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JOANNA KOSSEWSKA https://orcid/0000-0002-8156-6764

Institute of Special, School and Teachers' Education
Pedagogical University of Krakow, Poland
e-mail: joanna.kossewska@up.krakow.pl

MAGDALENA MILCZAREK https://orcid/0009-0009-6321-4712

Zespół Szkół w Świątnikach Górnych
School Union in Świątniki Górne
e-mail: magdalena.hordjewicz@wp.pl

Camouflaging in Autism Spectrum Conditions in the Context of Self-Esteem Level

Kamuflaż a stany ze spektrum autyzmu w kontekście samooceny

Abstract. People with autism spectrum condition (ASC) sometimes mask the features of autism, and this could be related to their level of self-esteem. The aim of the research was to show the relationship between the intensity of autistic features, camouflage and self-esteem. Polish versions of the following tools were used in the study: the Short Autism Spectrum Quotient Test (AQ-10), the Rosenberg Self-Esteem Scale, and the Camouflaging Autistic Traits Questionnaire-CAT-Q. The study involved 100 adults (aged 18 to 52) who were divided into two groups based on their ASD diagnosis and empirical AQ-10 indicators: an ASD group (N1 = 41, declaration of ASD diagnosis and indicator AQ ≥ 6; 31 females, 4 males, 6 nonbinary persons, mean age = 28.71, sd = 8.86); and a non-ASD group (N2 = 48, no ASD diagnosis and indicator AQ < 6; 29 females, 17 males and nonbinary persons, mean age = 26.14, sd = 9.64). The results revealed the existence of a linear relationship between the severity of autistic traits and the use of camouflaging strategies. No linear relationship was found between self-esteem and the other variables; however, some significant differentiation was identified due to the distinguished level of self-esteem (low, medium, high).

Keywords: autism spectrum disorder, camouflage, self-esteem, psycho-social functioning, adulthood

Słowa kluczowe: zaburzenia ze spektrum autyzmu, kamuflaż, samoocena, funkcjonowanie psychosopłeczne, dorosłość

INTRODUCTION

Camouflaging is one of several coping and adaptive strategies that autistic individuals may employ in order to adjust to their social environment. These strategies may comprise camouflaging with masking (e.g., maintaining eye contact) and compensation (e.g., using scripted language to initiate conversation), along with other non-camouflaging behaviors. Camouflaging is a behavior complex (masking, compensation, copying or imitation) (Hull et al., 2017; Lai et al., 2017) that performs an adaptive function whose purpose is to mask certain autistic conditions and adapt to specific neurotypical environmental requirements. It should be noted that camouflaging is an adaptive strategy that is used by people with autism spectrum disorder/conditions to mask their natural autistic reactions, to participate in social interactions, and to be accepted by their peers (Lai, Baron-Cohen, 2015; Fombonne, 2020). Camouflag-

ing strategies and their effects are still poorly researched, but the best-studied are imitation (Lai, Baron-Cohen, 2015), masking (Baldwin, Costley, 2016) and compensation (Livingston, Shah, Happé, 2019).

It is worth mentioning that the scientific discussion on this concept first appeared in the works of Lorna Wing (1981), who was the first to reveal that some high-functioning autistic girls may be missed in clinical diagnosis due to their better social and communication abilities compared to males. However, empirical research on autism camouflaging has only recently emerged (cf. systematic review by Cook et al., 2021). Symptom profile comparisons between males and females with autism have yielded inconsistent results. Compared with males, females tend to display lower levels of restricted repetitive behaviors; however, although various gender-related effects of camouflaging can be observed, the magnitude of these differences is small, and differences in social and communicative behaviors or early cognitive skills are negligible (Schuck, Flores, Fung, 2019; Kaat et al., 2021). The first outcome of this is usually a delay in the diagnosis process (about 6 to 8 or more years) and a lack of adequate early therapy because these autistic features often do not meet the ASD diagnostic criteria, which were first described by L. Wing (1981) (Lai, Baron-Cohen 2015; Bargiela, Steward, Mandy, 2016; McQuaid, Lee, Wallace, 2021). The secondary consequences of camouflaging might be internalizing behaviors and more emotional disturbance, depression, or anxiety (Mandy et al., 2012; May, Cornish, Rinehart, 2014; Hull et al., 2021). There also is the risk of numerous emotional burdens, i.e., loss of identity and self-esteem, and self-harm and/or suicidal thoughts (Tierney, Burns, Kilbey, 2016; Cook, Ogden, Winstone, 2018; Hull et al., 2017).

Women diagnosed with ASD tend to mask their symptoms and compensate for social difficulties in various social situations (Lai et al., 2011; Lai, Baron-Cohen, Buxbaum, 2015; Mandy et al., 2012; Bargiela, Steward, Mandy, 2016; Rynkiewicz, Łucka, 2018). They usually do this by mimicking their peers, which is perfectly described by the camouflaging model developed by Hull et al. (2017), who believe that camouflaging is sustained by internal and/or external causes and can manifest itself both for (a) "conventional" reasons (to fit into formal environments such as school, work, and/or care) and (b) for "relational" reasons (to fit in with social expectations and roles).

