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The learning experiences of UK autistic university students during the Covid-19 pandemic

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This study explored the learning experiences of autistic university students in the UK during the Covid-19 pandemic, covering the period from the first lockdown in March 2020 to the removal of restrictions in July 2021 and the subsequent return to in-person learning. Data were generated from 17 participants using an online qualitative survey and were analysed with reflexive thematic analysis. We developed an overarching theme of 'change impacts learning', which encompassed the following three themes: 1) 'online learning worked for me' (including the sub-theme 'the freedom and control of home learning'); 2) 'online learning didn't work for me'; and 3) 'returning to campus brings so many challenges'. Changes to teaching delivery and subsequent impacts on learning highlights potential adjustments that can be made to increase the accessibility of higher education for autistic students.

Introduction

Increasing numbers of autistic students are enrolling on university courses (Davis et al., 2021). It is unclear if this is because of higher rates of diagnosis in recent decades (Russell et al., 2022) or if more autistic people are choosing to go to university. The sensory, social, communication and processing differences that characterise autism vary between individuals; the needs and strengths of autistic students are also diverse (Anderson et al., 2017; Toor et al., 2016). Because of this, individualised support for autistic university students is essential (Kuder & Accardo, 2017). To develop these types of support, for those who want and need it, listening to autistic students' experiences of higher education (HE) is crucial.

Research on autistic university students' experiences has been sparse until very recently (Davis et al., 2021). Research in this area now needs to take account of the forced changes in the way universities deliver teaching as a result of the Covid-19 pandemic. Methods that were previously relatively unchartered for most academics rapidly became the norm with the onset of the first lockdown in March 2020, and, according to one report,

almost a third of UK universities are continuing to provide blended learning (Standley, 2023).

Prior to the pandemic, research that addressed autistic students' experiences of online learning at university was scant (Adams et al., 2019), with studies often employing case-study methods to explore the challenges and opportunities of online learning within particular learning contexts (e.g., Downing, 2014; McDowell, 2015; Meyers & Bagnall, 2015). For example, Downing (2014) explored a mature-aged student's experience of online teacher education and the barriers created by online delivery including the lack of opportunities to communicate with staff, ambiguous instructions, being distracted by spelling errors in teaching materials and other students' behaviour, and the lack of linearity in the learning environment. McDowell (2015), by contrast, highlighted the benefits of online learning by exploring exploring how an online learning intervention enabled an undergraduate computing student to more fully participate in group activities. Meyers and Bagnall (2015) identified both benefits and challenges to online learning in their examination of the experiences of a mature-aged education student. The student valued the flexibility of online learning but felt uncomfortable with computer technology, and experienced a high level of disorientation - losing their sense of direction and not having the cognitive ability to orient himself - in the online learning environment. Though case study approaches such as these provide a detailed and rich account of an individual student's experience in a particular online learning environment, or with particular technological interventions, they cannot capture the inherent diversity in autistic students' experiences in university education more broadly. Research on online learning to date has shown that online delivery can reduce some of the challenges of in-person learning for autistic students (Simpson et al., 2019). However, online learning differs from in-person and requires a certain set of skills, such as self-regulation, self-discipline, and planning and organisation (Kauffman, 2015), that can be difficult to master for many autistic students, because of autism related differences in executive function (Gurbuz et al., 2019). Therefore, the use of online learning can negatively impact the learning experiences of autistic students (Adams et al., 2019).

The current study

Participants in the pre-pandemic literature chose to complete one or more modules online (Adams et al., 2019). However, the Covid-19 pandemic lockdowns meant students had no choice in how their course was delivered. Since the pandemic has exposed more students to online learning, it has provided the opportunity to further explore autistic students' experiences of online learning, particularly when that learning modality is not specifically

sought out. Thus, the current study explores autistic students' experiences of online learning during the Covid-19 pandemic lockdowns and the subsequent easing of restrictions.

Methodology

Researcher personal statement

We are both neurotypical; the second author is physically disabled. The first author considers herself an "informed outsider" (see Scott & Sedgwick, 2021, p. 4) as the parent of an autistic child, which means she has some understanding of the stigma autistic people are subjected to in society, as she experiences this through her child, as well as having her own lived experience of stigma as a parent (see Liao et al., 2019). She has also experienced some of the challenges faced by autistic children in (primary and secondary) education. In addition, she shares with the participants the experience of attending university during the pandemic, the rapid transition to online learning and then the return to campus. However, both authors are acutely aware that we can never really know how it feels to be autistic. We also acknowledge the fraught history of autism research, with much research being produced by professionals without lived experience of autism, and debates about who has the authority and knowledge to conduct research on and therefore effectively speak on behalf of autistic people (Hens et al., 2019). We are also aware of research showing that autistic adults are more likely to describe autism as a neutral difference and oppose the deficit-based medical model than are non-autistic adults and of arguments that autistic adults should be considered autism experts and involved as partners in research (Gillespie-Lynch et al., 2017). For this reason we sought feedback from autistic people during recruitment; but acknowledge that the pragmatic constraints of the project did not allow for the involvement of autistic people as full partners in the research.

