

Employment activities and experiences of adults with high-functioning autism and Asperger's disorder

Abstract

There is limited large-scale empirical research into the working lives of adults who have an autism spectrum disorder with no co-occurring intellectual disability. Drawing on data from a national survey, this report describes the employment activities and experiences of 130 adults with Asperger's Disorder (AD) and high functioning autism (HFA) in Australia. Outcome measures include current occupation; occupational skill level and alignment with educational attainment; type of job contract; hours of work; support received to find work; support received in the workplace; and positive and negative experiences of employment. The findings confirm and expand upon existing evidence that adults with AD and HFA, despite their capacity and willingness to work, face significant disadvantages in the labour market and a lack of understanding and support in employment settings.

Keywords

Autism · Asperger's Disorder · High functioning · Employment · Overeducation

Numerous research studies have found that adults with autism spectrum disorders (ASD) experience challenges in securing and sustaining competitive employment (Barnhill 2007). As a group, they are more likely to be unemployed (without a job), underemployed (in jobs that underutilise their knowledge, skills and experience) and 'malemployed' (in jobs for which they are expressly unsuited) than the population at large (Romoser 2000; Müller et al. 2003; Hurlbutt & Chalmers 2004; Robertson 2010; Seltzer et al. 2011). Related to this, they demonstrate a comparatively high level of job switching, resulting in fragmented work histories that may limit their potential for ongoing employment and career development, and in turn contribute to stress, depression, isolation, and financial insecurity (Goode, Rutter, & Howlin 1994; Müller et al. 2003).

The specific challenges faced by adults with ASD in the context of job seeking and employment are many and varied. They may include understanding complex job application materials; 'thinking on their feet' in an interview; acclimatising to new procedures and routines; remembering and following instructions; responding flexibly to unexpected situations; planning and juggling multiple tasks; communicating effectively with co-workers; interacting socially; and managing sensory sensitivities in the workplace (Beardon & Edmonds 2007; Hillier et al. 2007; Stuart-Hamilton et al. 2009; Robertson 2010).

Stankova and Trajkovski (2010) note that these generalised deficits mean some types of work are likely to be unsuitable for the majority of adults with ASD. For example, they may not cope well in jobs that require immediate and rapid processing of requests or demands, such as a cashier, a cook, a waiter or a receptionist. They are also more likely to struggle in busy or noisy environments, such as fast food restaurants and factories.

On the other hand, there are jobs in which adults with ASD may perform extremely well; notably those requiring visual thinking, systematic information processing or precise technical abilities (e.g. architect, librarian, computer programmer). Nevertheless, care must be taken not to stereotype the vocational interests and capabilities of this group, as studies have shown adults with ASD are in fact employed across a broad range of occupations, including those more counterintuitive to popular conceptions of the 'autistic mind', such as sales, creative arts, and the military (Müller et al. 2003; Stuart-Hamilton et al. 2009).

In addition to their specific job skills, there is a popular view, borne out to some extent by empirical data, that adults with ASD exhibit many exemplary characteristics as employees, such as honesty, efficiency, precision, consistency, low absenteeism, and a disinterest in 'office politics' (Müller et al. 2003; Hagner & Cooney 2005; Hillier et al. 2007).

Reports on the occupational activities of adults with ASD often describe individuals across a wide range of intellectual functioning, not specifically differentiating between those with and without an intellectual disability (ID), or are focused solely on those with ID. Data pertaining to employment for 'high functioning' individuals (without ID) is more sparse. However, such studies as have singled out adults with high functioning ASD and presented data specifically related to their employment experiences have tended to show poor outcomes for this group. These include low rates of independent employment; jobs that are not commensurate with the individual's ability levels; and difficulty maintaining jobs (Howlin, Mawhood, & Rutter 2000; Romoser 2000; Howlin et

al. 2004; Hurlbutt & Chalmers 2004; Cederlund et al. 2008; Stuart-Hamilton et al. 2009; Taylor & Seltzer 2011). In addition, it appears that many adults with high functioning ASD are not receiving the supports at work that they need in order to perform their jobs well (Beardon & Edmonds 2007).

