Journal for Re Attach Therapy and Developmental Diversities
eISSN: 2589-7799
2023 July; 6 (7s): 215-223

Exploring the Relationship between Autism Spectrum Disorder and Mental Health in Adults

Shalini Dixit[1] , Vishal Soodan[2], Manish Tyagi[3]
[1]Associate Professor, Department of Allied Health Care Sciences, Vivekananda Global University, Jaipur, India.
[2]Assistant Professor, Department of Marketing, CMS Business School, JAIN (Deemed to-be University), Bangalore, India.
[3]Assistant Professor, Department of Psychitary , Teerthanker Mahaveer University, Moradabad, Uttar Pradesh, India.

Received: 04-May-2023
Revised: 08-June-2023
Accepted:02-July-2023

Abstract
Introduction: Identities in society are a component of the self-concept and are related to psychological opinions of group affiliations. It was discovered in the past that social identification with groups is related to better mental health results.
Objective: In this investigation, adults with autism were measured for social identity using a reliable scale with a factor pattern.
Methods: Participants in this study were people with autism who had received a diagnosis. A confirmatory factor analysis (CFA) was carried out to find the factor pattern linked to social relationships after measuring social identity using a valid scale. The scope of social affiliation with various groups, the total number of societal identities, as well as the relationship between such identities and mental health indices were all evaluated in the study.
Results: Individuals with autism expressed sentiments of societal identification with a variety of groups, some with several groups, while others did not have a sense of social connection with any particular group. Less significant self-reported indicators of depression along with greater characteristics of beneficial mental health are linked to stronger sentiments of social identity with other autistic persons, towards family members, and with greater numbers of groups.
Conclusion: These results highlight the need of encouraging social interaction among autistic individuals.

Keywords- Social identification, mental health, autism spectrum disorder, confirmatory factor analysis (CFA)

1. INTRODUCTION

A neurodevelopmental disease known as an autism spectrum disorder (ASD) is characterized by ongoing difficulties with social interaction and communication and a pattern of narrow interests and repetitive activities. It must be emphasized that ASD encompasses individuals with a wide diversity of symptoms, associated traits, and levels of disability. Regardless, a lot of analysis has shown that different varieties of autism have clinical and neurological homogeneity, which connects them to similar radio (Gesi et al. (2021)). The mental health and well-being of recently recruited persons with autism in a supported job program. Other indicators of psychological wellness and mental health remained consistent over time, except for a minor increase in daily abilities and a slight decline in job fulfilment. According to the research, people with autism may be protected against depressive symptoms by feeling good about themselves ((Hedley et al. (2019)) (Autism Research (2019))). ASD is a chronic illness affecting men more often than women.

On the other hand, AN is a severe eating disorder (ED) characterized by chronic energy intake restriction, anxiety about weight gain, and abnormalities in how one experiences body shape or weight. The peak age of onset for AN is late adolescence, which is more common in females. Autism cannot be considered as a mental illness. This syndrome impacts how you connect with others and perceive the world.

Most autistic people share a few characteristics to some extent. These consist of:

- They have trouble comprehending and expressing their sentiments and those of others.
- We find stressful or disturbing things like bright lights, loud noises, and crowded spaces.
- I liked regular routines and experiencing anxiety or distress when faced with sudden changes or novel circumstances.

- Extremely specialized hobbies or interests.
- They require more time to comprehend information.

The significance of looking at how anxiety affects people on the spectrum proposes that employing carefully thought-out therapies to lessen problems with uncertainty may be one method to try to improve the quality of life for kids on the range ((Lin and Huang (2019))(Cooper et al. (2021))). An enhancement in the standard of living is an essential outcome for adults with autism spectrum disorder. However, there hasn't been much research on the variables that affect adults with autism spectrum disorder's quality of life. To enhance their quality of life, adults with autism spectrum disorders require more encouraging social settings and therapeutic interventions. Societal interactions, mental health, and sensory processing difficulties should be considered while developing treatment programs for adults with an autism spectrum disorder. This paper aims to use a valid scale with a factor structure; social identity in adults with autism was assessed.

