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Unraveling The Relationship Between Autistic Traits and Self-Esteem: Insights From A Systematic Literature Review

Amar Muzzamil Ridzuan[1,2], Mohd Syazwan Zainal[1]

[1]Faculty of Education, Universiti Kebangsaan Malaysia, Malaysia, [2]Sekolah Kebangsaan Seksyen 13 Shah Alam, Malaysia

Corresponding Author Email: syazwanzainal@ukm.edu.my

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Abstract

Understanding self-esteem in individuals with autism is a complex and varied undertaking, profoundly influenced by social interactions and support systems. Hence, this systematic literature review aims to elucidate the relationship between autistic traits and self-esteem. The search encompassed two comprehensive databases, SCOPUS, and Web of Science (WoS), spanning articles published from 2020 to 2024. Although initially, 81 articles were identified utilizing keywords such as "autistic traits" and "self-esteem," only 10 articles met the rigorous criteria for inclusion in this study. Adhering to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, this study ensures methodological rigor. Over the past five years, researchers from six countries have explored the correlation between autistic traits and self-esteem. Collectively, their findings consistently indicate lower self-esteem among individuals exhibiting high autistic traits, impacting various aspects of daily life. These insights not only deepen our understanding of this intricate relationship but also lay the groundwork for developing targeted interventions to mitigate the challenges faced by individuals characterized by high autistic traits and compromised self-esteem. By shedding light on this critical nexus, this study paves the way for future research endeavors and the implementation of effective interventions tailored to enhance the well-being of this population.

Keywords: Systematic Literature Review, Autistic Traits, Self-esteem, Autism Spectrum Disorder

Introduction

The relationship between self-esteem and autistic traits remains incompletely understood, owing to the limited research dedicated to the subject in recent decades. Autism Spectrum Disorders (ASD) represent a heterogeneous spectrum of neurodevelopmental conditions persisting throughout an individual's lifespan. Characterized by challenges in social communication and the manifestation of restricted and repetitive patterns of behavior, interests, and activities APA (2022), ASD is clinically diagnosed in approximately 1% of the

global population (Lord et al., 2020). Autistic traits, encompassing behaviors associated with ASD, persist across clinical and general populations, underpinned by consistent associations and mechanisms (Low et al., 2024; Constantino & Charman, 2016; Robinson et al., 2011). As such, exploring autistic characteristics within the general populace contributes to a more comprehensive understanding of ASD as a clinical disorder.

The term Autism Spectrum Conditions (ASC) is gradually replacing ASD in both scientific discourse and public perception Baron-Cohen et al (2008); Rynkiewicz & Lucka (2015), reflecting the emergence of neural diversity theory. This theory posits functional variations in the human brain's structure, advocating for a societal framework acknowledging and embracing neurodiversity, in contrast to rigid diagnostic cutoffs (Baron-Cohen, 2010; Lai & Baron-Cohen, 2015). ASC, as distinct from ASD, acknowledges the presence of milder symptoms in the general population, potentially emerging later in life or in adulthood (Baron-Cohen et al., 2010). Estimates suggest the prevalence of adult ASD in England to be 1.47%, though this figure may be underestimated (Lai & Baron-Cohen, 2015).

Identity processes intersect with psychological variables such as self-esteem, which pertains to one's self-assessment and sense of worth (Corden et al., 2021). Linked to concepts like optimism and self-confidence Rosenberg et al (1995); Lyubomirsky et al (2005), self-esteem evolves throughout maturation, influencing one's relationship with emotions and behavior (Barbalat et al., 2022). Adolescence, marked by biopsychosocial changes, often sees a decline in self-esteem observed since childhood, reflective of evolving self-evaluation processes (Sawyer et al., 2018; Harter, 2012). High self-esteem denotes positive self-assessment and clarity of thought, whereas low self-esteem correlates with emotional dysregulation and avoidance behaviors (Lee et al., 2020; Wisman et al., 2015).

