



Social communication problems, social anxiety, and mood problems: kindergarten and primary school teachers' perspective among students with autism spectrum disorder

Naila Tallas-Mahajna

To cite this article: Naila Tallas-Mahajna (2023): Social communication problems, social anxiety, and mood problems: kindergarten and primary school teachers' perspective among students with autism spectrum disorder, International Journal of Developmental Disabilities, DOI: [10.1080/20473869.2022.2160413](https://doi.org/10.1080/20473869.2022.2160413)

To link to this article: <https://doi.org/10.1080/20473869.2022.2160413>



Published online: 02 Jan 2023.



Submit your article to this journal [↗](#)



View related articles [↗](#)



View Crossmark data [↗](#)

Social communication problems, social anxiety, and mood problems: kindergarten and primary school teachers' perspective among students with autism spectrum disorder

Naila Tallas-Mahajna 

AL-Qasemi Academic College (R.A), Baqa-El-Gharbia, Israel

This study examined the level of social communication problems (SCP), social anxiety (SA), and mood problems (MP) among children with ASD (*age 4–13 years*) enrolled in special classes ($n = 74$) and regular classes ($n = 73$) and grade level (kindergarten, 1st–3rd, 4th–6th) from teachers' perspective in schools of Palestinian Arabs in Israel. Teachers responded to three questionnaires about (1) SCP, (2) SA and (3) MP; the teachers' responses to the questionnaires were used to answer the research questions. **Results:** SCP, SA and MP were of medium rates for students with ASD enrolled in regular and special classes. No significant differences in the level of SCP could be attributed to class type (Regular, Special) or the grade level (kindergarten, 1st–3rd, 4th–6th). There were significant differences in SA levels that could be attributed to grade level in favor of the 4th–6th grades but there were no significant differences according to class type (Regular, Special). There were statistically significant differences in MP levels that could be attributed to the class type in favor of special classes, and the effect of grade level was not significant. There was a direct significant relationship between SCP, SA, and MP. **Conclusion:** SCP may be an important risk factor for the development of SA and MP among students with ASD, which lead us to incorporating social skills interventions by educational staff to alleviate or even prevent symptoms of SA and MP among students with ASD, which supports the view of inclusion

Keywords: social communication problems; social anxiety; mood problems; autism spectrum disorders

Introduction

Autism Spectrum Disorder (ASD) is defined as a neurodevelopmental disorder characterized by an impairment of communication and social interaction, typical stereotypes and repetitive behaviors, provided that such symptoms range from simple to severe and appear in early childhood (American Psychiatric Association 2013). The DSM-5 characterizes Autistic Disorder by impairments in communication, social interactions, and a presence of stereotyped or challenging types of behavior, which result in clinically significant impairments in one's everyday functioning. The manifestations of these categories of impairments vary greatly depending on factors pertaining to developmental level and chronological age of the individual.

Individuals with ASD display some unfamiliar patterns of language use, such as repetitive and non-functional

language or the child may constantly repeat the words s/he has heard – a condition called echolalia. Some children with ASD sometimes speak in high-pitched voice or use robot-like speech. Other children may use strange phrases to start conversation (Kasari *et al.* 2013).

The development of Social Communication Behaviors – SCB skills – is a fundamental competence for children that allows them to learn about their environment, interact with peers, and develop a sense of individual competence (Gillespie-Lynch *et al.* 2012, McDevitt and Ormrod 2007). For children with ASD, then, the risk of having SCB difficulties is high. As children with ASD continue to mature, their SCB skills difficulties have greater social outcomes. The large body of research on this issue has shown that SCB skills are crucial for a person to lead an independent and productive life (Koenig *et al.* 2000). Moreover, parents of children with ASD have reported that one of the greatest difficulties in having a child with ASD is the absence of SCB, as expressed by their children

Correspondence to: Naila Tallas-Mahajna, AL-Qasemi Academic College (R.A), Baqa-El-Gharbia, Israel. Email: nailam1@hotmail.com

when reaching preschool and school age years (Prizant *et al.* 2006). Typical SCB development consists of growth in several key developmental domains, such as (a) communication, (b) emotionality, (c) understanding of self and others, (d) social cognition, and (e) interpersonal behaviors (Gillespie-Lynch *et al.* 2012, Cordier *et al.* 2014).

SA, also known as social phobia, is particularly prevalent in children with ASD, with an estimated prevalence of 50% (Maddox and White 2015, Spain *et al.* 2016). This estimate is much higher than the estimates of 7–13% mentioned for the non-ASD population. SA is also a common clinical concern in adults with ASD (Hurtig *et al.* 2009, Kuusikko *et al.* 2008, White and Schry 2011). Most body of research on SA in individuals with ASD has dealt with the physiological symptoms and behavioral avoidance (Corden *et al.* 2008, Tyson and Cruess 2012), but the main behavioral symptom of SA is thus abstaining from social situations. Empirical studies of anxiety in children and adolescents with ASD reveal a wide range of comorbidity estimates (i.e. 11–84%) (White and Roberson-Nay 2009). Social anxiety disorders (SAD) are thus the most prevalent among adolescents and adults with ASD who do not have co-occurring intellectual disability (Kuusikko *et al.* 2008). With respect to functioning, SA disorder was also associated with a higher level of social impairment in primary school children with ASD, and exploratory analyses revealed that higher levels of SA disorder predicted low social skills (Chang *et al.* 2012, Syriopoulou-Delli *et al.* 2016).

