In their own words: The impact of subtle language and communication difficulties as described by autistic girls and boys without intellectual disability

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Abstract

Subtle language and communication difficulties are persistent and pervasive for autistic individuals without intellectual disability. They are thought to impact negatively on functionality, social interrelations and emotional well-being, although this relationship is under-explored in the literature. The personal accounts of autistic children could add valuable insight into how they experience subtle language and communication difficulties and what impact this has on their daily lives. In this study, 12 autistic children (9–14 years), without intellectual disability, were interviewed on this topic, using specially developed methods/materials to facilitate rich self-reporting. Results showed the children could provide detailed insight into their difficulties and the impact of these on key aspects of functionality (education and daily living) and social interrelations (including friendship building). They also demonstrated a potentially bi-directional relationship between subtle language and communication difficulties and negative emotions; with negative emotions limiting communicative competence and subtle linguistic difficulties leading to negative emotional responses. This study indicates the need for further investigation into the subtle difficulties experienced by autistic children without intellectual disability and its likely impact. Implications for clinical practice include the need for better identification of subtle language and communication difficulties and provision of appropriate therapeutic services which may help to ameliorate negative functional, social and emotional sequelae.

Lay abstract

Subtle language and communication difficulties are experienced by many autistic individuals even when they do not have additional learning disabilities. These difficulties may affect a person's day-to-day living, social relationships and emotional well-being. However, currently, there is not much research into this topic. To date, no one has asked autistic children about their own language and communication difficulties or how they feel it affects them. Asking the children could provide valuable new insights. In this study, 12 autistic children (9–14 years), without learning disability, were interviewed on this topic. We developed interview questions, resources and interview procedures with the support of the autistic community. We also worked with an autistic researcher to analyse our results. We aimed to get the most genuine report of the autistic child's experiences. Our results showed that the children could give detailed insight into their language and communication difficulties if they were given the right support. They told us about how subtle language and communication difficulties affected their ability to learn, take part in certain activities and seek help. They talked about how subtle difficulties affect their ability to talk to new people, talk in groups and ultimately make friends. They also told us about the emotional upset that these subtle difficulties could have. They suggest that communication breakdown leads to negative feelings, but also that negative feelings can lead to more difficulties explaining themselves. The results

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of this study suggest that we should do more research on the effects of subtle language and communication difficulties. There are also implications for clinical practice. We should identify subtle language and communication difficulties through thorough assessment because these are often missed. We should also develop therapy and strategies that are aimed at individuals with subtle language and communication difficulties because this could help prevent additional difficulties with learning, help-seeking, friendship-making and emotional well-being.

Keywords
autism, gender, language and communication, mental health

Background

Persistent, if subtle, language and communication difficulties are commonly identified in autistic individuals without intellectual disability, IQ $\geqslant 70$. However, little is known about how these difficulties impact the individual. It has been hypothesised that they contribute to reduced functionality, social interrelations and reporting of emotions (Eigsti et al., 2007; Siller et al., 2014), although limited research has focused on these interactions. This study explores the experiences of autistic children without intellectual disability through firsthand accounts of subtle language and communication difficulties and their impact.

Subtle language and communication difficulties and potential impact

A specific pattern of strengths and weaknesses typifies the language and communication profile for autistic individuals without intellectual disability. Strengths lie in vocabulary (Kelley et al., 2006) and expressive grammar (Eigsti et al., 2007), while subtle difficulties are identified in the above sentence-level tasks and semantics and pragmatic language. Better language and pragmatic skills are associated with improved social communication across mixed-ability autistic children (Levinson et al., 2020). There is also some indication that subtle difficulties will contribute to poorer functionality and social skills for autistic individuals without intellectual disability. For example, word-finding difficulties (recall of lexical items) can result in slower conversational reciprocity (Kamio et al., 2007) and a higher incidence of idiosyncratic word choices (Eigsti et al., 2007), making utterances appear less relevant to interactions. While reduced grammatical complexity (Eigsti et al., 2007) may mark the speakers' communication as less sophisticated compared to peers. Narrative skills, important for both self-advocacy (Sillar et al., 2014) and peer engagement (Dean et al., 2013), are limited by reduced grammatical complexity (Sturrock, Yau, et al., 2020), story cohesion (Diehl et al., 2006), attention to character's motivations (Kauschke et al., 2016) and emotional content (Siller et al., 2014). Furthermore, subtle problems processing complex verbal information (Saalasti et al., 2008) will impact compliance with verbal requests, conversing with peers and undertaking social activities. In addition, commonly identified pragmatic difficulties during conversational interchanges, for example, turn-taking (Eigsti et al., 2007), topic maintenance/generation (Dean et al., 2013; Paul et al., 2009), referencing (Hobson et al., 2010) and interruption of conversational flow (Adams et al., 2002), will directly impact social interactions, relationship-building and taking part in functional activities.

