RESEARCH ARTICLE

Special Interests and Subjective Wellbeing in Autistic Adults

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Special interests form part of the core features of autism. However, to date there has been limited research focusing on the role of special interests in the lives of autistic adults. This study surveyed autistic adults on their special interest topics, intensity, and motivation. It also assessed the relationship between special interests and a range of quality of life measures including subjective wellbeing and domain specific life satisfaction. About two thirds of the sample reported having a special interest, with relatively more males reporting a special interest than females. Special interest topics included computers, autism, music, nature and gardening. Most autistic adults engaged in more than one special interest, highlighting that these interests may not be as narrow as previously described. There were no differences in subjective wellbeing between autistic adults with and without special interests. However, for autistic adults who did have special interests, motivation for engaging in special interests was associated with increased subjective wellbeing. This indicates that motivation may play an important role in our understanding of special interests in autism. Special interests had a positive impact on autistic adults and were associated with higher subjective wellbeing and satisfaction across specific life domains including social contact and leisure. However, a very high intensity of engagement with special interests was negatively related to wellbeing. Combined, these findings have important implications for the role of special interests in the lives of autistic adults. ***Autism Res*** *2018, 0: 000–000.* © 2018 International Society for Autism Research, Wiley Periodicals, Inc.

Lay Summary: Autistic adults reported having special interests in a range of topics, including computers, music, autism, nature and gardening. Special interests were associated with a number of positive outcomes for autistic adults. They were also related to subjective wellbeing and satisfaction across specific life domains including social contact and leisure. Very high intensity of engagement with special interests was related to lower levels of wellbeing. This highlights the important role that special interests play in the lives of autistic adults.

Keywords: autism spectrum disorder; adults; special interests; motivation; wellbeing; quality of life

Introduction

Autism is characterized by social communication and interaction difficulties and the presence of restricted, repetitive patterns of behavior or special interests [American Psychiatric Association, 2013]. There is a large body of literature evaluating social interaction and communication challenges for autistic individuals. However, there is limited research evaluating repetitive patterns of behavior and special interests in autistic people. Furthermore, the association between special interests and day-to-day functioning and wellbeing is unclear.

It has been reported that between 75 and 95% of autistic people have special interests in particular topic areas [Klin, Danovitch, Merz, & Volkmar, 2007; Turner-Brown, Lam, Holtzclaw, Dichter, & Bodfish , 2011]. Previous research assessing special interests in autism has shown varied results. For example, some authors have indicated that special interests are associated with difficulties in social interaction [Klin et al., 2007] and functional impairment [Turner-Brown et al., 2011] and have concluded that special interests have a negative impact on functioning. However, others argue that special interests have a more positive impact and are associated with areas of strength and ability [Winter-Messiers, 2007; Mercier, Mottron, Belleville, 2000]. There is also evidence to suggest that incorporating special interests into support programs for autistic children can foster an increase in socialization and interaction [Boyd, Conroy, Mancil, Nakao, & Alter, 2007].

Most research evaluating special interests has focused on parent reports of autistic children and adolescents. However, clinical observations and self-reported accounts suggest that special interests are also of significant importance to autistic adults [Attwood, 2007]. First person accounts and smaller qualitative studies highlight that special interests are associated with positive outcomes for autistic adults. For example, a recent qualitative study asked young autistic adults to identify

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their strengths and coping methods [Teti, Cheak-Zamora, Lolli, & Maurer-Batjer, 2016]. Participants reported that their special interests assisted with positive emotions and coping strategies, and included skills or activities that induced a sense of pride [Teti et al., 2016]. Other research indicates that special interests can be associated with increased social interaction, enthusiasm, and motivation [Mercier et al., 2000; Winter-Messiers, 2007].

It is vital for our understanding of autism to gain better knowledge about the origins of special interests, how these interests develop and the significance and role of special interests for autistic individuals. According to self-determination theory, motivation plays an important role in our understanding of behavior [Deci and Ryan, 1985, 2002]. Behavior can be intrinsically motivated, extrinsically motivated or amotivated [Deci and Ryan, 1985, 2002]. Intrinsic motivation is driven predominantly by the satisfaction and pleasure that occurs through the enjoyment of engaging in an activity [Deci, 1975]. In contrast, extrinsic motivation is driven by external factors, for example, praise from others [Ryan, Connell, & Grolnick, 1990]. Amotivation describes behavior that is not motivated by either internal or external factors [Pelletier et al., 1995].