Design

Qualitative research allows the exploration of the nuances and complexity of autistic students' experiences (Barkas et al., 2020). Such research can inform how universities develop more inclusive and accessible learning experiences. This research was conducted when pandemic-related restrictions on in-person research remained in place at the authors' university, as such online qualitative surveys were used to collect data via the *Qualtrics* survey platform. Qualitative surveys consist of a number of open-ended questions to which participants respond in their own words and in as much detail as they choose. Online surveys provide a strong sense of "felt anonymity" (Braun et al., 2021, p. 644), an important consideration given the stigma associated with autism. Qualitative surveys also allow people to participate without the time constraints associated with other methods such as interviews (Braun et al., 2021). Such flexibility could be useful to autistic people who may

need additional time to process questions (Frith & Happé, 1994), without the pressure of in-person social interaction and the social norms associated with this. Qualitative surveys can also contribute to participants having a greater sense of control over the research, affording them the opportunity to challenge the researcher without the constraints of normative politeness, which might be expected in an interview (Braun et al., 2021). This was especially important given the first author's position as an informed outsider researcher; feedback was both welcome and useful (see below). It is also important to acknowledge the limitations of qualitative surveys as a static form of data generation, which do not provide participants with the opportunity to clarify the meaning of a particular question. Participants can email the researcher to seek clarification, but this places the onus on the participant, and an immediate – in the moment – response may not be forthcoming. Participants were given the option of taking part in an interview instead of completing the survey, but none opted for an interview. The data were analysed using reflexive thematic analysis (TA) within a broadly critical realist framework (Braun & Clarke, 2022).

Participants and recruitment

A variety of online recruitment strategies were used: sharing the study on social media, including in relevant closed groups with the moderator's permission, the University of the West of England's psychology participant pool, with university societies for neurodivergent/autistic students, and national and local autism charities and research groups. Initially inclusion criteria specified a formal diagnosis, but following feedback from recruitment contacts who were autistic, students who self-identified as autistic were subsequently included. This expanded recruitment criteria acknowledges the validity of self-identification within the autistic community because of flaws and gatekeeping in the diagnostic criteria and process (Ferguson, 2022). Furthermore, participants had to have experience of the transition from in-person to online learning during the pandemic. The survey was closed after three months, with 17 responses. Fifteen participants reported having an autism diagnosis, two self-identified and were seeking a diagnosis. One participant did not provide demographic data (indicated by ND – no demographics - below). Of the 16 participants who did, six identified as male, six as female, and four as non-binary/third gender, and they were aged 18-35 years. Participants were mostly white, except for four, who identified as mixed race. Degree courses included various social science and science subjects, and participants were mostly undergraduates, with two post-graduates.

Data generation

The British Psychological Society's (2021) *Code of Human Research Ethics* was adhered to in all aspects of the research. The study received ethics approval from the University of the West of England Psychology Ethics Committee. The survey was designed so that the landing page included information about the study, what participation involved, and how the data would be used. This was followed by consent and demographic questions, then the substantive survey questions, which covered learning experiences during the lockdown and following the return to campus, and opinions on the extent to which staff and other students understand autism. During the recruitment process, two participants gave feedback on the survey, which led to changes in the design of the survey, to improve accessibility. The final survey design included fewer but broader substantive questions and the demographics were moved to after the substantive questions (for the final survey questions, see Box 1). As is common with qualitative survey data, the responses varied in length - some were relatively brief, others longer, but all provided highly relevant and focused data, and the responses were generally dense with meaning and there were some rich and evocative accounts of participants' experiences with online learning (Braun et al., 2021).

Box 1: Substantive survey questions

1) Please describe your experience of being a university student during lockdown.
Give as much detail as you wish; things you may like to write about in your answer:

- What it was like changing to online learning.
- How you felt about learning online.
- What aspects of online learning you found beneficial to your learning style and what aspects you found challenging.
- How supported by your university you felt during lockdown.

2) Please describe your experience of being a university student since lockdown restrictions have been lifted and universities have begun to re-open and deliver blended learning.
Give as much detail as you wish; things you may like to write about in your answer:

- If you have continued your studies exclusively from home and your reasons for making that choice.
- If you are attending university in person and what the return has been like for you.

3) To what extent do you think other students and university staff are aware of or understand autism?
Give as much detail as you wish; things you may like to write about in your answer:

- If you think learning materials are presented in an autism friendly way.
- If you tell other people at university about your autism.

- What you think other people at university think about autism.

