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Parents' Perceptions of the Impact of Early Stage Exam Tests on Anxiety Levels in Young Children With and Without Autism

**MacDougall, Ashleigh, School of Social Sciences,
Bishop Grosseteste University, UK ashleighMacDougall@student.bishop.ac.uk**

**Dr. Efstratopoulou, Maria, Senior Lecturer School of Social Sciences,
Bishop Grosseteste University, UK Maria.efstratopoulou@bishopg.ac.uk**

Abstract

The study explores parental perceptions of the impacts of Key Stage One (KS1) Standard Attainment Tests (SAT's) on anxiety and the extent to which this may impact children with autism. In the end, it will provide possible suggestions on how to reduce any negative impacts experienced by test anxiety. A mixed method research design was used, employing both questionnaires and interviews. Questionnaires were distributed to participants for structured interviews. The sample consisted of 32 parents with children aged between 6 and 7 years old attending primary schools across England. Participants were mothers (aged 28-34 years old) of which 28 were parents of children either with an official diagnosis of Autistic Spectrum Disorder (ASD) or currently awaiting an official diagnosis. The other four were parents of neuro-typical (NT) children. Data derived from parents of children with ASD were compared to data from parents of NT children. The data were gathered through both qualitative and quantitative measures. Overall, the findings suggest that parents of children with ASD reported an increase in the anxiety levels of their children during exam preparation, while parents of NT did not report any behavioural changes during this period due to anxiety. Findings suggest that exams at this early stage may have a detrimental effect on the well-being of children with ASD; therefore, implications for educational policy changes are made.

Key words: anxiety, autism, well-being, qualitative analysis

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Introduction

The aim of this study is to assess parents' perceptions of the impact of exams on the anxiety levels of children with Autism Spectrum Disorders (ASD). The purpose is to investigate whether this may be a factor hindering the ability of children with ASD to achieve their full potential in school. There a considerable amount of research on record that focuses on the effects of exams at this early stage on neurotypical children. However, research focusing on young children with autism or autistic behaviours is limited. This area of study was chosen after extensive research into the advantages and disadvantages of SAT's revealed the possible implications of anxiety from high-stake testing may cause in children.

The effects of exams on Key Stage One (KS1) children with ASD have been understudied

although a large amount of research has focused on neuro-typical children (NT) and the effects of exams on older students mainly during Key Stage Two (KS2). Studies conducted by Wigfield and Eccles (1990) and McDonald (2010) found that Key Stage 2 exams are likely to cause increased anxiety in children, a finding also supported by other researchers (Putwain, 2007).

Therefore, it may be suggested that if NT children are at risk for test anxiety -- and it is widely known that many children with ASC have increased anxiety compared to other children (Gillot, Furniss & Walter, 2001) -- they may be more exposed to the risk during SAT's, especially when placed under pressure as young as six years old.

Some of the first research to consider the effects of test anxiety in younger children discovered that younger children do in fact suffer from test anxiety when placed under strict exam conditions (Segool, Carlson, Goforth and Embese, 2013). One key study by Gillot et al (2001) specifically considered increased levels of anxiety that children with ASD experience compared to both NT children and those with additional needs such as specific language impairment (SLI).

Although according to these two studies it has been noted that both young children and children with ASD appear to have a risk of developing increased anxiety, neither study considers the possible combined effects of SAT's on anxiety in children in KS1 who also have ASD. Thus, we establish the aim of this area of our research. Although this is a small-scale study, based on the perceptions of approximately 30 parents of children with ASD across England, the findings may be relevant for those hoping to provide an inclusive education by removing existing barriers to learning thereby increasing the well-being of children with ASD. This could be carried out by drawing attention to the possible impact of

exams given at an early stage on anxiety in children with ASD. We envision possible suggestions to address these issues within the classroom to possibly reduce barriers to learning.

However, due to the small sample size, there may be limitations to our findings, as the opinions expressed may not coincide with those of the rest of society. Therefore, we are unable to generalise these findings throughout academic settings across England. To do so, more research in this area may need to be conducted.