Mood disorder is a childhood condition of extreme irritability, anger, and frequent, intense temper outbursts. Disruptive mood dysregulation disorder (DMDD) symptoms go beyond being a ‘moody’ child. During the last two decades, some literature has especially focused on the relationship between ASD and mood disorder (MD). Hofvander *et al.* (2009) pointed out a significant prevalence of MD among children diagnosed with ASD, i.e. 52% among subjects with Asperger’s disorder and 60% among subjects with Autistic disorder. Child with DMDD experience: (a) irritable or angry mood most of the day, nearly every day; (b); severe temper outbursts (verbal or behavioral) at an average of three or more times per week that are out of keeping with the situation and the child’s developmental level; (c) trouble functioning due to irritability in more than one place, such as at home, at school, with peers (Mayes *et al.* 2015). Some studies investigated irritability-angry mood, temper outbursts, and related symptoms in autism. Irritability is reported in the majority of children with autism (Mikita *et al.* 2015).

A comparison of the comorbidity of anxiety and mood disorders in children with ASD, with and without ADHD revealed that children with ASD and ADHD had an increased risk of anxiety and mood disorder and increasing age was the most significant contributor to the presence of anxiety disorder and mood disorder (Gordon-Lipkin *et al.* 2018).

It has become clear from the review of previous studies that children with ASD exhibit difficulties in meaningful communication and social interaction skills. However, and through the review of many Arabic studies, the levels of SA and MP of this group of students and their relationship to SCP were not discussed. Most studies did not contribute to a deep understanding of the levels of these variables within this category of ASD students enrolled in regular and special classes.

Since individuals with ASD exhibit difficulties in communication, social interaction, SA and MP at different levels, the current study is trying to determine the levels of these difficulties among Arab Palestinian students with ASD in Israel, and examine the relationship of these variables with the variable of class type and grade level. This provides the scientific research with a more in-depth information on the SCP, SA and MP that characterize students with ASD. In addition, the current study is aimed at enabling professionals and specialists to develop therapeutic programs based on these research results.

Therefore, it is important to examine the levels of SCP, SA and MP among students with ASD enrolled in special and regular classes from the point of view of teachers. For that purpose, the following questions are going to be answered:

1. Are there differences in SCP, SA and MP among students with ASD enrolled in special and regular classes?
2. Are there differences in SCP, SA and MP among students with ASD according to grade level?
3. Are there statistically significant relationships at $\alpha = 0.05$ level between SCP, SA and MP among students with autism spectrum disorder?

Materials and method

Participants

All participants¹ ($n = 147$) were first diagnosed for ASD by clinical psychologists and then, according to the special educational policy of Israel, have been assessed for high functionality ASD by the National Assessment and Eligibility Committee² and they present some language difficulties, but no relevant comorbidity. Participants were distributed into 74 (50.3%) students enrolled in special classes, and 73 (49.7%) enrolled in regular classes, with an age range of 4–13 years with 117 male (79.6%) and 30 female (20.4%) students. The grade level was divided between three adjacent levels: kindergarten (24.5%), 1st–3rd grade (40.8%) and 4th–6th grade (34.7%). Their teachers are one male (0.7%) and 146 females (99.3%) (see Table 1).

Data collection

The researcher contacted teachers of students with autism in order to obtain consent for participation in this study; all of them agreed on the conditions that all teachers and students be anonymous and that the collected data be used only for this study and for no other

purpose. Once consent had been obtained, the researcher created versions of questionnaires using Google Form and distributed them to the teachers; the teachers' answers are used as raw data. The data collection process lasted two months.

Operational definitions of study terms
Scientific and operational definitions of study terms

Students with Autism Spectrum Disorder: students with a social communication, interaction impairment, and restricted behaviors, activities and interests (Hallahan *et al.* 2015). Students with ASD are defined operationally as students diagnosed with Autism Spectrum Disorder and enrolled in special and regular classes in the schools of Palestine within.

Social Communication: A process of students' participation through everyday situations reflected in establishing relationships with others in the social sphere, measured through the social communication scale developed to achieve the research objectives. This includes:

- Communication skills that include verbal and non-verbal skills and gestures.
- Emotional skills that include the ability to exhibit and regulate emotions.
- Perception of self and of others that includes responding to the emotions of others and emotional exchange.

Operational definition for social communication: Laushey and Heflin (2000) provide discrete operational definitions of social skills such as: asking for objects, getting the attention of another, waiting for his/her turn and looking at or in the direction of another person who is speaking to him/her. This is determined by the degree to which students receive the social communication scale used for research.