The relationship between autistic spectrum and camouflaging has recently been investigated (Hull et al., 2017; Hull et al., 2021; Rynkiewicz et al., 2016; Jorgenson et al., 2020), but the influence of the regulative function of self-esteem has not been evaluated in a state-of-the-art manner. Significant theories by Reykowski and colleagues (1977), Kozielecki (1981), Rosenberg (1965), and Polczyk and Szpitalak (2015) have assumed the significant importance of self-esteem. Although self-esteem development is long-lasting process (Erol, Orth, 2011) that is usually affected by parenting style and child-rearing attitudes (DeHart, Pelham, Tennen, 2006) and its core mechanism underlines genetic and neural conditions (Pan et al., 2016), its general stability is the basis of adequate and healthy psychological functioning (Kernis, 2005). The aim of the research was to determine the relationship between the intensity of autistic conditions, self-esteem level, and the use of camouflaging. The following hypotheses were defined:

H1: Camouflaging strategy variation depends on the intensity of autistic traits.

H1.1. The ASD group in comparison to the non-ASD group will display a significantly higher level of camouflaging strategies.

H2: Self-esteem variation depends on the intensity of autistic traits.

H2.2 The ASD group in comparison to the non-ASD group will display a significantly lower level of self-esteem.

H3: Variation of the intensity of autistic traits depends on gender.

H3.1 Males will display a significantly higher intensity of autistic traits in comparison to females.

H4: There is variation in camouflaging by gender.

H4.1. Females in comparison to males will display a significantly higher level of camouflaging strategies.

H5: Use of camouflaging strategies depends on age.

H5.1 Younger adults present a significantly higher level of camouflaging strategies.

H6: The level of self-esteem differentiates the use of a camouflaging strategies.

METHOD

Group

The study involved 100 adults (aged 18 to 52) that were split into two groups on the basis of their declared ASD diagnosis and empirical AQ-10 indicators: an ASD group (N1 = 41, declaration of ASD diagnosis and indicator AQ ≥ 6; 31 females, 4 males, 6 nonbinary persons, mean age = 28.71, sd = 8.86); a non-ASD group (N2 = 48, declaration of no diagnosis and indicator AQ<6; 29 females, 17 males and nonbinary persons, mean age = 26.14, sd = 9.64). Although the term *Autism Spectrum Disorder* is used in this text, this term is not understood as precisely as clinical diagnosis in accordance with the criteria contained in DSM-5 or ICD-11. The research was carried out between February and August 2021[*] *via* a Google e-application posted on online forums for people with autism spectrum disorders and among people from the general population who did not declare any disorders. Because the research was carried out under conditions of social and physical isolation during the COVID-19 pandemic, direct diagnostic assessment was not possible (Schneider, 2021). In order to empirically distinguish the two groups (with and without ASD diagnosis), the results were classified under the interaction of two separate criteria: a personal declaration of ASD diagnosis (vs a declaration of no diagnosis) and the empirical results of the AQ scale, taking into account the cut-off point. The cut-off point between ASD and non-ASD was set at 6.0 points in the AQ-10 questionnaire; this is in line with the results of Allison, Auyeung, and Baron-Cohen (2012).

Due to the fact that it was impossible to verify medical diagnoses and precisely use the medical term 'disorder' (related to a specific causal and dysfunctional mechanism), following Baron-Cohen (Lai, Lombardo, Baron-Cohen, 2014) the term 'autism spectrum condition' was used in order to express not evidence of dysfunction but rather a variety of autistic traits of varying intensity.

The range of the participants' ages was wide (18–52), therefore we divided it into three stages according to Levinson's theory (1978) to find the developmental differences within the relationships between the analysed variables: (1) Early Adult Transition and Entering the Adult World (age 18–30); (2) Age 30 Transition and Settling Down (30–40); (3) Mid-Life Transition and Entering Middle Adulthood (40–52).

Participation in the research was voluntary and anonymous.

Instruments

The following instruments were used:

Short Autism Spectrum Quotient Test (AQ-10) (Allison, Auyeung, Baron-Cohen, 2012), developed on the basis of the full Polish version of AQ (Pisula et al., 2013). Cronbach's Alpha reliability coefficient for the original version of AQ-10 is $\alpha = 0.85$. AQ-10 consists of 10 items rated on a 4-point Likert scale that describe the most characteristic autistic conditions in five subscales: attention to detail, communication, imagination, shifting attention, social skills.

The Polish version (Łaguna, Lachowicz-Tabaczek, Dzwonkowska, 2007) of the Rosenberg Self-Esteem Scale (Rosenberg, 1965) consists of 10 items assessed on a 4-point Likert scale; it measures global self-esteem in adolescents and adults. The RSES consists of 10 self-report items which are rated on a 4-point scale, ranging from strongly agree (3) to strongly disagree (0), with a total score ranging from 0 to 30. A high total score indicates high self-esteem. The reliability of the scale is in the Cronbach alpha range of 8.01–8.45.

[*] Data were collected within the master thesis project by Milczarek (2021).

