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Justyna ŚWIERCZYŃSKA*

Beata PAWŁOWSKA**

Mental health symptoms in mothers of children with autism spectrum disorder and its relation to maternal coping styles, sense of coherence, and assessment of the child’s emotional, social, and behavioural functioning

Zdrowie psychiczne u matek a style radzenia sobie ze stresem, poczucie koherencji i ocena funkcjonowania emocjonalnego, społecznego i behawioralnego dziecka z zaburzeniami ze spektrum autyzmu

Abstract

Aim. The aim of this study was to analyse the relationship between mental health symptoms in mothers of children with autism spectrum disorder (ASD) and maternal coping styles, sense of coherence, and mother-rated child’s emotional, social, and behavioural problems.

Study group. The study included a group of 70 women raising children with a medical diagnosis of ASD.

* **e-mail:** j_swierczynska@wp.pl

Instytut Psychologii, Wydział Pedagogiki i Psychologii, Uniwersytet Jana Kochanowskiego w Kielcach, Krakowska 11, 25-029 Kielce, Polska
Department of Psychology, Faculty of Pedagogy and Psychology, Jan Kochanowski University in Kielce, Krakowska 11, 25-029 Kielce, Poland
ORCID: 0000-0002-9890-0677

** **e-mail:** pawlowskabeata@tlen.pl

II Klinika Psychiatrii i Rehabilitacji Psychiatrycznej, I Wydział Lekarsko – Dentystyczny, Uniwersytet Medyczny w Lublinie, Głuska 1, 20-439 Lublin, Polska
Department of Psychiatry and Psychiatric Rehabilitation, 1st Faculty of Medicine with Dentistry Division, Medical University of Lublin, Głuska 1, 20-439 Lublin, Poland
ORCID: 0000-0003-3520-0187

Methods. The following instruments were used in this study: An Inquiry Form designed by the present author, The General Health Questionnaire GHQ-28 by D. Goldberg, The Coping Inventory of Stressful Situations (CISS), by Endler and Parker, The Sense of Coherence Scale SOC-29 by Antonovsky, The Set of Questionnaires for the Diagnosis of Autism Spectrum Disorders (ASRS) by S. Goldstein and J. A. Naglieri, The Strengths and Difficulties Questionnaire (SDQ) by R. Goodman.

Results. Based on the conducted study, it was found that there are statistically significant correlations between the increased symptoms of mental health disorders in the studied mothers of children with ASD, assessed with the GHQ-28 Questionnaire, and their preferred emotional and avoidance style of coping with stress, a low sense of coherence and, as observed by them in the child, increased symptoms of autism spectrum disorders measured with ASRS and increased symptoms of disorders assessed with SDQ.

Conclusion. 1. There are significant relationships between the mother's use of emotion-focused and avoidance coping styles and increased maternal mental health symptoms; 2. There are significant relationships between the mother's low sense of coherence and increased maternal mental health symptoms; 3. Severe child ASD symptoms, as measured by ASRS, and emotional problems, as measured with SDQ, correlate significantly with severe maternal mental health symptoms.

Keywords: autism spectrum disorder, coping with stress, sense of coherence, mental health, depression, mothers.

Abstrakt

Cel. Celem pracy była analiza zależności między objawami zaburzeń zdrowia psychicznego u matek dzieci z zaburzeniami należącymi do spektrum autyzmu (ASD) a stosowanymi przez nie stylami radzenia sobie ze stresem, poczuciem koherencji i oceną funkcjonowania emocjonalnego i behawioralnego u dziecka.

Material. Badaniem objęto 70 kobiet wychowujących dzieci z diagnozą lekarską zaburzeń należących do spektrum autyzmu (ASD).