Data analysis

The first author led the analysis and began the process of data familiarisation during data collection. When the survey was closed, she read the whole dataset several times and made notes on things that were potentially analytically interesting. Familiarisation was followed by a systematic coding process. Codes were then clustered into potential themes. After several rounds of clustering and reclustering, we organised the themes into three levels – an overarching theme, three themes and a sub theme nested within one of the themes. The overarching theme 'change impacts learning' encompassed the following three themes: 1) 'online learning worked for me' (including the sub-theme 'the freedom and control of home learning'); 2) 'online learning didn't work for me'; and 3) 'returning to campus brings so many challenges'. The well documented stigma of autism (Botha et al., 2022) is briefly discussed before the presentation of the themes because it provides an important context for the analysis and autistic students' experiences of HE more broadly. Typographical and other errors in the data have been corrected to aid readability and pseudonyms allocated to participants to personalise the data whilst maintaining anonymity.

Analysis

Although there is reported to be increased knowledge about autism and reduced stigma at universities (Stronach et al., 2019), whether students chose to disclose or not and whether this decision was related to perceived stigma or not, it was clear that they felt autism was not spoken about at university: *"It's not something that normally comes up in conversation"* (Noah, UG, Y3), *"I've not heard anyone talking about it at uni yet"* (Sandra, UG, Y1). Previous literature has discussed the lack of understanding from others that many autistic students experience (Accardo et al., 2019; Clouder et al., 2020). Both the current study and existing literature suggest that silence about autism among university communities seems to be the norm, whether that be in the form of a lack of open discussion, a lack of communication and education about autism, or autistic students' feeling scared to disclose because of the reaction they anticipate from others. In line with previous research (Bakker et al., 2019; Bolourian et al., 2018), many participants chose not to disclose their autism diagnosis, and most of those who did, did so selectively citing fears based on perceived stigma and a lack of acceptance. For example, Harriet (UG, Y3) had not disclosed because *"I don't want to be seen as different or incapable"*, whereas others had disclosed selectively and strategically: *"Yes to get DSA and adjustments to exams. Not to many people. I don't want people to think I'm different or feel sorry for me"* (Chris, UG, Y3); *"only a few people. I'm worried it will affect my future career"* (Avery, UG, Y2).

'Online learning worked for me'

Around half of the participants reported that online learning was preferable to in-person learning. They adapted to online learning well and found it enjoyable, easy to engage with and beneficial to their academic outcomes. The transition to online learning was an abrupt one, students were given little notice of the move to online learning (Raaper et al., 2022). Research on the transition to university under pre-pandemic circumstances indicates that autistic students find this transition difficult (Clouder et al., 2020; Nuske et al., 2019), by contrast, the transition to online learning was welcomed. As well as being worried about catching Covid-19, the move to online learning reduced anxiety regarding travelling to and being on campus: *"I didn't struggle it was easier for me as my anxiety was high"* (Caitriona, UG, Y3); *"One of my major struggles is taking public transport. I was always late or overwhelmed"* (Charlie, MSc, Y2). Arriving at campus in a state of high anxiety and feeling overwhelmed could be barriers to learning effectively, which online learning removed.

Students who reported benefitting from online learning indicated that recorded lectures were especially useful given their comparable accessibility and flexibility, allowing students to structure their learning as they desired, pause for breaks, replay parts and rewatch for revision purposes. For example: *"it is good to be able to watch parts back again and again to get an idea through your head that you may not have got if it was presented live to you"* (Sandra, UG, Y1). This perceived improvement in accessibility and flexibility of taught materials impacted students' learning and their engagement in their studies. Many of these participants reported an increase in their engagement with taught material: *"I've seen more lecture material with them being online than in my whole uni experience"* (James, UG, Y3). Previous research has shown improvements in engagement levels are likely to produce higher academic achievement (Collie et al., 2017). Thus, this study indicates that online delivery/recording lectures is an important reasonable adjustment that increases accessibility for some autistic students.

Changes to assessments were also received well, especially exams being moved online, often with longer windows for completion or flexible start times. This flexibility reduced the stress associated with traditional format exams: *"I love having my exams online. It's way easier to focus when I am home. It makes the whole process less stressful"* (Dave, UG, Y3); *"Online exams are good you can choose what time of day to start feels less pressured I can plan my day better"* (Chris, UG, Y3). Additionally, online exams were often open-book and not timed, giving students an opportunity to demonstrate their academic skills without the pressure resulting from traditional exam formats. Stress can have a disadvantageous impact on exam performance (Kleine-Borgmann et al., 2021; Putwain et

al., 2015); the greater flexibility afforded by online exams reduced stress for these students and some reported their academic performance improved during home learning: *"allowed me to achieve my best grades"* (James, UG, Y3); *"Now my grades have improved because there's less "noise" or less barriers to my learning"* (Charlie, MSc, Y2).