Motivation potentially plays a significant role in the development and pursuit of special interests in autistic individuals. Understanding this motivation may provide some clues as to the mechanism involved in the development of special interests. It may also account for the high prevalence of special interests within autistic populations, as well as assist in our understanding of the role special interests play in the lives of autistic individuals. A previous study conducted in the UK described the development of the Special Interests Motivation Scale [SIMS; Grove, Roth, & Hoekstra, 2016b], a 20-item measure evaluating the motivation for engaging in special interests in autistic adults. The SIMS evaluates five motivational factors including intrinsic factors, 'intrinsic interest and knowledge' and 'engagement and flow' (e.g., "because it is satisfying to learn new things about my special interest") and extrinsic motivation factors 'personal life values and goals', 'prestige', and 'achievement' [e.g., "because it enables me to be well regarded by people I know"; full scale presented in Grove et al., 2016b]. This research showed that autistic individuals were more motivated by internal or intrinsic motivation factors including interest and knowledge and engagement and flow than external factors such as prestige and achievement [Grove et al., 2016b]. It also found that autistic adults reported more motivation to engage with their special interest compared with the control sample.

While Grove et al.'s [2016b] findings emphasized the highly motivating nature of special interests for autistic adults, this paper did not explore the impact of special interests on quality of life and wellbeing. Quality of life in autism has previously been defined by normative measures such as living independently, finding employment or developing friendships [Bishop-Fitzpatrick et al., 2016]. However, it is important to move beyond these normative outcomes to understand how other aspects of quality of life may play a role in the lives of autistic adults, including wellbeing and satisfaction with life. Wellbeing has been defined in multiple ways over time, encompassing happiness, positive affect, satisfaction with life and psychological functioning [Dodge et al., 2012]. Subjective wellbeing has been associated with success across a number of areas including social relationships, health, and employment [Lyubomirsky et al., 2005]. The use of more subjective measures of wellbeing provide an opportunity for moving beyond a definition of health that is not just the absence of disease [Waters et al., 2009]. The autism field has traditionally focused on the wellbeing of parents or caregivers rather than self-reported measures of autistic people themselves [Stokes et al., 2017]. However, recent research suggests that many autistic adults report good quality of life when subjective (satisfaction with life) and more specific domains (adequate living conductions, good social relationships) of wellbeing and quality of life are evaluated [Bishop-Fitzpatrick et al., 2016; Bishop-Fitzpatrick et al., 2017].

This paper aims to address this gap, by exploring the type and range of special interests reported by a large sample of autistic adults from the Netherlands. It also aims to assess the association between special interests, motivation for special interests, and a range of features of quality of life, including subjective wellbeing and domain specific life satisfaction. This paper also examines any gender differences in the content or motivation for special interests in autistic adults.

Methods

Participants

The sample was recruited through the Netherlands Autism Register (NAR), a longitudinal online database of autistic individuals. The NAR contains 687 adults with a diagnosis of DSM-IV or DSM-5 autism spectrum disorder (338 females, 349 males). The sample has a mean age of 42.4 (SD = 15.1). The male sample was significantly older (Mean = 45.3, SD = 15.0) than the female sample (Mean = 40.2, SD = 12.4, $P < 0.01$). Age of diagnosis was 35.9 years (SD = 18.0) for males and 32.5 years for females ($P < 0.05$). Males had on average received their clinical diagnosis longer ago than females (time since diagnosis was 9.2 years (SD = 6.9) for males and 7.2 years (SD = 5.4) for females; $P < 0.01$). The

sample included individuals from a range of socioeconomic backgrounds, with annual incomes ranging from < €10,000 to >€70,000. 35% of the sample was currently in paid employment; 57% participated in a structured activity; 7% reported no structured activity or were unemployed. 31% of the sample had completed higher professional education, 24% vocational education and 18% a university degree.

Measures

Special interests. Participants were asked whether they have one or more special interests, and, if present, to list their topics of special interest (respondents could choose as many special interest topics as they wished). Special interests were defined in the following way; "people on the autism spectrum often have extraordinary intense or specific interests, this is what we refer to as a special interest in a topic". Participants were also asked the number of days per week and hours per day spent engaged in their special interest(s). They were also asked to rate the extent to which their special interests have a positive impact on their life on a scale rating from 1 'not at all' to 10 'completely'. Participants were also asked to evaluate how much their special interest impact on their daily functioning on the same scale.