Metody. W pracy zastosowano następujące metody badawcze: ankietę własnej konstrukcji, Kwestionariusz Ogólnego Stanu Zdrowia GHQ-28, autorstwa D. Goldberga, Kwestionariusz Radzenia Sobie ze Stresem (CISS), autorstwa Endlera i Parkera, Kwestionariusz Orientacji Życiowej SOC-29, autorstwa Antonovsky'ego, Zestaw Kwestionariuszy do Diagnozy Zaburzeń ze Spektrum Autyzmu (ASRS) autorstwa S. Goldsteina i J. A. Naglieri, Kwestionariusz Mocnych Stron i Trudności (SDQ), R. Goodmana.

Wyniki. Stwierdzono występowanie istotnych statystycznie zależności między zaburzeniami zdrowia psychicznego matek dzieci z ASD, określonymi na podstawie kwestionariusza GHQ-28 a preferowanym przez nie emocjonalnym i unikowym stylem radzenia sobie ze stresem, niskim poczuciem koherencji i nasilonymi objawami zaburzeń obserwowanych u dziecka, mierzonych: kwestionariuszem do Diagnozy Zaburzeń ze Spektrum Autyzmu (ASRS) i Kwestionariuszem Mocnych Stron i Trudności (SDQ).

Wnioski. 1. Istotne zależności występują między emocjonalnym i unikowym stylem radzenia sobie ze stresem a nasilonymi objawami zaburzeń zdrowia psychicznego u badanych matek; 2. Znaczące zależności występują między niskim poczuciem koherencji a nasilonymi objawami zaburzeń zdrowia psychicznego u matek; 3. Istotne zależności występują między nasilonymi objawami zaburzeń ze spektrum autyzmu, mierzonymi ASRS i trudnościami w funkcjonowaniu emocjonalnym, mierzonymi SDQ u dziecka a nasilonymi objawami zaburzeń zdrowia psychicznego u badanych matek.

Słowa kluczowe: zaburzenia ze spektrum autyzmu, radzenie sobie ze stresem, zdrowie psychiczne.

Introduction

Raising a child with ASD is a particularly burdensome challenge for a parent (Abbeduto et al., 2004; Al-Towairqi et al., 2015; Argumedes et al., 2018; Ilias et al., 2018; Pisula & Porębowicz-Dörsmann, 2017; Stelter, 2004). As a consequence, parents of children with ASD may be at risk of developing mental health symptoms (Estes et al., 2013; Ingersoll & Hambrick, 2011). The child's communication, and social, difficulties, his/her stereotyped behaviours and interests, and maternal preoccupation with the offspring's current health status and future development may, according to some authors (Cohrs & Leslie, 2017; Naheed et al., 2019; Olsson & Hwang, 2001), lead to severe depression and anxiety symptoms in the mothers. Austin Cohrs and Douglas Leslie (2017) estimate that depression occurs in 16.9% of mothers of children with ASD. Moreover, these mothers experience increased attention problems, loss of energy and motivation to act, a sense of excessive tension, and social isolation. These symptoms may negatively affect these women's role as mothers and reduce their parenting competences in meeting the child's needs (Cohrs & Leslie, 2017).

The authors who have drawn attention to the issue of the mental health of parents of children with ASD have focused their research on the analysis of the associations between the psychopathological symptoms observed in those parents and the level of stress they experience (Desiningrum, 2018; Little, 2002; Ryff, 2002; Tomeny, 2016), their coping strategies (Benson, 2010; Hastings et al., 2005; Willis et al., 2016), their sense of coherence (Olsson & Hwang, 2002) and the severity of the child's ASD symptoms (Weitlauf et al., 2012).

ASD symptoms give rise to elevated levels of parenting stress as they make it difficult for the parent to understand their own child and establish and maintain a close emotional relationship with him or her. Parents raising children with ASD may experience stress, tension, anxiety, sadness, a sense of chaos, and uncertainty (Desiningrum, 2018; Ryff, 2002). In Lisa Little's study (2002), mothers of children with ASD had higher levels of stress related to family problems and being pessimistic about their child's future, and were more likely to use antidepressants compared to fathers.