The freedom and control of home learning

Participants who valued online learning reported that it gave them control over how to structure their days, allowing them to incorporate breaks when needed, rather than when their timetable dictated these were permissible, and practice better self-care: *"Now I can eat properly and do other things I did not have time for before"* (Sandra, UG, Y1); *"being at home meant I could plan my day how I wanted and take breaks when I wanted"* (Simon, UG, Y3). These participants valued being able to plan their days in a way that allowed them to learn when they felt best able to: *"I liked I could do* [listen to pre-recorded lectures] *when I was able to, rather than only at the time"* (Caitriona, UG, Y3). Being in control of their own time was also important: *"I had full control of my time, from my desk"* (Harriet, UG, Y3). The feeling of being in control over their lives is important to autistic students (Scott & Sedgewick, 2021); when students are in control of their own routines and time, they know what to expect, and the unpredictability that can be uncomfortable or distressing is reduced. Being at home provided an environment for the student *"where everything is controlled and predictable"* (Harriet, UG, Y3).

The freedom to be themselves and behave in the way they naturally would without fear of stigma was also valued: *"It gives me the freedom to do my own thing while also watching a lecture, whereas I do not think I would have that freedom in a lecture room. I am able to do my own thing without worrying about people watching me, and feeling judged"* (Avery, UG, Y2). This removal of worry about being on campus was also clear in Charlie's (MSc, Y2) response: *"I can wear comfortable clothes, have my things around me, not have to worry about lighting or temperature or background noise that I can't control. I can eat and go to the bathroom when I want."* The removal of sensory distractions and worrying about other people's perceptions is likely to have improved students' focus on their studies.

Overall, the combination of freedom to be themselves and control over their own time was something students found beneficial to their well-being and academic focus. Research indicates that mental health conditions detrimentally impact the academic performance of autistic students (Kuder et al., 2021), and they have higher rates of mental health conditions compared to their neurotypical peers (Davis et al., 2021). Therefore, reasonable adjustments that improve mental health for autistic students are important to increase engagement and prevent autistic students dropping out before the completion of

their degree, as currently dropout rates for autistic students are higher than for their neurotypical peers (Cage & Howes, 2020).

'Online learning didn't work for me'

While some thrived from home learning, others did not have such a positive experience. These participants found online learning challenging; the transition to online learning was hard, which had repercussions for their engagement with their studies and academic performance. They struggled to maintain focus and keep up with what was expected of them. Bundy et al. (2021) reported increased levels of anxiety, depression and stress during and since the pandemic lockdowns for autistic students. Although none of the students mentioned struggling with lockdown, one participant did mention depression, coupled with a difficulty in asking for help, leading to a complete disengagement with their studies for a prolonged period that seemingly went unnoticed by their university: *"there was a time where I didn't do any work for 2 months, I was too scared to contact anyone, I was really depressed"* (Chris, UG, Y3). This is concerning, both in terms of student mental health and the difficulty of maintaining regular contact with students when learning moves online.

Participants reported not feeling supported in the transition to online learning and there was an underlying sentiment of both feeling alone and being in the same boat as everyone else. The latter evident in a feeling of camaraderie – that everyone, students and lecturers alike, were doing their best to adjust to this sudden and significant change in university life. When asked if they felt supported in the transition to online learning, the following types of responses were common: *"No but everyone was the same everyone found it hard including lecturers I think"* (Chris, UG, Y3); *"No. We were pretty much left to fend for ourselves"* (Emily, PhD). In addition to adjusting to being at home, students were also required to use unfamiliar learning platforms and navigating these was difficult at times. This added to the feeling of 'going it alone' because students felt these were not explained in advance. Another problem participants encountered was the lack of consistency in the formatting of online learning materials and not having enough time to familiarise themselves with these materials before teaching sessions: *"learning materials are often not logically laid out and get released really short notice it would be better if I knew what was coming"* (Noah, UG, Y3). Existing research highlights that having access to learning materials at least 24 hours in advance of a teaching session is an important reasonable adjustment for autistic and other neurodivergent students for both online and in-person learning (Clouder et al., 2020). Existing research has also identified several challenges with online learning materials including visual and text distractions such as spelling errors and typos, cluttered/busy pages, and visuals with unclear thematic relevance (Adams et al., 2019).

Participants also found that online learning made it difficult to focus, and absorbing and retaining taught material was more difficult online than in person: *"Online learning takes out the absorbance of information for me personally"* (Devan, ND); *"I was never able to maintain focus during online lectures and seminars"* (Kate, UG, Y2). This could be because online learning requires several skills that many autistic students have been shown to struggle with, such as time management, organisation and planning (e.g., Adams et al., 2019).

Participants found online seminars particularly difficult; attempting to navigate social rules online was tricky for participants like Charlie (MSc, Y2): *"I wish there were more clear rules about when to talk etc. I think I butt in and talk over people but I don't notice at the time and feel bad after"*. Trying to navigate this new online mode of learning led to disengagement with seminars altogether for several participants: *"It's confusing and pressured, no one talks and it's too easy just to skip it"* (Harriet, UG, Y3). So, for those who found online learning did not work for them, engagement decreased, which is not conducive to academic success (Ketonen et al., 2016). Support for these students could mediate this, but many participants reported not accessing, being offered or knowing what support was available to them, a problem echoed in previous research (Gelbar et al., 2014).