Subjective wellbeing. Three measures of subjective wellbeing were included in the study. The Satisfaction with Life Scale [Diener et al., 1985] consists of five items assessing satisfaction with life, scored on a 7-point Likert scale ranging from 1 'strongly disagree' to 7 'strongly agree'. The Subjective Happiness Scale [Lyubomirsky and Lepper, 1999] is a four item measure asking participants to rate their level of happiness on the same 7-point Likert scale. Finally, the Cantril ladder [Cantril, 1965] was administered to evaluate general quality of life on an 11-point scale with 0 indicating the worst possible life and 10 the best possible life. Previous psychometric analysis has shown that the correlation between the latent factor scores of these three measures of subjective wellbeing range between 0.70 and 0.95, indicating that a dimensional score combining these three measures is a valid and reliable measure of overall subjective wellbeing [Bartels et al., 2012]. Based on these findings, these three scales were combined to form one overall subjective measure of wellbeing in the current study. Scores on this combined measure ranged from 2 to 73, with higher scores indicative of a higher level of overall subjective wellbeing.

Domain specific life satisfaction. The Cantril ladder [Cantril, 1965] was adapted to develop a number of additional scales specifically for this study to assess satisfaction across particular domains of life. These scales included a focus on more specific areas including satisfaction with mental and physical health, education, workplace situation, leisure activities, social contact, and contribution to society. Domain specific life satisfaction across these areas was rated on an 11-point scale ranging from 0 'not at all satisfied' to 10 'completely satisfied'. For example, "on a scale of 0 (not good) to 10 (very good), how do you value your mental health right now?"

Special interests motivation scale. Participants who reported having at least one special interest were asked to complete the Special Interest Motivation Scale. Full data on this scale were available for 407 (Females = 185, Males = 222) autistic adults. The Special Interests Motivation Scale [SIMS; Grove et al., 2016b] is a 20-item measure assessing both intrinsic and extrinsic motivation across five subscales. Intrinsic motivation subscales of the SIMS include intrinsic interest and knowledge (3 items) and engagement and 'flow' (4 items) or the satisfaction experienced while completely absorbed in an activity [Csikszentmihalyi, 1990; Csikszentmihalyi and Csikzsentmihalyi, 1988]. Extrinsic motivation factors include personal life values and goals (3 items), prestige (4 items), and achievement (6 items). Items are scored on a 7-point Likert scale ranging from 'not at all' through to 'exactly', to assess how well each statement describes why individuals engage in their special interest. The SIMS was translated from English into Dutch using the backward translation procedure. Higher scores on the SIMS indicate a higher level of intrinsic or extrinsic motivation to engage in special interests.

Statistical Analyses

Analysis of variance was implemented to compare mean scores on the SIMS between males and females. The content and intensity of special interests was explored using descriptive statistics and nonparametric Mann-Whitney U group difference testing. The association between time spent on special interests and wellbeing was explored using Spearman rank correlations. Multiple regression models were implemented to evaluate whether SIMS factors were predictive of subjective wellbeing and domain specific life satisfaction. Regression models were also conducted to evaluate the impact of autistic traits on subjective wellbeing. These analyses were completed in SPSS [IBM Corp, 2016].

Confirmatory factor analysis (CFA) was conducted to evaluate the factor structure of the Dutch SIMS. The items were predicted to load onto the five subscales identified for the English version of the measure [Grove et al., 2016b]. There was a significant difference