The impact of language and communication difficulties on emotional well-being within autistic groups is also under-investigated. Autistic individuals without intellectual disability are thought to have specific difficulties with poorer vocabulary relating to emotion (Sturrock, Yau, et al., 2020) and greater difficulties narrating events with emotional content (Goddard et al., 2014; Sillar et al., 2014), meaning breakdown in communication will be more likely when explaining emotions. In a non-autistic population, communication breakdown is thought to cause increased levels of anxiety (McCabe, 2005), while increased levels of anxiety are linked to poorer linguistic function (Allen & Bourhis, 1996). It is possible that this bidirectional relationship will be exacerbated in an autistic group that experiences specific linguistic limitations. However, to date, this has not been explored. Linguistic skills are positively correlated with better emotional regulation in a non-autistic population (Eisenberg et al., 2005), where higher verbal thinking and emotional literacy facilitate self-soothing and help-seeking. However, in autistic groups, higher cognitive/linguistic ability is typically associated with increased anxiety (Gotham et al., 2015). Therefore, the interaction between subtle language and communication difficulties and reporting emotions is apposite for investigation. Other factors such as social cognition and executive function will contribute to poorer functionality, social interrelations and emotional well-being (Bishop-Fitzpatrick et al., 2017; Hollocks et al., 2014). However, this article will focus on the contributory factors of language and communication.

Sex/gender representation

There is a historic lack of female representation in autism research (Lai et al., 2015), meaning findings typically reflect the male phenotype of the condition. Recent research

Table 1. Demographics of children and interview details.

Participant[a]	Sex/ gender	Age in years	Diagnosis	Recruitment channel	Location of interview	In attendance
Gemma	Female	13	ASD	Charity[b]	Home	–
Emily	Female	11	ASD/anxiety	New online	Home	Mother
Esther	Female	12	ASD/ADHD	NHS[b]	School	–
Alisa	Female	9	ASD/SPD	New online	Home	Mother
Molly	Female	14	ASD/dyspraxia	Charity[b]	Home	–
Lottie	Female	9	ASD	New online	UoM	Mother
Liam	Male	12	ASD	NHS[b]	Home	–
Jacob	Male	11	ASD/ADHD	Charity[b]	Home	Mother
Andrew	Male	12	ASD/ADHD	NHS[b]	Home	Mother
Fletcher	Male	11	ASD	NHS[b]	School	–
Lucas	Male	12	ASD/dyslexia	Charity[b]	Home	–
Oscar	Male	13	ASD	Charity[b]	Home	Charity[b]

ADHD: attention-deficit and hyperactivity disorder; SPD: sensory processing disorder.
[a]Pseudonyms used throughout.
[b]Recruited originally to the previous study.

suggests autistic females perform better than autistic males on measures of semantics, pragmatics and social communication (Conlon et al., 2019; Park et al., 2012; Sturrock, Yau, et al., 2020), although this is not always associated with better scores for functionality as reported by the individual or family (Holtmann et al., 2007; Lai et al., 2011; Sturrock, Marsden, et al., 2020). Direct assessment comparing autistic females to sex-/gender-matched typical females indicate they perform less well on certain language and pragmatic tasks (Kauschke et al., 2016; Sturrock, Yau, et al., 2020), potentially driving subjective feelings of poor social competency. The demand for complex collaborative discourse in female social groups has been reported by autistic females (Sedgewick et al., 2016) and appears to increase from adolescence (Tierney et al., 2016). Therefore, the relationship between sex/gender and the impact of subtle language and communication difficulties is also worthy of exploration.

This study aims to explore themes of subtle language and communication difficulties described by autistic children without intellectual disability, and how this impacts functionality, social interrelations and emotional well-being. It will consider any variations that emerge according to sex/gender.

Methods

Interpretive phenomenological analysis (IPA) is recommended for eliciting rich, detailed accounts from autistic individuals (Howard et al., 2019) through dynamic interaction with the interviewer. However, barriers to reflecting genuine autistic experiences through qualitative research exist; subtle language and communication difficulties may impact the quality of oral accounts during interactive exchanges (Dewinter et al., 2017); limitations in self-reflective skills may reduce insight into perceived difficulties

(Huang et al., 2017); and TD/researcher influence during analysis may misinterpret the autistic experience (Milton, 2012). To address these concerns, autistic community engagement was built-in across study design; parents of participating children were interviewed to steer research questions; community members/parents developed materials and protocol; interviews were conducted by a speech and language therapist (experienced in facilitating self-advocacy in language and communication disordered individuals); and an autistic researcher was recruited to contribute (30% of total team time) towards the thematic analysis of all transcripts and (20% of total team involvement) to paper editing, thereby reducing potential TD/researcher over-shadowing.

Participants

Autistic children without intellectual disability were purposively selected using the following criteria: a diagnosis of autism spectrum; aged 9–14 years; attending mainstream school/following a mainstream curriculum. None had any additional factors impinging on language and communication (hearing disability, oral dyspraxia, English as a second language). They were not screened out for commonly co-occurring diagnoses (dyslexia, sensory processing disorder, attention-deficit and hyperactivity disorder (ADHD), anxiety, depression). Participants in the final selection were all residents in the United Kingdom (North West) with family characteristics representative of middle Social Economic Status. Equal numbers of females (n = 6) and males (n = 6) were sought to ensure representation of sex/gender phenotypes and to explore potential differences. Table 1 shows participant demographics.

All six of the boys and two of the girls were recruited from an existing research database. Performance IQ was available for this first group ($\geqslant$70). Four female participants

were sought through public advertisement and relevant social media networks ('Autism@manchester' and 'Aspire: female autism network'). Normal range intellectual function and basic structural language levels for this second group were determined by researcher observations, parental report and evidence of the child accessing a mainstream curriculum (without learning support) within a mainstream setting. No incentives were given. A synopsis of the child's responses was provided to parents subsequent to the interview. Reassurances of ethical processes were outlined in the parent information sheet and summarised in a child-friendly version. The interviewer had an existing relationship with eight children due to the previous testing of language and communication using psycholinguistic measures. There was no other relationship between the interviewer and children. Participants were not aware of the hypothesis of the research.