The remaining sections of this paper are as follows: Part 2 describes related works; Part 3 explains methodology; Part 4 summarizes results; and Part 5 accomplishes with a conclusion

2. LITERATURE REVIEW

Lin and Huang (2019) examined variables that affect youngsters with autism spectrum disorder lifestyle value. This study compared 66 people aged 20 to 38 with neurotypical adults to explore their quality of life and associated characteristics. A licensed occupational therapist conducted questionnaire-based interviews with all of the participants. When creating treatment plans for youngsters with autism spectrum conditions, social interactions, psychological well-being, and processing of sensor issues must be considered.

Cooper et al. (2021) examined the CFA. They found that social interactions with various autistic persons, rather than with family members, had a factor pattern that frequently happened in this group of people. That stated the autistic community gains from focusing on the advantages and strengths associated with the disease, and older persons are more inclined to adopt this focus on the positives than younger ones.

Maitland et al. (2021) examined the information on adult ASD patients' mental health from current studies. A more significant sample was made possible by including self-identified autistics, and it was possible to determine whether participants varied from those who had received a formal diagnosis. Potential causes were discovered, including concomitant psychiatric illnesses, anxiety, loneliness, and sensation-sensitive behaviours.

Howlin and Magiati (2017) examined the social identity measure's feature structure and reliability among youngsters with autism. Inconsistent and occasionally contradictory research findings have resulted from methodological difficulties, particularly those relating to the large degree of heterogeneity in the cohorts studied and the variety in the measurements utilized.

Lin and Huang (2019) examined a substantial percentage of individuals with ASD, including those with average IQs, who have significant disadvantages regarding their quality of life, work possibilities, social connections, mental and physical well-being, and other aspects. There is frequently a shortage of assistance to help people integrate into society at large, and little study has been done on creating more successful adult intervention programs.

Zimmerman et al. (2017) examined the associations between youngsters with ASD, executive functions (EF), and mental health. Forty-two youngsters with ASD completed EF, mood, and self-concept tests. Significantly lower anxiety symptoms were connected considerably with improved concept creation and social inference abilities. Age, gender, and number of years of schooling were looked at as potential confounders. Executive function tests and levels of stress and depression did not significantly correlate.

Cage et al. (2018) examined how the mental health of youngsters with autism may be affected by experiences with and perceptions of autism acceptance. An online poll of 111 youngsters on the autism spectrum asked them about their feelings of approval for their condition and their signs of stress, anxiety, and despair. They postulated that despair, anxiety, and stress symptoms would be more common in autistic individuals with fewer acceptances.

White et al. (2018) examined how the AIR Self-Determination Scale and the Arc's Self-Determination Scale, two complimentary measures of self-determination, related to the quality of life for young youngsters with ASD. The findings imply that SD-focused interventions and supports may be an efficient way to improve Quality of

Life by fostering Self Determination abilities and providing young individuals with ASD with opportunities as they enter adulthood.

3. METHODS

The researchers polled the autistic community about a novel study on social identities and psychological wellness. The proposed investigation and the social identity theory were both presented visually online. We asked autistic people about the practical significance and applicability of the concept of social identity and the proposed analysis. According to feedback, the autistic community thought the intended research was worthy. In response to comments, the first methodology was modified. These changes were made to study the social identity of autistic people in particular and to evaluate anxiety and other benefits of psychological wellness rather than depression. Along with those who had acquired a clinical diagnosis, they also permitted those who had self-diagnosed autism to participate. The team thanks everyone who participated and hopes this study can benefit the autistic community more.