Research on autistic individuals underscores their lower self-esteem compared to typically developing peers (Cooper et al., 2017). Adverse experiences, such as unhealthy social connections or excessive focus on dysfunction, may exacerbate this phenomenon, potentially leading to the development of comorbid disorders (Van Tuijl et al., 2014). Diagnosing low self-esteem traits in autistic individuals is crucial, given their association with heightened depression and increased suicide risk (Arwert & Sizoo, 2020).

Problem Statement

One study revealed that a significant portion of college students with autism did not identify themselves as having special needs or being disabled (Shattuck et al., 2014). Interestingly, those autistic individuals who embraced a positive assessment of their autistic social identity tended to report more positive traits related to their self-esteem (Cooper et al., 2017). This underscores the nuanced interplay between self-perception and autistic identity, shedding light on the complexity of self-esteem in this population. Existing research consistently indicates that adults with autism tend to exhibit lower self-esteem characteristics compared to their neurotypical counterparts (Nguyen et al., 2020; Maitland et al., 2021). However, studies also suggest a positive correlation between self-esteem and various other variables in non-autistic samples Greenaway et al (2015); Jetten et al (2015), further highlighting the need for comprehensive investigations into the factors influencing self-esteem across different populations.

While the relationship between self-esteem and autistic social identity has been explored to some extent Cooper et al (2017), less is understood about the connection between self-esteem and autistic personal identity—how individuals perceive autism as an integral part of themselves. This gap in knowledge underscores the importance of delving

deeper into the multifaceted nature of self-esteem within the autistic community. Moreover, individuals with autism can operate at vastly different levels depending on the severity of their autism and any co-occurring conditions (Hull et al., 2019; Perry et al., 2022). Considering the diverse spectrum of autism and its impact on mental health and self-esteem, it becomes imperative to account for various factors that may influence an autistic person's sense of self-worth, including their identity. Thus, future research endeavors should aim to elucidate these intricate relationships to better support the well-being of individuals with autism.

Methodology

This study adhered to the PRISMA model, as depicted in Figure 1, which comprises four distinct phases: identification, screening, inclusion, and synthesis. The utilization of the PRISMA model ensures a systematic approach to selecting articles for this systematic literature review (Hayrol et al., 2019). By following this model, researchers can meticulously process information, thereby enhancing the quality of the literature review produced. Moreover, the PRISMA model serves the purpose of facilitating comprehensive reporting, enabling readers to assess the methodological soundness and the reliability of the study's findings (Page et al., 2021). Consequently, researchers can effectively locate and synthesize relevant findings, culminating in the creation of a systematic literature review through these four phases.

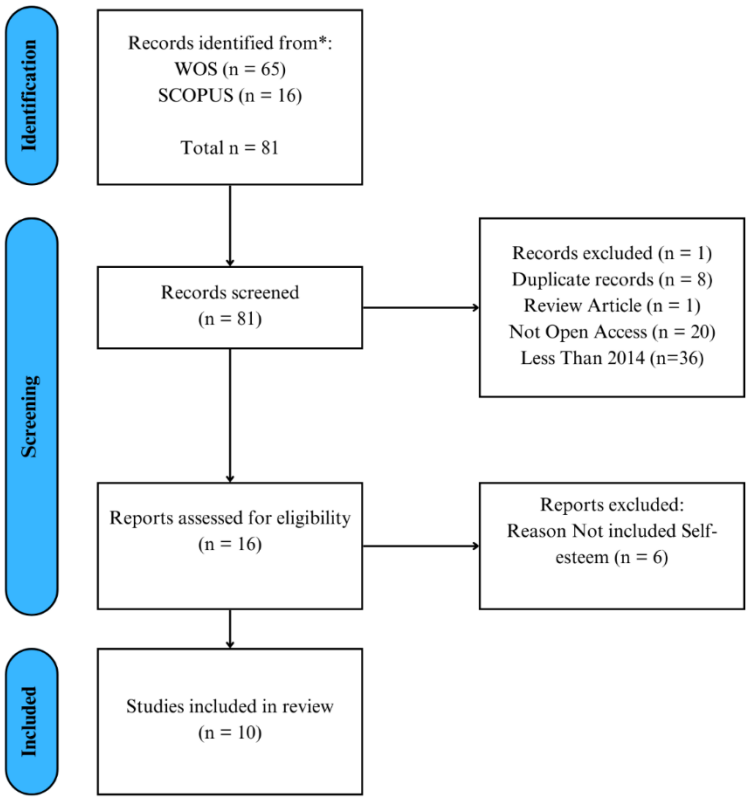

Figure 1 PRISMA flow chart

Definite Introductory Phase

Selection Criteria

To ensure the integrity of this systematic literature review, the study exclusively considered peer-reviewed articles published in scholarly journals. These articles specifically investigated