More recently, an increasing number of studies addressing the camouflaging effect have been based on data obtained with the Camouflaging Autistic Traits Questionnaire (CAT-Q, Hull and colleagues, 2019). In the presented study, an experimental Polish translation (by Milczarek and Kossewska) of this questionnaire was used. The scale consists of 25 items rated on a 7-point Likert scale; it examines the general tendency to camouflage and the use of three specific strategies: masking, assimilation, and compensation. The reliability of the original version is $\alpha = 0.94$; for the compensation dimension $\alpha = 0.91$; for the masking dimension $\alpha = 0.85$; for the assimilation dimension $\alpha = 0.92$.

In order to answer the research questions, the IBM SPSS Statistics 25 package was used to analyze basic descriptive statistics with the Shapiro-Wilk test and a two-way ANOVA, and correlation analyses were performed with R--Spearman's coefficient.

RESULTS

The basic descriptive statistics of the measured quantitative variables are presented in Table 1.

Table 1. Basic descriptive statistics of the studied quantitative variables

Statistics Variables	M	Me	SD	Sk.	Kurt.	Min.	Maks.	W	p
Autism Spectrum Quotient	5.596	6	2.843	–.179	–1.255	0	10	.93	<.001
Camouflaging	104.6	105	27.85	–.06	–.86	46	163	.98	.146
Compensation	39.146	40	11.999	–.266	–.852	14	61	.97	.03
Masking	32.157	33	8.859	–.441	.327	8	53	.98	<.001
Assimilation	34.697	37	12.102	–.323	–1.079	11	55	.95	<.001
Self-esteem	26.45	27	5.11	–.08	–.2	13	37	.99	.666

Note: M – average; Me – median; SD – standard deviation; Sk. – skewness; Kurt. – kurtosis; Min and Max – the lowest and highest value of the distribution; W – Shapiro-Wilk test result; p – level of statistical significance

Source: own elaboration.

The descriptive statistics for the studied variables are presented in Table 1. The distributions of the variables differ significantly from the characteristics of the normal distribution, as evidenced by the Shapiro-Wilk test indexes and the values of the skewness coefficient of the distribution; therefore, it was assumed that the distribution of the studied variables was not significantly asymmetric in relation to the means, therefore nonparametric tests were applied (George, Mallery, 2019).

The correlation was performed to find the relationship between the intensity of autism conditions and camouflaging and self-esteem (Table 2).

Table 2. Linear correlation between variables with R-Spearman's coefficient

	1	2	3	4	5	6
1. Autism Spectrum Quotient	1.00					
2. Compensation	.53*	1.00				
3. Masking	.05	.57*	1.00			
4. Assimilation	.67*	.69*	.34*	1.00		
5. Camouflaging	.55*	.92*	.68*	.85*	1.00	
6. Self-esteem	–.01	.05	.13	–20	–.03	1.00

*p < .05
Source: own elaboration.

No linear relationships were found between self-esteem and autistic conditions or between self-esteem and camouflaging strategies. However, there was a significant correlation between the total result of camouflaging (as well as compensation and assimilation) and autistic spectrum quotient. No significant correlation was found between masking strategy and autistic conditions and self-esteem.

The Kruskal-Wallis test was used to measure more-detailed inter-group differences (ASD *vs* non-ASD) (Table 3).

Table 3. Inter-subgroup differentiation between camouflaging and self-esteem (ASD *vs* non-ASD subgroups)

Variable	Subgroup ASD (N1 = 41)		Subgroup non-ASD (N2 = 48)		H Kruskal--Wallis (1, N = 89)	p
	Range sum	Mean range	Range sum	Mean range		
Total SES	1821.5	44.43	2183.5	45.49	.04	.85
Compensation	2368.0	57.75	1637.0	34.10	18.55	.001
Masking	1930.5	47.08	2074.5	43.22	.50	.48
Assimilation	2510.0	61.22	1495.0	31.15	30.00	.0001
Total CAT-Q	2400.0	58.53	1605.0	33.44	20.88	.0001

Source: own elaboration.

In terms of the intensity of autistic conditions, differences were found between camouflaging strategies and self-esteem (Table 4). Participants in the ASD subgroup (declared formal diagnosis and indicators AQ => 6) in comparison to those in the non-ASD subgroup (declared no diagnosis and indicators AQ < 6) showed a higher overall level of camouflaging strategies (compensation and assimilation); however, no differences were found in the application of masking strategies or the level of self-esteem.

The Kruskal-Wallis nonparametric test of the one-way ANOVA was used to measure detailed differences between genders (Table 4).

Table 4. Differentiation between camouflaging and self-esteem, depending on gender

Variable	Female (N_f = 60)		Male (N_m = 21)		Non-binary (N_{nb} = 8)		H Kruskal--Wallis (2, N = 89)	p
	Rang sum	Mean rang	Rang sum	Mean rang	Rang sum	Mean rang		
Total SES	2778,50	46.31	1035.00	49.29	191.50	23.94	6.08	.047
Compensation	2970.50	49.51	701.00	33.38	333.50	41.69	6.21	.045
Masking	2769.00	46.15	875.50	41.69	360.50	45.06	0.46	0.79
Assimilation	2877.00	47.95	625.50	29.79	502.50	62.81	11.88	.003
Total CAT-Q	2914.00	48.57	681.50	32.45	409.50	51.19	6.56	.04
Total AQ-10	2855.00	47.58	656.50	31.26	493.50	61.69	10.01	.01

Source: own elaboration.

