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The ecosystem of competitive employment for university graduates with autism

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The ecosystem of competitive employment for university graduates with autism

Abstract

There is a growing population of young people with autism entering higher education and successfully completing qualifications, however, their postgraduate outcomes are often some of the poorest. This study responds to the gap in research regarding the transition out of higher education and into the labour market for this group. It outlines a two-phase qualitative research design to examine barriers and pathways to competitive employment for graduates with autism. Findings report the heterogenous experience of autism, the importance of natural supports such as family, universities, or supported employment for success, and the impact of attitudes regarding autism and inclusive practice expressed by employers and wider society. The study further analyses how people, practices and policies often interact contingently to open up or close down opportunities for graduates with autism within the ecosystem of competitive employment.

Keywords

Autism, Employment, Graduate, Higher Education, Ecosystem, Qualitative

Introduction

There is a relatively robust evidence-base to show that entering the workforce and maintaining competitive employment is a persistent challenge for adults with autism (Hedley et al, 2018; Howlin et al, 2004; Nicholas, et al, 2019; Scott et al 2019; Shattuck et al, 2012a; Taylor et al, 2015, *inter alia*). UK data suggest that up to 84% of adults on the autism spectrum are not in full-time employment (Mavranouzouli et al, 2014) and similar trends are replicated elsewhere. In the United States, only 58% of young adults with autism (aged 18–25 years) have worked for pay, with only 21% in full-time employment (Roux et al, 2015); in Canada, Nicholas et al (2019) report an employment rate of only 14.3% for those 18-64 years of age; and in Australia adults with autism have an

1
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3 employment rate of 28% (Nicholas et al, 2019). Of those that are in employment, many
4
5 are in posts inconsistent with their skill set or are overqualified for their role (Baldwin
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7 et al 2014).
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11 What is less well-established in the literature is an analysis of employment rates and
12
13 experiences of graduates with autism exiting higher education. Government figures in
14
15 the UK indicate that these graduates are over five times more likely to be unemployed
16
17 six months after completing their university course when compared to their non-
18
19 disabled peers (BIS, 2016). More recently, Allen and Coney (2019) report that those
20
21 disclosing an autistic spectrum condition were the least likely of any disabled group in
22
23 higher education to be in full-time employment - in fact employment outcomes were
24
25 actually worse for this group where they had gained postgraduate qualifications. Such
26
27 evidence echoes concerns raised by Gelbar et al (2015) in the United States and suggests
28
29 that there is a clear disparity between academic capability and their postgraduate
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31 outcomes for university graduates with autism This is particularly pertinent given that
32
33 increasing numbers of young people with an autism diagnosis enrolling on higher
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35 education courses (HESA, 2018; Jackson, Hart and Volkmar, 2018).
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39 ***The employment ecosystem for graduates***

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41 Previous studies have used bioecological models to better understand the complex
42
43 interactions, relationships, and arrangements within specific socio-cultural contexts for
44
45 individuals with autism across the life course (Dent and Coles, 2012; Kuhn et al, 2018;
46
47 Wright et al, 2019). Nicholas et al (2018) proffer an employment ecosystem model
48
49 which foregrounds the importance of the autistic individual, identifying factors that
50
51 impact on employment success including job readiness, occupational focus, personal
52
53 wellbeing and the presentation of foundational autistic traits. The ecosystem model is a
54
55 welcome, and much-needed, contribution to the field in its recognition of the
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57 multifarious contexts that interact contingently in leading to different employment
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3 outcomes. This is particularly evident when considering the pathways and barriers to
4 employment for graduates with autism.
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10 **Graduates on the autism spectrum**

11 At the heart of the employment ecosystem is the individual. Whilst graduates on the
12 autism spectrum are diverse as a population, by completing a university or college
13 qualification they will tend to have average or above average IQ and possess skills and
14 abilities which might provide an advantage in the workplace (Holwerda et al, 2013;
15 Scott et al, 2019). Based on their academic ability, Chown et al (2018) position them as
16 'high achievers' who are determined and passionate about their subject (Ward and
17 Webster 2018); however, this ought not to bely challenges they might also face. Whilst
18 there is little research which examines the specific transition to employment for autistic
19 graduates (Author_1, 2019), it is likely that they encounter general transition-related
20 challenges similar to when starting university (cf. Author 2 et al, in press), as well as
21 many of the same difficulties as the general population on the autism spectrum when
22 seeking employment. Studies report challenges with the social demands of the
23 workplace, particularly in interacting and communicating with co-workers based on
24 nonverbal cues (Baldwin et al, 2014; Krieger et al, 2012). Graduates with autism may
25 also experience difficulties with sensory processing, leading, for some, to increased
26 levels of discomfort and sensory overload (Ashburner et al, 2013). Such social and
27 sensory experiences can cause extreme physical and emotional distress as well as
28 feelings of anxiety, despair, isolation and the increase in 'restrictive and repetitive
29 behaviours' (Harmuth et al, 2018; Hedley et al, 2018; Kapp et al, 2019). Older age, better
30 education, absence of co-occurring conditions, and access to networks of support are all
31 recognised as factors which might increase potential for employment success among
32 graduates with autism (Hedley et al, 2017; Holwerda et al, 2013).
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Postgraduate parental engagement