Developing interview materials

A semi-structured interview schedule was derived from the literature on language and communication difficulties in autistic children without intellectual disability and in consultation with parents of participants. Fourteen key questions were established focusing on how children perceived their language and communication strengths and weaknesses and how this impacted on their functionality, social interrelations and emotional well-being. Parents also made recommendations for eliciting accounts from their children: providing a written interview schedule and supportive materials to stimulate discussion; access to materials before the session (digital and/or paper format); being flexible according to the individual's needs. These reflected findings in the literature (Howard et al., 2019). Feedback on and editing of materials by the 'autism@manchester' advisory group indicated the need for direct questioning during the interview. Although qualitative methodology typically favours open questions (Smith & Osborn, 2007), it was felt that explicit questioning would not inhibit autistic children who were confident talking, and would support those who needed structure. An introductory digital/paper booklet providing a schedule of questions and prompts was offered to the children at the point of recruitment (Figure 1/Supplement 1).

'Ideas to help you think' pages provided a standardised means of scaffolding conversations about potentially less familiar topics, for example, what is communication? A friend? Storytelling? (Figure 2). This was introduced at the start of the interview. All materials were piloted with autistic individuals.

Interview procedures

In line with parental recommendation, the interview process was flexible, allowing time and space for sensory, behavioural or communicative differences and taking into account individual needs and preferences. Children could opt to read interview materials before the session, use visual material in

Figure 1. Example page from the written interview schedule.

the session itself, meet at school or home, during class or break-time, evenings or weekends. They could access materials electronically in session (facilitating natural side-by-side sitting). Video-recording was preferable (to allow notation of non-verbal responses) but optional, although audio-recording was required. Sensory/calming strategies were encouraged during the session, although care was taken to balance these against increased levels of distraction. Parents could attend the interview session on the child's request, although it was explained in advance that their role was to facilitate the interview process and not *talk for* their child. Ultimately, three girls and three boys had their mothers in the interview session. All parents conformed to the rules of involvement and, where present, added to the richness of dialogue. Adaptations were facilitated by the interviewer. Interviews took place during one session of approximately 1 hour (range: 45–90 min).

Analysis

Child accounts during the interview were transcribed verbatim. Parental contributions were noted but not included in thematic analysis. IPA procedures were derived from Larkin and Thompson (2012) and Smith and Osborn (2007). The data analysis team was equally contributed to by the interviewer (a speech and language therapist with a recognised bias in identifying impact of language and communication difficulties in autism), a qualitative researcher (background in special needs education) and an

Ideas to help you think: storytelling

Who?

When?

Where?

What happened?

Stories can be about something **true that happened** or **something make believe**

Telling a story is important **so you can explain to other people what happened** in real life situations.

We tell a story every time someone asks us 'what did you do at the weekend?', or 'where did you go over the summer holidays?'

Page 1 of 1

Figure 2. Example page from 'ideas to help you think'.

autistic researcher (background in neurology and hearing research). Apart from the lead researcher, the data analysis team were unaware of the principal research questions, but were aware of the focus on language and communication difficulties in autism without intellectual disability. Thematic analysis was conducted as follows: (1) three researchers (A.S., K.F. and H.C.) independently became familiar with two participant transcripts, through reading, free-coding and documenting ideas, then in-depth, line-by-line, analysis. Quotes and themes of interest were independently identified for later discussion; (2) in an initial meeting, independent coding was discussed and a consensus approach undertaken to resolve disagreements on a point-by-point basis (Barker & Pistrang, 2005). The interpretations of the autistic researcher were prioritised to ensure centrality within emerging themes; (3) the resulting coding scheme was used to orient researchers to a second round of independent analysis for a further two transcripts; (4) during a second meeting researchers (A.S., K.F. and H.C.) discussed the validity of existing main and subordinate themes in light of new material; (5) in a third round of independent analysis the researchers (A.S., K.F. and H.C.) used the second iteration of the coding scheme to guide decision making; (6) a final consensus meeting (A.S., K.F. and H.C.) was used to discuss remaining issues and amendments required in the final list of main and subordinate

themes. At this stage, data were saturated and themes were consistently applied; and (7) email discussion continued for minor amendments and theoretical organisation. C.A. and J.F. reviewed emerging themes against excerpts from original transcripts as part of a credibility check and to scrutinise for potential bias of interpretation by the analytic team. The data were determined to be of good quality, providing rich descriptions of the phenomenon under investigation. A final list of themes, subordinate themes, and tertiary themes was presented and is represented using direct quotations in the 'Results' section.

Community involvement statement

Autistic individuals and their families were involved in this study throughout. All 12 parents of the interviewed autistic children were formally consulted to guide research focus, develop interview questions and establish child-friendly interview protocol. Two autistic individuals provided in-depth scrutiny of the interview materials. One autistic individual and his mother piloted the measure and offered further feedback. One autistic researcher was recruited to the data analysis and editorial team; she contributed equal parts to both analysis and analysis (as detailed in the text) and is recognised as co-authoring this article. Once the study is published, participants and their families will be informed of the results through lay summary and findings will be presented at a public-facing event.