3.1 Participants

The study included individuals who self-identified as autistic or had a clinical diagnosis of autism, were at least 18 years old, had English as their first language, and did so. Posts promoting the study were placed near two colleges and neighbouring shops and gathering spots. University disability services in the UK were called and asked to put up posters. The mean association coefficient between SI and depression was 0.33 in 14 earlier studies. According to Cohen's tables, 208 individuals are required to detect an r = 0.20 at power 0.80 at =0.05. A group of 208 individuals were sought out, of whom 28 (13.5%) were self-diagnosed as autistic, and 180 (86.5%) reported having had a professional autism diagnosis. 156 out of the 208 individuals reached the Social Response Time Scale cut-off. An official autism diagnosis was given to each of the 49 subjects who fell short of the cut-off. As a result, the 208 individuals were all included in the sample used for the analysis. In Table 1, demographics are displayed. 66 (31.7%) men, 127 (61.1%) women, and 15 (7.2%) people of other genders were among the total 208. The age distribution was 18–67 (M=51.0, SD=18.7) years.

Table 1: Respondent's statistics (N=208)

statistics variable		**Total (n (%))**
sexuality		
	other	15 (7.2)
	Male	66 (31.7)
	Female	12.7 (61.1)
Employment type		
	Full time	70 (33.7)
	Part-time	28 (13.5)
	Self-employed	14 (6.7)
	Unemployed	19 (9.1)
	Unable to work	30 (14.4)
	Retired	15 (7.2)
	Student	24 (11.5)
	Career	7 (3.4)
	I prefer not to say	1 (0.5)
Ethnic group		
	White	191 (91.8)
	Mixed/multiple British	8 (3.9)
	Asian/Asian British	1 (0.5)
	Black/African/Caribbean/Black British	1 (0.5)
	various ethnic community	3 (1.4)
	hesitate to say	4 (1.9)

The pinnacle of schooling		
	postgraduate	24 (11.5)
	Bachelor's degree	112 (58.9)
	Doctor of Philosophy	36 (17.3)
	higher Secondary schooling	20 (9.6)
	high school	10 (4.8)
	Primary school	1 (0.5)
	lack of education	5 (2.4)
Status of attachments		
	Long-term partner	97 (46.6)
	committed relationship	27 (12.9)
	unmarried	70 (33.7)
	breakup	13 (6.3)
	Hesitate to say	1 (0.5)

.

3.2 Estimation

The SRS evaluates a person's social competence as it relates to autism. A person grades the frequency of 65 characteristics they observe in themselves on a 4-point scale: 1 = Not Correct, 2 = Occasional Correct, 3 = Frequently Correct and 4 = Always Correct. The data is then converted to t-scores, with more excellent scores indicating a person's experience of more autistic social behaviours. The only participants who met the inclusion criteria, a cut-off t-score of 60 suggesting moderate signs of autism, were those who self-diagnosed.

Based on an analysis of historical Social Identification tools, we created a 14-item measure to assess SI. The items are categorized using the five SI criteria of individual self-stereotyping, within-group uniformity fulfilment, friendship, and priority. The first 2 variables in the framework are the self-image factor, and the last 3 variables are the individual interest part. Those load onto two different more complex elements, respondents, on the 7th-point scale, score how much they concur or not with an opinion about their sentiments towards an individual. One is Strongly Agree; seven is Strongly Disagree. A group's overall score might range from 14 to 98.

The scale's items can be changed for particular groups. Respondents took the test with autistic people in-group to get an “Autism Social Identification (Autism SI)” score. Participants completed the questionnaire with the “Family Social Identification (Family SI)” score as the in-group. The group of persons they interact with in person the most frequently during weeks who are not members of their family was then asked to be considered by the participants. They assigned the group a name, explained its nature, and provided an approximate weekly time commitment. They then finished this group's social identification measure.

Respondents were prompted to assess if they belonged to another group to whom the item statements applied after completing the test on three occasions and becoming familiar with the inquiries. Respondents identified the group once more, described its makeup, and estimated the number of hours they interacted with it per week. As a result of their responses to the social identification questions referring to this group, they received a score for their social identification. If participants did not believe they belonged to such a group, they were advised to refrain from answering the Contact or Self-Nom social identification questions. Participants' descriptions and responses about groups that did not fit the definition of a group used in the current study or were more similar to other groups that had already been mentioned were not counted as additional social identifications.