A key aspect of the ecosystem for graduates with autism is family and parental engagement. Young people across European and Western countries are increasingly dependent on their parents for longer, even beyond higher education (Roksa and Arum, 2012) and there is certainly evidence that parents play a significant and sustained role in the lives of young people on the autism spectrum, particularly in transition planning (Harmuth et al 2018; Hillier and Galizzi 2014; Giarelli et al, 2013; Nicholas et al 2018; Author_1, 2019). There are currently various transition planning models in use among this population, many of which involve parents. The best known is Kohler et al's (2016) Taxonomy for Transition Programming 2.0, which positions family engagement as central to successful transition. Similarly, the online transition planning program Better Outcomes & Successful Transitions for Autism (BOOST-A™), has also been reported by parents to be effective (Hatfield et al, 2018). Carter et al (2012) report a five-fold increase in the chances of work participation after high-school where parents held high job expectations and were engaged in the process. As such many parents end up taking on 'key-worker' or advocacy roles to support the successful transition into adulthood and employment (Mitchell and Beresford, 2014; Van Bourgondien et al 2014). Such findings are also reported by Nicholas et al (2018) who identified parents' role in navigating services and liaising with employers and employment service personnel as crucial for job sustainability.

Institutional support

A further factor in the ecosystem for graduates with autism is their university or college. As with other students with disabilities, there is an increasing awareness that students with autism require additional support to further their career goals and promote long-term independence (Gelbar et al, 2015). Opportunities for employment preparation, such as mock interviews and career exploration activities are considered useful as are

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3 internships and developing a disclosure plan for employers (Briel and Getzel 2014;
4 Hatfield et al, 2018; Mitchell and Beresford, 2014). VanBergeijk et al (2008) emphasize
5 the need for university support service staff, in particular careers advisors, to provide
6 information that is clear and precise and to offer opportunities to identify interests,
7 abilities, talents, and skills and practice a range of job seeking skills. Time might also be
8 spent developing soft skills, such as working as a team, knowing business etiquette, and
9 navigating a work environment. A challenge in this regard is the 'invisibility' of the
10 autism diagnosis which can lead to students finding it difficult to justify their
11 requirements, and a lack of understanding and adequate support by the institution
12 (Anderson et al, 2017; Hatfield et al, 2018).
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27 **Workplace**

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29 The workplace is a central component of the employment ecosystem for graduates on
30 the autism spectrum. Throughout their university courses, they might engage in a range
31 of work experiences, placements and internships (Dipeolu et al, 2015). In principle, this
32 ought to increase their chances of success, however, given poor postgraduate outcomes
33 (Gelbar et al, 2015; Allen and Coney, 2019) there appear to be significant barriers. One
34 of the most complex (and under-researched) obstacles to employment for graduates
35 with autism is industry professionals' lack of understanding or negative attitudes. Mai's
36 (2019) study finds that hiring managers discriminate against candidates with an autism
37 diagnosis based on the belief that co-workers would resent having to alter their working
38 practices and that qualified candidates with autism would embarrass the company,
39 moreover they tended to hold a range of incorrect stereotypes related to absenteeism
40 and dependability. Other studies also suggest that some employers hold negative views
41 based on perceived barriers such as the cost of reasonable adjustments, lower
42 productivity, and additional supervision requirements (Scott et al, 2019).
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3 Given low levels of understanding among many industry professionals, recruitment
4 processes, including job adverts, interviews, and assessment centres are typically
5 designed with only neurotypical candidates in mind and can thus present barriers for
6 graduates with autism (Hedley et al, 2018; Strickland et al, 2013). Generic job
7 descriptions, which use figurative language ('you'll blow the customers' minds') or
8 stipulate capacities not always essential to the job role, for example 'become one of the
9 team' and 'communicate with impact and empathy' can make navigating this process
10 difficult (Handley, 2018:245; Scott et al, 2015). Finally, the spatial and material
11 conditions of workspaces can be challenging for employees with autism, particularly
12 where these generate high sensory demands through, for example, strip lighting or loud
13 open-plan offices (Giarelli et al, 2013; Landon et al, 2016).