Social anxiety: is characterized by a strong fear of social situations, which is often accompanied by a fear of being examined by others (DSM-5), avoid social situations, including interacting with others, eating in public

or in front of a group. Anxiety-related fears are usually associated with negative perceptions and fear of being target for ridicule by others.

Operational definition for SA: It is determined by the score which students receive on the SA scale used for research.

Mood problem: A childhood condition of extreme irritability, anger, and frequent, intense temper outbursts.

Operational definition for Disruptive mood dysregulation: It is determined by the score which students receive on the disruptive mood dysregulation scale used for research.

Study tools

To achieve the aims of the study, the following tools were used:

Social communication scale

The researchers conducting this study adaptive and modify the Social Communication Scale from (*The social communication questionnaire: manual* by Rutter *et al.* 2003). This inventory is comprised of 19 items, each of which participants rated on a five-point scale, from 1 ('Never') to 5 ('Always'). The highest score students can get is (95), while the lowest score is (19). In addition, the averages of social communication level were judged as follows: From (1.00–2.33) low level, from (2.34–3.66) medium level, and from (3.67–5.00) High level.

The Scale validity and reliability were calculated: First, content validity: to verify the content validity of the Social Communication Scale, it was presented to (7) specialists in educational psychology and counselling, to review the scale in terms of the comprehensiveness of scale items, accuracy of language formulation, and item clarity. Second: discriminate evidence: to verify the discriminate evidence of the scale, it was applied to a sample of (36) participants (their characteristics are consistent with those of the study sample), within the community, and the values of Pearson correlation coefficients between responses were calculated on the items and the overall scale, as shown in Table 2, which shows that the values of the item's correlation coefficients with the overall scale ranged from (0.464–0.780), the criterion to accepting the item was adopted by being significant at the level of ($\alpha = 0.05$), and so the scale is adopted in its final form which consists of (19) items.

Third: Reliability of the Social Communication Scale: To ensure the reliability of the Social Communication Scale, the internal consistency coefficient of the scale was calculated using the Cronbach Alpha equation, as it was applied to a survey sample consisting of (36) students (their characteristics are consistent with those of the study sample), within the community. The value of the Cronbach Alpha coefficient for the scale was (0.906), thus the scale is adopted in its final form which consists of (19) items.

Table 1. Participant demographics.

		n	%
Teachers' gender	Female	146	99.3
	Male	1	0.7
Teacher's academic level	B.A.	67	45.6
	M.A	79	53.7
	PhD	1	0.7
Field of specialization	Special Education	117	79.6
	Other	30	20.4
Teaching experience	Less than 3 years	2	1.4
	3–9 years	20	13.6
	10 years and above	125	85.0
Class type	Special	74	50.3
	Regular	73	49.7
Students' gender	Female	30	20.4
	Male	117	79.6
Grade level	Kindergarten	36	24.5
	1st to 3rd grade	60	40.8
	4th to 6th grade	51	34.7

Table 2. Item correlation coefficient with the overall Social Communication Scale.

	Pearson N. correlation	Pearson N. correlation	Pearson N. correlation	Pearson N. correlation
1	.780*	6 .464*	11 .672*	16 .723*
2	.612*	7 .507*	12 .502*	17 .660*
3	.632*	8 .682*	13 .631*	18 .652*
4	.684*	9 .613*	14 .653*	19 .567*
5	.561*	10 .410*	15 .661*	

*Correlation is significant at 0.05 level.

Social anxiety scale

The researcher conducting this study adaptive and modify the SA Scale from (La Greca and Stone 1993). The inventory is comprised of 18 items, each of which participants rated on a five-point scale, Higher scores reflect a higher level of SA. In order to correct the scale, the five-Likert scale was adopted to measure the level of SA, where the answer was given always (5 points), frequently (4 points), sometime (3 points) seldom (2 points), and never (1 point), the highest reached degree that the student can get (90), and the lowest score (18). In addition, the averages of SA level were judged as follows: From (1.00–2.33) low level. From (2.34–3.66) moderate level. From 3.67–5.00) High level.

The validity and reliability were extracted: First: The content validity: To verify the content validity of the measure of SA, it was presented to (7) specialist in educational psychology and counselling, to arbitration the scale in terms of the comprehensiveness of the scale items, the accuracy of the language formulation, the clarity of the items. Second: the discriminate evidence: To verify the discriminate evidence of the scale, it was applied to a sample of (36) participants (their characteristics are consistent with those of the study sample), within the community, and the values of Pearson correlation coefficients between responses were extracted on the items and the overall scale, as shown in Table 3.