Interesting differences were found in reference to gender. On the basis of the Kruskal-Wallis ANOVA test and the post-hoc Tukey-Kramer test for unequal samples, it was found that the non-binary gender subgroup represented a significantly higher level of autistic condition, a lower level of self-esteem, as well as a lower level of assimilation in comparison the female and male gender subgroups. Other significant gender differences were found regarding camouflaging strategies. In comparison to females, males showed significantly lower camouflaging, compensation and assimilation indicators.

Due to the fact that the sample was age differentiated, it was important to distinguish the developmental differences in reference to the three developmental periods based on Levinson's Theory: (1) Entering the Adult World subgroup (age 18–30); (2) Age 30 Transition and Settling Down subgroup (30–40); (3) Mid-Life Transition and Entering Middle Adulthood subgroup (40–52).

Table 5. Developmental differences in autistic conditions, camouflaging and self-esteem

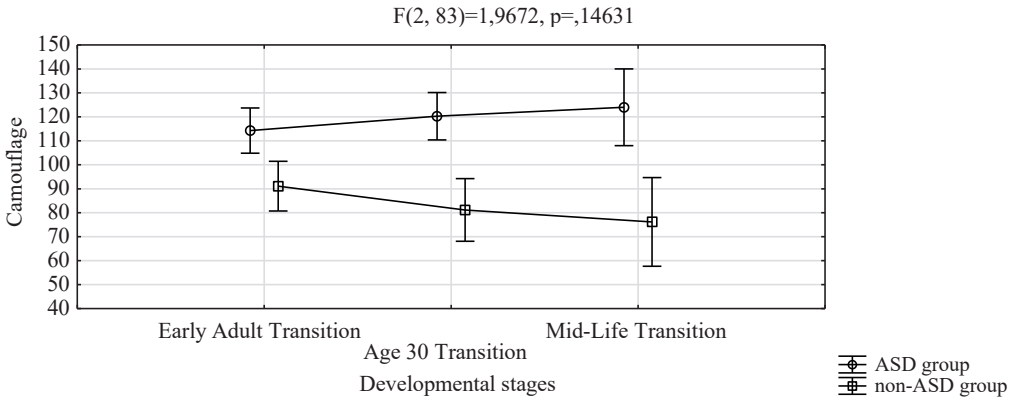
Variable	Early Adult Transition (N1 = 42)		Age 30 Transition (N2 = 33)		Mid-Life Transition (N3 = 14)		H Kruskal-Wallis (2, N = 89)	p
	Rang sum	Mean rang	Rang sum	Mean rang	Rang sum	Mean rang		
Total SES	1838.00	43.76	1633.00	49.48	534.00	38.14	2.09	.35
Compensation	1809.00	43.07	1574.00	47.69	622.00	44.43	.60	.74
Masking	1920.50	45.73	1516.50	45.95	568.00	40.57	.49	.78
Assimilation	1907.00	45.40	1483.50	44.95	614.50	43.89	.04	.98
Total CAT-Q	1815.00	43.21	1569.50	47.56	620.50	44.32	.53	.76
Total AQ-10	1874.50	44.63	1520.50	46.07	610.00	43.57	.15	.93

Source: own elaboration.

There were no significant statistical differences in the level of the dependent variables (autistic conditions, self-esteem, camouflage) in relation to the developmental context, understood as the three considered developmental stages (Entering the Adult World; Age 30 Transition and Settling Down; Mid-Life Transition and Entering Middle Adulthood).

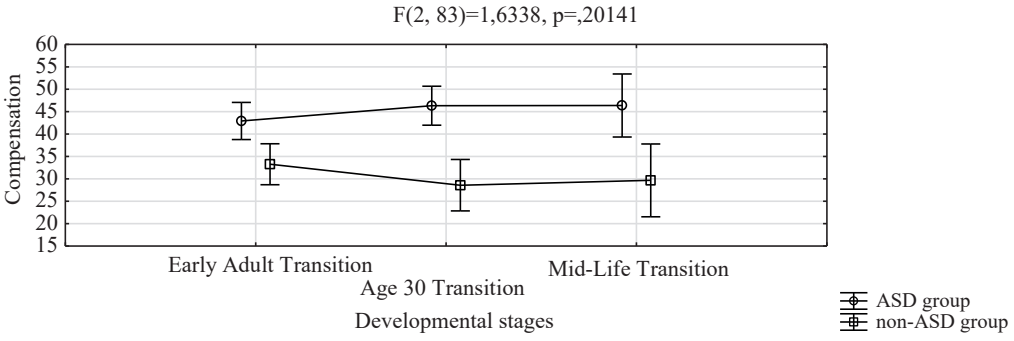
The interaction between developmental stage and the main differentiating criterion (ASD *vs* non-ASD) was not positive. Visualization of camouflage indicators is shown in Figs. 1–4.