30 **Research Aims**

31
32
33 Previous research has predominantly focused either on general trends in employment
34 rates for adults with autism or, within the context of higher education, on students'
35 induction into university or college and inclusive pedagogies (cf. Anderson et al 2017);
36 however, there is a gap in research regarding the transition out of higher education and
37 into the workplace for this group. This study, therefore, aimed to contribute to the
38 evidence-base and generate new understanding focussed on the barriers and pathways
39 to competitive employment for graduates with autism based on an ecosystem approach
40 (Nicholas et al, 2018). The research was guided by the following questions:

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51 1. *What are the barriers to competitive employment for graduates with autism?*
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60 2. *What are the pathways to success in competitive employment for graduates with
autism?*
3. *How do internal and external factors interact in opening up or closing down such
opportunities?*

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3 This study draws reports a two-phase qualitative research design which allowed for
4 comparative analysis between and across the data in the generation of new theory.
5 Charmaz (2005) notes how this approach proves useful for illuminating how
6 inequalities are manifested at interactional and organisational levels, which was at the
7 heart of this study.
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15 **Methods**

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18 Phase 1 included twenty-one semi-structured interviews with students and recent
19 graduates with autism reporting on their experiences of seeking employment. The
20 participants ranged in age from 21 to 26 years ($M_{age}=22.19$). Fifteen participants
21 identified themselves as male and 6 identified as female. In total ten of the participants
22 were students within 12 months of completing university and 11 were recent graduates.
23
24 The majority ($n= 17$) self-reported a diagnosis of Asperger's syndrome and four self-
25 reported a diagnosis of autism; all but two had received their diagnosis in childhood.
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35 In line with theoretical sampling, participant selection for Phase 2 was informed by
36 initial analysis of Phase 1 data. In total four focus groups (FocGrp_1-4) took place among
37 58 community stakeholders, including a range of actors involved in the process of
38 supporting graduates with autism into competitive employment. The three largest
39 groups included careers and disability practitioners (21%), public sector employees
40 (19%) and autistic graduates (17%). Two thirds (67%) of the participants were women
41 and the majority of the participants reported their age to be between 41-50 years with
42 74% aged between 31-60 years of age.
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54 **Procedure**

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56 Participants for both groups were recruited purposively through local and national
57 networks using snowballing techniques. Ethical approval was granted for both phases of
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1
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3 the research by the first author's institutional review board. Written informed consent
4 was obtained from each participant prior to data collection. All data were audio-
5 recorded using a digital voice recorder and transcribed verbatim. Data were analysed
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9 with the following steps undertaken by the two authors:
10

- 11 1. close reading of transcripts from both datasets;
- 12
13 2. identification of open codes and comparative analysis between the different
14 participants and two datasets to generate categories with inter-rater reliability
15 achieved through a consensus approach;
- 16
17 3. Use of NVivo-11® to aid axial coding and higher-level abstraction of data into
18 five initial themes: individual experience of autism; networks of support;
19 barriers to success; pathways to success; and societal-cultural factors (see Table
20 1);
21
22 4. Integration of data into theoretical ecosystem framework, to enhance the
23 explanatory power of the data (see Figure 1).
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35 Table 1 here
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Findings

The following section outlines the five initial themes identified in the data: individual experience of autism; networks of support; barriers to success; pathways to success; and societal-cultural factors. Our analysis, however, takes these further through an analytic framework which better elucidates how they relate to one another in four distinct ways (see Figure 1). In the first instance, the five themes are understood to fit within three nested superordinate themes of people, practices and perspectives/policies, thus indicating the contingent nature of the employment ecosystem for graduates with autism. Secondly, within and as part of these nested themes are six graduated layers including the graduate with autism, parents, institutional support, supported employment providers, employers, and socio-cultural. These represent aspects of the employment ecosystem which are proximal or distal relative to how the individual experiences them and indicative of the impact that different people, practices and policies can have in generating pathways to success or barriers to employment. Thirdly, our data suggest a temporal dimension which accounts for past experiences. And finally, our themes and the categories within them are analysed according to the extent to which they mediate success in accessing competitive employment for graduates with autism.