Literature Review

The correlation between anxiety and school performance has been of interest to researchers for approximately eighty years (Wigfield & Eccles, 1990). It has been found that anxiety negatively affects school performance and may therefore impair a child's ability to achieve their potential on exams (Efstratopoulou, 2017; Manley & Rosemier, 1972; McDonald; 2012).

The fact that anxiety has an impact on achievement could prove to be an issue within the current education system as exams appear to be the dominant method of student assessment,

leaving children who experience anxiety at a disadvantage (Embse & Hasson, 2012; McDonald, 2010).

It has been found that there is a higher risk of anxiety when children take part in high stake exams such as SAT's and GCSE's in comparison to general classroom assessments, with a prevalence of this anxiety on the rise (McDonald, 2010; Putwain, 2008; Segool et al, 2013). This particular anxiety is referred to as text anxiety, a type of performance anxiety that occurs when a person feels under extreme pressure to achieve. This pressure can be placed on the test taker by others such as teachers or parents, or it may be placed on the individual by them (Denscombe, 2000; Spielberger & Vagg, 1995; The Nemours Foundation, 2018). It may be suggested that this test anxiety is increasing in children due to the growing pressures placed on schools to meet targets. This has caused high stake tests to become one of the main methods for measuring school effectiveness and pupil achievement. This in turn places further pressure on children, possibly resulting in increased test anxiety (Embse & Hasson, 2012; McDonald, 2010; Tymms & Merrell, 2007; Wigfield & Eccles, 1990).

Recently, there has been an increase of interest in the link between exams and anxiety in school children within England; however, when compared to other countries, such as the United States, research is limited (Putwain, 2007; Putwain, 2008). Of those studies in the UK that have researched the effects of anxiety on children partaking in high stakes tests, the majority have been conducted on older children, such as those undertaking their GCSE's.

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Therefore, a gap in the research exists as there has been little to no work done on text anxiety in younger children with ASD.

One of the first studies to consider the effects of test anxiety on younger children was done by Segool et al (2013). It was conducted in the USA and directly examined the differences in test anxiety on 335 children in grades 3-5. The study measured the cognitive and psychological impacts of anxiety caused by class assessments compared to higher stakes exams. The results indicated that pupils experienced increased anxiety on higher stake exams. This is supported by further research in the field, such as that undertaken by McDonald (2012), who found tests to be a major cause of concern for many children as they raise the likelihood of anxiety due to increased pressure. Furthermore, it was found that this increase in test anxiety is likely to impact a child's performance (McDonald, 2012). It may be argued that reduced performance during exams is moderated by individual differences and testing environments. However, if a child is a high achiever but experiences a high level of test anxiety, and as a result underperforms, this may have further negative impacts as it validates their negative thought process during exams (Weems, Berman, Silverman & Saavedre, 2001). The above finding shows the impact high stake exams may have on children in primary school settings and how this may affect their level of achievement. When conducting research in this area, it was noticed that the majority of studies have failed to consider the impacts of exams on anxiety in children with additional needs. This was of particular interest as many conditions such as Autism Spectrum Disorder (ASD) may result in a person experiencing high levels of anxiety on a daily basis. High stake testing may add to this anxiety, causing detrimental effects to well-being (National Autistic Society, 2018b; The Children's Society, 2019). Of note, one study conducted by Gillot et al (2001) researched the impacts of exam anxiety on children with additional needs. The sample size was 45 children, split into three equal groups. The first group was the control group, made up of NT children. The second group was made up of children with specific language impairments, and the third group consisted of children diagnosed with High-Functioning Autism (HFA). HFA, previously

known as Asperger's Syndrome, is one of many 'autistic profiles' and, therefore, it is an area on the autistic spectrum that is included under the diagnosis of ASD in the current diagnostic manual (National Autism Society, 2018b).