Many of these studies and reports have been small-scale or anecdotal in nature. There is a dearth of large-scale empirical research into the working lives of adults with high functioning ASD. Thus, the aim of the current study was to provide a detailed overview of the occupational activities and experiences of a large sample of adults ($n=130$) who have an autism spectrum disorder with no co-occurring intellectual disability. It explores, for the reference group, the following factors: type of occupation; occupational skill level and overeducation (discussed further below); type of job contract; hours of work; past, present and future job-seeking support needs; support received in the workplace; and positive and negative experiences of employment.

The term 'overeducation' describes a situation in which a worker holds a level of formal education that exceeds the required level of education for the job in which they are employed. Economic studies have shown that overeducated workers typically earn less than those with equivalent qualifications employed in jobs that fully utilise their skills (Alpin et al. 1998; Voon and Miller 2005). They also exhibit higher levels of occupational and inter-organisational mobility, perhaps in part due to a sense of dissatisfaction and unfulfilled potential in jobs that are 'too easy' (Sicherman 1991; Alba-Ramirez 1993). Latterly, research has identified a link between overeducation and poor mental health, particularly depression (Bracke, Pattyn, & von dem Knesebeck 2013).

Recent estimates of the rate of overeducation within the Australian labour market have ranged from 12% (Dockery & Miller 2012) to 21% (Black 2013). However, it is likely that these trends are not uniform across demographic categories. Studies have suggested that disproportionate numbers of women, younger workers, part-time employees, individuals from ethnic minorities, and people with disabilities may be overeducated relative to the requirements of their job (Alpin et al. 1998; Jones et al 2011). Given these findings, it was considered instructive in the present analysis to make a special examination of whether overeducation is a prevailing issue for adults with high functioning ASD.

Note on comparative statistics

At points of this report, comparisons are drawn between aspects of the study findings and related data from other sources, particularly the Australian Bureau of Statistics (ABS). The aim of these comparisons is to highlight characteristics of the employed, high functioning ASD population that may broadly resemble, or differ from, the Australian workforce as a whole. It is cautioned that, in view of the complexities and nuances underlying the way in which terms are defined, data gathered, and statistics calculated across different research organisations and exercises, any such comparisons should be treated as indicative rather than exact or conclusive.

Method

Sample

The present analysis is based on a subsample of participants from a larger study conducted by the authors [citation removed for blinding purposes]. This original study, entitled [title], employed a survey methodology to profile the experiences, needs and aspirations of $n=313$ Australian adults with Asperger's Disorder (AD) and high functioning autism (HFA) in relation to their health, education, work, social and community activities, and daily living. The sample was self-selecting, with adults responding to recruitment notices issued through the [organisation name] website, as well as via [organisation name] service managers to their staff and clients, targeted mailouts to external service providers, contacts and networks in the wider autism community, and selected local, national and online social media outlets. Respondents were given the choice of completing the research survey either electronically or as a paper document.

Note on sample validity

The scale of the [title] study, together with the survey methodology employed, necessitated a reliance on participants self-reporting that they had an ASD. Whilst the authors had no direct means of verifying the accuracy of these self-reports, several measures were put in place to ensure the integrity of the sample as far as possible.

First, participants were asked to specify the type of ASD diagnosis they had received (or their most recent diagnosis if they had received more than one): namely, Autistic Disorder, Asperger's Disorder, or PDD-NOS.¹

Second, participants were given the option of stating that while they personally believed they had an ASD, they had never received a professional diagnosis. For the purposes of the present study, participants who gave this response were excluded from the analysis.

Third, participants who indicated that they had a professional diagnosis of ASD were asked to state the age at which they had received this diagnosis. Within the overall [study title] study population, 78% of participants were able to state their age of diagnosis; and within the subset of participants included in the present study (see below), this proportion increased to 84%.