Figure 1 here

People: The individual experience of autism

At the most proximal of the six ecosystem layers is the autistic graduate and their individual experience of autism. Participants across both phases reported heterogeneous experiences of autism in the context of employment, reflected here by statements such as, 'people who are autistic, they're not all the same'. The most

1
2
3 prominent category was embodied differences, which related how an autism diagnosis
4 can be viewed as a strength but also potentially problematic, depending on the
5 individual's perspective of the condition and the intensity to which the neurocognitive
6 differences present themselves. Participants reported differences related to 'sensory
7 sensitivities', such as challenges processing multiple people speaking at once or 'shiny
8 colours or stimulating surfaces'; and difficulties managing changes to routines and
9 unexpected outcomes. However, the most frequently discussed was social
10 communication differences. Both participants below experienced anxiety around formal
11 and informal social interactions and reported expending emotional energy on planning
12 all the possible outcomes.
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26 If I know something's coming up the day before I literally sit for hours to think
27 through every possible scenario that might possibly go wrong and think 'what's
28 appropriate to say, what might not be appropriate to say' ...when it comes to it
29 the preparation is usually just a waste of time but there are times when I've been
30 able to fall back on what I've thought. (Aut_adult_FocGrp2)
31
32

33 So, banter is really difficult... everyone is ripping the heck out of each other -
34 what if I say something and it's a little bit too much... what if I try and say
35 something and it's just awkward and everyone laughs at me?
36 (Aut_adult_FocGrp4)
37
38

39 Participants with autism specifically explained the need to mask these differences in a
40 neurotypical workplace and the emotional strain that is experienced as a result. One
41 individual referred to his attempts to 'pass as normal' as 'draining' where energy was
42 expended focussing on 'your body language, your behaviour, trying not to say anything
43 inappropriate' (Aut_adult_FocGrp1).
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50 The autism experience was, however, also described as potentially advantageous in the
51 workplace and there was some evidence of resistance to perceiving autism as a
52 disability. One public sector employee identified the usefulness of the neurodiversity
53 movement for articulating neurological difference as potentially 'an asset to companies'.
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3 There was also acknowledgement of the dangers of “over-selling” the strengths of
4
5 autism, particularly where it leads to viewing it as a commodity and gives the
6
7 impression that it is all skills without any need for adjustments.
8
9

10
11 you don't want to turn autistic people into a product to sell... you know the
12 conveyor belt 'oh here's the next set of people on the autism spectrum'
13 (Aut_adult_FocGrp4)

14
15 there needs to be a balance...it's terribly important to highlight those positives
16 but equally it's the balance of needs (Parent_FocGrp2)

17
18 From this first theme, the individual autistic experience is clearly important in leading to
19
20 better understanding into how this heterogenous identity plays a role in generating
21
22 opportunities but can also be perceived as a barrier in gaining competitive employment.
23
24 However, the extent to which it leads to these outcomes is frequently contingent on how
25
26 other people across other layers, including parents, university staff and employers
27
28 perceive autism.
29
30

31 32 ***People: Networks of support***

33
34 Participants identified networks of support, including parents and university support
35
36 staff which were important for securing competitive employment and operate in more
37
38 or less proximal-distal ways. Parents were recognised as being particularly significant,
39
40 especially in job searching, application preparation and pre- and post-interview support.
41
42 Whilst the majority of examples were positive, a smaller number of participants
43
44 reported how parental attitudes were, at times, also delegitimising.
45
46
47

48
49 My family suspects that the need for token disabled employees may make [my
50 diagnosis] enabling (Int_Grad5)

51
52 This insight is useful in acknowledging that, just as for the individual, the autism
53
54 diagnosis can be considered more or less of a strength in employment by family
55
56 members.
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3 Universities were also identified as sources of support whilst at this ecosystem layer
4
5 involvement was less involved compared to parents. Participants reported the
6
7 importance of good careers advice, internships, and specialist approaches or
8
9 programmes for success. One Careers Advisor related how one Science, Technology,
10
11 Engineering and Mathematics (STEM) area responded to the challenges of
12
13 discriminatory interview processes,
14

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16
17 I worked with Engineering, so there's a lot of undergraduates on the autism
18
19 spectrum and one of the initiatives was to bring the employers in to see the
20
21 students working as a form of assessment so they don't have to go through
22
23 interviews (Car_Adv_FocGrp4)

24
25 At [my] uni, I've been part of a 10 week employability workshop type of thing...
26
27 what I found most useful was the mock interviews; we met people from the
28
29 Council and they interviewed us like it was a proper job. (Int_Grad7)

30
31 Finally, supported employment advisors, who typically work in close partnership to place
32
33 and retain individuals with autism in competitive employment, were recognised as being
34
35 effective for offering individualised support, which attended to both practical and
36
37 psychological needs. This second theme provides insight into how people derived from
38
39 family, university staff, and supported employment agencies form part of networks of
40
41 supports which can create pathways to success. These were identified within the most
42
43 proximal layers, indicating how important the personal element is for catering for
44
45 individuals' needs.
46