It was found that children with HFA experienced considerably high levels of anxiety in comparison to the other two groups. Although these results suggest that children with ASD are at an increased risk of experiencing test anxiety, the limitations of this study must be

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considered. This was an extremely small study, with just three groups of 15 children, reducing the validity of the findings as a truly representative sample. Due to this, these findings cannot be accurately generalised without further study. After conducting research on the impacts of anxiety in school children in the literature in relation to exams, a gap emerged. The studies in the field mostly consider the effects of test anxiety on older children with little research conducted on the younger group. The study conducted by Segool et al (2013) is one of the first of its kind to consider the impacts of test anxiety on younger children, but it still only considers the impacts on children from the age of nine to eleven (grades 3-5). Although this is primary school age, the study does not consider the impacts of exams on children as young as six. Thus, it suggests that further research needs to be conducted. A further gap noticed in this area is the impacts test anxiety may have on children with ASD. Although one study did consider this, it is a small sample size, suggesting limited validity. Therefore, this study will explore the impacts of exams on anxiety levels in children with and without ASD by analysing parents' reports on behaviour during the exams period. It will specifically consider children in year two, as this is the exam period. The research aims to evaluate parents' perceptions of their children's behaviour in the run up to the exams in order to discover whether children with ASD show an increased level of anxiety.

Methodology

To research this topic, several different methods of data collection were considered. It was important to assess the strengths and weaknesses of these methods to decide on the most appropriate. It was decided that a combination of qualitative and quantitative methods would be used as they both appeared to be useful for the research area. Qualitative data collection allowed the researchers to develop in-depth insights into the meaning of the results in regard to the development of future exams in mainstream schools (Bell & Waters, 2014; Occupytheory, 2014).

Therefore, highly relevant to the research undertaken, qualitative data was deemed beneficial in helping provide in-depth information on this particular area of study. Although this study shows possible benefits of qualitative data collection, there are also some disadvantages to using this method. For example, due to the in-depth nature of this style of research, it may be difficult and time-consuming to draw conclusions from the findings. In comparison, quantitative research allows for easier assessment, involving fewer variables that may increase both the reliability and validity of the findings (Daniel, 2011; Punch, 2014).

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A combination of both qualitative and quantitative measures were used with benefits provided by both in-depth data and data that can easily be assessed and analysed. This combination of data collection enables parent perceptions to be gathered, allowing for the

exploration and comparison of any similarities (Bell, 2006; Laws, Harper & Marcus, 2013, p143). If the findings from the majority of parents appear to be in agreement, it may suggest that the study is high in validity. However, the findings may also result in conflicting data, meaning it would be essential to critically assess any inconsistencies to determine whether this is due to variables such as differing parent perceptions or a flawed method of collection. Variables in parental perceptions are a highly plausible scenario due to the possibility of each child coping differently in various situations or parents not being made aware of possible impacts on their child, for , if the SAT impacts the child in school, but not at home. By thoroughly examining all data, possible explanations arise as to any discrepancies, although it may result in a reduction of the validity and reliability of the study (Bell, 2006).

The benefit of open-ended questions is that they provide insight into parent's perceptions of any negative effect exams may have had on anxiety in their children. Participants' personal opinions may have affected their responses. All participants had the right to withdraw at any time while completing the survey and were under no obligation to continue with the study. However, as the surveys were anonymous, upon completion they could not be removed from the research. It was explained at the beginning of the survey that upon submission, the participant would be providing their permission to have the data they submitted included within the study.

In addition, all information gathered was fully confidential. Participants will be referred to throughout this study with fictionalised names, for example 'Participant #1'. The information gathered was stored securely on the university system with the research remaining anonymous and disposed of upon completion of this study. This research adopts the ethical considerations outlined by British Educational Research Association (BERA), and there are no other specific areas to be considered (McNamee, Bridges, Tickle, Pring, Winch & Carr, 2002).

Presentation & Analysis of Findings

To draw conclusions in this topic area, data were collected through the use of a questionnaire and interviews were conducted to analyse in depth the responses from the participants' parents. The questionnaire was comprised of ten questions, six on collecting quantitative data and the other four to collect qualitative data on the topic area. This section covers the analysis and

presentation of the findings, comparing them to results of previous studies as mentioned within Chapter two. A total of 32 participants participated in the study and responded to the survey. were split into three groups; 14 from the group 'diagnosed with ASD', 14 from the group 'suspected ASD, currently awaiting diagnosis' and 4 from the group 'no diagnosis or concerns.'