Similarly, another in-principle limitation of the study was its reliance on participants' self-selection on the basis that they did not have an intellectual disability (ID). A guideline for determining the presence or absence of ID (an IQ of below or above 70, respectively) was provided in an explanatory note accompanying the research questionnaire, and potential participants were encouraged to contact a psychologist from the research team for further advice if they were unsure whether or not they had ID. Whilst this initial screening mechanism could only be successful in proportion to the self-awareness and cooperation of respondents, from this point on there were intrinsic features of the study methodology that would almost certainly have presented challenges for an individual with an intellectual disability seeking to participate. The research questionnaire was over 15 pages in length and would have required considerable concentration and engagement to complete; and the questions themselves,

¹ These categories correspond to the diagnostic sub-groupings for Pervasive Developmental Disorders in DSM-IV-TR, which was still in use at the time of the study. It was succeeded by DSM-5 in May 2013.

whilst designed to be as clear and concise as possible, were worded and constructed at a level appropriate for a highly literate adult.

Once the survey responses had been collated and analysed, there were several elements of the data that strongly implied the study sample should indeed be considered 'high functioning': in particular, the fact that 86% of participants had attained post-school educational or training qualifications.

Selection of study sample

The sample for the present analysis ($n=130$) includes all [title] participants who satisfied the following criteria: (1) had a paid job at the time of completing the survey; (2) were not in full-time education at the time of completing the survey; (3) reported that they had a professional diagnosis of ASD. From here on, the term 'participants' will refer to this subset of the [title] study population only.

The gender profile of the participant group was 68% male and 32% female. Mean age was 35.6 years ($SD = 12.4$), with a range from 18 to 65 years. Participants were distributed across all eight Australian states and territories, with the highest proportions living in New South Wales (42%), Victoria (22%) and Queensland (18%). The majority (82%) lived in urban areas. The group was predominantly (71%) Australian by birth, with a further 17% identifying as British or European. Almost all (97%) spoke English as their first language. Approximately one-quarter (23%) were married or living with a partner, while 39% lived with one or both of their parents.

The majority (85%) of participants stated that they had a diagnosis of Asperger's Disorder, with much smaller proportions reporting a diagnosis of Autistic Disorder (12%) or PDD-NOS (2%).² Approximately three-quarters (74%) of all participants reported that they had received their diagnosis at or after age 18, with the mean age of diagnosis being 29.9 years. These figures exclude those participants who indicated that they did not know, or could not remember, at what age they were diagnosed (15%).

The majority (86%) of participants held a post-school qualification; that is, any qualification awarded outside formal primary and secondary education, including TAFE (Technical and Further Education) Certificates and Diplomas, and university degrees at undergraduate and postgraduate level. The educational profile of the study sample, as it relates to occupational skill level, is examined in more detail in the Results section.

There was a high prevalence of self-reported mental health concerns within the participant group, with over three-quarters (76%) stating that they experienced frequent worry or stress, and over two-thirds (68%) reporting a current clinical mental health condition, such as anxiety or depression.

Measures

The following measures relating to employment were obtained or derived from participants.

Type of occupation

² Here and elsewhere, percentage breakdowns may not sum to 100 due to rounding.

The survey asked participants to record their job title, the name of their employing organisation, and a brief description of their main tasks or responsibilities at work. This information was used to assign each participant to an occupational grouping according to the Australian and New Zealand Standard Classification of Occupations (ANZSCO) system. ANZSCO is a skill-based typology used to categorise all occupations and jobs in the Australian and New Zealand labour markets (Trewin & Pink 2006). Occupations are organised into progressively larger groups on the basis of their similarities with regard to skill level and skill specialisation.

At the broadest level, ANZSCO consists of eight major occupational groups. Major groups are broken down into sub-major, minor, and unit groups, and eventually into highly specified 'occupations'. For the purposes of this study, participants were classified at the 'unit group' level with respect to their current job. An example of this four-step breakdown, in this case for the occupational unit group 'recruitment consultant', is shown below.

<i>Major group</i>	→	<i>Sub-major group</i>	→	<i>Minor group</i>	→	<i>Unit group</i>
Professionals		Human resource and training professionals		Human resource professionals		Recruitment consultant

Occupational skill level

Every occupational unit group listed within ANZSCO is aligned with a 'skill level'. Skill levels are defined and differentiated primarily by the amount of formal education and training required for competent performance of an occupation. There are five skill levels in the ANZSCO system, each commensurate with a specified level (or range) of educational qualification as set out in the Australian Qualifications Framework (AQF) (Figure 1).

