchner, 2007) the study was found to have sufficient power to detect large effects using these methods of analysis.

Results

i) Do levels of school connectedness among young people with ASC differ from those of their typically developing peers across the transition?

A mixed between subjects ANOVA was initially conducted to assess the impact of transition on the two groups of students on their scores on the PSSM across the four time points. Means and standard deviations for both groups are presented in Table 1, with results displayed graphically in Figure 1.

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⁷ This approach was adopted due to difficulties in using techniques of missing data analysis, such as multiple imputation, longitudinally with ANOVA tests.

The analysis revealed no main effect for time, Wilks' Lambda = .90, $F(3, 45) = 1.62$, $p = .20$. The ASC group demonstrated an overall rise in sense of school connectedness over time, while the TD group showed a decline. Both groups saw a drop in scores from T3 to T4.

There was a non-significant interaction of group and time, Wilks' Lambda = .84, $F(3, 45) = 2.79$, $p = .051$, indicating that change in the two groups did not differ over time. However, it is apparent from Figure 1 that the TD group reported higher scores on the PSSM than the ASC group at every time-point, although this gap clearly attenuates from T1-T3.

The main effect comparing the two participant groups was significant, $F(1, 47) = 5.62$, $p = .01$, partial eta squared = .14 (large effect size), indicating an overall difference between the two groups.

Independent samples t-tests were then conducted to compare school connectedness scores between the groups at each time point. Analyses revealed statistically significant differences at T1 and T2 as demonstrated in Table 1. Despite differences between the groups still apparent at T3 and T4, these were not statistically significant. These results indicate that while the disparity in sense of school membership of the two groups of students was initially quite clear, this diminished over time, with students in the ASC group reporting higher levels of school connectedness, and the opposite true for students in the TD group.

ii) Do levels of school connectedness change across the transition for young people with ASC compared to those of their peers?

Separate one-way repeated measures ANOVAs were subsequently conducted to compare scores from students in the ASC and TD groups on the PSSM at T1, T2, T3 and T4.

In the ASC group self-reported scores for school connectedness rose after each time-point, with the exception of from T3-T4 where there is a fall in mean scores. There was a

significant effect for time, Wilks' Lambda = .70 $F(3, 25) = 3.51$, $p = .03$, multivariate partial eta squared = .30 (large effect size), indicating that school connectedness for students in the ASC group rose significantly over the course of the study. Pairwise comparisons were then conducted to explore where these changes occurred. Bonferroni correction was used to accommodate multiple comparisons. There were significant increases in mean scores at T1-T3: $t(27) = -2.86$, $p = .01$, eta squared = .43 (large effect size). The increase in scores from T2-T3 was also significant, $t(27) = -2.95$, $p = .01$, eta squared = .48 (large effect size). There was a non-significant increase in scores from T1-T4, $t(27) = -2.01$, $p = .054$, eta squared = .18 (large effect size). All other comparisons were non-significant. This indicates that the main changes occurred during the first year of secondary school.

A second one-way repeated measures ANOVA was conducted to compare scores from TD group on the PSSM at T1-T4. These demonstrate a decrease in school connectedness scores from T1-T2, then a plateau from T2-T3, followed by another decline in mean scores. There was a non-significant effect for time for this group, Wilks' Lambda = .85 $F(3, 18) = 1.07$, $p = .39$. Although the means demonstrate a gradual non-significant decrease in scores over time (see Table 1), pairwise comparisons using the Bonferroni adjustment revealed no statistically significant changes between any of the time-points. This indicates no significant change in school connectedness in the TD group over time.

Discussion

Throughout this study, students with ASC and their TD peers had scores that indicated positive levels of school connectedness ($M > 3$). Students with ASC reported statistically

significant increasing levels of school connectedness from T1-T3 and T2-T3 (i.e. between the end of primary school and the end of their first year in secondary school), with a non-significant fall from T3-T4. Students in the TD group reported declining levels of school connectedness from T1-T2, with it stabilising from T2-T3, before showing a further small decline from T3-T4, although none of these changes were statistically significant. By the end of the study, the gap between the two groups had closed and was no longer statistically significant. However, it is of note that students with ASC reported lower levels of school connectedness than their TD peers at each time-point, and each group displayed different trends, although differences between the groups were only statistically significant at T1 and T2.