the relationship between autistic traits and self-esteem. Furthermore, all selected articles were freely accessible (open access) within the domains of education and social sciences and were written in English. The publication timeframe for the included articles spanned the most recent five years, from 2020 to 2024.

Data Source

The data for this study were sourced from electronic databases specializing in education and social sciences. Specifically, the search was conducted on the Scopus and Web of Science websites. These databases were chosen due to their extensive coverage and reputation as high-impact sources frequently referenced in academic literature. According to Osman and Yusoff (2020), Scopus, published by Elsevier, stands out as the largest multidisciplinary citation index database. The search on these databases was conducted up to February 15, 2024, ensuring the inclusion of the most up-to-date and relevant articles for the study.

Search

Boolean Operators and Truncation techniques were used to find this research article. The following are the search terms used in each database viz *("autistic trait*" OR "autism characteristic*" OR "autistic characteristic*" AND self-esteem).* All searches for this article were conducted using the titles and abstracts of the studies. Certain search limitations were imposed based on predefined selection criteria. However, no limitations were applied to ascertain the total number of studies addressing autistic traits and the concept of self-esteem comprehensively. The search results are presented in Table 1.

Table 1
Preliminary search results

Search Item	Database	Search limitations	Findings
TITLE-ABS-KEY("autistic trait" OR "autism characteristic*" OR "autistic characteristic*" AND self-esteem)*	Scopus	Journal articles 2016-2024	16
TS=(((autistic trait) OR (autism characteristic*) OR (autistic characteristic*)) AND (self-esteem))*	Web of Science	Journal articles 2004-2024	65

Refinement Phase

The screening of articles follows the predefined criteria established during the screening phase, as detailed in Figure 1. Upon completion of the screening process, a total of 81 articles were identified. A cross-check was conducted between the two databases to ensure there were no duplicate articles, resulting in a final count of 74 unique articles. The selection criteria for articles are outlined in Table 2 below:

Table 2
Criteria set in the filtering phase

Criteria	Qualifications	Exceptions
Kinds of literature	Journal (Study article)	Books, Proceedings
Language	English	Other than English
Year of publication	2020-2024	Less than Year 2020
Index	Scopus & WoS	Apart from Scopus & WoS
Country	The whole world	No specific country
Access type	*Open Access*	-

In the filtering phase, the initial criterion applied pertains to the type of literature, focusing on journals or research articles. One article was excluded due to being a review article. Subsequently, the publication year was restricted to the period between 2020 and 2024, resulting in the exclusion of 34 journals with publication years preceding 2020. Additionally, articles lacking open-access features were excluded from the selection, leading to the exclusion of 20 articles.

Qualification Phase

In the qualification phase, 16 articles were initially selected after meeting the criteria established in the Screening Phase. These articles underwent assessment using instruments pertaining to autistic traits and self-esteem. Evaluators chose to prioritize articles featuring instruments for identifying autistic characteristics and assessments measuring self-esteem within the accepted articles. Consequently, a total of 10 articles met these criteria. Subsequently, a thorough reading of these 10 articles focused on investigating the relationship between autistic traits and self-esteem to address the research question.

Entry Phase

A total of 81 articles were identified from both databases. These articles were subsequently screened based on predetermined criteria before being included in the next stage of the study, resulting in the acceptance of only 10 articles.

Data Analysis

Based on the selected research articles, the majority of studies employed a quantitative approach, accounting for 9 studies (90%), while the remaining study utilized a mixed approach, constituting one (1) study (10%). These studies were conducted based on research themes related to autistic characteristics and self-esteem. A detailed analysis of all articles is presented in Table 3 below.