[Insert Figure 1 around here]

An occupational skill level was thus recorded for each participant on the basis of their previously determined occupational unit group.

Hours of work

Participants were asked to select one of three options to indicate the number (range) of hours they normally worked per week: namely 1-15, 16-30, or 31 and over. These working hour divisions were chosen for their relevance to the Disability Support Pension (DSP). As of 1 July 2012, DSP recipients became entitled to work up to 30 hours per week without their payment being suspended or cancelled, subject to income test. Prior to this (from 11 May 2005) DSP recipients could only work up to 15 hours a week before forfeiting their payment. The purpose of this revision was to give people with disability the security to test their capacity to re-enter the workforce or work more hours, without losing qualification for the disability pension.

Type of job contract

Participants were asked to indicate, from a list of options, the type of job contract they were working under at the time of the survey: namely permanent, fixed-term, casual, apprenticeship, internship, or self-employed.

Past, present and future job-seeking support

Participants were asked to respond 'Yes' or 'No' to the question: "*Did you receive any assistance or support to get your current job?*" Those who responded 'Yes' were asked to indicate from a list of agencies which, if any, had provided them with support. Agencies named in the list included Centrelink, Disability Employment Services (DES) and the National Disability Coordination Officer (NDCO) program.

As part of a broader survey question relating to support needs for independence and everyday living, participants were asked to indicate whether they felt they required any support with "*finding a job*". The response options for this question were: (1) 'I am already getting enough support with this'; (2) 'I need more support with this at the moment'; (3) 'I think I will need more support with this in the future'; (4) 'I don't need any support with this'.

Support received in the workplace

Participants were asked to respond 'Yes' or 'No' to the question: "*Are you receiving any support at work related to your autism spectrum disorder?*" Those who responded 'Yes' were asked to provide brief details about the kind of support they were receiving.

In a separate survey item, participants were asked to respond 'Yes' or 'No' to the question: "*Would you like to have more support at work?*" Participants could answer 'Yes' to this question even if they had previously stated that they were currently receiving support. Those who responded 'Yes' were asked to provide brief details about the kind of support they would like to receive.

Positive and negative experiences of employment

Participants were asked to provide a brief written description of the "*three best things*" and "*three worst things*" about their work and employment experiences to date. A coding framework was subsequently devised to group the responses into thematic categories. The framework was drafted by one of the authors and reviewed by colleagues to ensure agreement on the conceptual grouping of responses. The data coding process was undertaken by individual members of the research team, following which selected portions of coding were checked and verified by a colleague. Any instances of disputed codes were discussed verbally until agreement was reached.

Results

Type of occupation

All eight of the ANZSCO major occupational groups were represented in the study sample (Figure 2). The highest proportions of participants were found in the groups Clerical and Administrative Workers, Labourers, and Professionals, which between them accounted for over two-thirds (68%) of the adults in the study.

[Insert Figure 2 about here]

Participants were employed in a wide range of specific occupations within these high-level groupings. Whilst there was a notable trend towards scientific, technical, and information-based jobs within the study sample (e.g. ICT technicians, business analysts, and administrators), there were also many professions that did not conform to these more 'stereotypical' categories associated with adults with ASD, including teaching, complementary medicine, hospitality and catering, retail, and gardening.

Qualifications, occupational skill level and overeducation

Figure 3 shows the distribution of participants by highest educational qualification to date.

[Insert Figure 3 about here]

Figure 4, in the column headed 'All', shows the distribution of participants across occupational skill levels in respect of their current employment. The majority of participants were distributed between jobs at skill levels 1, 4 and 5, with smaller numbers working in jobs aligned with skill levels 2 and 3.

The subsequent columns in Figure 4 break down participants into three groups according to the match (or mismatch) between their occupational skill level and their highest qualification level. Participants were classed as being 'at parity' if the skill level equivalent to their highest educational qualification matched the skill level of their current job as specified by ANZSCO. They were classed as 'undereducated' if their highest qualification fell below the skill level of their current job, and as 'overeducated' if it exceeded it.