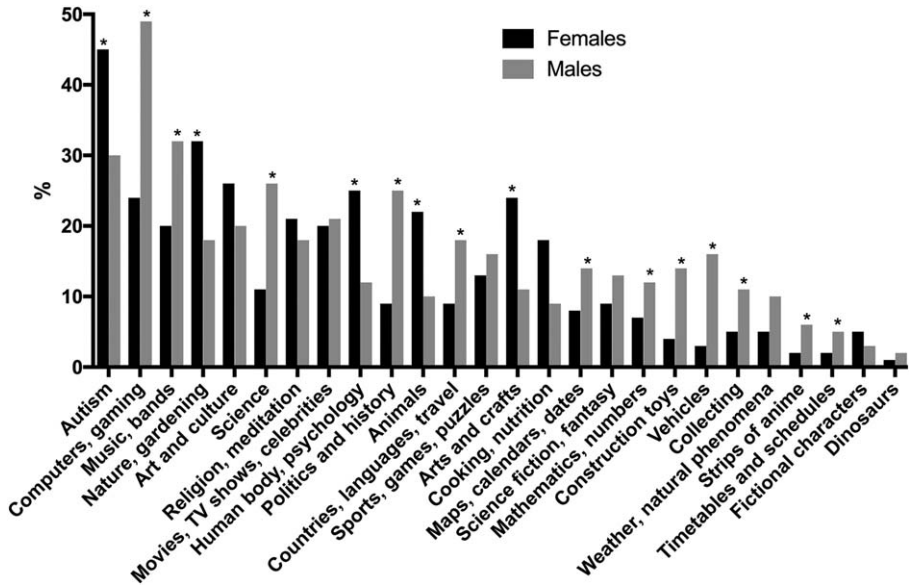

Figure 1. Special interest topics by sex ($n = 443$). Note. *Special interest topics in which men and women differ significantly in their likelihood of endorsement ($P < 0.05$).

between time since diagnosis for males and females in the sample ($P < 0.05$). Previous analyses using the NAR data have also shown this variable to be associated with scores on the AQ-Short [see Grove, Hoekstra, Wierda, & Begeer, 2016a]. Time since diagnosis was therefore included as a covariate in the model. All CFA analyses were conducted using MPlus version 8 [Muthén & Muthén, 2012].

Results

Special Interests

65% of the total sample reported at least one special interest ($n = 443$; Females = 193, Males = 250), with 35% of the sample reporting no current special interests ($n = 244$, Females = 145, Males = 99). Males were more likely to report a special interest than females ($P < 0.01$). Of those participants who did report a special interest ($n = 443$), a range of special interest topics were reported, with most participants (82%) reporting more than one special interest topic. The distribution of special interest topics is provided in Fig. 1. Autism, computers, gaming, and music were identified as the most common special interest topics across all participants. Autism, nature and gardening, and art and culture were the most popular among women; computers and gaming, music and bands and autism were the most popular topics in males. Women were significantly more likely than men to have an interest in autism, nature and gardening, human body or psychology, animals, and art and culture; men were more likely than women to be interested in a wide range of activities (see Fig. 1 for details).

Figure 2 shows the frequency of engagement in special interest topics, as well as whether special interests were reported to be an obstacle to daily functioning or to have a positive impact. 56% of the sample reported spending 7 days per week on their special interest topic, with the majority of the sample spending between 0 to 2 (31%) and 2 to 4 (37%) hours per day on their special interest. Most respondents did not perceive their special interest to be an obstacle to functioning, with 37% of the sample rating this item as 1 ('not at all' an obstacle). Most participants indicated their special interest had a positive impact, with the majority of the sample reporting a 7 (22%) or 8 (30%) on this scale (Range 1–10, higher scores are equivalent to a more positive impact). There were no sex differences in the frequency or intensity of special interests, or the negative or positive impact of these interests ($P > 0.05$).

Motivation to Engage in Special Interests

Model fitting results indicated that the Dutch SIMS displayed an equivalent five-factor structure to the English version of the measure (RMSEA = 0.09; CFI = 0.8; TLI = 0.8). However, item number 6 'to prove to myself that I am capable of achieving something special' fitted more appropriately into the prestige factor. This item was therefore moved from achievement to prestige, resulting in a better model fit (RMSEA = 0.07; CFI = 0.9; TLI = 0.9). There was a significant relationship between time since diagnosis and the factors 'engagement and flow' and 'achievement' ($P < 0.05$), indicating that participants who were diagnosed at a later age reported higher scores on these two subscales.