Table 3
Analysis of study findings

Writer	Title	Country of study	Methodology Respondents	An instrument to detect Autistic Traits	An instrument to assess Self-Esteem
McDonald (2020)	Autism Identity and the Lost Generation: Structural Validation of the Autism Spectrum Identity Scale and Comparison of Diagnosed and Self-Diagnosed Adults on the Autism Spectrum	USA	Quantitative n=1032 Adolescents & adults	Autism Spectrum Identity Scale (ASIS)	Rosenberg Self-Esteem Scale (RSES)
Katsuki, R; Tateno, M; Kubo, H; Kurahara, K; Hayakawa , K ; Here, N; Kanba, S; Kato, TA (2020)	Autism spectrum conditions in hikikomori: A pilot case-control study	JAPAN	Quantitative n=416 Adolescents & adults	Autism-Spectrum Quotient (AQ) Japanese Version	Tarumi's Modern-Type Depression Trait Scale: Avoidance of Social Roles, Complaint, and Low Self-Esteem (TACS-22)
Moffat R.; Cross E.S. (2024)	Evaluations of dyadic synchrony: observers' traits influence estimation and enjoyment of synchrony in mirror-game movements	Australia	Quantitative n=322 adults	Comprehensive Autistic Trait Inventory (CATI)	Rosenberg Self-Esteem Scale (RSES)
Nguyen W.; Ownsworth T.; Nicol C.; Zimmerman D. (2020)	How I See and Feel About Myself: Domain-Specific Self-Concept and Self-Esteem in Autistic Adults	Australia	Quantitative N=71 adults	Ritvo Autism Asperger's Diagnostic Scale-Revised (RAADS-R)	Rosenberg Self-Esteem Scale (RSES)

Aral A.; Usta M.B. (2022)	Intrapersonal and family predictors of internet addiction in attention deficit hyperactivity disorder	Turkey	Quantitative n=250 adolescents	- Adolescent Version (AQ-Adolescent).	Coppersmith Self-Esteem Inventory (CSEI).
Liu, TL; Wang, PW; Hsiao, RC; Ni, HC; Liang, SHY; Lin, CF; Chan, HL; Hsieh, YH; Wang, LJ; Lee, MJ; Chou, WJ; Yen, CF (2022)	Multiple types of harassment victimization in adolescents with autism spectrum disorder: Related factors and effects on mental health problems	Taiwan	Quantitative n=219 adolescent	Social Responsiveness Scale (SRS) Chinese version	Rosenberg Self-Esteem Scale (RSES)
Nakano T.; Uesugi Y. (2020)	Risk Factors Leading to Preference for Extreme Facial Retouching	Japan	Quantitative n=30 adults	Autism-Spectrum Quotient (AQ) Japanese Version	Rosenberg Self-Esteem Scale (RSES)
Groenendijk E.R.; Van Heijst B.F.C.; Geurts H.M. (2023)	Short report: A co-designed psychoeducation for older autistic adults-a multiple case study	Netherland	Mix Method n=9 elder	Shortened Autism Spectrum Quotient (AQ-28)	Rosenberg Self-Esteem Scale (RSES)
Ai, W; Cunningham, WA; Lai, MC (2024)	The dimensional structure of the Camouflaging Autistic Traits Questionnaire (CAT-Q) and predictors of camouflaging in a representative general population sample	USA	Quantitative n=1051 adults	The Subthreshold Autism Trait Questionnaire (SATQ)	Relational Self-Esteem Scale (RSE)
Strang M.; Macmillan C.M.; Brown C.M.; Hooley M.; Stokes M.A. (2024)	The relationship between alexithymia and self-esteem in autistic adolescents	Australia	Quantitative N=102 adolescents	Autism Quotient (AQ)	Rosenberg Self-Esteem Scale (RSES)

Findings

Characteristics of Empirical Studies

Year of Publication

Table 4 below shows the publication years between 2020 and 2024. The trend for research on the relationship between autistic characteristics and self-esteem is decreasing from 2020 to 2023, with four studies in 2020, decreasing to two studies in 2022, and further declining to one study in 2023. However, in 2024, the number of studies will increase to three. Findings indicate that the highest number of studies occurred in 2020, with four studies, while the lowest was in 2023, with only one study. This suggests that fewer researchers are focusing on the study of autistic characteristics and self-esteem over time.