To ascertain if a group functioned as a social identity for an individual, a methodology is identical. If an individual's average social identification item score was more significant than or equal to 5, that category was regarded as that individual's social identity. On social identification scales, a group was disregarded as a social identity for a participant if the average item score was less than 5 or the essential information needed to be submitted. Consequently, a participant's social identification number (SI Number) was the total number of different groups for which they had a mean SI score of 5 or above. Participants may range from 0 to 4 on their SI Number.

3.3 Depression

A 21-item self-report questionnaire called the “Beck Depression Inventory—Second Edition” was developed to determine whether depressive symptoms are present. The respondent rates the intensity of each sign they experienced in the past two weeks for each symptom on a 4th-point scale (0–3). The results are then added up to produce a final depression score ranging from 0 to 63. Despite the likelihood that changes in depression manifest in autistic persons may change depression tools work

3.4 Anxiety

The “State-Trait Inventory for Cognitive and Somatic Anxiety (STICSA)” was developed. Participants use a 4-point scale (1=Not at all to 4=Very much so) to indicate how much they agree with each statement concerning the current anxiety symptoms they are going through. Anxiety ratings range from 21 to 84 and are calculated by adding item scores

3.5 Positive Mental Health

A 7-item questionnaire called the “Short Warwick-Edinburgh Mental Wellness Scale (SWEMWBS)” is used to gauge participants' overall mental wellness. On a scale of 1 to 5, where 1 equals "none of the time," and 5 equals "all of the time," participants indicate how often they have had a particular idea or feeling over the last two weeks. Following the addition of the scores, totals may range between 7 and 35

4. PROCEDURE

Through the online surveying tool Qualtrics, the study was administered. A disclosure sheet outlining the study, participants' freedom to withdraw from it, and the confidentiality of their data was given to each participant. By choosing the option, "I have read and understand the above and wish to participate in this study," participants demonstrated their informed permission. A "thank you" message was displayed to individuals who chose the option expressing a desire to decline participation. The study measures were then given to those who expressed their consent. The debriefing document outlining the study and providing the researchers' contact details was then displayed.

5. RESULTS

All statistical analyses have functioned using SPSS-25. Total score variables were checked for anomalies, multicollinearity, and normalcy before parametric tests and regression analysis. Many of the factors were found to be out of the ordinary. On the BDI and STICSA totals, square root modifications were performed to account for positive skew. Square root transforms were applied to the reversed score totals of the SI Autism and SI Family scores to account for negative skew; the scores were then unreversed in this section such that higher scores indicate more excellent sentiments of SI. The converted totals are used as references to these scores moving forward.

5.1 Structure of the SI scale's parameters

“Cronbach's alpha" method and CFA were used to assess the reliability of the SI scale and its factor structure. The responses related to SI (autism) and SI (family) were used for (n=208) respondents; they got the most significant number of responses. When evaluating family SI (95%) and autistic SI (90%), the SI scale's Cronbach's alphas showed solid internal reliability. The um package was used to perform CFA in R. The autism SI item data was created. Table 2 displays the model fit indices that were obtained. "Root mean square error of approximation (RMSEA)" less than 0.06 indicates a good fit. More recent theories suggest cut-offs below 0.07 or 0.08.

Additionally, the "standardized root mean square residual (SRMR)" indicates a good fit, which is less than 0.08. A model that fits the data well is characterized by a "Tucker-Lewis index (TLI)" or "comparative fit index (CFI)" better than 95% when compared to the null model and "the degrees of freedom (n-1)". The model fit seems to the SI (autism) data well when absolute and relative fit indices were taken into account jointly. The family SI responses were subjected to the same model of hierarchical components. Appropriate indices indicated that this fit was subpar (Table 2).