As we show in Table 2 that the values of the item’s correlation coefficients with the overall scale ranged from (0.356–0.830), the criterion to accepting the item was adopted to be significant at the level of ($\alpha=0.05$), thus the scale stay contain of (18) items. Third: Reliability of the SA: To ensure the stability of the SA scale, the internal consistency coefficient of the scale was calculated by the Cronbach Alpha equation. As it was applied to a survey sample consisting of (36) students (their characteristics are consistent with those of the study sample), within the community, and the value of the Cronbach Alpha coefficient for the scale (0.922), thus the scale is adopted in its final form where consists of (18) items.

Mood problems scale

The researcher conducting this study adaptive and modify the MP scale from (Hirschfeld *et al.* 2000). This inventory is comprised of 22 items, each of which participants rated on a five-point scale, from 1 (‘Never’) to 5 (‘Always’).

Table 3. Items correlation coefficient with the overall scale of the SA scale.

	Pearson N. correlation	Pearson N. correlation	Pearson N. correlation	Pearson N. correlation
1	.753*	6 .830*	11 .708*	16 .752*
2	.791*	7 .547*	12 .545*	17 .716*
3	.356*	8 .636*	13 .558*	18 .609*
4	.770*	9 .652*	14 .437*	
5	.770*	10 .579*	15 .777*	

*Correlation is significant at the 0.05 level.

Higher scores reflect a higher level of MP. In order to rate the scale, the five-point Likert scale was adopted to measure the level of MP, where the response ‘always’ was given (5 points), ‘frequently’ (4 points), ‘sometimes’ (3 points) ‘seldom’ (2 points), and ‘never’ (1 point). The highest score students can get is (90), while the lowest score is (22). The means of mood problem level were judged as follows: From (1.00–2.33) low, from (2.34–3.66) medium and from (3.67–5.00) high. The scale validity and reliability were calculated: First: content validity: to verify the content validity of the MP Scale, it was presented to (7) specialists in educational psychology and counselling to review the scale in terms of comprehensiveness of scale items, accuracy of language formulation, and item clarity. Second: discriminate evidence: to verify the discriminate evidence of the scale, it was applied to a sample of (36) participants (their characteristics are consistent with those of the study sample), within the community, and the values of Pearson correlation coefficients between responses were calculated on the items and the overall scale, as shown in Table 4.

It’s clear from Table 4 that the values of the item’s correlation coefficients with the overall scale ranged from (0.242–0.813), the criterion to accepting the item was adopted by being significant at the level of ($\alpha=0.05$), and so the scale is adopted in its final form which consists of (22) items. Third: reliability of the MP Scale: To ensure the reliability of the MP Scale, the internal consistency coefficient of the scale was calculated by the Cronbach Alpha equation. It was applied to a survey sample consisting of (36) students (their characteristics are consistent with those of the study sample), within the community, and the value of the Cronbach Alpha coefficient for the scale (0.922), thus the scale is adopted in its final form which consists of (22) items

Results

In order to answer the first question, we used in the statistical analysis including (arithmetic mean, median, standard deviation, coefficient of skewness, which are shown (Table 5).

The result shows that there are no statistically significant differences at the level of $\alpha=0.05$ in SCP that can be attributed to class type-(regular, special), the level of SCP is a *Medium* in both groups-(regular,

Table 4. Correlation coefficient with the overall mood problem scale.

	Pearson N. correlation	N.	Pearson correlation	N.	Pearson correlation	N.	Pearson correlation	N.
1	.728*	7	.591*	13	.743*	19	.440*	
2	.735*	8	.611*	14	.655*	20	.772*	
3	.675*	9	.598*	15	.813*	21	.541*	
4	.497*	10	.514*	16	.679*	22	.585*	
5	.652*	11	.703*	17	.242*			
6	.401*	12	.799*	18	.641*			

*Correlation is significant at 0.05 level.

special). In addition the result indicate that there are no statistically significant differences at the level of $\alpha = 0.05$ in SA level that can be attributed to class type (regular, special) the level of SA is a *Medium* in both groups-(regular, special). In mood problem the results indicate that there are statistically significant differences effect for class type $t(138.5) = 4.559, p < .05$, were the special class ($M = 3.498, SD = .567$) have more MP than the regular class ($M = 3.019, SD = .697$).

In order to answer the second question, we used in the statistical analysis including *One-Way Analysis, Anova* which are shown in [Table 6](#).

The one way analysis of variance indicated that the effect of grade level was not significant in the Social Communication $F(2, 144) = .353, p = .703$. However, in the SA the one way analysis of variance showed that the effect of grade level was significant $F(2, 144) = 11.565, p = .006$. Post hoc analyses using the Scheffé post hoc criterion for significance indicated that the SA was significantly higher in the '4th to 6th grade' ($M = 3.335, SD = .765$) than the other two levels '1st to 3rd grade' ($M = 2.846, SD = .894$) and Kindergarten ($M = 2.695, SD = .712$). The result indicate that the MP the one way analysis of variance showed that the effect of grade level was no significant $F(2, 144) = 3.251, p = .043$.

In order to answer the third question, we used in the statistical analysis including Pearson Correlation coefficient, which are shown in [Table 7](#).