Figure 1. Camouflaging and age in ASD *vs* non-ASD groups



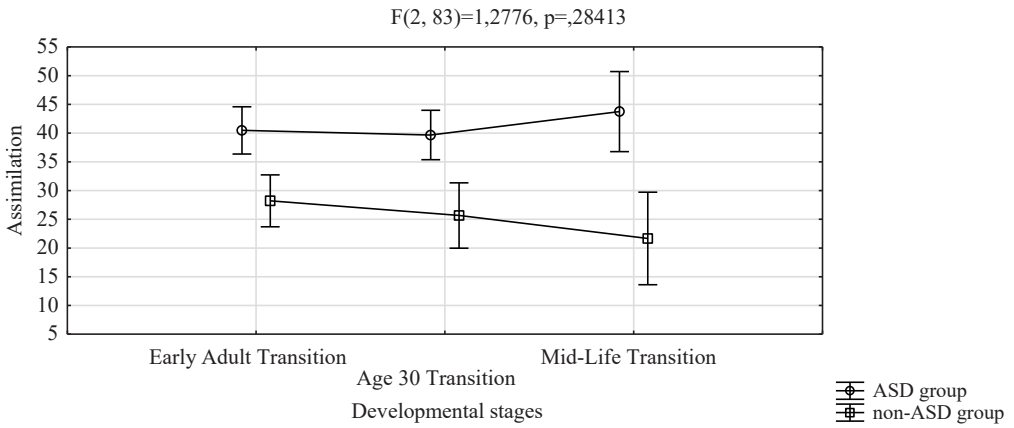
Source: own elaboration.

Figure 2. Compensation and age in ASD vs non-ASD groups



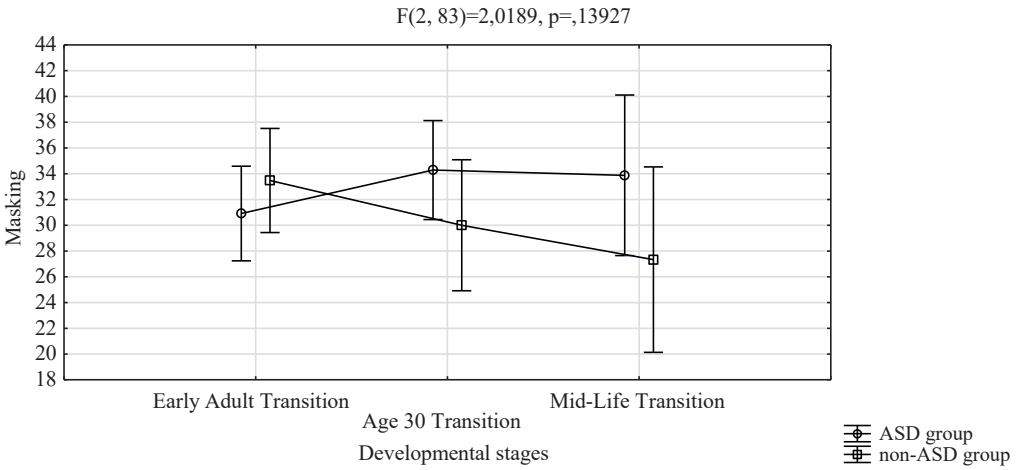
Source: own elaboration.

Figure 3. Assimilation and age in ASD vs non-ASD groups



Source: own elaboration.

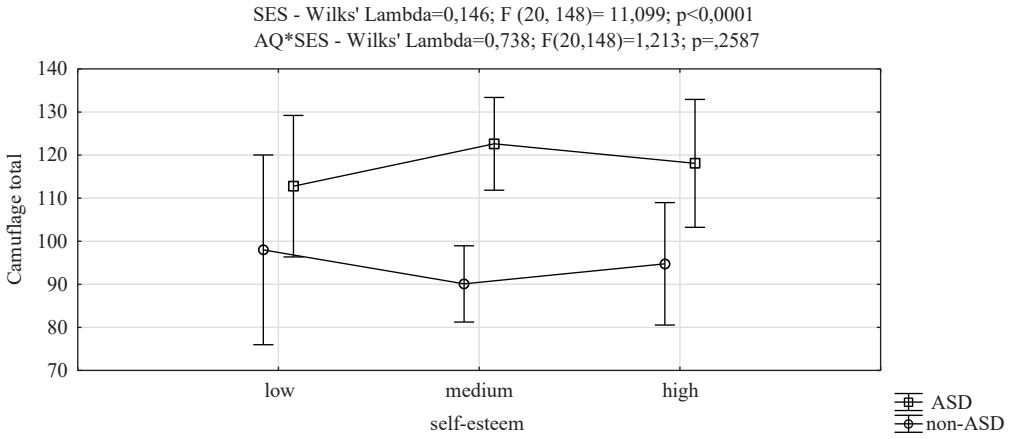
Figure 4. Masking and age in ASD *vs* non-ASD subgroups



Source: own elaboration.