Returning to campus brings so many challenges

Experiences of autistic students attending university campuses has been well documented in previous research (Gurbuz et al., 2019; Madriaga, 2010). University campuses are spaces in which autistic students are particularly at risk of sensory overload (Mulder & Cashin, 2014) because of many distractions such as noise and crowds (Gurbuz et al., 2019). Participants' reports of the return to campus after lockdown showed this continues to be the case, especially after being away from campus and other busy spaces for so long.

Returning to campus primarily meant two things: the potential for sensory overload and the need for masking. These are both challenging for autistic students and added to the stressors of university life. Participants reported being particularly affected by the sensory information processing differences associated with autism on campus: *"worry about lighting or temperature or background noise that I can't control"* (Charlie, MSc, Y3); "*Anxiety literally takes over and focusing on the minute details of noise and feet shuffling and people talking on the phone can sometimes almost paralyse you"* (Kate, UG, Y2). Sensory overload can be debilitating and distracting, making it difficult to concentrate on material being taught. As a result, participants were afraid to return to campus - *"Scared. I like being at home"* (Sandra, UG, Y1); *"terrified :("* (Alex, UG Y2) - and when they did return, there was often a lengthy process of adjustment:

> *The main issues I had was transitioning back and the high anxiety of going back into groups of people (….) This lasted for most of semester 1 2021/22, the first semester I had anything in campus. However, now I have adjusted and refamiliarised myself with it I am liking the blended learning approach* (Harriet, UG, Y3).

Masking is when an autistic person consciously or unconsciously uses strategies either to hide their autistic differences or find alternative ways to face something they struggle with (Sedgewick et al., 2022). Masking often happens when engaging in social interactions and when experiencing sensory overwhelm (Pearson & Rose, 2021), a feeling of being overwhelmed or overloaded by sensory input as a result of hypersensitivity to such input (MacLennan et al., 2022). After spending so much time at home and for so long, likely with little or no need to mask, masking was an essential part of participants' return to campus, and they did not feel they could be themselves away from their home environment: *"I try to act as neurotypical as possible"* (Harriet, UG, Y3); *"worry about my breathing, my facial expressions"* (Sandra, UG, Y3). Furthermore, Avery (UG, Y2) compared learning at home and in lecture rooms, implying they would be masking if they were in the lecture room and that they would not be masking at home: *"whereas I do not think I would have that freedom in a lecture room. I am able to do my own thing without worrying about people watching me, and feeling judged"*. It is evident that the participants felt that there would be negative reactions from other members of the university community to their unmasked self, suggesting they are conscious of continued stigma around autism (see Botha et al., 2022).

Campus, like other public and social domains, is a place where autistic students mask to fit in or not be noticed as different (Sedgewick et al., 2022). This masking led to problems for the participants because of the need to rest afterwards: *"All of these things absolutely exhaust me. I then need to retreat, recharge"* (Kate, UG, Y2); *"but then I go home and I am completely exhausted, both physically and mentally, and I don't think people realise that"* (Dave, UG, Y3). Prolonged masking can even lead to autistic burnout – a response to long-term and unresolved stress, where individuals reach their limit emotionally and physically (Sedgewick et al., 2022) – and is associated with increased mental health problems (Miller et al., 2021; Scott & Sedgewick, 2021), including risk of suicide in autistic adults (Pelton et al., 2020). Having to make time for, and suffer through, the consequences of masking because of attending university could not only have effects on learning and academic achievement, but also on mental health. For many autistic people, not just students, masking is life (Miller et al., 2021), but it is not without the aforementioned costs. This raises questions about what universities can do to reduce the need for masking on campus to make it a less stressful place for autistic students.

Conclusions

Unsurprisingly perhaps, the present study showed that changes caused by the pandemic had impacts on autistic students' perceived learning, engagement with their studies and academic performance. However, these impacts were varied, online learning was an improvement for some, but not for others. Themes developed in this study reiterate the diversity of autistic students' experiences evident in existing research (e.g., Anderson et al., 2018). However, in many existing studies, only a minority report a positive experience of university (e.g., Barkas et al., 2020), whereas, in the current study, the pandemic's imposition of home learning seemed to have benefitted many. Online learning reduced the sensory challenges of attending campus, provided students with more freedom to behave as their authentic self and gave them more control over their time and studies. Thus, online learning is an important reasonable adjustment to increase accessibility for some autistic students, as part of an individualised and holistic support package (MacLeod & Green, 2009). To mediate the challenges some autistic students faced with online learning, such as time management and navigating the online learning environment, the current study highlights the importance of teaching the skills needed to succeed and careful design of the learning environment and content (Adams et al., 2019). The current study also highlighted the reduced opportunities for communication with staff, and in-person interaction, associated with online learning, which meant that students could completely disengage with their studies for prolonged periods without anyone necessarily noticing or contacting them. This highlights the need to monitor students' engagement with online learning and to actively reach out, using a variety of communication channels (Dwyer et al., 2022), if students are disengaged for prolonged periods.