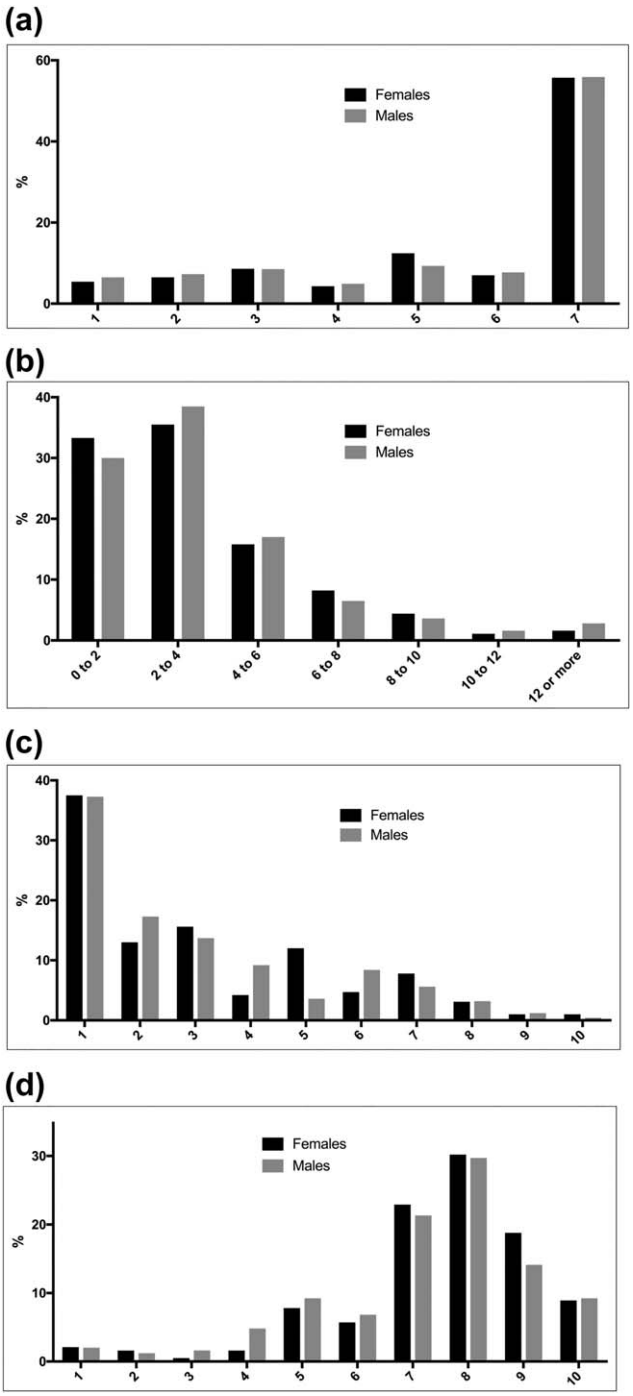

Figure 2. **(A)** Days per week spent on special interest ($n = 443$). **(B)** Hours per day spent on special interest ($n = 443$). **(C)** Special interests as an obstacle to daily functioning ($n = 443$). Note. Higher score indicates more of an obstacle. **(D)** Positive impact of special interests ($n = 443$). Note. Higher score indicates greater positive impact.

Only participants reporting a special interest completed the SIMS. In order to determine which subscales of the SIMS were most frequently endorsed within the sample, each score was divided by the number of items in that subscale. These results are depicted in Fig. 3. Intrinsic motivation factors were more frequently endorsed than extrinsic factors. Unadjusted mean scores on the Dutch version of the SIMS are also provided in Fig. 3. There were no significant sex differences on the SIMS ($P > 0.05$).

Subjective Wellbeing

Wellbeing scores were near-normally distributed, with a mean score of 38.5 (SD = 12.8). There was no significant difference between overall subjective wellbeing scores for individuals who reported having a special interest and those who indicated no current special interests (Mean difference = 1.7, $P > 0.05$). There were also no differences in scores on most of the domain specific life satisfaction scales ($P > 0.05$) between these two groups. However, autistic adults who reported having a current special interest scored significantly higher on the satisfaction with leisure activity scale compared to those without a reported special interest topic (Mean difference = 0.8, $P < 0.01$) (see Table 1). There was a negative correlation between days per week spent engaging in special interests and overall subjective wellbeing ($r = -0.147$, $P < 0.05$). Hours per day spent engaging in special interests was also negatively correlated with subjective wellbeing ($r = -0.142$, $P < 0.05$).

The five factors of the SIMS were included as predictors of overall wellbeing in multiple regression models (see Table 2). Values and goals ($\beta = 0.235$, $P < 0.01$) and engagement and flow ($\beta = 0.167$, $P < 0.01$) were identified as significant predictors of subjective wellbeing, with increased motivation predictive of a higher score on the overall wellbeing scale. Table 3 outlines the regression models including the SIMS subscales as predictors of domain specific life satisfaction. All subscales were predictive of higher scores on the satisfaction with social contact scale ($P < 0.05$) with the exception of achievement, which was predictive of a lower score on this domain. The values and goals subscale were also shown to predict higher scores on the leisure domain of life satisfaction ($P < 0.05$). There was no association with any of the other domain specific life satisfaction scales and scores on the SIMS.