In total, 26% of the study participants were found to be at parity relative to the skill requirements of their jobs, while 28% were working in jobs whose skill requirements exceeded those of their formal qualifications (most likely indicating that they had gained additional skills through experience and/or on-the-job training). The remaining 46% of participants were classed as overeducated.

[Insert Figure 4 about here]

Job contract and hours of work

Figure 5 shows the distribution of participants across types of job contract and range of hours normally worked per week.

[Insert Figure 5 about here]

A comparison of these data with national employment figures suggests, in the first place, that adults with AD and HFA are overrepresented in casual positions of employment. As indicated in Figure 6, 32% of study participants were working on a casual basis at the time of the survey; in contrast, 21% of the Australian labour force as a whole is made up of casual workers (ABS 2012b). The rate of casual employment within the study sample increases to 35% when the self-employed group is excluded (as it is in the ABS calculation). Conversely, the proportion of permanent and fixed-term employees in the study population (61% when the self-employed group is excluded) is notably lower than the corresponding national figure of 79% (ABS 2012b).

Within the study sample, casual employment was strongly associated with lower skilled work: 83% of individuals working on casual contracts were in jobs equating to ANZSCO skill level 4 or 5.

In addition, it appears that adults with AD and HFA tend to work reduced hours relative to the population as a whole. Figure 6 indicates that 29% of study participants were working 15 hours or less per week at the time of completing the survey, while approximately half (51%) were working 31 hours or more. In contrast, the most recent national data showed that just 11% of the overall Australian workforce was working 15 hours or less per week, with 69% working 30 hours or more (ABS 2012c).

Past, present and future job-seeking support

Fewer than half (41%) of participants indicated that they had received any kind of assistance or support to get their current job. Within this group, 32% of individuals had been supported by Disability Employment Services and 19% by Centrelink. In addition, 30% reported having received informal support from their family or friends.³

Over half (54%) of participants indicated a need for some level of support to help them find a (new) job, either presently or in the future. There was no significant relationship between the skill level of an individual's current job and their expression of a need for job seeking support.

Of this group, 37% stated that they were already receiving an adequate level of support to find a (new) job.

Support received in the workplace

Almost three quarters (72%) of participants stated that they were not currently receiving any specific support at work for difficulties associated with their ASD. Of the subset of respondents who *were* receiving support and who provided further information about this ($n=29$), only four referred to assistance from external agencies. Other comments generally related to specific accommodations and adjustments made within the workplace, including modifications to job content and working conditions (e.g. offering flexible hours, arranging special lighting, permitting exemption from customer-facing tasks) and tailored supervision strategies (e.g. providing written instructions, 'checking in' regularly, showing leniency when the individual is having a 'bad day').

Approximately two-thirds (66%) of participants indicated that they would like to receive more support at work related to their ASD. Those who elaborated on this answer with written comments tended to convey a strong desire for greater recognition, understanding and respect of their needs within the workplace by others. A further subset within this group consistently noted a need for more effective support in developing their social and communication skills, as well as the desire to access workplace counselling.

Positive and negative experiences of employment

³ Percentages are not mutually exclusive due to instances of multiple sources of support being accessed.

Participants recorded a total of 347 positive comments ('best things') and 309 negative comments ('worst things') relating to their past and present employment experiences. Following the review and coding process described in the Method section, the positive comments were categorised into four key themes (Figure 6) and the negative comments into six key themes (Figure 7). The Figures indicate, for each theme, the proportion of participants who recorded at least one comment classified to that theme.⁴

[Insert Figure 6 about here]

[Insert Figure 7 about here]

Three of the themes identified in these analyses appeared to bear some relationship to participants' occupational skill level. First, the higher the designated skill level of an individual's job, the more likely they were to describe work as a means of self-actualisation, and to identify this as one of the 'three best things' about their employment experiences to date. 84% of participants working at skill level 1 recorded a comment coded to this theme, in contrast to 64% of those at skill level 4 and 53% of those at skill level 5 ($\chi^2=8.372$, $p<0.05$).⁵

Second, individuals working in higher skilled jobs were more likely than those in lower skilled jobs to identify a health or well-being issue as one of the 'three worst things' about their employment experiences. Approximately half (49%) of participants working at skill level 1 recorded a comment coded to this theme, in contrast to 36% of those at skill level 4 and 18% of those at skill level 5 ($\chi^2=7.691$, $p<0.05$).