The study reiterated the sensory challenges associated with attending university campuses that has been a recurring theme in previous literature (Anderson et al., 2017; Gurbuz et al., 2019), indicating that universities still have much work to do in this area. Research and consultation with autistic students is necessary because some measures, despite their well-intended nature, can be experienced as isolating by some (Madriaga, 2010). From listening to voices of autistic students in this study, we support existing recommendations for the creation of sensory rooms or quiet spaces on university campuses that they can use when feeling overwhelmed by sensory information or need to take a break from masking (Sarrett, 2018).

It is striking that there is a continued need for more awareness and acceptance of autism in university communities; the silence around autism needs to be broken to reduce stigma and promote acceptance. Recommendations for ways this could be achieved are

training for university staff, both academic and support staff, and providing education to all students about autism (Madriaga, 2010). Such training will help staff to implement ways of teaching and supporting students that are more inclusive and accessible, and create more acceptance of things like stimming (self-stimulatory behaviours such as flapping hands, humming or rocking back and forth; Sarrett, 2018), and hopefully reduce the pressure autistic people feel to mask their autism, thus reducing the harmful impact masking can have.

Finally, turning to the limitations of this study, this study was led by a non-autistic researcher, albeit one who identified as an 'informed outsider' (Scott & Sedgwick, 2021), and although attempts were made to consult autistic people in the design of the survey via the feedback mentioned above, the research could have been improved by collaboration or consultation with autistic people as part of the design. Feedback from autistic recruitment contacts suggested there were too many questions in the initial version of the online survey, though actions were taken to change this by developing a shorter survey, the survey could have been shorter from the outset, which may have benefitted recruitment. Feedback also included the suggestion to use voice notes as a response mode because filling in lengthy surveys online could be challenging for some autistic students (on top of all the writing required for their degree course). Although this was investigated, it was not possible to identify a way for participants to submit voice notes that was GDPR compliant within the time constraints of the study. In future, it is important to design research with autistic students that offers multiple modalities of response, for instance, an online survey and video-call, telephone, email and instant messenger interviews could all be offered to allow the participant to choose the best way for them to participate in the research (Aidley & Fearon, 2021). Looking forward, as many universities continue to provide blended learning to students, there is abundant opportunity to extend understandings of autistic students' experiences of online learning.

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References

Accardo, A. L., Kuder, S. J., & Woodruff, J. (2019). Accommodations and support services preferred by college students with autism spectrum disorder. *Autism*, *23*(3), 574-583. https://doi.org/10.1177/1362361318760490

Adams, D., Simpson, K., Davies, L., Campbell, C., & Macdonald, L. (2019). Online learning for university students on the autism spectrum: A systematic review and questionnaire study. *Australasian Journal of Educational Technology*, *35*(6), 111-131. https://doi.org/10.14742/ajet.5483

Aidley, D., & Fearon, K. (2021). *Doing accessible social research: A practical guide*. Policy Press.

Anderson, A. H., Carter, M., & Stephenson, J. (2018). Perspectives of university students with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, *48*(3), 651-665. https://doi.org/10.1007/s10803-017-3257-3

Anderson, A. H., Stephenson, J., & Carter, M. (2017). A systematic literature review of the experiences and supports of students with autism spectrum disorder in post-secondary education. *Research in Autism Spectrum Disorders*, *39*, 33-53. https://doi.org/10.1016/j.rasd.2017.04.002

Bakker, T., Krabbendam, L., Bhulai, S., & Begeer, S. (2019). Background and enrollment characteristics of students with autism in higher education. *Research in Autism Spectrum Disorders*, *67*, 101424. https://doi.org/10.1016/j.rasd.2019.101424

Barkas, L. A., Armstrong, P. A., & Bishop, G. (2020). Is inclusion still an illusion in higher education? Exploring the curriculum through the student voice. *International Journal of Inclusive Education*, 1-16. https://doi.org/10.1080/13603116.2020.1776777

Bolourian, Y., Zeedyk, S. M., & Blacher, J. (2018). Autism and the university experience: Narratives from students with neurodevelopmental disorders. *Journal of Autism and Developmental Disorders*, *48*(10), 3330-3343. https://doi.org/10.1007/s10803-018-3599-5

Botha, M., Dibb, B., & Frost, D. M. (2022). “Autism is me”: An investigation of how autistic individuals make sense of autism and stigma. *Disability & Society*, *37*(3), 427-453. https://doi.org/10.1080/09687599.2020.1822782

Braun, V., & Clarke, V. (2022). *Thematic analysis: A practical guide.* Sage.