47 ***Practices: Barriers to success***

48
49 The third and fourth themes relate more specifically to practices and highlight how
50
51 these can open up or close down opportunities for graduates with autism. On a
52
53 temporal level, accounts related various previous experiences of rejection,
54
55 discrimination and de-legitimisation of the autistic identity. Represented within more
56
57 distal ecosystem layers, these were viewed as a consequence of a lack of knowledge
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3 about autism generally and inclusive employment practice specifically. The rejection
4
5 was frequently experienced at the application stage of the process.
6
7

8
9 By the time I got my current job I'd fired off over 100 applications and had about
10 10 or 15 interviews out of those (Int_Grad4).
11

12 I'm trying to do about five or six applications per day but nothing so far, it's quite
13 frustrating (Int_Grad7)
14

15 Whilst a competitive labour market is a challenge for any university graduate, for this
16 group their autism diagnosis was recognised as an additional barrier. This was
17 especially acute in relation to disclosure, where they felt they would be, or had been,
18 discriminated against in the past and resulted in a reluctance to disclose at all.
19
20
21
22
23

24
25 I never told any of the people...I'm not having your perception of autism hold me
26 back (Int_Grad10)
27

28 I work with a lot of young people applying for jobs and their first reaction is 'I don't
29 really want to tell anyone' because they immediately think it will stop them getting a
30 job (Car_Adv_FocGrp2)
31

32 Persistent rejection led, for many, to a loss of trust in employers and a fear of disclosure
33 over time. These feelings were, however, also realised through some participants'
34 experiences of managers' and colleagues' delegitimising attitudes.
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37

38
39 I told [my manager] that I had Asperger's and I find it really hard if you don't give
40 me an ordered list but he didn't and he kept saying my memory was rubbish, making
41 fun of Asperger's turning it into a joke in the workplace... about a month into it he
42 brought my application form upstairs and went 'What's this? We know it's been
43 proven Asperger's doesn't exist... it's all in your head you're making it up!'
44 (Aut_adult_FocGrp2)
45

46 Misconceptions about autism, an individual's high levels of skill, or their capacity to
47 mask their different cognitive style can all contribute to the experience of autism being
48 delegitimised by an employer. This clearly creates challenges with respect to receiving
49 the kind of positive recognition required to access support and be successful in the
50 workplace. Fundamentally, however, negative and discriminatory instances such as
51 these, served to generate a loss of trust in employers more generally.
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3 Participants rationalised their negative experiences as a result of a 'lack of knowledge
4 about autism and inclusive practice'; here reflected as the largest category in the dataset
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6
7 (n=54).
8
9

10 Employers' lack of exposure, not appreciating that you've disclosed it, that maybe
11 they need to have a conversation with you about what that meant for you and what
12 accommodations they might need to make (Aut_adult_FocGrp1)
13

14 Even among parents of young people with autism, there was an acknowledgement that
15 employers' attitudes are often not pernicious, simply ill-informed:
16
17

18 I worked with an autistic colleague and until we had our son's diagnosis I was
19 ignorant (Parent_FocGrp3)
20

21 In relation to a lack of knowledge of inclusive practice, recruitment processes were
22 identified as particularly exclusionary. Participants related how standard job adverts
23 frequently state requirements that are not reflective of the role itself, which can limit
24 applicants with autism who may rule themselves out despite being capable of success.
25
26
27
28

29 The job adverts that say 'You have to be a team player with good communication
30 skills' - all that sort of thing may be off-putting for people with autism
31 (Supp_Empl_FocGrp2)
32
33

34 Interviews were also identified as barriers, especially where, as one adult with autism in
35 the focus groups put it, there is an 'over-reliance on chemistry - oh, I like this person'
36 but not on the skills they need to complete the role. Finally, psychometric testing was
37 also perceived as exclusionary, as such mechanisms 'are designed for neurotypical
38 people' and so fail to appreciate those who think differently.
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46 Our data suggest that working practices and the demands they put on individuals with
47 autism can also be exclusionary. Practical issues such as open plan offices, hot desking
48 and multi-site working were all considered challenging. The social demands that 'go on
49 under the radar' were, however, recognised as some of the least inclusive. Not only was
50 there an expectation to partake in social activities but 'if someone comes in to do their
51 job and goes home, that's often frowned upon' (Parent_FocGrp1). Such experiences,
52 particularly within the context of earlier reports of anxiety regarding interactions, can
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3 lead to high levels of stress and feeling that 'you're going to eventually crack'
4
5 (Aut_Adult_FocGrp4).
6

7
8 This third theme demonstrates the attitudinal and practical barriers that many students
9
10 and graduates with autism face as they look for employment. Whilst these practices
11
12 operate at the more distal end of the six ecosystem layers, they nonetheless have
13
14 significant implications for the potential this group have accessing and being successful
15
16 in competitive employment.
17