The results demonstrate that there is a direct significant relationship between communication problems, SA, and MP. This indicates that the higher the level of one variable rises, the higher level of the two other variables rises among individuals. The highest correlation between variables (0.451) is between SCP and SA. The lowest correlation (0.387) is between SCP and MP. Correlation between SA and MP is (0.396). All the values are significant at $\alpha = 0.01$ level (see [Table 7](#)).

We tried to find out whether there were differences between male and female students with respect to SC, SA and MP variables. According to the T test results, levels of SC ($p = 0.966$) show no significant differences related to gender. The same applies for SA ($p = 0.711$) and for MP ($p = 0.494$). Thus, the overall results indicate that there are no significant differences in these variables related to gender.(see [Table 8](#))

Table 5. Differences of SCP, SA and MP levels by the type classes.

	Regular (n = 73)		Special (n = 74)		t(df)	p
	M	SD	M	SD		
Social communication	3.077	.614	3.048	.846	-.242(133.2)	.809
Social anxiety	3.093	.805	2.979	.860	-0.828(145)	.409
Mood problems	3.019	.697	3.498	.567	4.559(138.5)	.042 *

Means, (SD), t test. *p < .05

Discussion

This study aims to investigate the SCP, SA and MP among students with Autism Spectrum Disorder enrolled in special and regular classes from teachers' perspective. The study concluded a set of results in light of what was reviewed, based on the literature and related studies.

SCP indicate medium rates for students with ASD enrolled in regular and special classes, which means that students with ASD show problems with social communication, regardless of the educational environment in which they study (Duffy and Healy 2011). They also have a limited range of social communication skills to initiate interactions, sustain reciprocity, and respond to others to interact successfully (Jones and Schwartz 2009). This indicates that integrating ASD students in regular classes along with their peers without any disabilities does not mitigate the social communication difficulties they encounter. These results are consistent with the studies which concluded that students with ASD encounter a medium level of social communication difficulties (Robertson 1999, Fakher and Mardini 2016).

SA indicates medium rates for students with ASD enrolled in regular and special classes. These results show that the difficulties, which students with ASD encounter, are also accompanied with SA. This can be attributed to their fear from facing different social situations and their fear from addressing them. This is consistent with the results of previous studies (White and Roberson-Nay 2009, Hurtig et al. 2009, Kuusikko et al. 2008, White and Schry 2011). This result can also be attributed to fear of being rejected or of other individuals' judgment, as observed in typically functioning individuals with SA (Beidel and Turner 2007).

As with the previous variables, MP showed medium rates for students with ASD enrolled in regular and special classes. These results show that the difficulties, which students with ASD encounter, are also accompanied with the MP that are correlated with ASD traits. The results of MP are at medium level and they are consistent with the results previous studies (Mikita et al. 2015). Other studies pointed to high levels of MP in individuals with ASD (Dell'Osso et al. 2019).

The results indicate that there are no statistically significant differences at the level of SCP that can be attributed to class type (regular, special) and the grade level (kindergarten, 1st–3rd, 4th–6th). Despite having

Table 6. Differences of social communication, social anxiety and mood problems levels by the level grade.

	Kindergarten (n = 36)		1st to 3rd grade (n = 60)		4th to 6th grade (n = 51)		F(2, 144)
	M	SD	M	SD	M	SD	
Social communication	3.131	.869	3.005	.704	3.082	.684	.353
Social anxiety	2.643	.693	3.202	.840	3.429	.757	11.565*
Mood problems	3.365	.550	2.928	.686	3.255	.749	.648

Means, SD, One-Way Analysis-Anova.

*p < .05.

Table 7. Values of Pearson correlation co-efficient between social communication problems, social anxiety, and mood problems.

Variable	n	M	SD	1	2	3
1. Social communication	147	3.063	0.738	-		
2. Social anxiety	147	3.036	0.832	0.453**	-	
3. Mood problems	147	3.260	0.677	0.379**	0.334**	-

**p < .01.

Table 8. Differences of SCP, SA and MP levels by the student gender t.

	Male (n = 117)		Female (n = 30)		t(df)	p
	M	SD	M	SD		
Social communication	3.064	.749	3.057	.706	-.042 (145)	.966
Social anxiety	3.026	.839	3.075	.818	.291 (145)	.771
Mood problems	3.241	.690	3.336	.630	.685 (145)	.494

Means, (SD), t test.

social problems, which appeared at a medium level among students with ASD, there are no significant differences between the groups in SCP, it should be pointed out that SCP are correlated with the ASD traits of having communication difficulties (Kasari *et al.* 2011, Macintosh and Dissanayake 2006), This result may be the reason why there are no significant differences neither between students with ASD enrolled in special classes and those enrolled in regular classes, nor between students with ASD who study in different grade levels (kindergarten, 1st–3rd, 4th–6th). This suggests that there is no effect of the variable of educational framework or even grade level in SCP.