Throughout this section, participants will be referred to anonymously with names such as 'Participant #1' or 'Participant #2' etc. The participants were parents who have children currently practising for year two exams or parents of children who have previously completed them.

A total of 85.5% of the participants stated their children usually suffer with anxiety on a daily basis, compared to 12.5% of parents who stated that their children do not experience regular anxiety (Fig. 1). This coincides with the number of parents who either have children with ASD or are awaiting diagnosis for their child compared to the number of parents with NT children who took part in the survey. This suggests that overall, children on the spectrum or showing traits of being on the spectrum are more likely to experience anxiety compared to NT children.

Anxiety is a trait on the autism spectrum and a condition that has been widely recognised (National Autistic Society, 2018b; The Children's Society, 2019). Through our research, we propose that children with ASD, who are already at a higher risk of anxiety, may have an increased possibility of test anxiety from high stake testing compared to children who have not been diagnosed or show any traits of ASD (National Autistic Society, 2018b; The Children's Society, 2019; Gillot et al, 2001).

Fig. 1. Presentence of children who experience sings of anxiety

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The above assumption may be criticised, although it shows that all participants with children showing traits of ASD stated their children's experiences of anxiety, while all participants with children who do not display traits of ASD said their offspring do not to experience the same level anxiety. Only 12.5% of participants had children classed as NT in this study. This is not a representative sample of the total number of participants within this study. It may therefore be suggested that if more participants of NT children had completed the survey, it may have been found that some children who do not display traits associated with ASD may also experience moments of anxiety, as this is not exclusively a trait of ASD. This is supported by evidence from previous studies on NT children who experience test anxiety (Embese et al, 2012; McDonald, 2010; Sarason et al, 1960; Segool et al, 2013; Wigfield et al, 1990).

Question 3 asked whether the participants' child behaved differently at school compared to at home. 29 participants answered, 'Yes' to this question. This was an important question as many children behave differently around teachers compared to their parents (Efstratopoulou, Janssen, & Simons, 2012). However, many children with ASD are known to mask their stress and anxiety levels at school, often appearing to cope well in the school environment (National Autistic Society, 2018c; Reiser, 2016; Severs, 2018). Due to this, it was essential for the researchers to gather qualitative data for this question alongside the quantitative data. This was the purpose of question four. 'If you answered yes to question 3, what differences in behaviour are you aware of?' The qualitative data gathered from this question allowed the parents to explain any differences in behaviour noticed in school compared to at home. 24 respondents

out of 29 stated their child behaves differently at school, believing this to come from masking their emotions and anxiety. Participant #29 (female, 27) stated,

"My child masks at schools and explodes as soon as they get home".

In addition, Participant #25 (female, 30) stating that their child

"Masks all emotional turmoil at school and it erupts when he feels safe with mummy or daddy.

Known as the coke bottle effect. Teacher has no understanding which makes it hard,

but the SENCO can completely empathise.”

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Both of these responses, alongside many others in the research, show evidence of children with ASD masking their behaviours in school. This may be an issue of concern. If teachers are unaware or lack understanding of ASD traits, as suggested in the comment from Participant #25, children may not be effectively supported at school and therefore are at a higher risk of developing test anxiety during times of high-stake exams during the early stage. Participant #25 also mentions the coke bottle effect. This theory is effective in helping explain how masking behaviours in school may affect a child with ASD. Many aspects of daily life cause major sensory overload and anxiety for children with ASC. If a person were to imagine holding a coke bottle, for each sensory overload or stressful situation, they shake the bottle. There are many situations throughout a child’s day when this may occur such as a classroom being too bright or busy, communication difficulties, having to comply and sit still, etc. Once the child is home, with people they feel comfortable with, the ‘coke bottle’ can now be opened, allowing the child to finally express their emotions. However it often causes extreme meltdowns due to having masked the anxiety that has been built up throughout the day. This theory is one good method to explain the building up to a meltdown for a child with ASD (Autism with Love, 2016; Core, 2018).