Braun, V., Clarke, V., Boulton, E., Davey, L., & McEvoy, C. (2021). The online survey as a qualitative research tool. *International Journal of Social Research Methodology*, *24*(6), 641-654. https://doi.org/10.1080/13645579.2020.1805550

British Psychological Society (2021). *BPS code of human research ethics*. British Psychological Society. https://www.bps.org.uk/guideline/bps-code-human-research-ethics-0

Bundy, R., Mandy, W., Crane, L., Belcher, H., Bourne, L., Brede, J., Hull, L., Brinken, J., & Cook, J. (2021). The impact of early stages of COVID-19 on the mental health of autistic adults in the United Kingdom: A longitudinal mixed-methods study. *Autism.* https://doi.org/10.1177/13623613211065543

Cage, E., & Howes, J. (2020). Dropping out and moving on: A qualitative study of autistic people’s experiences of university. *Autism*, *24*(7), 1664-1675. https://doi.org/10.1177/1362361320918750

Clouder, L., Karakus, M., Cinotti, A., Ferreyra, M. V., Fierros, G. A., & Rojo, P. (2020). Neurodiversity in higher education: A narrative synthesis. *Higher Education*, *80*(4), 757-778. https://doi.org/10.1007/s10734-020-00513-6

Collie, R. J., Holliman, A. J., & Martin, A. J. (2017). Adaptability, engagement and academic achievement at university. *Educational Psychology*, *37*(5), 632-647. https://doi.org/10.1080/01443410.2016.1231296

Davis, M. T., Watts, G. W., & López, E. J. (2021). A systematic review of firsthand experiences and supports for students with autism spectrum disorder in higher education. *Research in Autism Spectrum Disorders*, *84*, 101769. https://doi.org/10.1016/j.rasd.2021.101769

Downing, J. (2014). “Obstacles to my learning”: A mature-aged student with autism describes his experience in a fully online course. *International Studies in Widening Participation*, *1*(1), 15-27.

Dwyer, D., Mineo, E., Mifsud, K., Lindholm, C., Gurba, A., & Waisman, T. C. (2022). Building neurodiversity-inclusive postsecondary campuses: Recommendations for leaders in higher education. *Autism in Adulthood*. http://doi.org/10.1089/aut.2021.0042

Frith, U., & Happé, F. (1994). Autism: Beyond "theory of mind". *Cognition*, *50*(1-3), 115-132. https://doi.org/10.1016/0010-0277(94)90024-8

Ferguson, L.. (2022, March 8). Autistic self identification is valid and it's a social justice issue. Spark. https://www.sparkpsych.com/blog/autistic-self-identification-is-valid

Gelbar, N. W., Smith, I., & Reichow, B. (2014). Systematic review of articles describing experience and supports of individuals with autism enrolled in college and university programs. *Journal of Autism and Developmental Disorders*, *44*(10), 2593-2601. https://doi.org/10.1007/s10803-014-2135-5

Gillespie-Lynch, K., Kapp, S. K., Brooks, P. J., Pickens, J., & Schwartzman, B. (2017). Whose expertise Is It? Evidence for autistic adults as critical autism experts. *Frontiers in Psychology*, *8*, 438. https://doi.org/10.3389/fpsyg.2017.00438

Gurbuz, E., Hanley, M., & Riby, D. M. (2019). University students with autism: The social and academic experiences of university in the UK. *Journal of Autism and Developmental Disorders*, *49*(2), 617-631. https://doi.org/10.1007/s10803-018-3741-4

Hens, K., Robeyns, I., & Schaubroeck, K. (2019). The ethics of autism. *Philosophy Compass*, *14*, e12559. https://doi.org/10.1111/phc3.12559

Kauffman, H. (2015). A review of predictive factors of student success in and satisfaction with online learning. *Research in Learning Technology*, *23*. https://doi.org/10.3402/rlt.v23.26507

Ketonen, E. E., Haarala-Muhonen, A., Hirsto, L., Hänninen, J. J., Wähälä, K., & Lonka, K. (2016). Am I in the right place? Academic engagement and study success during the first years at university. *Learning and Individual Differences*, *51*, 141-148. https://doi.org/10.1016/j.lindif.2016.08.017

Kleine-Borgmann, J., Schmidt, K., Billinger, M., Forkmann, K., Wiech, K., & Bingel, U. (2021). Effects of open-label placebos on test performance and psychological well-being in healthy medical students: A randomized controlled trial. *Scientific Reports*, *11*(1), 1-11. https://doi.org/10.1038/s41598-021-81502-2

Kuder, S. J., & Accardo, A. (2017). What works for college students with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, *48*(3), 722-731. https://doi.org/10.1007/s10803-017-3434-4

Kuder, S. J., Accardo, A. L., & Bomgardner, E. M. (2021). Mental health and university students on the autism spectrum: A literature review. *Review Journal of Autism and*

Developmental Disorders, *8*(4), 421-435. https://doi.org/10.1007/s40489-020-00222-x

Liao, X., Lei, X., & Li, Y. (2019). Stigma among parents of children with autism: A literature review. *Asian Journal of Psychiatry*, *45*, 88–94. https://doi.org/10.1016/j.ajp.2019.09.007