Theodore Tomeny (2016) described relationships between the child's ASD symptoms and the stress experienced by mothers and their psychopathological symptoms. The severity of ASD symptoms correlated positively with both maternal stress and psychopathological symptoms. Moreover, stress mediated the relationship between the severity of the child's ASD symptoms and the symptoms of maternal psychopa-

thology. The results of Tomeny's study suggest that parenting stress, especially the stress experienced in connection with a negative outlook on the child's future, may be one of the risk factors for the occurrence of psychopathological symptoms, including depressive, anxiety, obsessive-compulsive, and somatic symptoms and hostility towards the self or others in mothers of children with ASD (Tomeny, 2016).

The ways parents of children with ASD deal with daily stressors affects their mental health (Benson, 2010; Hastings et al., 2005). Kelcie Willis et al. (2016) described the relationship between the use of avoidance coping strategies and depressive symptoms in parents of children with ASD. Paul Benson (2010) reported that, in his study, distraction coping, and disengagement coping were important predictors of a depressed mood in mothers of children with ASD. Conversely, he found no significant correlation between engagement coping and depressive symptoms in those mothers. Distraction coping, in contrast to engagement coping, was associated with higher levels of anger in the mothers (Benson, 2010).

Benson (2010) found that an increase in the child's abnormal behaviours was associated with increased depressive symptoms in the mothers. Amy Weitlauf et al. (2012) showed that mothers of children with autism reported higher levels of depression than mothers of children with other developmental disorders. Those researchers examined the relationships of the severity of the child's ASD symptoms and behavioural problems with parenting stress, the quality of the parent-child relationship, and depressive symptoms in mothers of children with autism. The results of their study suggested that depression in mothers was associated with the child's behavioural problems (Weitlauf et al., 2012).

Aliya Naheed et al. (2019) measured the level of depression and quality of life in mothers whose children with ASD attended schools offering special provision for this group of students. All the mothers met the criteria for depression. These authors found that maternal quality of life was negatively associated with depressive disorders. They pointed out that mothers of children with ASD should receive mental health support (Naheed et al., 2019).

Abir Bekhet et al. (2012) observed significant associations between adaptive abilities and mental health indicators in parents of children with ASD. They drew attention to the relationship between the parents' ability to adapt well to the difficult situation of raising a child with ASD and less frequent depressive symptoms (Carter et al., 2009; Ekas & Whitman 2010; Ekas et al., 2016; Tobing & Glenwick, 2006; Siman-Tov & Kaniel, 2011), better mental well-being (Kuhn & Carter, 2006), and greater life satisfaction (Ekas & Whitman, 2010). Naomi Ekas and Thomas Whitman (2010) showed that mothers of children who had less severe ASD symptoms had better psychological well-being and life satisfaction as well as lower levels of depression. According to Elizabeth Halstead et al. (2018), better adaptability in mothers of children with ASD

is associated with better maternal well-being, lower levels of depression and anxiety symptoms, a lower sense of solitude, and better family functioning.

Malin Olsson and Philip Hwang (2002) studied sense of coherence (SOC) and the severity of depression in parents of children with intellectual disability and/or autism and parents of healthy children (Olsson & Hwang, 2002). Sense of coherence is a “global orientation that expresses the extent to which a person feels confident that: 1) stimuli derived from one’s internal and external environments in the course of living are structured, predictable and explicable; 2) the resources are available to one to meet the demands posed by these stimuli; and 3) these demands are challenges that are worthy of investment and engagement, and that life has an emotional meaning” (Antonovsky, 1997, p 206-231.). Sense of coherence determines the ways a person perceives, experiences, and construes the surrounding reality (Sek & Ścigala, 1996), and it facilitates understanding the mechanisms and processes of adaptation to stressful factors and situations (Antonovsky, 1995). Olsson and Hwang (2002) found that parents of intellectually disabled children who had a low sense of coherence were at an increased risk of developing depression, compared to parents of healthy children with a low sense of coherence. A lack of self-efficacy in parents of children with ASD correlated with severe depressive symptoms (Bekhet et al., 2012). In mothers of children with autism, active engagement in the relationship with the child was associated with a sense of agency. Conversely, mothers’ guilt, increased depressive symptoms, and elevated levels of stress were negatively correlated with self-efficacy (Kuhn & Carter, 2006). Jennifer Kuhn and Alice Carter (2006) reported significant correlations between self-efficacy and competence and lower levels of depression and stress in mothers of children with autism.