Results

Four main themes, 12 subordinate themes and associated tertiary themes emerged from the data (Table 2). This article focuses on results about language and communication difficulties, although other factors are tabulated and briefly noted in the text. Analysis showed consistent inter-rater coding for conceptual themes, with progressive iterations refining organisation, for example, 'Emotional responses' were originally coded as a separate main theme, subsequently they were organised alongside the language and communication difficulty which induced them. Sex/gender differences were subtle, so did not constitute a separate theme, but are described in the text and highlighted in tabulation.

The text is annotated, using standardised format, to improve clarity for the reader: [] ellipsed content added; (. . .) superfluous/tangential content removed; {} non-linguistic content or contextual information provided.

Perceptions of language and communication ability

This main theme focused on how children understood and reported their strengths and weaknesses with spoken language and communication. Emotional responses to difficulties are also noted.

Table 2. Themes, subordinate themes and tertiary themes emerging from interview data with autistic children regarding their language and communication difficulties.

1. Perceptions of language/ communication ability	1.1 Vocabulary	1.1.i. Pride in extended vocabulary
		1.1.ii. Word-finding difficulties (and emotional impact[a])
		1.1.iii. Strategies for word-finding difficulties
	1.2 Listening and comprehension	1.2.i. Barriers to listening/comprehension
		1.2.ii. Impact of listening difficulties (emotional[a] and functional)
		1.2.iii. Strategies for improving listening
	1.3 Dialogue	1.3.i. Motivation for conversation
		1.3.ii. Difficulties with group conversation (and emotional impact[a])
		1.3.iii. Facilitators for conversation
2. Difficulties with self-advocating	2.1 Narrating events	2.1.i. Accuracy
		2.1.ii. Giving the right amount of detail
		2.1iii. Emotional responses to explaining an event[a]
	2.2 Explaining thoughts and ideas	2.2.i. Difficulties explaining thoughts and ideas
		2.2.ii. Emotional responses to explaining thoughts and ideas[ab]
		2.2.iii. Strategies for explaining thoughts and ideas
	2.3 Explaining emotions[b]	2.3.i. Difficulties explain emotions
		2.3.ii. Emotional responses to explaining emotions[a]
		2.3.iii. Strategies for explaining/managing emotions
3. Impact of language/ communication difficulties on social relationships	3.1 Creating new relationships	3.1.i Desire to make friendships[b]
		3.1.ii Difficulties initiating conversation
		3.1.iii Pressure and stress when creating relationships[a]
	3.2 Barriers to maintaining relationships	3.2.i Difficulties with social communication
		3.2.ii Changing relationship dynamics
		3.2.iii Dating[b]
	3.3 Facilitators for creating and maintaining relationships	3.3.i Divergence as an identity[b]
		3.3.ii Opportunities for building relationships[b]
		3.3.iii Personal characteristics[b]
4. Communication and literacy interaction	4.1 Creative writing	4.1.i Pride in writing
		4.1.ii Writing and social-emotional development[b]
		4.1.iii Physical difficulties with writing (including strategies)
	4.2 Reading	4.2.i Enjoyment in reading
		4.2.ii Reading and social-emotional development[b]
	4.3 Strategies	4.3.i Strategies using literacy to support social-emotional development

Overarching themes reported in results (where indicated): [a]relationship between emotions and language/communication difficulties and [b]sex/gender difference.

1.1. Vocabulary was discussed as a strength by 10 participants, describing *pride* (1.1.i) in word-knowledge either because of 'dictionary-like' abilities or intense interest in vocabulary:

> Gemma: I know the longest word 'pneumonoultramicroscopicsilicovolcanoconiosis'. It got 40 characters.

A subset (two boys/two girls) described *word-finding difficulties* (1.1.ii) which included two children who otherwise reported excellent vocabulary. Where word-finding difficulties existed, these were associated with conversational breakdown and negative emotions (feeling stupid or frustrated). *Strategies* (1.1.iii) identified by the children are represented in Table 3.

1.2. Listening and comprehension was an area of difficulty described by all children, although perceived *barriers to listening/comprehension* were heterogeneous (1.2.i). Four

girls and three boys described difficulties listening to people if they were not motivated. Motivators included: liking the person or topic of conversation or functional importance of the information. Motivation was not always sufficient and five children described involuntary 'zoning-out'.

> Lucas: I (. . .) drift off in the middle of someone talking. Like in school when they're telling us what to do (. . .) Then I don't know what we're doing.

Eight children identified problems recalling detail in spoken instruction. Lottie reported difficulties interpreting inferred meaning which she described as 'confusing' and 'irritating'. Jacob talked specifically about multi-sensory factors impacting on listening:

> If it's the art room, I'm like 'that's pretty. . . What? (. . .) 'sorry Miss, I'm just looking at things' (. . .). I [also] find it very hard to stand still when I'm listening.

Table 3. Strategies identified for managing communication difficulties, including formal/informal, reactive/proactive and adaptive/maladaptive.