Third, the *lower* the skill level of a participant's current job, the more likely they were to identify social and collegial factors as one of the 'three best things' about their employment experiences. Less than one-third (30%) of participants working at skill level 1 recorded a comment coded to this theme, in contrast to half (50%) of those at skill level 4 and 58% of those at skill level 5 ($\chi^2=6.340$, $p<0.05$).

Discussion

This study contributes to our knowledge about the employment activities and experiences of adults who have an autism spectrum disorder with no co-occurring intellectual disability. It addresses the current shortage of literature in this area by presenting a range of both objective and subjective data derived from a national sample of working adults with Asperger's Disorder (AD) and high functioning autism (HFA) in Australia.

It is noted at the outset that the study sample ($n=130$) constituted just over half (54%) of the original research population from which it was drawn: namely, adults with AD and HFA, participating in the [title removed for blinding purposes] survey project, who had left full-time education. The remainder of this group ($n=119$) had no paid job at the time of completing the survey. Whilst it was the express intention of this study to focus

⁴ As participants could record up to three comments in both the 'positive' and 'negative' streams, the percentages shown in Figures 6 and 7 are not mutually exclusive and do not sum to 100.

⁵ Participants working at skill levels 2 and 3 were excluded from this and the following analysis due to small numbers.

on adults *in* employment, secondarily it has emphasised – on a large scale, and in support of previous research – that unemployment is a significant issue for high functioning adults on the autism spectrum. Ultimately, it seems likely that unsatisfactory employment experiences, such as those explored in the following discussion, are inextricably linked to the risk of losing or leaving jobs.

As a starting point, our findings highlight the comparatively high educational attainments of the study population. The proportion of participants holding a post-school qualification (86%) is substantially higher than the corresponding figure of 57% for the Australian population as a whole (ABS 2012a). Objectively speaking, the educational credentials of adults with AD and HFA should place them in a favourable position in the labour market. It is well established that, in the general population, higher levels of education are linked to increased earnings across the lifespan, a lower probability of unemployment, greater access to on-the-job training, and higher job satisfaction (Booth 1991).

In reality, this study only adds weight to existing evidence of underemployment and malemployment for adults with autism, and specifically for those without an intellectual disability. In particular, it strongly highlights the issue of ‘overeducation’ as a concern for this group. Close to half (45%) of the adults surveyed in this study were working in jobs for which they were, according to the ANZSCO skill typology, overqualified. This rate of overeducation is more than double that estimated by Black (2013) for the Australian workforce as a whole (21%), and clearly places the reference group amongst those subsections of the labour market already noted to be at greater risk of working in jobs that are not commensurate with their educational attainments.

One way in which this point might be illustrated with reference to the study population is in the relatively small number of individuals working in managerial positions: $n=8$, or 6% of the total participant group. In contrast, 13% of the overall Australian workforce is made up of managers (ABS 2012a). Despite the fact that adults with AD and HFA are intellectually capable and educationally well qualified relative to the general population, at present they would appear to be underrepresented in senior organisational roles.

Part of the reason for this situation may be that progressive job opportunities and career advancement are generally predicated on previous vocational success. If, as has been established in earlier studies, adults with AD and HFA tend to evolve uneven job histories, including periods of unemployment and underemployment, this may lead to a vicious cycle of them being placed repeatedly into entry-level jobs despite holding impressive records of educational attainment (Müller et al. 2003).

In addition, it seems probable that there are aspects of management roles themselves that may daunt and deter adults who have an ASD, as the following quotes illustrate.

“[I] don't know where to go or what to do... [I'm] frustrated by low pay even though I have good qualifications. I couldn't face the thought of management work as you have to deal with people.”

“I want to keep doing what I'm doing. I don't want to move up into management, and I don't want to travel overseas, and I don't want to have much to do with the clients. I find those things stressful.”