22 ***Practices: Pathways to success***

23
24 The penultimate theme also relates to the superordinate theme of practices but offers a
25
26 more positive interpretation of what might enable employment success for graduates
27
28 with autism. Among the categories identified was enhanced knowledge and
29
30 understanding, which reflects the core issue recognised in the previous theme.
31

32
33 Examples of inclusive employers were presented as what might be possible,
34

35
36 One employer who did come was GCHQ [British Intelligence Agency] they're very
37
38 proactive about recruiting people on the spectrum because they see the
39
40 advantages...I thought that was a very, very positive thing. (Car_Adv_FocGrp4)

41
42 You've got to have employers who basically want to put on their website, want to
43
44 shout out, these are the kind of adjustments that we make for disabled employees,
45
46 not just adjustments for the physically disabled but also for the neurodiverse...we've
47
48 got to get them to want to brag about it. (Pub_Sec_FocGrp1)

49
50 From these extracts, it is recognised that cultural shifts are most likely to come from
51
52 industry itself, where particular sectors understand and recruit for the potential 'autistic
53
54 advantage'. Where this is successful it is likely to lead to fuller exposure, greater
55
56 opportunities and better outcomes for all involved. It was acknowledged that
57
58 awareness-raising is not, on its own, enough. As one autistic graduate put it, "it might
59
60 only take 20 minutes to become aware of it, but you need longer to become accepting

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2
3 and supportive of it. Development of understanding must, therefore, come through
4
5 'multiple approaches' and should involve 'people on the autism spectrum themselves'.
6
7

8 Another factor for success that participants reported was disclosure. This is interesting
9
10 as it is perceived as both a risk factor and a potential benefit. Participants linked the
11
12 need for disclosure to masking,
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15 If you don't disclose then you're setting yourself up for covering the rest of the
16 time... it's stressful, it's fraught with possibilities that could go wrong
17 (Aut_adult_FocGrp1)
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19 For some, disclosure puts the control back in the hands of the autistic person,
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22 I'd quite like to be able to explain my difficulties in some way but also the
23 positive things... and to be able to express those, so that it's not just seen as a
24 negative thing (Aut_adult_FocGrp3)
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26 Disclosure was also a pathway to additional support and reasonable adjustments and so
27
28 as one participant put it, 'it's useful for them to know and it's useful for me for them to
29 know'. This view was also articulated by a supported employment professional, who
30
31 stated "if everybody knows then I can come in and we can job carve and help and
32 support that person to be the best employee they can be". Disclosure also creates access
33
34 to other reasonable adjustments including arranging Access to Work, a UK Government
35 grant scheme which supports people with disabilities in work with specialist equipment
36
37 and transport costs ; providing interview support where 'they can apply for funding for
38 a support worker to attend'; getting and interpreting feedback; negotiating reasonable
39
40 adjustments like different lighting and desk arrangements; and accessing a mentor to
41
42 help navigate the social aspects of the workplace.
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50 A final pathway to success was advocacy and being an ally, which is also part of the
51
52 networks of support in many ways and indicative of how people and practices intersect.
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54 Whilst it did not require formal disclosure it does rely on trusting relationships, insofar
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56 as it must be somebody who you feel like you can connect with and you could tell 'I'm
57
58 stressed right now' (Aut_adult_FocGrp4). Participants related different positive
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3 examples of this in the workplace, some more formal arrangements between line
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5 managers, allies, and autistic colleagues and others more informal as in this case,
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8 One of my other co-workers, she was really understanding, and one time when a
9 customer told [a] joke, she actually explained the joke to me by whispering it in my
10 ear and I was like 'thanks for that' and she was just like 'it's okay, my cousin's
11 autistic' (Int_Grad8)
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13 However, as well as allies, there was an emphasis on 'autistic employees [being] able to
14 speak for themselves rather than needing someone to speak for them all the time'. As
15 autistic employees develop strategies that make them successful and grow in confidence
16 this is likely to be the most appropriate arrangement.
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22 Themes 3 and 4 indicate the contingent nature of people and practices, where those at
23 relatively proximal or distal layers can open up or close down employment
24 opportunities for graduates with autism through their practices.
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30 ***Perspectives and policies: Socio-cultural factors***