Table 2: Fit indices for models of identity in society

	Absolute fit indices		**Relative fit indices**	
	RMSEA	**SRMR**	**CFI**	**TLI**
Autism Social Identification	0.069a	0.077[a]	0.969[a]	0.924
Family social Identification	0.105	0.028[a]	0.937[a]	0.958

5.2 Groups for people with autism

All 208 participants discussed their SI with other autistic people and their families in their reports for the overall participant count for each group and the overall participant count required for a team to be considered a social identity (Table 3). Amongst those people, 118 (56.7%) obtained high enough scores to qualify as a social identity with similar autistic persons; 97 (46.6%) scored well enough for their family to be a social identity; 170 (81.7%) responded in regards to a group they had weekly direct interaction and 87 (41.8%) They obtained sufficient ratings to have their regular contact group classified as an identity in society. Most people talked about how they felt about their co-workers or customers. There were also many social clubs, college friends, and autistic support organizations. However, 40 respondents (19.2%) said they had no frequent direct interactions with any group of people. 83 (39.9%) people reported self-nominated groups—their SI's attitudes toward it. The average SI item score for 66 of them (31.7% of the overall sample) was more than 5, and considered to be a social identity was the nominated group. Approximately one-quarter of the model (23.6%) reported not socially identifying with any groups, whereas roughly one-fifth (20.7%) had three or more social identities, according to the total number of groups participants were socially associated.

Table 3: Social identification

Group names	**Reported**	**social identity**
	n (%)	**n (%)**
Family	208 (100)	97 (46.6)
Another self-nominated group	83 (39.9)	66 (31.7)
Regular contact group	170 (81.7)	87 (41.8)
Other autistic people	208 (100)	118 (56.7)

5.3 Indicative data and correlations

Table 4 (without any adjustments) displays descriptive information and variable correlations. 146 respondents provided information for Contact SI regarding a regular contact group. Self-Nom SI received 59 responses regarding a suitable group. Because these groups were underpowered, Type II error could have occurred when Indicative data and correlations for SI (Self-Nom) and SI (Contact) were generated using data from the people. SRS and wellness ratings for depression, anxiety, and positive psychological wellness did not differ significantly by gender. SRS ratings and fitness showed no apparent distinctions between people with formal diagnoses.

Table 4: Indicative data and correlations (N=208)

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Self-nom	0.19	-0.05	-0.08	0.05	0.08	0.33*	0.02	0.17
Contact SI	-0.09	-0.20*	-0.09	0.13	0.26**	0.35**	0.17	-
Family SI	-0.11	-0.24**	-0.30**	-0.21**	0.28**	0.33**	-	
Autism SI	-0.05	0.01	-0.30**	-0.04	0.32**	-		
Positive mental health	-0.23**	-0.42**	-0.75**	-0.49**	-			
Anxiety	0.12	0.41**	0.71**	-				
Depression	0.15	0.46**	-					
Autistic traits	0.08	-						
Age (years)	-							

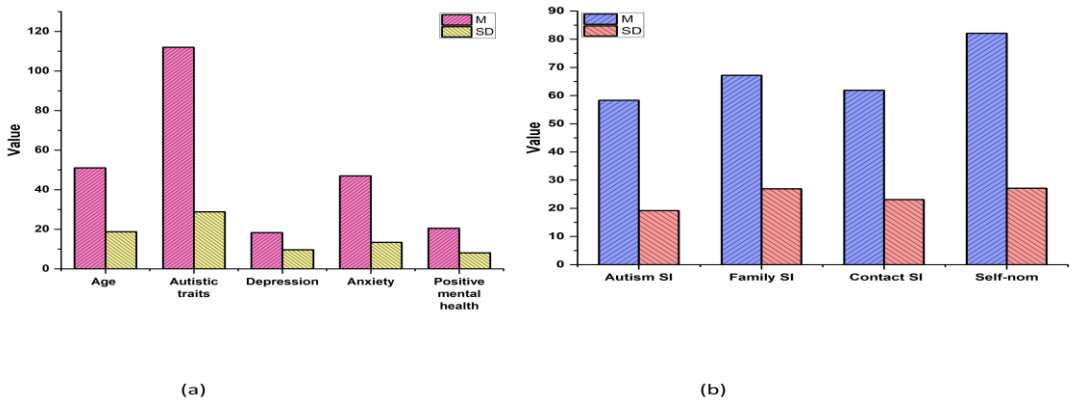

Figure 1: Indicative data and correlations for mean and standard deviation.