Strategies by category heading	Description
Word-finding difficulties (1.1.iii)	• Filling gaps in speech flow; e.g. blah, blah, blah • Using nonsense words/neologisms; e.g. worsist • Waiting for others to fill the gap
Listening and comprehension difficulties (1.2.iii)	• Reactive use of questioning, e.g. asking peers, teachers, adults • Being close to the speaker • Accessing written instructions, e.g. lists, calendars • Using aids to memory, e.g. diaries, apps and alarms • Relying on routine • Making notes in class • Following written instructions or materials in lessons
Explaining thoughts and ideas (2.2.iii)	• Writing down thoughts and ideas, e.g. to teacher peers and adults • Writing questions to seek clarity • Using intermediaries, e.g. friends, family, appointed peer 'buddies' • Using objects to explain the meaning, e.g. demonstrating solutions to class-based activities
Explaining/managing emotions (2.3.iii)	• Calming emotions before explaining, e.g. wearing headphones, going to a quiet room, being quiet, going to a small space (under a table) • Explaining emotional content to a familiar person • Taking emotional difficulties home (potentially leading to expression of emotional behaviour after getting home) • Reflecting on emotional information in a set location, e.g. in the car (sat side by side), in bed at night • Talking to the family pet • Texting parents • Using music to help generate emotional words, e.g. humming tense music to help generate the word 'tense'
Physical difficulties with writing (4.1.iii)	• Using laptops in lessons, e.g. reduce difficulties with handwriting • Specialist software to support organisation of writing and spelling • scribes
Using literacy to support social-emotional development (4.3.i)	• writing to explain own interpretation of events/feelings to others • written information to understand complex social situations, e.g. collaborative with an adult • texting to socialise • writing to explore self and others, e.g. stories, diaries, poems • reading to explore self and others, e.g. factual books, graphic books, person-centred story books with relatable characters

Most of the children described a negative emotional *impact of listening difficulties (1.2.ii)*; leading to feelings of stress, frustration and becoming 'annoyed' with oneself. They also impacted on the child's daily function, meaning they spent disproportionate amounts of time managing difficulties or otherwise missing out on things they wanted to do. *Strategies* (1.2.iii) are identified in Table 3.

1.3. Dialogue emerged as a subordinate theme focusing specifically on the child's perceived strengths and weaknesses in conversation. The '*impact* of language and communication difficulties on social relationships' emerged separately. *Motivation for conversation* varied (1.3.i); eight children felt it was dependent on context, two identified as mostly 'not' liking conversation and two were firmly in favour.

Difficulties with group conversation (1.3.ii) were commonly associated with problems processing competing voices (exacerbating issues raised under 1.2.i). However,

understanding complex turn-taking also contributed to reduced confidence in group conversations. Emotional responses to group conversations were typically negative and could be intense

> Lottie: I am bashing my head and it's noisy and it's chaos.

Choosing appropriate topics for peer-group conversations was also seen as problematic, often leaving children feeling voiceless: 'like someone had taken out a few of my vocal chords' (Esther).

Facilitators for conversation (1.3.iii) included regularity of contact with the conversational partner (primarily close family and friends: n=8), and familiarity of conversational topic (e.g. special interests: n=10). Five children identified small groups/one-to-one settings as their preferred conversational environment, although one girl found it easier to slot into group conversations because of reduced expectation to initiate topics.

Difficulties with self-advocating

This main theme focused on difficulties the children experienced narrating events, and explaining thoughts or emotions to others.

2.1. Narrating events was identified as problematic by nine children, although perceptions of underpinning difficulties varied. There was a wide belief that absolute *accuracy* (2.1.i) was important in reporting events, meaning that if children could not remember the details (Andrew), or did not observe the whole situation (Gemma), they would find the task difficult. Knowing *the right amount of detail* (2.1.ii) for the listener was also problematic for several children:

> Molly: I'd (. . .) go into loads of detail, or barely go into any detail, to try to *avoid* going into loads of detail.

Emotional responses to explaining an event (2.1.iii) included feeling 'flustered' (Gemma) and 'stressed' (Emily), ultimately resulting in refusal and/or avoidance (Esther).

2.2. Explaining thoughts and ideas emerged from the accounts of 11 children. *Difficulties* (2.2.i) were ultimately associated with organising salient information for the listener, commonly leading to the incidence of communication breakdown. *Emotional responses* (2.2.ii) typically (n = 10) included feelings of; upset, annoyance, pressure, frustration, anger and stress, leading to increased shyness, uncertainty, fear, and feeling left out and turned off in discussions (Gemma, Esther, Emily, Molly, Lottie, Liam, Fletcher, Jacob, Andrew and Oscar). Only Liam described feeling 'determined' to get his point across. Descriptions of difficulties could be emotionally charged:

> Lottie: I have an idea in my head and I can't get it out {clenches fists and shakes them}.

One child explained how writing down her ideas helped reduce negative emotions and avoid a communication breakdown. Other *strategies* (2.2.iii) are noted in Table 3.

2.3. Explaining emotions emerged as a separate subordinate theme because of conceptual factors differentiating it from other types of self-advocacy; primarily specific difficulties identifying and discussing emotional content. Ten children reported a range of *difficulties explaining emotions* (2.3.i). Several children did not see any reason to explain their feelings,

> Lottie: if you have a feeling (. . .) then there is no point talking about it.

Others felt they did not have the vocabulary to explain emotions accurately (Gemma), risking hurting people's feelings (Oscar). Two boys did not identify difficulties explaining emotions, although this was driven by a belief that other people would interpret their feelings without explicit explanation. Girls notably provided richer and more reflective descriptions of difficulties explaining emotions than the boys in this study.

> Molly: usually I'll convey a negative emotion, of being sad or worried, but I'll shut down (. . .) so they'll know it's a negative emotion, but not which one.

> Lottie: in a 'meltdown' teachers say 'just say something', and I am getting all wound up and I don't know what to do.