Table 4
Year of publication of the study

Year of Publication	Number	Writer
2020	4	Katsuki et al.; McDonald & TAM; Nakano & Uesugi; Nyugen et al.
2022	2	Aral & Usta; Liu et al.
2023	1	Groenendijk et al.
2024	3	Ai et al.; Moffat & Cross; Strang et al.

Study Location by Country

Table 5 shows a total of 6 countries involved in the study locations that have been conducted. The country conducting the most recent studies on the relationship between autistic characteristics and self-esteem is Australia, with three studies, followed by Japan and the United States, each with two studies, while other countries only have one study.

Table 5
Country by study location

Country	Number	Writer
United States of America	2	Ai et al. (2024); McDonald & TAM (2020)
Australia	3	Moffat & Cross (2024); Nguyen et al. (2020); Strang et al. (2024)
Dutch	1	Groenendijk et al. (2023)
Japan	2	Katsuki et al. (2020); Nakano & Uesugi (2020)
Taiwan	1	Liu et al. (2022)
Turkey	1	Lesson & Master (2022)

Sample Study

Table 6 below presents a sample of studies focusing on teenagers up to adulthood. These studies utilize a quantitative approach, employing self-report instruments. Consequently, various sample sizes are employed, reflecting the diversity in addressing research questions.

Table 6
Sample study

Number of study respondents	Number of articles
1- 200 people	4
201 - 400 people	3
401 - 600 people	1
601 - 800 people	0
801 - 1000 people	0
more than 1000 people	2

Study Instrument

Table 7
An instrument to detect Autistic Traits

Number	An instrument to detect Autistic Traits
1	Autism Spectrum Identity Scale (ASIS)
5	Autism-Spectrum Quotient (AQ)
1	Comprehensive Autistic Trait Inventory (CATI)
1	Ritvo Autism Asperger's Diagnostic Scale-Revised (RAADS-R)
1	Social Responsiveness Scale (SRS) Chinese version
1	The Subthreshold Autism Trait Questionnaire (SATQ)

Table 8
An instrument to assess Self-Esteem.

Number	An instrument to assess Self-Esteem
1	Coppersmith Self-Esteem Inventory (CSEI).
1	Relational Self-Esteem Scale (RSE)
7	Rosenberg Self- Esteem Scale (RSES)
1	Tarumi's Modern-Type Depression Trait Scale: Avoidance of Social Roles, Complaint, and Low Self-Esteem (TACS-22)

Autistic Traits and Self-Esteem

Table 8 below displays the results of a study focusing on the relationship between autistic characteristics and self-esteem. The findings suggest that high levels of autistic traits correspond to low levels of self-esteem.

Table 8
The results of a study on the relationship between autistic characteristics and self-esteem

Article	Result	
	High Autistic Traits, High Self Esteem	High Autistic Traits, Low Self Esteem
Autism Identity and the Lost Generation: Structural Validation of the Autism Spectrum Identity Scale and Comparison of Diagnosed and Self-Diagnosed Adults on the Autism Spectrum		/
Autism spectrum conditions in hikikomori: A pilot case-control study		/
Evaluations of dyadic synchrony: observers' traits influence estimation and enjoyment of synchrony in mirror-game movements		/
How I See and Feel About Myself: Domain-Specific Self-Concept and Self-Esteem in Autistic Adults		/
Intrapersonal and family predictors of internet addiction in attention deficit hyperactivity disorder		
Multiple types of harassment victimization in adolescents with autism spectrum disorder: Related factors and effects on mental health problems		/
Risk Factors Leading to Preference for Extreme Facial Retouching		/
Short report: A co-designed psychoeducation for older autistic adults-a multiple case study		
The dimensional structure of the Camouflaging Autistic Traits Questionnaire (CAT-Q) and predictors of camouflaging in a representative general population sample		
The relationship between alexithymia and self-esteem in autistic adolescents		/

Discussion

The research findings consistently highlight a significant correlation between high scores on instruments assessing autistic characteristics and low scores on instruments gauging self-esteem. Adjusting for autistic traits, individuals with autism reported markedly lower levels of power and global self-esteem compared to neurotypical individuals (Nguyen et al., 2020). Additionally, self-diagnosed individuals were found to be less likely to identify as students or to embrace the term "autism," while being more likely to be older, female, or employed (McDonald, 2020).