Furthermore, this study has reinforced the many specific personal and professional obstacles to successful employment faced by adults with AD and HFA. The 'three worst things' exercise on the survey highlighted in particular the difficulties experienced by the study population in the areas of social and collegial relationships and health and well-being at work. It is the view of many within this group that their workplaces are failing to provide accommodations and adjustments appropriate to these and other needs.

Together, these predicaments may go some way to explaining the overrepresentation of adults with AD and HFA in part-time and casual positions of employment. Whilst part-time work can (at least for some) be as much a lifestyle choice as a coping strategy, casual work may entail serious disadvantages for an intellectually capable adult with ASD. In the first place, it is often comparatively low-skilled and low-paid, with limited opportunities for training and career development. Furthermore, a high proportion of casual jobs are found in primarily 'people-facing' industries, such as retail and hospitality (ABS 2009), which may create particular anxiety and discomfort for adults with AD and HFA.

Nevertheless, this study has emphasised – specifically through the 'three best things' analysis – the great personal importance of work to many individuals with AD and HFA. It is clear that within this population, having a job is not simply a means to an end, at least in the monetary sense: comparatively speaking, the issue of earnings did not feature strongly in participants' reflections on what made for either a satisfying or dissatisfying employment experience. Rather, it would appear that adults with AD and HFA (like many other people) view work primarily as an opportunity to apply their knowledge, skills and interests in a way that is both self-fulfilling and has intrinsic value.

From an advocacy perspective in particular, two sub-themes emerging from this element of the 'three best things' analysis are worth highlighting. One is the sense of adults with AD and HFA seizing, or at least appreciating, the opportunities afforded in the context of their work to confront some of the specific difficulties associated with their ASD. The following quotes illustrate this idea.

"[My job] challenges my boundaries and aversion to chaos and personal discomfort."

"Work in security made me deal with people all the time, I learned a great deal."

"I can choose professional learning that improves my understanding of how humans think and behave."

Another is the notion of work providing an outlet for individuals with AD and HFA to truly 'come into their own', flourishing in their specific areas of interest and ability, to the benefit both of themselves and those with and for whom they work.

"Being able to express myself through my strengths."

"I feel like I am achieving something and am stimulated so I am not depressed."

"Working with adults on the spectrum is terrific. For once I feel valued and am helping to make a difference."

It is noteworthy that individuals working in higher skilled jobs more readily identified 'self-actualisation', in its various facets, as one of the most positive aspects of their employment experiences to date. This finding would appear to strengthen the arguments surrounding the detrimental impacts of underemployment and malemployment for adults with AD and HFA, as the following quotes exemplify:

"[My] work is repetitive and boring. It's not really what I want to do for the rest of my working life." [Female qualified to skill level 2, working at skill level 4]

"I'm not getting to use my degree/neuroscience knowledge. I'm not getting paid what I should for my expertise. [I dislike] having people assume I'm a secretary and not know about my scientific mind." [Female qualified to skill level 1, working at skill level 4]

"Most of what I've done doesn't challenge me mentally at all." [Male qualified to skill level 2, working at skill level 4]

Across the body of 'three worst thing' comments recorded by participants about their employment experiences, the words *boring* and *boredom* appeared 31 separate times.

Finally, as in previous research, this study draws attention to the diversity of occupations pursued by adults with AD and HFA, and serves as a further caution against stereotyping the abilities and interests of this group. The following quotes provide just a small snapshot of some of the variety of work and career choices for members of the study population. It is evident that the jobs described here may nonetheless contain 'ASD-friendly' components, such as one-on-one client interaction and operating under prescribed routines.

"I think massage is the perfect career - I get to interact one on one with clients, but they lead the conversation and I don't have to make eye contact."

"[I enjoyed] the daily routines of the Royal Australian Navy and the ceremonial parades I did during my six years of service."

"Enjoyed initiating and facilitating [a support] group after failure of IVF."

"[I'm] now hoping to work as a personal trainer. I would like to open an outdoor group fitness business or do fitness with either older people or children."

Notes

This study was approved by the [name of organisation removed for blinding purposes] Research Approvals Committee.

The authors declare that they have no conflict of interest.