Based on the literature review, we formulated the goal of this study and the hypotheses we wanted to test.

Aim

The goal of this study was to analyse the relationship between mental health symptoms in mothers of children with ASD and maternal coping styles, sense of coherence, and the severity of the child’s symptoms as rated by the mothers.

Study group

The study included a group of 70 women raising children with a medical diagnosis of ASD. The study included a group of 70 women, 18 of whom bring up a child with a medical diagnosis of childhood autism, and 52 bring up a child diagnosed with As-

perger's syndrome. We decided not to separate our sample into mothers of children with autism and those with Asperger's syndrome because DSM-5 and the currently developed ICD-11 do not tease those disorders apart. The children with the aforementioned pervasive developmental disorders were from 5 to 16 years old and were patients of the Mental Health Centre in Kielce, Poland. The mothers' mean age was 38.77 (sd = 4.60; min = 28; max = 49). Thirty-one (44.29%) of the participants lived in the countryside, and thirty-nine (55.71%) in the city. Eleven (15.71%) women had vocational education, twenty-eight (40.00%) – secondary, and thirty-one (44.29%) – higher. Thirty-four (48.57%) mothers were professionally active, two (2.86%) were on a disability pension/ retired, and thirty four (48.57%) did not work by choice. Ten mothers (14.29%) raised their child as single parents and sixty mothers (85.71%) – together with their husbands. For thirty-four (48.57%) of the participants, the child with ASD was their only child.

Methods

Our own survey allowed for the collection of data on: the ages of the studied women and their children, level of education of the study subjects, their place of residence, marital status, professional activity, and the children's medical diagnosis.

The General Health Questionnaire GHQ-28 by D. Goldberg in the Polish adaptation of Zofia Makowska and Dorota Merecz (2001) is used to diagnose the mental health of adults. The questionnaire consists of 28 questions (GHQ-28), the answers to which allow calculation of the general score, indicating the state of mental health (the higher the score, the more severe the mental health disorder). The questionnaire provides detailed scores in the areas of four symptoms: somatic disorders (A), anxiety and insomnia disorders (B), functional disorders (C) and depression symptoms (D). The scores for the scales range from 7–28 points (Frydecka et al., 2010; Makowska & Merecz, 1981; Makowska & Merecz, 2001). The GHQ-28 scale obtained high coefficients of internal consistency and good validity coefficients.

The Coping Inventory for Stressful Situations (CISS) questionnaire by Endler and Parker includes 48 statements enabling the identification of strategies chosen by the subject to cope with a stressful situation (McWilliams et al., 2003). The subject chooses the answer according to the five-point Likert gradation, where “1” corresponds to the lack of choice of a specific way of coping with stress, and “5” corresponds to making very frequent choices of a particular way. The scale includes three subscales: 1) task-solving orientation, 2) emotion-revealing orientation, and 3) avoiding the prob-

lem by engaging attention in other activities. The third style can take two forms: ACZ – distraction seeking while diverting attention away from the main problem and PKT – social diversion. Each of these subscales includes 16 items. The Polish adaptation of the CISS was developed by Strelau and Jaworowska (2020). Coefficients of reliability range from 0.78 to 0.90, and the correlation coefficients between twofold examination of 2-3 weeks apart within the range of 0.73-0.80. Polish sten scores (sten being an abbreviation for ‘Standard Ten’) were developed for people aged 16 to 79.