Discussion

This study aimed to better understand the role special interests play in the lives of autistic adults, and explored the association between special interests, motivation for special interests and different features of quality of life, including subjective wellbeing and domain specific life satisfaction. It also aimed to assess sex differences in the content or motivation for special interests.

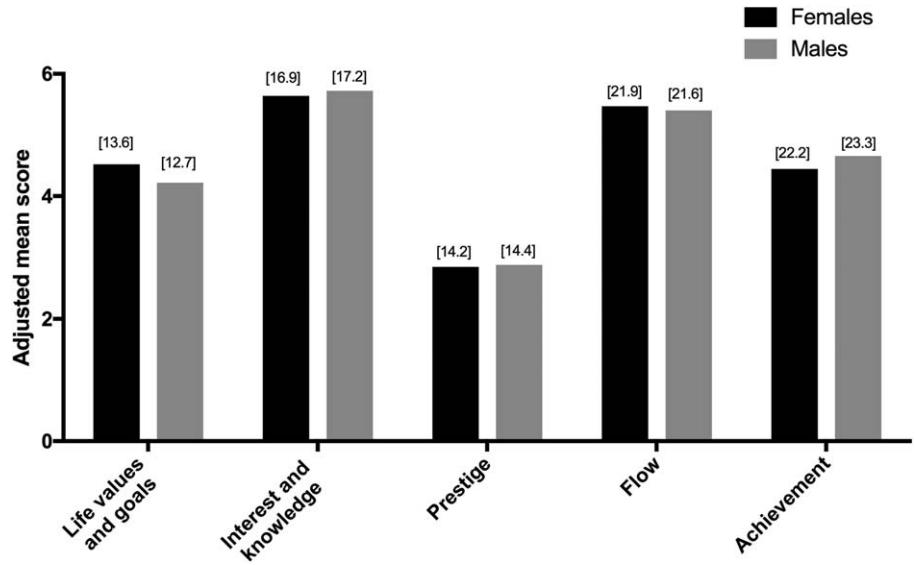

Figure 3. Endorsement of intrinsic and extrinsic factors on the Special Interests Motivation Scale (SIMS). Note. [] = unadjusted mean scores; only participants reporting at least one special interest completed the SIMS.

Table 1. Mean Scores on Overall Subjective Wellbeing and Domain Specific Life Satisfaction

	Special interest ($n = 443$) Mean (SD)	No special interest ($n = 244$) Mean (SD)
Overall subjective wellbeing	38.4 (12.9)	38.5 (12.6)
Domain specific life satisfaction		
Mental health	6.3 (1.8)	6.2 (1.8)
Physical health	6.3 (1.8)	6.4 (1.9)
Education situation	7.2 (1.7)	6.8 (1.9)
Workplace situation	5.6 (3.1)	5.7 (2.7)
Leisure activities	6.9*** (1.8)	6.1 (2.0)
Social contact	6.2 (2.0)	6.1 (2.0)
Contribution to society	5.7 (2.8)	5.7 (2.7)

Note. Higher scores indicate greater satisfaction with life.
***$P < 0.001$.

Table 2. Special Interests Motivation Scale (SIMS) Subscales as Predictors of Subjective Wellbeing

	Beta	*t*	*P* value
Personal life values and goals	**0.235**	**3.988**	**0.000**
Intrinsic interest and knowledge	−0.055	−0.844	0.399
Prestige	−0.063	−0.997	0.319
Engagement and flow	**0.167**	**2.770**	**0.006**
Achievement	0.031	0.410	0.682

Note. Only participants reporting at least one special interest completed the SIMS.

Bold values indicate statistically significant results.

Not all participants in the NAR indicated that they had a special interest, with 65% of the sample indicating special interests in at least one topic area. This is consistent with previous research indicating that while a large proportion of autistic individuals have special interests, this is not the case for everyone [Klin et al., 2007]. Significantly more males indicated having a special interest compared with females. This has important implications for the assessment and diagnosis of autism in women. While males were more likely to report having a special interest, there were no sex differences identified in the intensity, frequency of, and motivation for engaging in special interests. This indicates that when special interests are present, they play an equivalent role for autistic males and females.