The *emotional responses to explaining emotions* (2.3.ii) included heightened descriptors of anger, 'madness', stress, being wound-up, annoyance, uncertainty and shyness (Molly, Lottie, Andrew, Fletcher and Oscar). The bi-directional relationship between difficulties explaining emotions and emotional response was well described by Molly:

> Usually if I'm sad and I can't express my sadness I become more sad, so it makes the emotion worse (. . .) I might be angry with myself that I can't convey the emotion, or angry at other people because they're not letting me convey the emotion.

Strategies for explaining/managing emotions (2.3iii) are in Table 3. Many children, described saving their emotions till they were in a safe space, typically home.

> Jacob: I bottle it up; I come home at the end of the day. I'm like a werewolf. . . I'm just a normal person walking down the road and then 'hoooowwwlll'.

Impact of language and communication difficulties on social relationships

In this section, language and communication difficulties as well as other factors impacting on relationship-building are discussed. All the children linked language and communication demands with social interactions and these responses are prioritised to answer a priori research questions. However, other barriers associated with social and behavioural differences were also identified and are briefly described in the text.

3.1. Creating new relationships emerged as a subordinate theme. Two girls and four boys described lack of motivation as a barrier to making new friendships (3.1.i).

> Oscar: If I need to [talk to new people] I will, but I prefer just to stick to the same people because I know what I'm getting.

Equal numbers of girls and boys (n = 8) described *difficulties initiating conversation* (3.1.ii). For some, having another child initiate interaction was helpful. But others found chattiness and assumed familiarity of others to be uncomfortable and artificial.

Liam: people come up and start talking to you as if they've known you your entire life, that's annoying, because, like, 'Who are you?'

Pressure and stress when creating relationships (3.1.iii) describe the social pressure to engage with new people reported by some autistic children (n = 4). This became associated with negative emotions (typically stress) which compounded existing difficulties talking to unfamiliar people.

3.2. Barriers to maintaining relationships emerged as a separate subordinate theme. This focused on difficulties progressing relationships over time. *Difficulties with social communication* (3.2.i) were cited as a barrier to maintaining relationships by three girls and three boys. This included pragmatic and social cognitive difficulties, that is, working out how others would interpret their communicative behaviours.

Lottie: I tend to correct people's grammar a bit too much (. . .) I get told that it's rude sometimes.

Five girls and three boys talked directly about being bullied. Some of them identified differences in social communication as contributing towards this:

Liam: they actually mocked me by saying I had a posh voice, and that stuck in my mind.

Changing relationship dynamics (3.2.ii) were identified as a major barrier to maintaining relationships by four older children. There appeared to be a commonly held expectation that friends from early childhood would be in their lives forever (four girls/four boys). Where children had experienced changing relationship dynamics this was difficult for them to accept and emotionally challenging.

Although this section had the scope to talk about all types of relationships, children mostly talked about family, friends and acquaintances. Only Esther discussed *dating* (3.1.iii) which entailed overlapping difficulties with understanding changing emotions and expressing those emotions appropriately.

3.3. Facilitators for creating and maintaining relationships encompass a range of naturally occurring and scaffolded factors identified by the children.

Divergence as an identity (3.3.i) was a common theme (n = 7) and revolved around descriptors of self and close friends being different in some way, for example, a 'nerd', 'crazy like me' or having a diagnosis of a neurodevelopmental condition (autism, ADHD, dyslexia or a speech disorder). For the girls, it also commonly entailed not feeling part of the popular or mainstream culture.

Alisa: I do not fit in with the girls. I don't know why; they play different games to me.

Molly: I think most of them enjoy things that are trendy and they go out (. . .) to parties, whereas I don't.

Opportunities for building relationships (3.3.ii) were important for the children. This often revolved around *shared interests* (n = 10), providing a focus for early conversations and allowing friendships to grow around an activity. Other opportunities were related to physical (or virtual) shared space; school (particularly primary school), clubs, the school library, online gaming and social media. Access to a dedicated autism provision in school was seen by some boys as facilitative. However, Esther recounted difficulties fitting in with the dominant male group, and described herself as fundamentally different to both autistic boys and TD girls. Parents and teachers facilitating opportunities to interact with others were generally seen as positive. Although one girl pointed out that this could be misplaced, when what she actually wanted was to spend time on her own.

Personal characteristics (3.3.iii) could support making and maintaining friendships; using logic to understand new people (Gemma) and being direct and taking charge in relationships/play activities (Molly and Lottie). Others demonstrated genuine awareness of the feelings of others and Lucas simply described himself as 'likable'. Two girls talked about their creativity and how imaginary friends had fulfilled a need to be sociable while growing up. This was not reported by any boys.

Language and communication and literacy

This theme covers descriptions by the children of their use of literacy and prioritises its interaction with oral language and communication skills.

4.1.   Creative writing was a particular source of *pride* (4.1.i) for many of the girls and boys (n = 8) and was often linked to developing in-depth knowledge about special interests. Five girls, but none of the boys, linked together *writing and social-emotional development* (4.1.ii); using stories, diaries and poetry to explore themes of self and social awareness. Although four girls and four boys described some *physical difficulties with writing (4.1.iii)*, which was associated with grip or executive function difficulties (i.e. attention and planning).

4.2.   Reading was cited as an area of particular *enjoyment* (4.2.i) for all the children. As with creative writing, there was a strong association for all the girls between *reading and socio-emotional development* (4.2.ii).