The amalgamation of high self-esteem and autistic traits among teens can yield detrimental effects. Similar to Liu et al (2022), adolescents with autism who experienced multiple forms of maltreatment exhibited heightened levels of anxiety, depression, and an increased risk of suicide compared to non-victims or those experiencing only one form of maltreatment. Furthermore, research by Strang et al (2024) revealed that adolescents with autism demonstrated higher levels of cognitive alexithymia and lower levels of self-esteem

compared to their neurotypical counterparts. Although not studied extensively in autistic populations, heightened cognitive alexithymia has been linked to decreased self-esteem in non-autistic adolescents.

Moreover, adults with autism reported profound impacts on their daily lives, including lower quality of life, increased stigma, and diminished self-esteem compared to the general population (McDonald, 2020). Even after adjusting for correlations between autistic traits and self-esteem, autistic adults exhibited lower self-esteem traits than neurotypical individuals (Nguyen et al., 2020). Furthermore, individuals with autism or high levels of autistic traits often exhibit enhanced self-adjustment skills due to reduced socialization needs. However, those with severe autism may encounter challenges in social situations and communication (Katsuki et al., 2020). Additionally, individuals with high autism traits may demonstrate heightened responses to image retouching, indicating potential associations between autism traits and self-perception (Uesugi & Nakano, 2020).

Moreover, individuals with high autism traits may also exhibit symptoms of modern-type depression, coupled with lower self-esteem and a propensity for complaining (Moffat & Cross, 2024). The presence of autistic traits has been hypothesized to influence the formation of representations of social interactions among observers (Moffat & Cross, 2024).

Lastly, the inclusion of Social (pragmatic) Communication Disorder (SCD) and ASD in the DSM-5 underscores the significance of identifying autism symptoms in adults of average intellect (Yoshinaga et al., 2023). The Autism-Spectrum Quotient (AQ) test serves as a valuable tool for this purpose, with scores of 26 or higher potentially indicative of autism symptoms (Baron-Cohen, 2001). The reliability and validity of instruments such as the Rosenberg Self-Esteem Scale (RSE) further support the assessment of self-esteem in individuals with autism, demonstrating strong internal consistency, stability, and validity (Rosenberg, 1965).

Conclusion

In summary, the research offers valuable insights into the intricate interplay among autism spectrum disorder (ASD), self-esteem, social interactions, and mental health. It elucidates the diverse demographic characteristics of individuals with self-diagnosed autism compared to those formally diagnosed, highlighting potential differences in their experiences. Moreover, it underscores the significance of early identification and intervention for individuals exhibiting autism traits, emphasizing the necessity for tailored support strategies. Furthermore, observer traits such as extraversion, empathy, and self-esteem are found to significantly influence social interaction representations, underscoring the importance of accounting for individual differences in social cognition studies. The consistent trend of lower self-esteem among autistic individuals, regardless of autism characteristics, calls for targeted interventions to bolster self-esteem and enhance overall well-being in this population.

The correlation between harassment victimization and adverse mental health outcomes underscores the vulnerability of individuals with ASD to negative social experiences, emphasizing the urgency of addressing bullying and harassment in supportive environments. Additionally, the exploration of self-face perception sheds light on the perceptual disparities experienced by individuals on the autism spectrum. Overall, these collective findings highlight the multifaceted nature of ASD and its impact on various aspects of individuals' lives, including self-esteem, social interactions, and mental health. Moving forward, continued research efforts aimed at comprehending these complexities and developing effective interventions tailored to the diverse needs of individuals with ASD are imperative for promoting their well-being and fostering inclusivity in society.

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