A wide variety of special interest topics were identified within the sample. The most commonly identified topics included computers, autism, music, and nature and gardening. The most frequently endorsed interest topics, including computers and games, music, nature and gardening is consistent with the Empathising-Systemising theory of autism [Baron-Cohen, 2010], which argues that autistic individuals display strength in their systemising skills, or the drive to understand and construct systems. The results also fit with recent

Table 3. Special Interests Motivation Scale (SIMS) Subscales as Predictors of Domain Specific Life Satisfaction

	Personal life values and goals Beta	Intrinsic interest and knowledge Beta	Prestige Beta	Engagement and flow Beta	Achievement Beta
Mental health	0.321	−0.352	1.750	1.384	−1.278
Physical health	0.096	−1.148	−0.283	0.319	1.671
Education situation	0.169	−0.244	0.116	0.856	0.459
Workplace situation	−3.464	−0.084	−0.250	0.408	3.798
Leisure activities	**4.615***	0.525	1.020	1.162	−5.693
Social contact	**3.663***	**1.230***	**2.025***	**1.608***	**−6.021***
Contribution to society	0.602	−0.497	−1.955	−0.544	1.331

Note. Only participants reporting at least one special interest completed the SIMS.
Bold values indicate statistically significant results.
*$P < 0.05$.

research indicating that autistic individuals may not display interests that are as stereotypical as once described [Cho et al., 2017]. Interestingly, autism was also reported as one of the top special interests identified within the sample. Given that the majority of the sample was diagnosed later in life, these individuals may have developed autism as a special interest in order to better understand themselves and the world around them. Such interests may assist autistic adults to find comfort in autism as an identity.

The majority of the sample indicated that they had more than one special interest and were not narrowly fixated on one topic. This is contrary to the notion proposed by previous research that special interests are in some way circumscribed or inflexible [Turner-Brown et al., 2011]. There was no difference in overall subjective wellbeing or domain specific life satisfaction between autistic adults who did or did not report having a special interest. However, autistic adults with a special interest reported significantly more satisfaction with leisure than those who did not. Both autistic men and women reported that these interests had a positive impact rather than were an obstacle to functioning. This is consistent with a recent study evaluating how autistic adults view their special interests, indicating that special interests were identified as strengths that had a positive and calming impact [Patten Koenig & Hough Williams, 2017]. In this study, autistic adults reported that being allowed to focus on these interests as children had helped rather than hindered their success in life [Patten Koenig & Hough Williams, 2017]. This highlights the potential for special interests to have a positive impact on quality of life and wellbeing for autistic individuals. Overall, the current study did not find evidence that special interests *hindered* quality of life and wellbeing for autistic adults.

In order to assess motivation as a mechanism for understanding the importance of special interests in the lives of autistic adults, detailed CFA analyses of the SIMS were conducted. The results indicated that the Dutch version of the SIMS provides a good way of assessing the motivation for special interests. Mean scores across all the factors of the Dutch version also closely mapped onto the results obtained in the original study conducted in the UK, with no sex differences identified across all subscales of the SIMS in the current sample [Grove et al., 2016b].

Intrinsic motivation factors were more frequently endorsed than extrinsic factors, indicating that intrinsic factors play a more important role in the motivation to engage in special interests. This is also consistent with the previous study, outlining the importance of intrinsic motivation for special interests in autistic adults [Grove et al., 2016b]. As Ryan and Deci [2000] state, motivation helps to explain the underlying goals and attitudes that result in action, or the 'why' of actions. The current study suggests that intrinsic motivation may be an important driver for interest and engagement in special interests in autistic individuals. This intrinsic drive is stronger in autistic adults than in people without an autism diagnosis [Grove et al., 2016b].

Intrinsic motivation is a crucial part of cognitive, social, and physical development as it not only fosters the development of knowledge and skills, but also a number of psychological needs including autonomy, competence, and relatedness [Ryan & Deci, 2000]. If special interests are motivated by intrinsic factors then they may also serve to foster these feelings of autonomy and competence in autistic individuals. Indeed, in previous research, autistic adults reported that their special interests can be associated with increased social interaction and enthusiasm [Winter-Messiers, 2007] as well as regarded as an area of strength [Teti et al., 2016]. Subjective wellbeing was associated with motivation for special interests in the current study, with intrinsic motivation factor engagement and flow predicting higher levels of subjective wellbeing. When evaluating domain specific life satisfaction, both intrinsic motivation factors positively predicted satisfaction with social contact. These results suggest that intrinsic interests

may be key to both general and domain specific wellbeing and quality of life.