Esther: I like the way [my favourite characters in books] have gender neutral names, gender neutral personality

Alisa: My favourite books are about this girl and she's really funny and she always makes mistakes.

One liked Manga comics which allowed her to focus on the character's larger-than-life expressions. Another liked

factual books which explored neurodevelopmental conditions. Boys described books as a vehicle for developing in-depth knowledge about areas of interest unrelated to social-emotional development. S*trategies using literacy to support social-emotional development* (4.3.i) are identified in Table 3.

Discussion

In this study, autistic children without intellectual disability provided rich and novel firsthand accounts of their language and communication difficulties. Although these are objectively subtle, the children experienced a perceptible impact on functionality, socialisation and well-being. Specific difficulties were shown to contribute to difficulties with self-advocacy and social interactions with TD peers, while a bi-directional relationship between language and communication difficulties and emotional response was also indicated. Preliminary data suggest the experience of language and communication difficulties for autistic females and males differ. Results have clinical and research implications.

Self-reporting of subtle language and communication difficulties

Rich and detailed descriptions by the children about their language and communication difficulties were achieved using facilitative materials and protocols. Self-reporting skills are thought to be limited in the autistic population (Huang et al., 2017) and, while children in this study all achieved some degree of self-reporting, this may be limited if compared to transcripts from typically developing children. In addition, there was variation in the quality of response between individuals, with girls typically providing richer accounts. Although this was not systematically analysed, it reflects sex/gender differences in self-identification of language and communication difficulties (Sturrock, Marsden, et al., 2020) and narrative abilities (Conlon et al., 2019).

The children's reports mirrored findings from the literature, identifying difficulties with; word-finding (Eigsti et al., 2007; Kamio et al., 2007), conversational skills (Adams et al., 2002; Paul et al., 2009), listening for meaning (Saalasti et al., 2008; Seung, 2007) and listening against background noise (DePape et al., 2012; O'Connor, 2012). Only one child identified difficulties with inferred meaning, despite the literature predicting pervasive limitations in this domain (Botting & Adams, 2005; Dennis et al., 2001). This may be due to the relatively young age of participants, where meta-awareness of difficulties could be impacted by their early stage in inference development (Casteel & Simpson, 1991).

Difficulties with self-advocacy emerged as the main theme encompassing explaining events, thoughts, ideas and emotions. These were associated with negative emotional responses from the children, often resulting in avoidance. Underpinning difficulties with narrative (Sillar et al., 2014) were also identified by the children reflecting the literature (Diehl et al., 2006; Sturrock, Yau, et al., 2020). Limited self-advocacy is thought to negatively impact education, employment, health/mental healthcare, independent living and social inclusion (Jonikas et al., 2013; Waltz et al., 2015), making subtle linguistic difficulties potentially of significant importance and warranting further exploration. However, known limitations for autistic individuals in self-awareness and social interaction skills will also be required (Griffin et al., 2014; Waltz et al., 2015). Strategies to support better self-advocacy included use of written communications and the involvement of an intermediary.

Impact of subtle language and communication difficulties on social interrelations

All children independently identified an association between conversational proficiency and social interrelations. Reflecting concerns of children in this study, the literature indicates specific difficulties with language processing speed (Paul et al., 2009) and pragmatic abilities (Loukusa & Moilanen, 2009) which impact real-time turn-taking (Nichols et al., 2009), topic generation/maintenance (Dean et al., 2013; Paul et al., 2009) and conversational behaviours (Adams et al., 2002). Linguistic difficulties were associated with poorer social interactions for the children in this study, mirroring findings from parent and teacher reports (Levinson et al., 2020). The children reported increased language and communication difficulties and subsequent negative emotional sequelae and social exhaustion within group settings. Despite this, and possibly contrary to the popular understanding of autism, the children did not overwhelmingly dislike conversations. Strategies for more successful conversations involved preferred topics and conversational partners and one-to-one settings.

The children described 'effort' incurred when talking to *new* people, reflecting findings from Calder et al. (2013) and Sedgewick et al. (2019). In the current study, children described elevated anxiety when communicating with unfamiliar people, which compounded existing interaction difficulties. Communicative differences also negatively impacted *maintenance of* relationships; being overly authoritative or correcting and using tone of voice erroneously (sounding sarcastic), were cited. Social-communication differences have been identified as negatively impacting relationships by adolescent/adult groups (Bargiela et al., 2016; Tierney et al., 2016). This study suggests the impact of subtle language and communication difficulties extends into middle childhood.

Data from this study support the wider literature by ascertaining autistic children are vulnerable to difficulties

making and maintaining friendships (Bauminger & Kasari, 2000; Calder et al., 2013; Head et al., 2014). However, *divergence as an identity* emerged as a facilitating factor. This was an unexpected finding and worthy of note. The notion of 'neuro-diversity' is widely discussed by autistic adults, encompassing a sense of identity and community (Blume, 1998). This study found autistic children also positively described friends as having neurodevelopmental conditions or being *unusual*, 'like me'. Further information on this topic could provide facilitative strategies for autistic children. While difficulties with relationship building will be multifaceted, the impact of subtle language and communication difficulties is a recognised concern for these children and its contribution should be further explored.