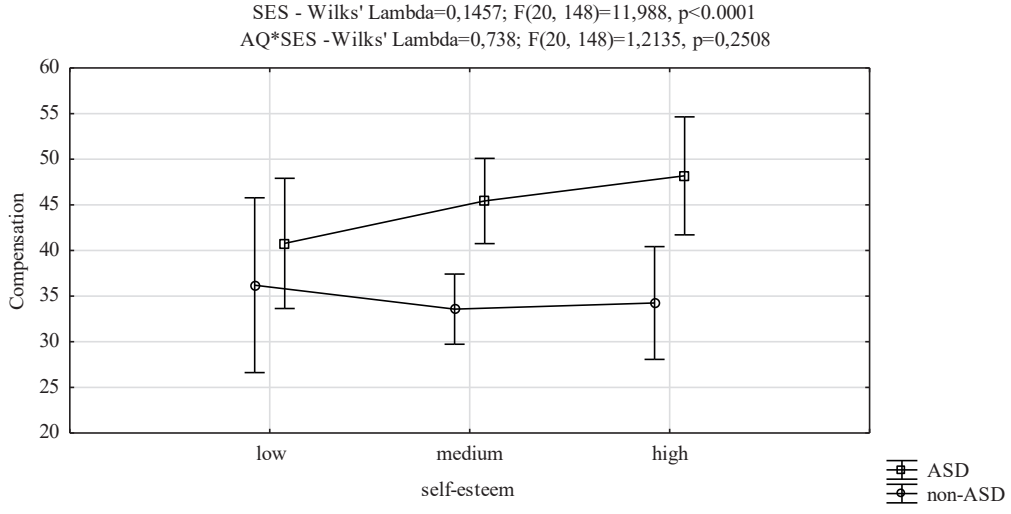
Due to the important regulatory function of self-esteem, it was assumed that its level may play a mediating role in the relationship between the severity of ASD and camouflaging. As there were no linear correlations between self-esteem and camouflaging or between self-esteem and AQ, an ANOVA analysis was performed for the subgroups distinguished according to the level of self-esteem (low, medium and high). A visualisation of the camouflaging indicators in reference to self-esteem level is given in Figs 5–8.

Figure 5. Differences on camouflaging intensity depending on the level of self-esteem in ASD vs non-ASD groups



Source: own elaboration.

Figure 6. Differences of the compensation intensity depending on the level of self-esteem in ASD *vs* non-ASD groups



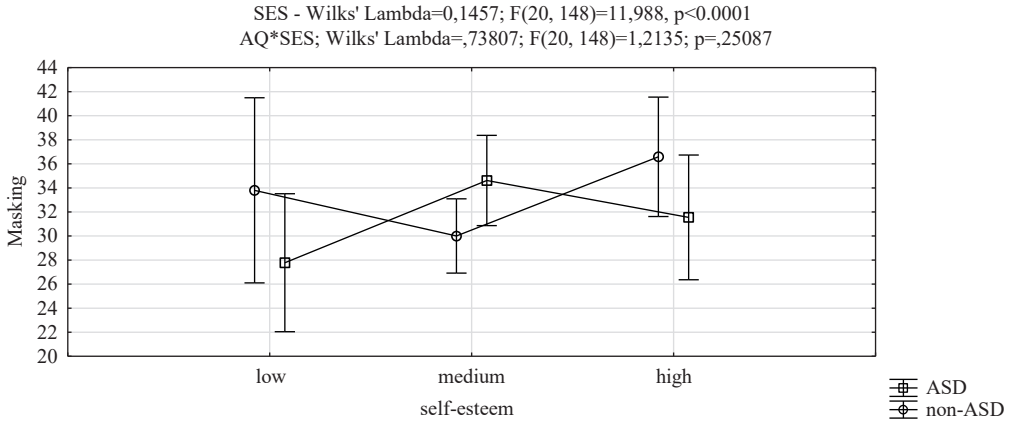
Source: own elaboration.

Self-esteem is a factor that differentiates the use of camouflaging (Figure 5). It was found that the level of self-esteem could differentiate the tendency to camouflage (Wilks' test = .146; $F(20, 148) = 11.099$, $p < .0001$). Fisher's NIR post-hoc test revealed that people from the ASD

group with moderate self-esteem presented the highest level of camouflaging – statistically significantly higher than the non-ASD group at all three levels of self-esteem. People with ASD and high self-esteem also exhibit statistically higher levels of camouflaging than neurotypical people with moderate and high self-esteem. Regarding low self-esteem, differences were found in the use of camouflaging between the ASD group and the typical development group. In contrast, people with ASD and low self-esteem use camouflaging to a greater extent than neurotypical people with moderate self-esteem.

In terms of application of the compensation strategy, the ASD group with low self-esteem did not differ from the non-ASD group (Figure 6). On the other hand, people with ASD and a medium and higher level of self-esteem use compensation significantly more than neurotypical people with a similar level of self-esteem. At the same time, people with ASD and a high level of self-esteem use compensation significantly more often than people with ASD and the two other levels of self-esteem.