The Sense of Coherence Scale SOC-29 by Antonovsky (1995) measures the sense of coherence and was first published in 1983. In its original version, it includes 29 items and 3 subscales: the sense of comprehensibility (SOC-29 ZR), manageability (SOC-29 Z) and meaningfulness (SOC-29 S). The first subscale includes 11 items, the second - 10, and the third - 8. The subject answers using a 7-point Likert scale, in which “1” corresponds to the statement that a given attitude always occurs, and “7” never occurs. In some items, reverse scoring was used. Based on the scale, it is possible to obtain a general score (SOC-29), which determines the general intensity of the sense of coherence in the studied person (Antonovsky, 1995; Pasikowski, 2001). The SOC 29 Life Orientation Questionnaire is featured by high integrity and cross-cultural validity (Bowman, 1996; Flannery et al., 1994; Koniarek et al., 1993; Pasikowski, 2001). In Polish studies, SOC-29 showed a very high reliability and validity. The internal consistency coefficients, calculated using the split half method with the Spearman-Brown correction, were as follows: sense of coherence – 0.92, comprehensibility – 0.78, manageability – 0.72, and meaningfulness – 0.68. The dimension of meaningfulness is the most diagnostic subscale of the Orientation to Life Questionnaire (Koniarek et al., 1993).

The Set of Questionnaires for the Diagnosis of Autism Spectrum Disorders (ASRS), by Goldstein and Naglieri, allows for the identification of difficulties related to: communication skills, attention deficits, and difficulties in contacts with peers and adults. The set of questionnaires includes separate versions for parents and teachers, and for two age groups: 2 to 5 years and 6 to 18 years. The full version of the questionnaire includes 71 items, and allows to calculate the following scores: general score, DSM scores, ASRS scores, and therapeutic scales. The test can be conducted individually or in groups. The parent chooses the answer from among 5 options: 0 - never, 1 - rarely, 2 - sometimes, 3 - often, 4 - very often, which best describes the child’s difficulties. Goldstein and Naglieri (2016) distinguished the following ASRS scales: 1) Social relations/ communication - incorrectly uses verbal and/ or non-verbal communication to initiate contacts, engage in relationships, maintain social contacts; 2) Atypical behaviour - has difficulty tolerating changes in routine activities, engages in seemingly pointless stereotypical behaviour, reacts too strongly to

specific sensory experiences; 3) Self-regulation - has attention deficit, motor control and impulse control deficits, is quarrelsome and confrontational; 4) DSM scales - has symptoms directly corresponding to the DSM-IV-TR diagnostic criteria for ASD. Therapeutic scales include: 1) Relationships with peers - has limited abilities and interests in terms of engaging in activities that favour establishing and maintaining relationships with peers; 2) Relationships with adults - has limited abilities and interests in terms of engaging in activities that are conducive to establishing and maintaining relationships with adults; 3) Social and emotional reciprocity - has a limited ability to adequately react emotionally in a relationship with another person and in a social situation; 4) Atypical language - communicates verbally in an unstructured, unconventional way; 5) Stereotypies - engages in pointless repetitive behaviour; 6) Behavioural rigidity - has difficulty tolerating changes in the order of the day and routine activities; environmental features must not change; 7) Sensory sensitivity - reacts too strongly to some tactile, auditory, visual, smell, or taste sensations; 8) Attention/ self-regulation - has difficulty focusing attention properly on one thing and ignoring distractions; seems lost and confused; may have deficits in motor and impulse control, is confrontational (Goldstein & Naglieri, 2016). In 2014, the Polish standardization study was conducted. Standards were developed and the assessment of the reliability and accuracy of the questionnaires was developed. Internal consistency, defined by Cronbach's α coefficient, is very high; the overall score of the version for parents it is 0.93. The scales distinguished on the basis of factor analysis have the highest reliability - coefficients for these scales range from 0.87 (social relations/ communication) to 0.96 (atypical behaviour). The coefficients for the DSM scale were also very high and ranged from 0.88 to 0.96 (Goldstein & Naglieri, 2016). A version of the questionnaire for parents was used in the study.