Impact of subtle language and communication difficulties on emotional reporting and well-being

This research identified a strong association between language and communication difficulties and negative emotions. Findings are consistent with the emotional impact of social interaction difficulties more generally (Bargiela et al., 2016; Hull et al., 2017; Tierney et al., 2016). However, this study highlights the independent effect of language and communication difficulties as reported by the children. Highly descriptive accounts demonstrated the children's frustration when they were unable to convey information successfully. Listening difficulties were linked to confusion, stress and annoyance (towards self or others). Limitations in self-advocating were associated with stress, panic, fear, upset, pressure and avoidance (depreciating self-advocating further). A relationship between language and communication difficulties and negative emotional responses has been identified in non-autistic populations (McCabe, 2005). This study suggests the same trend exists for autistic individuals. Furthermore, explaining emotions incurred additional demands compared to explaining non-emotional content (a phenomenon also noted by Sillar et al; 2014) thereby leading to increased negative emotional responses. Heightened emotion is found to reduce communicative competency in TD populations (Allen & Bourhis, 1996), meaning autistic children may experience a particular vulnerability in this area; a bidirectional interaction between communication breakdown and emotional responses, exacerbated by limitations in emotional vocabulary (Sturrock, Marsden, et al., 2020). This interaction and specific vulnerabilities require further exploration. In the longer term, a tendency to withdraw from emotional self-advocacy may contribute to establishing patterns of critical self-thinking and internalisation of difficulties, although strategies identified by the children suggest that writing may encourage better communication of emotions.

Sex/gender variation

Although sex/gender differences were not noted with sufficient frequency to generate independent themes, subtle differences in code frequencies and quality of descriptions do support the notion of sex-/gender-specific phenotypes in autism. Reflecting the wider literature, girls reported greater motivation for making friendships (Kopp & Gillberg, 1992; Sedgewick et al., 2016). However, they reported equal difficulties initiating conversation as boys in this study. Autistic girls and boys demonstrate similar levels of difficulty compared to TD sex/gender-matched peers on direct language and communication assessment (Sturrock, Marsden, et al., 2020; Sturrock, Yau et al., 2020) potentially predicting similar experiences of limited ability. Girls also more commonly reported difficulties 'fitting-in' with popular groups and not liking typical girls' interests, a theme identified in the reports of older autistic females (Bargiela et al., 2016; Tierney et al., 2016). In this study, one girl talked emotionally about feeling different from both TD female peers and autistic boys (mirroring findings from Cridland et al., 2014), and typifying the distinct positionality of autistic girls from either group. In addition, girls in our study used creative imagination and literature to explore themes of friendship, emotions and self-awareness; writing stories, diaries and poems, reading about characters they could identify with, or books that helped them learn about people. These themes did not emerge from boys' accounts, and supports clinical descriptors of sex/gender difference in how autistic children develop social skills (Attwood, 2006; Gould & Ashton-Smith, 2011).

Overall, girls and boys reported many shared experiences in terms of language and communication difficulties. Although there was limited sex/gender difference in code frequency for explaining emotions, girls showed a greater degree of elaboration on this topic. This may be due to naturally occurring differences in female conversation, favouring topics of emotions and other people demonstrated in TD (Newman et al., 2008) and autistic populations (Sedgewick et al., 2019). Autistic females are also thought to have greater emotional vocabulary than autistic males (Sturrock, Yau, et al., 2020), and have better memory for recounting emotional events (Goddard et al., 2014). Both would support better communication on this topic as demonstrated in the current study. Further investigations into sex/gender differences in self-reporting (especially of emotional content) are warranted.

Conclusion and limitations

This study placed autistic voice centrally in developing research questions, materials and protocol. The regular involvement of autistic individuals and family members undoubtedly improved child engagement and responses to interview questions. A more genuine representation of

autistic experiences was enabled by the recruitment of an autistic researcher to the team. This article provides some insight into the benefits of participatory qualitative research.

This research focused on identifying the impact of subtle language and communication difficulties on functional, social and emotional experiences of autistic individuals without intellectual disability. It purposively does not prioritise other features of autism known to impact those domains (e.g. rigidity and social cognition). This was a known bias in the development of interview questions and analysis of results. However, the negative impact of subtle language and communication difficulties was independently identified by the children.

Findings also indicated a number of sex/gender differences in the experiences of autistic children, contributing to better understanding of the autistic female phenotype. One of our female cohorts was older than any male participant. Age might facilitate better quality self-reflections regardless of sex/gender, although detailed descriptions notably typified female accounts across all ages.

The small sample sizes (desirable in qualitative analysis) do not lend themselves to the generalisation of findings. However, this study provides important and novel firsthand accounts of communication breakdown and its impact on autistic girls and boys without intellectual disability. The rich and detailed descriptions of these complex interactions can form the basis of further investigation using empirical measures with larger sample sizes.

Practical implications

Subtle language and communication difficulties for autistic children without intellectual disability have an impact on self-advocacy, social interactions and ultimately relationships and emotional well-being. It is therefore a priority during clinical and educational investigations to identify these difficulties, through direct assessment of the above sentence-level language and pragmatics, and observation of functional communicative skills. In this study, children were enabled to discuss their own perceived difficulties in detail which, it is recommended, could contribute to clinical investigations and target-setting. Environmental adaptations and interventions to develop skills must be made available to meet the needs of this higher-ability group. Strategies identified by the children could be used to develop protocols for other individuals. Interventions could ameliorate negative functional, social and emotional sequelae.

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Supplemental material

Supplemental material for this article is available online.

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