The relationship between extrinsic motivation and special interests was less straightforward. Personal values and goals was also shown to predict higher levels of subjective wellbeing. The personal values and goals factor represents extrinsic motivation factors including values and goals that have been internalised. Special interests may be engaged in for extrinsic reasons (i.e., to achieve personal goals), but the behavior is internally regulated and self-determined [Pelletier et al., 1995]. This is distinct to the other two extrinsic motivation factors that represent motivation that is purely external. Prestige was also shown to predict higher levels of satisfaction with social contact, while achievement was associated with lower scores on this domain. Thus, while intrinsic motivations and internalised personal values and goals had a consistently positive association, the relationship with extrinsic motivations is more complex. Overall, the results of the study highlight the importance of motivation for special interests in subjective wellbeing as well as domain specific life satisfaction, particularly social contact and leisure.

There was a negative correlation between the number of days spent per week and hours spent per day engaging in special interests and subjective wellbeing. This suggests that while special interests may have a positive impact on autistic adults, driven by strong intrinsic motivation, there may be a trade-off, with very high intensity of engagement impacting negatively on wellbeing. Alternatively, people with low subjective wellbeing may engage more intensely in their special interest as a coping mechanism. The cross-sectional nature of the current study does not allow for an exploration of cause and effect.

Traditionally, the deficit model of autism, describing symptoms of autism in terms of deficits, has dominated autism research. Special interests have been described as "restricted", "circumscribed", "perseverative", and "obsessions". The Autistic Self Advocacy Network (ASAN), a group of autistic adults, as well as other self-advocacy groups, have promoted a paradigm shift from the use of this negative language to incorporate a more strengths based approach. ASAN describes this aspect of autism as comprising of "deeply focused thinking and passionate interests in specific subjects" (Autistic Self Advocacy Network (ASAN)). They go on to describe special interests as "narrow but deep", thus highlighting the different, rather than deficient nature of special interests in autism.

This approach also fits with the neurodiversity movement in autism. Self-advocates and proponents of the neurodiversity movement argue that pathologising terms such as 'disorder' do not provide a helpful description of neurological variants including autism [Silberman, 2015]. The neurodiversity paradigm accepts that neurodiversity is a natural and important form of human diversity and that the idea that there is one 'normal' or 'correct' style of neurocognitive functioning is culturally constructed [Walker, 2014]. The neurodiversity movement is an important consideration when conducting research in autism, as it celebrates the differences and unique abilities, rather than the deficiencies, of autistic adults.

Limitations

This study provided exploratory analyses of the relationship between special interests, motivation, and quality of life for autistic adults. It is important that these findings are cross-validated in other independent samples. The use of an online database enabled the collection of information from a widespread sample that may have found accessing a face-to-face assessment challenging. While the voluntary online nature of the NAR provided limited confirmation of clinical diagnoses in the entire sample, most NAR participants were able to provide proof of their official diagnosis. Previous research has also confirmed that diagnoses reported via online registers are reliable [Lee et al., 2010]. In addition, the sample only included self-report measures. This means that only autistic adults who are able to complete these measures could participate, restricting the sample to intellectually able participants. The findings reported here can therefore not be generalised to autistic people with severe learning difficulties. The current study was restricted to self-report data, whilst the perspectives from other informants may be different, for example, on the effect of intense engagement in special interests on life functioning. The inclusion of both self and informant reports would benefit future research.

Conclusion

Overall, this study indicated that a large proportion, though not all, of autistic adults have special interests. The topics of these interests varied and often included more than one interest, indicating that special interests may not be as narrow or circumscribed as they have previously been understood. Having special interests was not associated with overall subjective wellbeing. For those who did report a special interest, there was evidence that these were associated with positive outcomes, subjective wellbeing, and satisfaction across specific life domains including social contact and leisure. However, a very high intensity of engagement in special interests was associated with decreased self-reported wellbeing, suggesting that there may be a trade-off. The

positive role of special interests appears to be linked to motivation, which may be a potential driver for the engagement in special interests. Importantly, this research highlights the potential for special interests to foster a sense of wellbeing in autistic individuals, provided that the intensity is within limits. This has implications for future research, as well as clinical implications for support and intervention programs. As one individual states "*Special interests are important to most aspies' happiness and perhaps to our mental health. If I go through a period where I can't engage in my special interests, I get agitated and spend a lot of time thinking about what I'd like to be doing. For me, and for a lot of aspies, a special interest is our preferred way of de-stressing, recharging and just plain enjoying ourselves"* [Reddit, 2017].

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