The results indicate that there are no statistically significant differences at the SA level that can be attributed to class type (regular or special), but there are statistically significant differences in SA levels that can be attributed to grade level in favor of the 4th–6th grades. The relatively higher level of SA in the higher grades can be attributed to the fact that this age range marks the beginning of adolescence, during which students have fears of how others see them. This is consistent with previous studies which concluded that SA usually begins between late childhood and early adolescence (Grant *et al.* 2005). van Steensel and Heeman (2017) also pointed out that anxiety levels among children with ASD increase with age and with higher functioning at the mental or cognitive level.

The results of MP indicate that there are statistically significant differences at the level MP that can be attributed to class type in favor of ASD students enrolled in special classes. However, there are no statistically significant differences in the MP level that can be attributed to the grade level which indicate that despite having medium levels of MP among ASD students enrolled in regular classes and special classes, (Gordon-Lipkin *et al.* 2018, Kim *et al.* 2000). The point out there are significant differences between the two groups that can be attributed to students enrolled at special classes, this can be attributed to the fact that the mood of ASD students enrolled at special classes is influenced by their environment, through which they are exposed to different stimuli (Mayes *et al.* 2015), such as the behavior of their class mates which may include undesirable behaviors, tantrums, or sudden disturbances. In comparison, their peers who are enrolled in regular classes show less MP. This indicates that the class environment affects the mood of students with ASD (Gordon-Lipkin *et al.* 2018).

In order to help students with autism to reduce mood problems, they should attend inclusive classrooms according to their needs. Such needs are met essentially with the help of additional caregiving staff such a special education teacher, a speech therapist, as well as an occupational therapist and a behavior analyst. All the support around the children in regular classes require considerable financial resources. In my view, however, since the research participants belong to an ethnic minority group, which suffers from budget inequality, there is a constant lack of resources also in the field of inclusion of children with autism in regular classrooms, and this results in a higher level of mood problems. This situation is at times also responsible for parents’ reluctance to accept their children’s inclusion programs. A successful implementation of an integration plan would have reduced these children’s mood problems.

The results demonstrate that there is a direct significant relationship between SCP, SA and MP. The highest correlation is between SCP and SA. This relation is attributed to the fact that SA increases barriers of social participation, and so, it acts as a risk factor for elevating social impairment in students with ASD. Chang *et al.* (2012) pointed out that greater severity of SAD was associated with a higher level of social impairment in primary school children with ASD, and that higher

levels of SA disorder predicted low social skills. Having a relationship between SCP, SA and MP in students with ASD increases the risk impact. If an ASD student scored in the affected range of any of these scales, it is likely for that student to score an impact range on the other scales (Towbin *et al.* 2005). Individuals with high-functioning ASD often receive treatment for anxiety or mood states (Martin *et al.* 1999). Mood rates and symptoms of anxiety may be elevated among autistic individuals (Kim *et al.* 2000). Gordon-Lipkin *et al.* (2018) pointed out that children with ASD and ADHD had an increased risk of anxiety and mood disorders (compared with children with ASD alone). Dell’Osso *et al.* (2019) also pointed out that there is a strong relation between MP and ASD.

SCP may be an important risk factor for the development of SA and MP among students with ASD. This is a point of importance to the potential usefulness of incorporating social skills interventions to prevent or alleviate symptoms of SA and MP among students with ASD. The educational policy of inclusion bears a clear practical impact in the form of social benefits for these students, and it thus constitutes an important factor in the design of individual educational programs for this population. Further studies, employing qualitative and quantitative designs are needed to enhance our understanding of the causal, maintaining and protective mechanisms related to SCP, SA and MP among students with ASD.

Limitations and suggestions

One of the limitations of the study is the relatively small sample of participants, so a larger number of participants would no doubt allow further generalization of the results. And among the suggestions for further study, I may put forward studying the impact of children’s inclusion on variables such as social communication, social anxiety and mood problems.

Acknowledgements

I would like to express my gratitude and appreciation to the participants’ parents and teachers for making this research possible thanks to their consent and full cooperation.

Disclosure statement

I declare that I have no competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Notes

1. Arab Palestinian Israelis from the Galilee as well as from the Mothallath area, ranging from Umm al-Fahm in the North to Jaljulia in the South. All participants share the same Palestinian identity within their Israeli citizenship. They also share similar customs and tradition with minor differences depending on their confessional affiliation, whether Muslim or Christian. They speak Palestinian Arabic with some regional-dialectal variation.

2. The powers of the National Assessment and Eligibility Committee are:

- To determine the overall level of functionality and needs of the student with the disability who applies to the committee according to the assessment the student’s functionality in the cognitive, academic, linguistic, emotional and social fields as well as in terms of communication, functional independence and organization.
- Discuss the student’s right to receive special education services at the educational institution due to one or more disabilities that affect their functionality.
- To determine the composition of the services for a student placed in a regular education school who is entitled to special education services according to their needs.