5.4 SI and psychological health

To determine autism and familial SI were predictive of sadness, anxiety, and sound psychological wellness, multiple linear regression models were run. Age, Gender, SRS Scores, and Autism In all three studies, SI and Family SI, served as the independent variables. Two dummy variables were made because Male, female, and other were the three nominal classes for sexuality. The baseline group was determined to be females. Figure 2 displays values and semi-partial correlations squared to represent the impacts of independent variables. The factors collectively predicted a considerable amount of variance for depression. Significant individual predictors of depression were found to be autistic trait scores and autism SI. Conventional statistics and graphs showed that the regression presumptions were satisfied and that the model's criteria could be extrapolated to different data. The regression model for anxiety contained significant results p0.001 adjusted. However, the only significant individual predictor of stress was the autistic characteristic scores. Regression suppositions were satisfied. The regression model for good psychological wellness was substantial. Figure 2 lists the essential individual determinants of good psychological wellness as age (=0.2, semi-partial r2=0.05), autistic trait scores (=0.39, r2=0.16), and autism SI (=0.26, r2=0.08). According to statistics and graphs, the model parameters were generalizable to different samples.

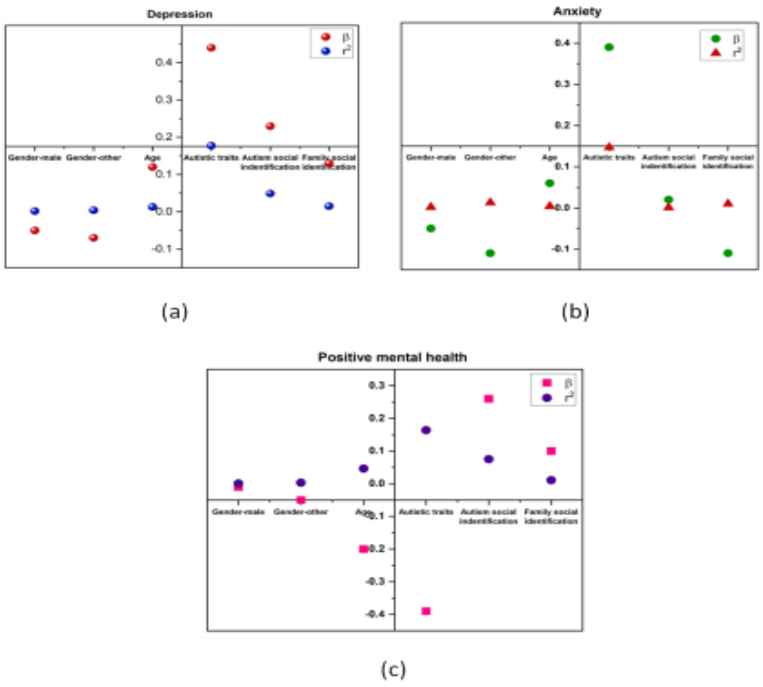

Figure 2: Types of social identity and mental wellness (N=208): a) Depression in social identification: b) Anxiety in social identification: c) Positive mental health in social identification

5.5 Depression and several social identities

To determine the number of Social identities subjects possessed predicted their mental wellness score and multiple linear regression analyses were utilized. In all three models, the independent variables included gender, SRS ratings, age, family SI and autism SI. Two dummy variables were made because Male, female, and other were the three nominal classes for sexuality. The baseline group was determined to be females. Figure 3 displays values and semi-partial correlations squared to represent independent variables' impacts. The depressed regression model predicted a significant portion of the variation. The only critical independent variables that predicted depression scores were autistic characteristics (=0.44, r2=0.19) and SI Number (=0.2, r2=0.04). Standardized residuals demonstrated the model's accuracy for the entire sample. The model's generalizability was shown by the fact that the linear regression assumptions were also met.