31 The final theme falls into the widest and most distal of the three nested superordinate
32 themes, 'perspectives and policies'. This, again, relates to a lack of understanding but
33 'not just by employers but by peers, by employees, by society'. Participants linked this to
34 gaps in legislation, its understanding, or implementation. For example, the UK Autism
35 Act (2009) 'needs to be more public' and was considered to require 'another twenty to
36 twenty-five years to have any effect', particularly within the current socio-economic
37 context of underfunded health and welfare systems.
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48 Participants also noted the implications of industry-level differences for developments
49 in inclusive practice. Those multinational companies were considered more able to take
50 risks and had the Human Resources expertise and capabilities than smaller businesses
51 'where people haven't necessary encountered somebody with autism or Aspergers'.
52 Whilst small or medium enterprises can be 'the best ones' they have fewer resources
53 and, consequently, are more risk-averse.
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Discussion

The findings from these data offer important insights into the employment ecosystem for graduates with autism and the barriers and pathways to success. As Nicholas et al's (2018) study suggests, analyses which are more sensitive to the social, relational, and political factors, and which stretch beyond the individual jobseeker with autism, ought to be welcomed. Our framework (Figure 1) builds on previous bioecological systems specific to autism (Dent and Coles, 2012; Kuhn et al, 2018; Wright et al, 2019) but extends these to offer new insights specific to the employment experiences of graduates with autism.

Our findings indicate the involvement of multiple actors in accessing competitive employment, including the autistic graduate, parents, university, supported employment, employers, and legislators. Where our model diverges from others is by identifying these as six graduated ecosystem layers. At the most proximal is the graduate with autism, whose self-concept, experience and perspective of autism is fundamental in the employment ecosystem (Russell et al, 2019). Bronfenbrenner and Morris's (2006:810) bioecological model describes such 'active orientations' as 'force' and the most likely to influence a person's outcomes. This is certainly the case in these data where participants' embodied differences and varied perception of autism as dis/ability were central to their sense of success. At the most distal is the socio-cultural layer which has a less direct and obvious impact, as noted by participants with reference to legislation such as the UK Autism Act (2009). These categories might be considered mediators of access to work, engagement in job roles, work retainment, and advancement within employment contexts.

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3 Cutting across these six layers we theorise three nested and interlinking domains of
4 influence: people, practices, and perspectives/policies, reflecting as Kreiger (2008:227)
5 puts it, the 'intermingling of ecosystems... at every level, macro to micro, from societal to
6 inside the body'. Based on our findings, the model reflects the importance of the
7 heterogeneous experience of autism in relation to other connected actors, and in
8 particular family members (Harmuth et al 2018), who fulfilled various advocacy and
9 practical support roles (Mitchell and Beresford, 2014; Van Bourgondien et al 2014). We
10 posit that a relational dimension encompasses that of practices and relates more
11 specifically to what happens at home, at university, in the community through
12 supported employment, or in the workplace. Indeed, Ling (2010) stresses that
13 successful employment transition support requires collaborative relationships at every
14 level and across actors. Similar to Ward and Webster (2018), those practices recognised
15 as being most enabling for graduates with autism included specialist support, workplace
16 adjustments, and advocacy / being an ally. At the other end of the mediating spectrum,
17 participants reported discriminatory or exclusionary practices such as inaccessible
18 recruitment procedures and unreasonable social demands, which concurs with wider
19 literature (Hedley et al, 2018; Scott et al, 2018).

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41 The broadest domain, and which encapsulates the other two within it, is
42 perspectives/policies, which speaks to the cultural norms at national and global levels
43 that shape attitudes towards autism and employment opportunities. All of the
44 relationships, practices and outcomes are necessarily situated within these wider
45 discourses. Whilst they exist at the most distal level, they have powerful implications;
46 for example, the lack of societal understanding of autism precipitates discriminatory
47 practices, delegitimising attitudes and, as a result, the reticence to disclose (Mai, 2019;
48 Ohl et al, 2017). However, enhanced understanding at societal, practical and relational
49 levels is also key to the solution; where there is understanding this presents possibilities
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3 for disclosure and associated pathways to reasonable adjustments and supported
4 employment provision. The study by Scott et al (2017) in fact shows that employing an
5 individual with autism provides benefits to employers and their organisations without
6 incurring additional costs.
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14 The final dimension in our framework is temporality. This is typically unacknowledged
15 in other autism ecosystem analyses (Dent and Coles, 2012; Kuhn et al, 2018; Nicholas et
16 al, 2018; Wright et al, 2019). In these data the repeated encounters of rejection from job
17 roles and experiences of delegitimizing attitudes have an enduring and negative effect,
18 precipitating a loss of trust of employers and fear of disclosure. Other temporal
19 examples included participants' previous experiences of social masking and the
20 emotional toll this can take, as well as the ongoing involvement of parents as advocates
21 in the job process (Mitchell and Beresford, 2014). Such temporal analyses are close to
22 what Bronfenbrenner and Morris (2006) refer to in their later versions of the
23 bioecological model as 'proximal processes', constituted through progressively more
24 complex, reciprocal and regular interactions between individuals and their
25 environments over extended periods of time.
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43 **Conclusion**