It is also important to consider that not all children with ASD mask their behaviours in school. Participants #11, #16, #17 and #22 all have children diagnosed with ASD. However, unlike the participants mentioned above whose children appear to mask their behaviours in school, these children appear to display their difficulties in school. Participant #11 (female, 32) stated:

*“School is a trigger for him. At school,
he displays disruptive behaviour:
throwing
chairs,
ripping up work, refusal/avoidance.
Extreme mood swings & he is unpredictable”.*

Although this is evidence that not all children with ASC mask their emotions in school, it shows the extreme levels of stress and anxiety that children with ASC experience in school. The benefit of not masking behaviour is that teachers may be more aware of their needs and can react accordingly, providing the necessary support to reduce anxiety (National Autism Society, 2018a; Ragan, 2018).

To date, the evidence from the survey suggests that all the children with ASC within this study have experienced anxiety to some extent. The second part of the survey was intended to

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discover whether exams have any impact on the anxiety experienced by these children. Fig. 2 shows that approximately 78% of participants believe exams at this early stage increased anxiety in their children. This suggests a significant number of parents within the study believe these high-stake exams have a negative impact on their children’s behaviour and well-being.

Fig. 2. Do Year 2 exams increase anxiety in children?

Question 5 asked, “Have you observed any changes in the behaviour of your child leading up to exam periods? If so, what changes have you noticed?” Of the 32 respondents, six believed there was no change in the level of anxiety displayed in their child. Four of these were parents of NT children, while the other two were parents of children currently awaiting diagnosis. The remaining 26 participants all noticed a considerable increase in the level of anxiety experienced by their children in the build up to the exam period. Participant #26 (female, 26) stated,

“Screaming, school refusal and meltdowns increased significantly.”

In describing their child’s challenging behaviour Participant #9 (female, 28) said, *“Not sleeping well, lots of ‘tummy aches and head aches’ refusal to go to school, lots of late, extreme anger and overly emotional about everything has been caused by the stress of the exam period.”*

Both responses indicate how extreme levels of anxiety displayed by children during exam period are due to the pressures placed on them. This evidence may in fact suggest that high stake testing is detrimental to the well-being of children with ASD, negatively affecting them from as young as six years of age. This evidence is supported by the study conducted by Gillot et al (2001) who found a considerably higher level of anxiety in children with Asperger

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Syndrome compared to other children. After gathering information on any effects these exams might have on anxiety, participants were then asked if they thought the benefit of exams outweighed their negative impacts. 29 participants believe that the negative impacts far outweigh the benefits with many stating that exams at this early stage have no benefit at all to children. Of the remaining three participants, only one believes the benefits outweigh the negative impacts while the other two did not state what they thought either way.

Participant

#16 (mother and teacher, 32) stated,

“No, as a parent and a primary school teacher, I believe the SATs only benefits the school.

It is merely a way of showing the percentage of children achieving expected levels.

It has no benefit for the child at all!”

This participant was able to comment from two differing perspectives. Not only do they believe that exams have no benefit to their own child, but they also suggest that there are no benefits

to any child taking part in exams at this early stage. Exploring the reasons behind exams at this stage, it was discovered that as of 2023, schools will have the option of entering their pupils in these exams. Justine Greening, the current UK Educational Secretary stated that KS1 SATs will be made non-statutory for schools from 2023 in the hope of free up teacher’s time to educate and inspire young children (Whittaker, 2017). Although this is a step in the right direction and will eventually reduce the pressures experienced by children in year two, this change is still four years away. The general secretary of the National Education Union believes this is,

'Bad news for children, parents and educational professionals' and that these high-stake exams 'should be scrapped sooner' (Whittaker, 2017)

This shows that the government is attempting to make changes that will benefit pupils across England but that it is going to be a slow process. In the meantime, support needs to be put in place for children at risk of experiencing test anxiety, especially those with ASD, as they appear to be more vulnerable. Participants in this study agreed with this proposal. Many stated that children should not be made aware that they are being tested. Two participants suggested that to reduce anxiety, children should take the tests in small groups with teachers available for support to read questions, while others suggested allowing breaks throughout the tests to reduce

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pressures. If implemented within the classroom, this may reduce some of the anxiety felt by children during exam period.