There was considerable evidence for the regression model that predicted anxiety levels. Autistic features, however, were the only significant predictor in the model (=0.42, r2=0.16). The accuracy and generalizability of the model were indicated through statistics and charts.

The model predicted a considerable variance in the positive psychological wellness scores. Significant predictors were age (=0.19, r2=0.04), autistic features (=0.38, r2=0.15), and SI Number (=0.26, r2=0.08). Numerous statistics suggested that the model may have been influenced by information from individuals of different genders. A regression model without individuals of the other gender wasn't any more precise. As a result, the original model was kept. Plots and statistics suggested that this model might generalize to other samples.

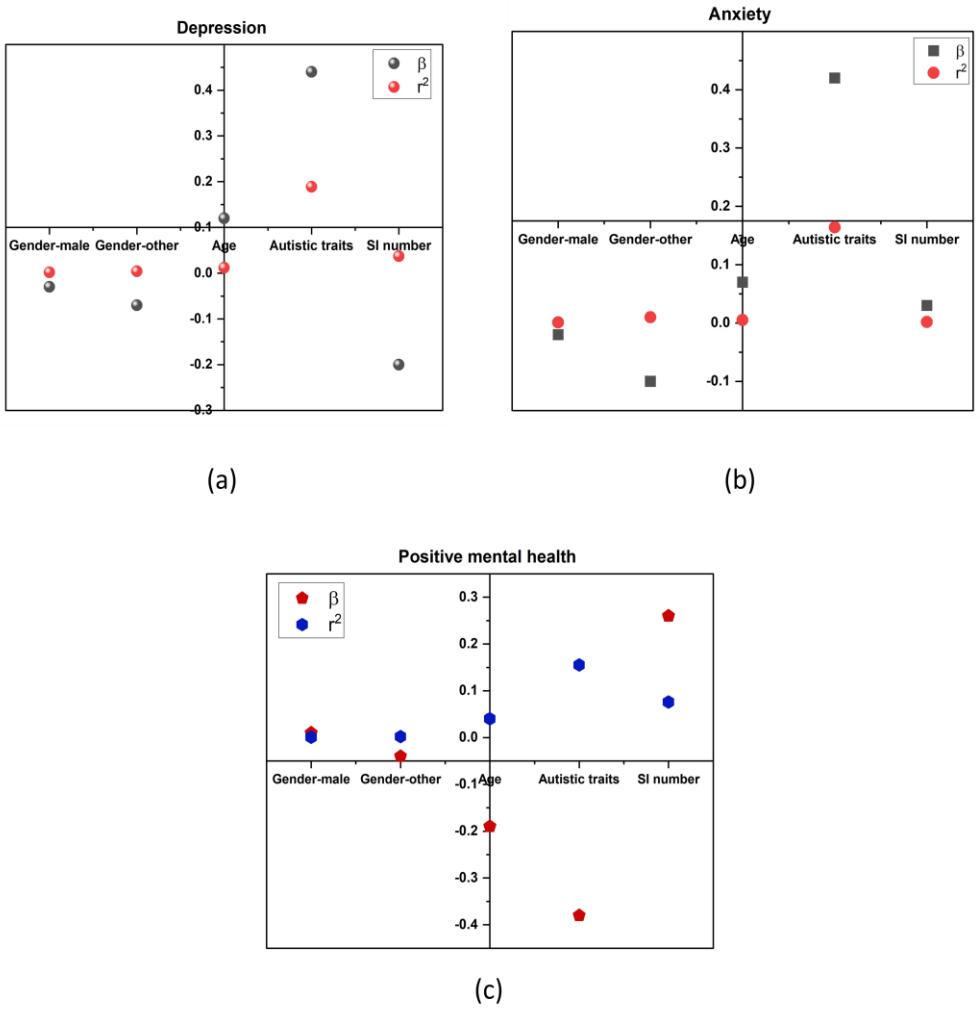

Figure 3: Social identity diversity and mental wellness (N=208): a) Depression in the Number of social identities: b) Anxiety in the Number of social identities: c) Positive mental health in the Number of social identities