Figure 7. Differences in masking intensity depending on the level of self-esteem in ASD vs non-ASD groups

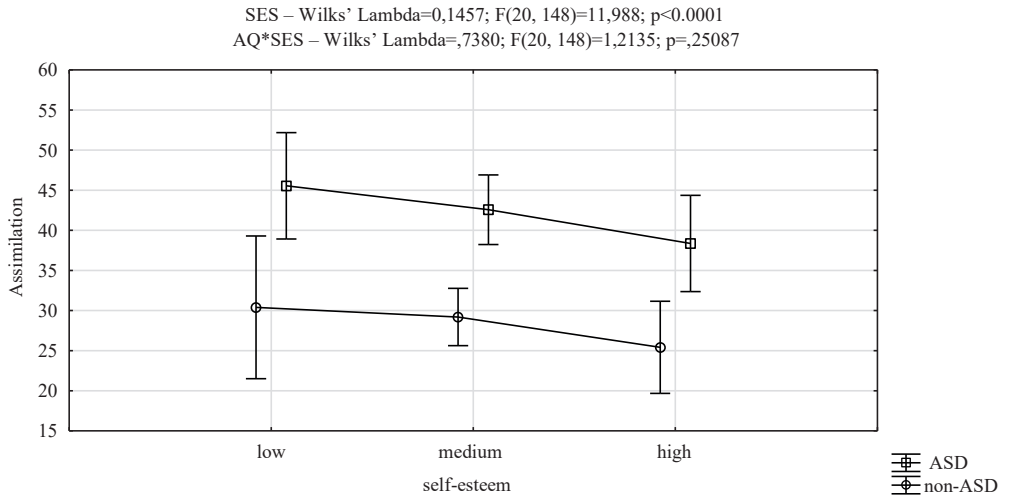


Source: own elaboration.

People with ASD with low self-esteem show the lowest level of masking, significantly lower than neurotypical people with high self-esteem, who at the same time show the highest level of masking – significantly higher compared to neurotypical people with average self-esteem (Figure 7).

People with ASD at each level of self-esteem show a significantly higher level of assimilation compared to neurotypical people with the same level of self-esteem, and it is inversely proportional to the level of self-esteem in both groups (Figure 8).

Figure 8. Differences in assimilation intensity depending on the level of self-esteem in ASD vs non-ASD groups



Source: own elaboration.

Discussion

The aim of the research conducted in Poland was to check the relationship between the intensity of autistic conditions and the use of camouflaging strategies and self-esteem. The research results confirmed the existence of the dependencies that were revealed in foreign studies (Hull et al., 2017) and the regulatory importance of self-esteem. Statistically significant differences between the genders in terms of the intensity of autistic conditions and camouflaging emerged. The results refer to the three most frequently used strategies: compensation, masking, and assimilation.

Women probably subjectively perceive a relatively higher intensity of autistic conditions than men do; this might be reflected in the camouflaging scores obtained via qualitative self-reports and questionnaires (Chandler, Russel, Maras, 2019; Hull et al., 2017; Hull et al., 2020). Females seem to be more empathic due to their better social compensatory skills and/or the camouflaging of core ASD symptoms (Hull, Petrides, Mandy, 2020). Lai, Baron-Cohen, and Buxbaum (2015) suggested that the female phenotype of ASD is the biological and genetic background of females' ability to camouflage their autistic symptoms. Women are more inclined and put more effort into undertaking a camouflaging strategy in the face of difficulties and deficits in social functioning, especially if their IQ level is average (Lai et al., 2017; Rynkiewicz, 2009; Rynkiewicz, Janas-Kozik, Słopień, 2018; Rynkiewicz et al., 2016); this can lead to late diagnosis or even no diagnosis (Dworzynski, Ronald, Bolton, Happé, 2012; Kreiser, White, 2014; Bargiela, Steward, Mandy, 2016). Women with ASD seem to analyze the nuances of human behaviors, the emotional atmosphere and social conventions, and they imitate the most adaptive and popular celebrities

or fictional characters by absorbing speech features and using conventional language phrases, e.g., by mimicking accents (Lai, Baron-Cohen, Buxbaum, 2015). This helps them camouflage their natural autistic conditions and mask the social confusion they may experience in social situations (Tierney, Burns, Kilbey, 2016). Girls and women with autism hide their misunderstanding of the nuances of social behavior and their struggles to overcome sensory disorders, but their use of these strategies is exhausting and confusing for them (Jorgenson, Lewis, Rose, Kanne, 2020; Hull et al., 2019; Rynkiewicz, Łucka, 2018). The research also revealed that the use of camouflaging strategies is significantly more frequent in people with ASD compared to the non-ASD group, which is consistent with previous research (Hull et al., 2017).

A compensation strategy is basically the acquisition and application of social skills through internalized scripts; however, social rules are not intuitive for people with ASD due to some impairment in the social brain, which is responsible for social cognition (Peng et al., 2020). Compensation is a rather exhausting process and is time-consuming because it takes a deliberate effort to respond appropriately in social settings; moreover, it can still probably impact mental health. Another strategy, namely masking, is used by many females with ASD (Attwood, 2007; Dean, Harwood, Kasari, 2017; Dworzynski et al., 2012; Kopp, Gillberg, 1992) to imitate others (socially skilled people or celebrities) in social interactions, but it also influences the imitation of mannerisms. Resent research by Cook, Ogden, and Winstone (2018) reported that girls can adapt their behaviours in an attempt to fit in, but they still often face interpersonal communication problems due to limitations in their social skills. Camouflaging in females could also lead to increased internalisation problems and greater stress, regardless of the developmental stage (in young girls as well as adult females with ASD) (Bussey, Bandura 1999; Keenan, Shaw, 1997; Kreiser, White, 2014; Wood-Downie et al., 2021).