The Strengths and Difficulties Questionnaire (SDQ) by R. Goodman is a tool used to assess the intensity of symptoms of emotional, social, and behavioural difficulties in children from 3 to 16 years of age. It consists of 25 statements describing various features of the studied person, 10 of which refer to strengths of the child, 14 describe their weaknesses, and 1 is a neutral statement. The SDQ questionnaire consists of 5 subscales (with 5 statements each): Hyperactivity / Inattention (HA), Emotional Symptoms (ES), Conduct Problems (CP), Peer Problems (PP), Prosocial Behaviour Symptoms - PBS). The first 4 subscales are part of the Total Difficulties Score (TDS), which describes overall intensity of psychopathology symptoms. The answers are scored from 0 to 2 points for negative statements and from 2 to 0 points for positive statements. The overall score of the SDQ ranges from 0 to 40 points. A high number of points is associated with an increase in the difficulty of the tested

child. The scores for the individual subscales and the overall score are categorized as: “normal”, “borderline”, and “abnormal”. In Poland, the only available standards are for the self-reported version of the SDQ questionnaire for adolescents (Mazur et al., 2007), and researchers most often refer to English standards of the SDQ (Becker et al., 2004, Rostkowska et al., 2013). In the study, a version of the questionnaire for parents was used. The Strengths and Difficulties Questionnaire – SDQ. In studies conducted among parents of children with central auditory processing disorders, Cronbach’s α for the SDQ questionnaire ranged from 0.78 to 0.51 (Rostkowska et al., 2013).

Study procedure

The study was approved by the Bioethics Committee at the Medical University of Lublin, No. KE-0254/3/2020. The individuals who consented to the study were provided with a set of questionnaires. They were informed that they could consult a psychologist at any time in the case of questions regarding the study. The female subjects completed the questionnaires individually at the Mental Health Centre, but also had the opportunity to complete them at their place of residence. Each of the subjects received materials including instructions, a demographic survey, and a set of the above questionnaires. The study was entirely voluntary. The subjects had the opportunity to request psychological help if needed.

Statistical analysis

The results were analysed statistically using STATISTICA 10.0PL software. The normality of distribution of the individual variables within groups was tested using the Lilliefors test (a version of the Kolmogorov–Smirnov test). Relationships between interval variables were determined by calculating Pearson’s correlation coefficient (r). A p value of 0.05 was deemed statistically significant.

Results

Mental health symptoms and coping styles, In order to investigate the relationship between the mothers’ mental health symptoms and their coping styles, Pearson’s correlation coefficients (r) were calculated between the women’s scores on the GHQ-28 General Health Questionnaire and the CISS (Table 1).

Table 1

Pearson's correlation coefficients (r) between the participants' GHQ-28 and CISS scores.

CISS	GHQ-28				
	General health	Somatic disorders	Anxiety, insomnia	Functional disorders	Depression symptoms
Task-oriented style	0.08	0.15	0.06	-0.01	0.07
Emotions-oriented style	0.54***	0.48***	0.43***	0.53***	0.32**
Avoidance-oriented style	0.31**	0.23	0.33**	0.31**	0.10
Distraction seeking	0.39***	0.30**	0.38***	0.38***	0.20
Social diversion	0.04	0.04	0.10	0.06	-0.16

*Notations: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$*

Source: Own study.

The results showed that there were statistically significant relationships between severe maternal mental health symptoms, as measured using GHQ-28, and the mothers' frequent use of emotion-focused, and avoidance coping, styles. The more often the women used emotion-focused coping in stressful situations, the more likely they were to respond with anxiety, tension, insomnia, difficulties in everyday functioning, as well as depressive, and somatic symptoms. The more the mothers tended to escape from the problem and remain passive, the more likely they were to complain of tension, anxiety, insomnia, and difficulties in everyday functioning. Significant relationships were found between the severity of mental health symptoms in the mothers of children with ASD and their increased somatic symptoms, increased insomnia, anxiety, difficulties in everyday functioning, and turning the attention away from the stressful situation by seeking substitute gratification.

Mental health symptoms and sense of coherence. To determine the relationship between the mothers' mental health symptoms and their sense of coherence, Pearson's correlation coefficients (r) between the participants' GHQ-28 and SOC-29 scores (Table 2) were calculated.