Overall, from the findings of the research, it can be suggested that exams conducted in year two do have a negative impact on anxiety levels experienced in children with ASD. This is supported by 78% of participating parents who noticed an increase in anxiety-related behaviours in their children during exam period. These findings suggest that the negative impacts caused by exams should be considered when deciding whether a child is to take part or not. The well-being of each child is of vital importance and should be given higher regard than having tests with the sole purpose of measuring school performance by the teaching staff.

It may be suggested that other more appropriate methods could be introduced to reduce test anxiety experienced by so many children, especially those on the autism spectrum as tests appear to be placing too much unnecessary pressure on children from such a young age. (Embese & Hasson, 2012; Gillot et al, 2001; McDonald, 2010; Putwain, 2007; Segool et al, 2013).

A further important consideration is that the high levels of test anxiety that appear to be present in the majority of children who display traits of ASD within this study may cause additional .

This is evidenced by other research that suggests that test anxiety could impair performance, resulting in children attaining lower scores than their ability would indicate (McDonald, 2010). Therefore, there is the possibility of causing further negative impacts on the child, such as a lack of self-esteem, due to a lower level of attainment (Weems, Berman, Silverman & Saavedre, 2001).

Conclusions and Implications

the information gathered in this research study suggests that exams at an early stage in primary school may cause increased anxiety in children with ASD and showing autistic behaviours.

This is supported by the discovery that almost 80% of the participants, all parents of children showing traits of ASD, believe that exams have negative impacts on their children's anxiety. This is valuable information as it suggests that high-stake testing may have negative

repercussions on the well-being of children with ASD, possibly resulting in test anxiety and impaired performance during exams.

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Furthermore, it is noted that many of the children with ASD who experience increased levels of anxiety often mask their feelings in school, such that teachers and other teaching staff may not always be aware that a child is having difficulties coping with anxiety (National Autistic Society, 2018c; Reiser, 2016; Severs, 2018). Thus, it would be beneficial for all educators and teaching staff across schools in England to receive training on children with special educational needs (SEN). Unfortunately, currently little time is being provided for this when training new teachers, leaving many teachers unable to effectively teach such children (Tirraoro, 2014).

Therefore, better training and exposure would increase teacher awareness of SEN, including ASD, thereby providing essential skills and knowledge to enable staff to effectively support each student.

Although the research suggests the importance of SEN training to allow effective support for children with additional needs, it is important to consider that test anxiety does not just have negative implications for children with ASC. Research conducted over the years has found that many NT children also experience test anxiety in school due to high-stake testing exams. Although the results within this study did not support this, these findings propose that children with ASD are at a higher risk of experiencing test anxiety. Furthermore, it may be suggested that the needs of all children must be considered in the build up to exams. This puts into question whether testing is beneficial to children in primary settings or whether other means should be considered. The benefits of using different methods of testing, tailored more to the needs of individual children, would reduce anxiety experienced in school not only for children with ASD, but for all children, thereby improving the mental well-being of all primary aged children who experience test anxiety.

While early stage exams are still being carried out in primary schools across England, it may be beneficial to consider a different approach to the existing assessment methods for young students. For example, carrying it out in small groups, allowing the teacher to read questions out loud, providing more support to those who need it, while also allowing children to take regular breaks throughout the exams to reduce pressure.

Future studies that use a larger sample could explore the issue in more depth from both the professionals' and young students' perspectives. The results might suggest alternative ways of assessment, especially for students with additional needs and emotional and behavioural problems. Future findings can inform educational policy and provide recommendations for change for the benefits of both the students and professionals in the field.

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