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Figure Captions

Figure 1. ANZSCO classification of occupational skill level

Figure 2. Occupation by ANZSCO major group

Figure 3. Highest qualification

Figure 4. Occupational skill level, overeducation and undereducation

Figure 5. Type of job contract and normal weekly hours

Figure 6. Positive experiences of employment

Figure 7. Negative experiences of employment

Figure 1 top

Occupational skill level	Equivalent AQF qualification level
1	Bachelor degree or higher
2	TAFE Diploma or Advanced Diploma
3	TAFE Certificate III-IV
4	TAFE Certificate II-III or HSC
5	TAFE Certificate I or School Certificate

Figure 2 top

Occupation major group	<i>n</i>	%
Clerical and Administrative Workers	29	22.8
Labourers	29	22.8
Professionals	28	22.0
Technicians and Trades Workers	16	12.6
Community and Personal Services Workers	12	9.4
Managers	7	5.5
Sales Workers	3	2.4
Machinery Operators and Drivers	3	2.4
Total	127	100

Missing data: $n=3$

Figure 3 top

AQF qualification level	ANZSCO skill level equivalent	<i>n</i>	%
Bachelor degree or higher	1	24	19.4
TAFE Diploma or Advanced Diploma	2	36	29.0
TAFE Certificate III-IV	3	14	11.3
TAFE Certificate II-III or HSC	4	38	30.6
TAFE Certificate I or School Certificate	5	12	9.7
Total		124	100

Missing data: *n*=6

Figure 4 top

Occupational skill level (current job)		All	Parity	Undereducated	Overeducated	Row total
1	<i>n</i>	36	10	26	-	36
	%	30.8	27.8	72.2	-	100
2*	<i>n</i>	10	5	4	1	10
	%	8.5	50.0	40.0	10.0	100
3*	<i>n</i>	7	-	1	6	7
	%	6	-	14.3	85.7	100
4	<i>n</i>	31	7	2	22	31
	%	26.5	22.6	6.5	71.0	100
5	<i>n</i>	33	8	-	25	33
	%	28.2	24.2	-	75.8	100
Column total	<i>n</i>	117	30	33	54	117
	%	100	25.6	28.2	46.2	100

Missing data: *n*=13

*Small numbers should be noted and row percentages regarded with due caution.

Figure 5 top

Type of job contract	<i>n</i>	%
Permanent	65	51.2
Fixed-term	8	6.3
Casual	40	31.5
Apprenticeship	3	2.4
Self-employed	11	8.7
Total	127	100.0
Normal weekly hours	<i>n</i>	%
1-15	37	28.7
16-30	26	20.2
31+	66	51.2
Total	130	100.0

Missing data: *n*=3 (contract); *n*=1 (hours)

Figure 6 top

Theme	Sub-themes	%
Self-actualisation	opportunity to apply and develop knowledge, skills and interests freedom to be independent, autonomous or creative sense of being accepted and valued making a difference in the lives of others or in society	65
Social and collegial factors	positive relationships with colleagues enjoyable interactions with clients and customers	45
Job roles and work content	enjoyment of particular job roles and work tasks favourable working conditions (e.g. physical environment, location, hours of work)	36
Pay and benefits	earning money benefits and 'perks' (e.g. leave allowance, company car, travel opportunities)	28

Figure 7 top

Theme	Sub-themes	%
Job roles and work content	dissatisfaction with job roles and work tasks (e.g. boring, repetitive or unfulfilling work) poor working conditions (e.g. physical environment, location, hours of work)	49
Working relationships	misunderstanding, criticism, ill-treatment or exclusion by others difficulties in communicating with or relating to others	46
Health and well-being issues	ASD-specific issues (e.g. sensory sensitivities, anxiety) other physical and mental health concerns	35
Performance and development issues	lack of adequate instruction, training or support perceived unfair discipline or dismissal	21
Organisational factors	unfavourable organisational systems and practices (e.g. bureaucracy, favouritism) negative workplace culture (e.g. high turnover, excessive 'office politics')	14
Pay and conditions	unsatisfactory pay poor employment conditions (e.g. not enough leave)	5