ORCID

Naila Tallas-Mahajna  <http://orcid.org/0000-0002-7492-6063>

References

- American Psychiatric Association. 2013. *Diagnostic and statistical manual of mental disorders*. 5th ed. (DSM-5). Washington, DC: London: American Psychiatric Association.
- Beidel, D. C. and Turner, S. M. 2007. *Shy children, phobic adults: Nature and treatment of social anxiety disorder*. 2nd ed. Washington, DC: American Psychological Association.
- Chang, Y., Quan, J. and Wood, J. 2012. Effects of anxiety disorder severity on social functioning in children with autism spectrum disorders. *Journal of Developmental and Physical Disabilities*, 24, 235–245.
- Corden, B., Chilvers, R. and Skuse, D. 2008. Avoidance of emotionally arousing stimuli predicts social-perceptual impairment in Asperger’s syndrome. *Neuropsychologia*, 46, 137–147.
- Cordier, R., Munro, N., Wilkes-Gillan, S., Speyer, R. and Pearce, W. M. 2014. Reliability and validity of the pragmatics observational measure (POM): A new observational measure of pragmatic language for children. *Research in Developmental Disabilities*, 35, 1588–1598.
- Dell’Osso, L., Carpita, B., Muti, D., Morelli, V., Salarpi, G., Salerni, A., Scotto, J., Massimetti, G., Gesi, C., Ballerio, M., Signorelli, M. S., Luciano, M., Politi, P., Aguglia, E., Carmassi, C. and Maj, M. 2019. Mood symptoms and suicidality across the autism spectrum. *Comprehensive Psychiatry*, 91, 34–38.
- Duffy, C. and Healy, O. 2011. Spontaneous communication in autism spectrum disorder: A review of topographies and interventions. *Research in Autism Spectrum Disorders*, 5, 977–983.
- Fakher, A. and Mardini, G. 2016. *The level of social communication difficulties in Autism Spectrum children from the viewpoint of their teachers. A field study at Future Center*. Damascus. Latakia: Tishreen University.
- Gillespie-Lynch, K., Sepeta, L., Wang, Y., Marshall, S., Gomez, L., Sigman, M. and Hutman, T. 2012. Early childhood predictors of the social competence of adults with autism. *Journal of Autism and Developmental Disorders*, 42, 161–174.
- Gordon-Lipkin, E., Marvin, A. R., Law, J. K. and Lipkin, P. H. 2018. Anxiety and mood disorder in children with autism spectrum disorder and ADHD. *Pediatrics*, 141, e20171377.
- Grant, B. F., Hasin, D. S., Blanco, C., Stinson, F. S., Chou, S. P., Goldstein, R. B., Dawson, D. A., Smith, S., Saha, T. D. and Huang, B. 2005. The epidemiology of social anxiety disorder in the United States: Results from the National Epidemiologic Survey on Alcohol and Related Conditions. *The Journal of Clinical Psychiatry*, 66, 1351–1361.