In exploring changes in school connectedness across transition, it is perhaps pertinent to begin by commenting on the TD group. Despite a small sample size of 21, findings for students in this group are broadly reflective of trends found in previous research (e.g. Bloyce & Frederickson, 2012). Their level of school connectedness was very high at the end of primary school ($M = 4.60$), and this declined gradually between then and the end of the first term of secondary school, before stabilising by the end of the school year. This is congruent with previous research that has indicated that the move to secondary school may impact on a number of key areas including school connectedness (e.g. O'Brennan & Furlong, 2010), but that any detrimental effects are likely to be short-term for most students (Bloyce & Frederickson, 2012). The small decline at the start of Y8 (second year of secondary school) is perhaps surprising but could be indicative of the onset of adolescence. Nevertheless, it should be noted that the changes in school connectedness were not statistically significant and could represent natural variability in the data captured, as well as being influenced by the small sample size.

In contrast, although the ASC group also reported positive levels of school connectedness throughout the transition, it is of note that they reported some different patterns of change from their TD peers. Levels of school connectedness rose consistently from the end of primary school (T1) until the end of the first year of secondary school (T3) and this increase was statistically significant. The existing literature on the transition of young people with autism remains inconclusive in terms of areas that might influence school connectedness, such as anxiety and social issues. However, Mandy et al. (2016b) detected a decrease in parent-reported bullying following a term at secondary school, while not finding significant increases in other areas of difficulty – this is clearly a finding that warrants further exploration, given the vulnerability of this group of young people to bullying behaviour from their peers (e.g. Maïano et al., 2015). Although these studies provide an invaluable insight into positive and negative aspects of transition, and are especially useful in terms of designing transition packages, they tend not to broach the topic of school connectedness and are often limited to the months immediately pre- and post-transition. The author therefore proposes that the positive and rising sense of school connectedness found during the first year of secondary school may reflect successful transition strategies used by participating primary and secondary schools. Given the self-selecting nature of schools in this study, it is also likely that those volunteering were already proactive in addressing transition issues for this group of students.

However, it is also possible that the more structured and outcome-focused nature of secondary schools appealed to the young people in the ASC group, providing a more predictable learning environment. Clearly, more research of a qualitative nature is needed to provide evidence of the positive trends reported by the students with ASC, and in particular to explore

whether the seven dimensions of school connectedness reported by Libbey (2004) are also relevant for young people with ASC.

The decline in school connectedness at the beginning of the second year of secondary school (T4), while non-significant in statistical terms, is similar to that found in the TD group, and may reflect the onset of adolescence and a nascent sense of disengagement with school that has previously been found (e.g. Daly, Shin, Thakral, Selders, & Vera, 2009). While this is noted in the broader school population, the apparent decline in school connectedness following significant gains is noteworthy and warrants further investigation, given the poorer outcomes of young people with ASC and the paucity of studies that extend their research beyond the immediate phase of transition. If transition and the associated outcomes are felt more intensely among this population (Dann, 2011), then any decline should be seen as a warning sign, with the move to Y8 (and subsequent school years) scrutinised in a similar way as the move to secondary school. Potential areas of concern include social inclusion (i.e. friendships and bullying), support provided by school (both academic and social), and the general well-being of the student (i.e. risk of anxiety and depression).

In addition to the different patterns of change in school connectedness, it is encouraging to note that statistically significant differences found between the young people with ASC and their TD peers at the end of primary school (T1) and during the first term of secondary school (T2) were no longer present at the end of the year (T3) and into the second year of secondary school (T4). This may reflect a lack of statistical power in the analyses (i.e. due to the small sample size), meaning that these differences may still be meaningful with a larger sample. It is, however, important to acknowledge that students in the ASC group consistently reported lower levels of school connectedness than their TD peers. Effectively, this suggests that students with

ASC in this study felt less “accepted, respected, included, and supported” (Goodenow, 1993, p.80), and that this was particularly apparent at the end of primary school.