MacLennan, K., O'Brien, S., & Tavassoli, T. (2022). In our own words: The complex sensory experiences of autistic adults. *Journal of Autism and Developmental Disorders, 52*, 3061–3075. https://doi.org/10.1007/s10803-021-05186-3

MacLeod, A., & Green, S. (2009). Beyond the books: Case study of a collaborative and holistic support model for university students with Asperger syndrome. *Studies in Higher Education*, *34*(6), 631-646. https://doi.org/10.1080/03075070802590643

Madriaga, M. (2010). "I avoid pubs and the student union like the plague": Students with Asperger syndrome and their negotiation of university spaces. *Children's Geographies*, *8*(1), 39-50. https://doi.org/10.1080/14733280903500166

McDowell, J. (2015). A black swan in a sea of white noise: Using technology-enhanced learning to afford educational inclusivity for learners with Asperger's Syndrome. *Social Inclusion*, *3*(6), 7-15. https://doi.org/10.17645/si.v3i6.428

Meyers, C. A., & Bagnall, R. G. (2015). A case study of an adult learner with ASD and ADHD in an undergraduate online learning environment. *Australasian Journal of Educational Technology*, *31*(2). https://doi.org/10.14742/ajet.1600

Miller, D., Rees, J., & Pearson, A. (2021). "Masking Is life": Experiences of masking in autistic and nonautistic adults. *Autism in Adulthood*, *3*(4), 330-338. https://doi.org/10.1089/aut.2020.0083

Mulder, A. M., & Cashin, A. (2014). The need to support students with autism at university. *Issues in Mental Health Nursing*, *35*(9), 664-671. https://doi.org/10.3109/01612840.2014.894158

Nuske, A., Rillotta, F., Bellon, M., & Richdale, A. (2019). Transition to higher education for students with autism: A systematic literature review. *Journal of Diversity in Higher Education*, *12*(3), 280. https://psycnet.apa.org/doi/10.1037/dhe0000108

Pearson, A., & Rose, K. (2021). A conceptual analysis of autistic masking: Understanding the narrative of stigma and the illusion of choice. *Autism in Adulthood*, *3*(1), 52-60. https://psycnet.apa.org/doi/10.1037/dhe0000108

Pelton, M. K., Crawford, H., Robertson, A. E., Rodgers, J., Baron-Cohen, S., & Cassidy, S. (2020). Understanding suicide risk in autistic adults: Comparing the Interpersonal Theory of Suicide in autistic and non-autistic samples. *Journal of Autism and Developmental Disorders*, *50*(10), 3620-3637. https://doi.org/10.1007/s10803-020-04393-8

Putwain, D. W., Daly, A. L., Chamberlain, S., & Sadreddini, S. (2015). Academically buoyant students are less anxious about and perform better in high-stakes examinations. *British Journal of Educational Psychology*, *85*(3), 247-263. https://doi.org/10.1111/bjep.12068

Raaper, R., Brown, C., & Llewellyn, A. (2022). Student support as social network: Exploring non-traditional student experiences of academic and wellbeing support during the Covid-19 pandemic. *Educational Review*, *74*(3), 402-421. https://doi.org/10.1080/00131911.2021.1965960

Russell, G., Stapley, S., Newlove-Delgado, T., Salmon, A., White, R., Warren, F., Pearson, A., & Ford, T. (2022). Time trends in autism diagnosis over 20 years: A UK population-based cohort study. *Journal of Child Psychology and Psychiatry*, *63*(6), 674-682. https://doi.org/10.1111/jcpp.13505

Sarrett, J. C. (2018). Autism and accommodations in higher education: Insights from the autism community. *Journal of Autism and Developmental Disorders*, *48*(3), 679–693. https://doi.org/10.1007/s10803-017-3353-4

Scott, M., & Sedgewick, F. (2021). "I have more control over my life": A qualitative exploration of challenges, opportunities, and support needs among autistic university students. *Autism & Developmental Language Impairments*, *6*, 1-14. https://doi.org/10.1177/23969415211010419

Sedgewick, F., Hull, L., & Ellis, H. (2022). *Autism and masking: How and why people do it, and the impact it can have*. Jessica Kingsley Publishers.

Standley, N. (2023, 6 January). Nearly a third of university courses still have hybrid teaching. BBC News. https://www.bbc.co.uk/news/education-64130367

Stronach, S., Wiegand, S., & Mentz, E. (2019). Brief report: Autism knowledge and stigma in university and community samples. *Journal of Autism and Developmental Disorders*, *49*(3), 1298-1302. https://doi.org/10.1007/s10803-018-3825-1

Toor, N., Hanley, T., & Hebron, J. (2016). The facilitators, obstacles and needs of individuals with autism spectrum conditions accessing further and higher education: A

systematic review. *Journal of Psychologists and Counsellors in Schools*, *26*(2), 166-190. https://doi.org/10.1017/jgc.2016.21