- Hallahan, D., Kauffman, J. and Pullen, P. 2015. *Exceptional learners: Introduction to special education*. Boston, New York: Allyn and Bacon.
- Hirschfeld, R. M., Williams, J. B., Spitzer, R. L., Calabrese, J. R., Flynn, L., Keck, P., Jr., Lewis, L., McElroy, S. L., Post, R. M., Rappaport, D. J., Russell, J. M., Sachs, G. S. and Zajecka, J. 2000. Development and validation of a screening instrument for bipolar spectrum disorder: The Mood Disorder Questionnaire. *The American Journal of Psychiatry*, 157, 1873–1875.
- Hofvander, B., Delorme, R., Chaste, P., Nydén, A., Wentz, E., Ståhlberg, O., Herbrecht, E., Stopin, A., Anckarsäter, H., Gillberg, C., Råstam, M. and Leboyer, M. 2009. Psychiatric and psychosocial problems in adults with normal-intelligence autism spectrum disorders. *BMC Psychiatry*, 9, 35–39.
- Hurtig, T., Kuusikko, S., Mattila, M.-L., Haapsamo, H., Ebeling, H., Jussila, K., Joskitt, L., Pauls, D. and Moilanen, I. 2009. Multi-informant reports of psychiatric syndrome or autism. *Autism: The International Journal of Research and Practice*, 13, 583–598.
- Jones, C. D. and Schwartz, I. S. 2009. When asking questions is not enough: An observational study of social communication differences in high functioning children with autism. *Journal of Autism and Developmental Disorders*, 39, 432–443.
- Koenig, K., Rubin, E., Klin, A. and Volkmar, F. 2000. Autism and the pervasive developmental disorders. In: C. H. Zeanah, ed. *Handbook of infant mental health*. 2nd ed. New York: Guilford Press, pp. 298–310.
- Kasari, C., Brady, N., Lord, C. and Tager-Flusberg, H. 2013. Assessing the minimally verbal school-aged child with autism spectrum disorder. *Autism Research*, 6, 479–493.
- Kasari, C., Locke, J., Gulsrud, A. and Rotheram-Fuller, E. 2011. Social networks and friendships at school: Comparing children with and without ASD. *Journal of Autism and Developmental Disorders*, 41, 533–544.
- Kim, J. A., Szatmari, P., Bryson, S. E., Streiner, D. L. and Wilson, F. J. 2000. The prevalence of anxiety and mood problems among children with autism and Asperger syndrome. *Autism*, 4, 117–132.
- Kuusikko, S., Pollock-Wurman, R., Jussila, K., Carter, A. S., Mattila, M. L., Ebeling, H., Pauls, D. L. and Moilanen, I. 2008. Social anxiety in high-functioning children and adolescents with autism and Asperger syndrome. *Journal of Autism and Developmental Disorders*, 38, 1697–1709.
- La Greca, A. M. and Stone, W. L. 1993. The Social Anxiety Scale for Children-Revised: Factor structure and concurrent validity. *Journal of Clinical Child Psychology*, 22, 17–27.
- Laushey, K. M. and Heflin, L. J. 2000. Enhancing social skills of kindergarten children with autism through the training of multiple peers as tutors. *Journal of Autism and Developmental Disorders*, 30, 183–193.
- Macintosh, K. and Dissanayake, C. 2006. A comparative study of the spontaneous social interactions of children with high-functioning autism and children with Asperger's disorder. *Autism*, 10, 199–220.
- Maddox, B. B. and White, S. W. 2015. Comorbid social anxiety disorder in adults with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, 45, 3949–3960.
- Mayes, S. D., Waxmonsky, J., Calhoun, S. L., Kokotovich, C., Mathiowetz, C. and Baweja, R. 2015. Disruptive mood dysregulation disorder (DMDD) symptoms in children with autism, ADHD, and neurotypical development and impact of co-occurring ODD, depression, and anxiety. *Research in Autism Spectrum Disorders*, 18, 64–72.
- Martin, A., Scahill, L., Klin, A. and Volkmar, F. R. 1999. Higher functioning pervasive developmental disorders: Rates and patterns of psychotropic drug use. *Journal of the American Academy of Child and Adolescent Psychiatry*, 38, 923–931.
- McDevitt, T. M. and Ormrod, J. E. 2007. *Child Development*. 3rd ed. Upper Saddle River, NJ: Merrill Prentice Hall.
- Mikita, N., Hollocks, M. J., Papadopoulos, A. S., Aslani, A., Harrison, S., Leibenluft, E., Simonoff, E. and Stringaris, A. 2015. Irritability in boys with autism spectrum disorders: An investigation of physiological reactivity. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, 56, 1118–1126.
- Prizant, B. M., Wetherby, A., Rubin, E., Laurent, A. C. and Rydell, P. J. 2006. *The SCERTS model a comprehensive educational approach for children with autism spectrum disorders*. Vol. 1. Baltimore: Paul H. Brooks Publishing.
- Robertson, J. 1999. Domains of social communication handicap in autism spectrum disorder. *Journal of the American Academy of Child and Adolescent Psychiatry*, 38, 357–367.
- Rutter, M., Bailey, A. and Lord, C. 2003. *The social communication questionnaire: Manual*. Los Angeles: Western Psychological Services.
- Spain, D., Happé, F., Johnston, P., Campbell, M., Sin, J., Daly, E., Ecker, C., Anson, M., Chaplin, E., Glaser, K., Mendez, A., Lovell, K. and Murphy, D. G. 2016. Social anxiety in adult males with autism spectrum disorders. *Research in Autism Spectrum Disorders*, 32, 13–23.
- Syriopoulou-Delli, C. K., Agaliotis, I. and Papaefstathiou, E. 2016. Social skills characteristics of students with autism spectrum disorder. *International Journal of Developmental Disabilities*, 64, 35–44.
- Towbin, K. E., Pradella, A., Gorrindo, T., Pine, D. and Leibenluft, E. 2005. Autism Spectrum traits in children with mood and anxiety disorders. *Journal of Child and Adolescent Psychopharmacology*, 15, 452–464.
- Tyson, K. E. and Cruess, D. G. 2012. Differentiating high-functioning autism and social phobia. *Journal of Autism and Developmental Disorders*, 42, 1477–1490.
- van Steensel, F. J. A. and Heeman, E. J. 2017. Anxiety levels in children with autism spectrum disorder: A meta-analysis. *Journal of Child and Family Studies*, 26, 1753–1767.
- White, S. W. and Schry, A. R. 2011. Social anxiety in adolescents on the autism spectrum. In: C. A. Alfano and D. C. Beidel, eds. *Social anxiety disorder in adolescents and young adults: Translating developmental science into practice* (pp. 183–201). Washington, DC: American Psychological Association.
- White, S. W. and Roberson-Nay, R. 2009. Anxiety, social deficits, and loneliness in youth with autism spectrum disorders. *Journal of Autism and Developmental Disorders*, 39, 1006–1013.