There are many potential explanations for this latter point, one of which may be a reflection on previous issues at primary school (i.e. behaviour difficulties pre-diagnosis, lack of friendships). Although the gap narrowed significantly in Y7, it remained throughout the study, with the suggestion that it may be widening again at the start of Y8. While no firm conclusions can be drawn from this, the findings provide evidence for the first time of a potentially important self-reported difference in the sense of school connectedness between students with ASC and their TD peers across a key educational transition. Given the vulnerability to poor mental health outcomes of young people with ASC and the protective nature of school connectedness, these findings suggest that ensuring an inclusive and supportive school environment before, during and after transition is essential to young people with ASC. This is a potentially significant indication of how early intervention and planning may serve as vital protective factors for young people with ASC, particularly in terms of resiliency and future mental health outcomes. Indeed, a recent evaluation of a transition intervention for this group of young people by Mandy et al. (2016a) offers encouraging findings that intervention can be successful in reducing levels of distress as well as behaviour problems at this time.

Limitations and directions for future research

Although the findings from this study are new for this population and have the potential to inform future planning and intervention, there are inevitably some limitations. First, the small sample size necessarily limits the ability to detect smaller effects that may be present in the data. As this is research investigating a previously unexplored area and over a longer period of time, it

is hoped that it will provide the impetus for future studies to replicate and further extend understanding.

Second, the self-selecting nature of school recruitment means that findings may have a positive bias. Nevertheless, the trends of school connectedness in the TD group reflect previous research in this area, lending strength to the findings in the ASC group. However, it is also necessary to recognise the heterogeneous nature of the participants and their transition arrangements; something which cannot be reflected in a questionnaire alone. Linked to this, questionnaire completion required that participating students with ASC were more cognitively able. While a number of participants had significant learning needs and attended special schools, the author is aware that the perspectives of minimally-verbal and/or severely learning disabled students were not taken into consideration thereby limiting the inclusivity of the research.

Third, while the findings presented here extend the time-period used in other studies, the trajectory of students with ASC beyond the early stages of Y8 needs to be explored, especially in terms of how adolescence impacts on their education. Indeed, this period between transition and the General Certificate of Secondary Education (GCSE) examinations taken at age 15/16 requires further study, given the disengagement with education that is often reported among the general school population (Wang & Eccles, 2012), as well as the significantly lower academic achievement of young people with ASC (DfE, 2014a).

Lastly, the current study does not use a theoretical framework. This was a purposeful decision, due to the exploratory nature of the research. However, as a qualitative exploration of school connectedness would be of benefit in gaining a greater understanding of the findings presented here, a theoretical framework, such as Bronfenbrenner's bio-ecosystemic model (2005), would provide a suitable approach.

Conclusion

This is the first study specifically to investigate school connectedness across the primary to secondary school transition for young people with autism compared to their typically-developing peers. The findings are broadly optimistic and indicate that this key transition can be a positive experience. The significant increase in school connectedness among young people with ASC when starting at secondary school contrasts with the slight non-significant fall experienced by those in the TD group, and this is likely to reflect successful transition arrangements employed by participating schools for their students with ASC. Nevertheless, the consistently lower levels of school connectedness reported by those with ASC are of concern and highlight the need to monitor and support this group of young people in order to prevent or reduce negative effects on mental health, social inclusion and educational attainment.

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Table 1. Means, standard deviations, and independent samples t-tests comparing the ASC group (N = 28) with the TD group (N = 21) at each time-point.

		M	SD	t	p
T1	ASC group	4.01	.69	-3.71	.001
	TD group	4.61	.30		
T2	ASC group	4.13	.74	-2.42	.02
	TD group	4.54	.26		
T3	ASC group	4.38	.54	-1.25	.22
	TD group	4.54	.30		
T4	ASC group	4.27	.69	-1.28	.21
	TD group	4.48	.27		

Figure 1. Between and within group differences across transition in the PSSM.