6. CONCLUSION

This study found that adults with autism report and experience category SI in a way comparable to those who are not autistic. Lower levels of despair and higher levels of positive psychological wellness were linked to feeling connected to more groups. More specifically, more substantial mental wellness outcomes were related to identifying socially among other autistic individuals and relatives. This demonstrates the value of allowing autistic persons to interact socially, especially with other autistic people.

Refrences

[1] Gesi, C., Migliarese, G., Torriero, S., Capellazzi, M., Omboni, A.C., Cerveri, G. and Mencacci, C., 2021. Gender differences in misdiagnosis and delayed diagnosis among adults with autism spectrum disorder with no language or intellectual disability. *Brain Sciences*, *11*(7), p.912.

[2] Hedley, D., Uljarević, M., Bury, S.M. and Dissanayake, C., 2019. Predictors of mental health and well-being in employed adults with autism spectrum disorder at 12-month follow-up. *Autism Research*, *12*(3), pp.482-494.

[3] Autism Research, 12(2019), 1505–1515. Wiley Periodicals, Inc. is a 2019 sponsor of the International Society for Autism Research.

[4] Lin, L.Y. and Huang, P.C., 2019. Quality of life and its related factors for adults with autism spectrum disorder. *Disability and rehabilitation*, *41*(8), pp.896-903.

[5] Cooper, R., Cooper, K., Russell, A.J. and Smith, L.G., 2021. "I'm proud to be a little bit different": The effects of autistic individuals' perceptions of autism and autism social identity on their collective self-esteem. *Journal of Autism and Developmental Disorders*, *51*, pp.704-714.

[6] Maitland, C.A., Rhodes, S., O'Hare, A. and Stewart, M.E., 2021. Social identities and mental well-being in autistic adults. *Autism*, *25*(6), pp.1771-1783.

[7] Howlin, P. and Magiati, I., 2017. Autism spectrum disorder: Outcomes in adulthood. *Current opinion in psychiatry*, *30*(2), pp.69-76.

[8] Zimmerman, D., Ownsworth, T., O'Donovan, A., Roberts, J. and Gullo, M.J., 2017. Associations between executive functions and mental health outcomes for adults with autism spectrum disorder. *Psychiatry Research*, *253*, pp.360-363.

[9] Cage, E., Di Monaco, J. and Newell, V., 2018. Experiences of autism acceptance and mental health in autistic adults. *Journal of autism and developmental disorders*, *48*, pp.473-484.

[10] White, K., Flanagan, T.D. and Nadig, A., 2018. Examining the relationship between self-determination and quality of life in young adults with autism spectrum disorder. *Journal of Developmental and Physical Disabilities*, *30*, pp.735-754.

[11] Underwood, L., McCarthy, J. and Tsakanikos, E., 2010. Mental health of adults with autism spectrum disorders and intellectual disability. *Current Opinion in Psychiatry*, *23*(5), pp.421-426.

[12] Howlin, P. and Magiati, I., 2017. Autism spectrum disorder: Outcomes in adulthood. *Current opinion in psychiatry*, *30*(2), pp.69-76.

[13] Howlin, P. and Moss, P., 2012. Adults with autism spectrum disorders. *The Canadian Journal of Psychiatry*, *57*(5), pp.275-283.

[14] Hedley, D., Uljarević, M., Bury, S.M. and Dissanayake, C., 2019. Predictors of mental health and well-being in employed adults with autism spectrum disorder at 12-month follow-up. *Autism Research*, *12*(3), pp.482-494.

[15] Underwood, L., McCarthy, J. and Tsakanikos, E., 2010. Mental health of adults with autism spectrum disorders and intellectual disability. *Current Opinion in Psychiatry*, *23*(5), pp.421-426