Assimilation as a camouflaging strategy is all about trying to fit into the social environment. This is masking on a much deeper level as it is no longer about covering up proclivities but about presenting as someone absolutely different (non-ASD) due to an intense desire to be socially engaged and to avoid being socially excluded. Some autistic women report that they imitate conversational styles, intonation, movements, dress-style, interests, and other mannerisms of popular schoolmates (Lai et al., 2011). In particular, assimilation can lead to many different mental problems (Beck et al. 2020; Cage, Di Monaco, Newel, 2018; Cage, Troxell-Whitman, 2019) and suicidal thoughts and behaviours (Cassidy et al., 2018; Cassidy et al., 2020) due to its very intense emotional outcomes.

People with autistic conditions (disorders) tend to camouflage them in order to adapt to the environment in social situations, which may be dictated by the motivation to establish interpersonal relationships, friendships and romantic relationships, which are an important factor that protects against mental disorders, i.e., depression (Mazurek, 2014). Due to the fact that camouflaging strategies, especially assimilation, could be correlated with major depression and suicidal behaviors, it is very important to explore the regulatory function of self-esteem in relationship to the intensity of autistic traits and the use of camouflaging strategies. The presented study provides some initial conclusions, but due to the limitations of the research (which will be presented at the end), these results should be interpreted as preliminary and with some caution. The results of our own research did not show a significant difference in self-esteem between the ASD and non-ASD groups, although low self-esteem and depression are correlated with ASD, which could be due to several explainable reasons (Mikami, Onishi, Matsumoto, 2014). Self-esteem in people with ASD is usually lower than in the general population (Cooper, Smith, Russell, 2017; van Tuijl et al., 2014; Arwert, Sizoo, 2020; Chandler, Russell, Maras, 2019), although this may also be a function of age as children with autism do not yet show a reduced level relative to the general population (McChesney, Toseeb, 2018), unlike adolescents with ASD, especially those without intellectual impairment, who develop low self-esteem due to their awareness of

their problems with social competency and poor social relationships. Although the participants of the presented study were adults, the self--esteem indicator could be related to changes in self-perception as a consequence of camouflaging, such as false self- perception (Hull et al., 2017), as well as the consequences of peer victimization, bullying experiences, or social anxiety (Chandler, Russell, Maras, 2019; Shtayermman, 2007; Mikami et al., 2014; Maïano et al., 2016). The conducted research revealed a statistically significant differentiation in the level of application of individual camouflaging strategies depending on the degree of self--esteem (low, medium, high), which is consistent with the results of research by Hull and colleagues (2017). Due to the fact that people with autism spectrum conditions make more consistent decisions (Farmer, Baron-Cohen, Skylark, 2017), the research outcomes seem interesting and worth considering.

CONCLUSIONS

The research made it possible to confirm or disconfirm the presented hypotheses:

1. The intensity of autistic conditions was positively correlated with the use of camouflaging and its particular strategies (compensation and assimilation). A statistically significant differentiation (H:1.1) was confirmed in the level of the camouflaging strategy in reference to the level of autistic conditions (comparison between ASD *vs* non-ASD groups).
2. No linear relationships were found between self-esteem and autistic conditions or camouflaging strategies. No self-esteem differentiation was confirmed in reference to the level of autistic conditions (comparison between ASD *vs* non-ASD groups), thus hypothesis H2.1 was not confirmed.
3. Gender was found to be a significant factor in the differentiation of autistic conditions. Non-binary persons represent a significantly higher level of autistic condition (H3.1) and a lower level of self-esteem.
4. Gender was found to be a significant factor of differences in the intensity of camouflaging. Males in comparison to females present a significantly lower level of camouflaging and its particular strategies (compensation and assimilation) (H4.1).
5. Neither autistic conditions nor camouflaging strategies are differentiated in reference to the developmental stages, thus hypothesis H5.1 was not confirmed.
6. The regulatory role of self-esteem in the relationship between autistic conditions and camouflaging strategies was confirmed, thus hypothesis H6 was confirmed.

Strengths and Limitations

A key strength of this study is that it is the first in Poland to empirically examine the relationship between autistic conditions and self-reported camouflaging in the context of self-esteem differentiation.

The sample was not large enough and was unbalanced across the genders (males and females and non-binary people). Similarly, the sample contained a few autistic individuals who were non-heterosexual or who had a non-binary gender identity; these people may feel a greater expectation to camouflage, perhaps due to the intersection of multiple stigmatised identities. It is important that future research explores these and other potential predictors of camouflaging in adolescent samples so we can better understand individual variation in camouflaging.

The sample was underpowered to identify small effects; several results were marginally significant, thus limiting the conclusions that can be drawn. Another limitation is that the research was done during the Covid-19 pandemic, therefore the respondents' declaration of formal ASD diagnosis could not be verified with an objective diagnosis of intelligence and clinical diagnosis of autism spectrum. Due to these circumstances, the conclusiveness of the results might be limited. Replication of the present analyses with more reliable measures of ASD would strengthen the current findings.

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