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46 This qualitative study makes an original contribution to the field by uncovering the
47 complex and multi-dimensional ecosystem for graduates with autism making the
48 transition to competitive employment. It theorises how employers' lack of awareness
49 about autism and inclusive practice, discriminatory or delegitimising attitudes, and the
50 eroding effect of previous rejections over time, resulted in a loss of trust and barriers to
51 success. Conversely, understanding about autism, particularly when facilitated by
52 autistic people or by dedicated employment advisors, alongside adjustments to
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3 recruitment processes and the workplace environment, emerged as effective pathways
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5 in the employment ecosystem. Interestingly, our findings show that disclosure has the
6
7 potential to be both a barrier and pathway to success in its capacity to either precipitate
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9 early rejection or, depending on context, provide a platform to communicate the 'autism
10
11 advantage' to employers. As the international population of graduates with autism seek
12
13 to access the competitive labour market there must be greater appreciation, at both
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15 proximal and distal levels, of the heterogeneous experience of autism and how with,
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17 often simple adjustments and better understanding, their various skills and capabilities
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19 can be converted into long-term success in the workplace.
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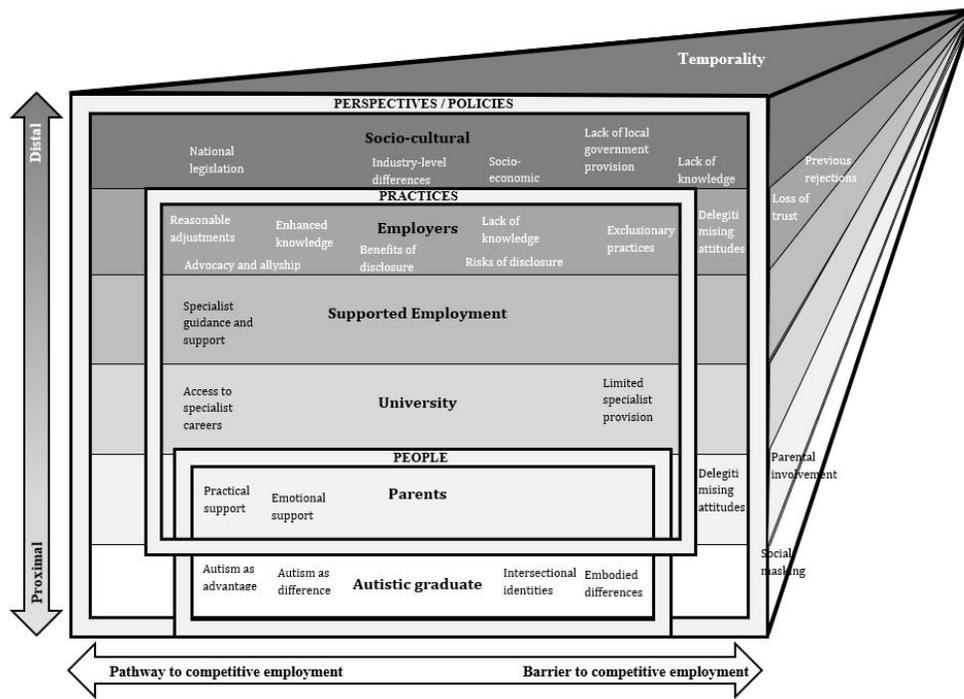
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Table of analyses

Themes	Categories
PEOPLE	
The individual experience of autism (67)	
	Autism advantage (16)
	Autism as difference not disability (9)
	Embodied differences (38)
	Intersectional barriers (4)
PEOPLE	
Networks of support (45)	
	Family support (15)
	Institutional support (20)
	Supported employment providers (10)
PRACTICES	
Barriers to success (138)	
	Experiences of rejection (19)
	Risks of disclosure (20)
	Delegitimising attitudes (5)
	Discriminatory practices (12)
	Loss of trust in employers (18)
	Lack of knowledge about autism and inclusive practice (54)
PRACTICES	
Pathways to success (64)	
	Enhanced knowledge and understanding (14)
	Benefits of disclosure (9)
	Recruitment adjustments (18)
	Workplace adjustments (24)
	Advocacy and allyship (8)
PERSPECTIVES & POLICIES	
Societal-cultural factors (49)	
	Lack of societal knowledge (17)
	Gaps in legislation (13)
	Gaps in local government provision (6)
	Industry level differences (10)
	Socio-economic factors (3)



Employment Ecosystem

256x183mm (96 x 96 DPI)