The results indicated that there were significant relationships between a low sense of coherence and increased mental health symptoms in the mothers. Low comprehensibility, manageability, and meaningfulness scores were associated with significantly increased somatic symptoms, as well as anxiety, and insomnia. The lower the mothers' sense of manageability, and meaningfulness, the more severe were their depressive symptoms, and problems in everyday functioning.

Table 2

Pearson's correlation coefficients (r) between the participants' GHQ-28 and SOC-29 scores.

SOC-29	GHQ-28				
	General health	Somatic disorders	Anxiety, insomnia	Functional disorders	Depression symptoms
Sense of comprehensibility	-0.30**	-0.33**	-0.32**	-0.22	-0.06
Sense of manageability	-0.47***	-0.44***	-0.36**	-0.42***	-0.36**
Sense of meaningfulness	-0.50***	-0.46***	-0.35**	-0.50***	-0.41***
Overall score	-0.51***	-0.49***	-0.41***	-0.45***	-0.32**

*Notations: *p<0.05; **p<0.01; ***p<0.001*

Source: Own study.

Mothers' mental health symptoms and mother-rated severity of child ASD symptoms. To determine the relationship between the mothers' mental health symptoms and mother-reported ratings of child ASD severity, Pearson's correlation coefficients (*r*) between the participants' GHQ-28 and ASRS scores were calculated (Table 3).

Table 3

Pearson's correlation coefficients (r) between the participants GHQ-28 and ASRS scores.

ASRS	GHQ-28				
	General health	Somatic disorders	Anxiety, insomnia	Functional disorders	Depression symptoms
Social relations and communication	0.22	0.14	0.21	0.23*	0.14
Atypical behaviours	0.26*	0.20	0.17	0.26*	0.28*
Self-regulation	0.23*	0.21	0.22	0.15	0.23
DSM	0.23*	0.17	0.19	0.23	0.24*
Relations with peers	0.26*	0.20	0.19	0.26*	0.27*
Relations with adults	0.26*	0.20	0.29**	0.16	0.26*
Social-emotional reciprocity	0.22	0.15	0.20	0.21	0.19
Atypical language	0.28*	0.21	0.25*	0.2*	0.18
Stereotypies	0.15	0.10	0.05	0.15	0.33**
Behavioural rigidity	0.15	0.11	0.08	0.14	0.22
Sensory sensitivity	0.31**	0.26*	0.21	0.32**	0.26*
Attention	0.21	0.20	0.19	0.15	0.18

*Notations: *p<0.05; **p<0.01; ***p<0.001*

Source: Own study.

Statistically significant correlations were found between the mothers' increased mental health symptoms and their ratings of their children's ASD symptoms, atypical behaviour, atypical language, sensory sensitivity, and peer and adult socialization on ASRS. The higher the women's ratings of the severity of their children's ASD symptoms, atypical behaviour, sensory sensitivity, stereotypy, and social difficulties, the more severe were their depressive symptoms and functioning problems. Increased anxiety and insomnia in the mothers were associated with the children's poor adult socialization and atypical language.

Mothers' mental health symptoms and child functioning difficulties. In order to investigate the relationship between the mothers' mental health symptoms and their children's emotional, social, and behavioural problems, Pearson's correlation coefficients (r) were calculated between the women's GHQ-28 and SDQ scores (Table 4).

Table 4

Pearson's correlation coefficients (r) between the participants' GHQ-28 and SDQ scores.

SDQ	GHQ-28				
	General health	Somatic disorders	Anxiety, insomnia	Functional disorders	Depression symptoms
Hyperactivity Scale	0.20	0.20	0.13	0.13	0.23*
Emotional Symptoms Scale	0.34**	0.33**	0.23	0.33**	0.23
Difficult Behaviour Scale	0.14	0.21	0.14	0.01	0.10
Problems with Peers Scale	0.22	0.21	0.19	0.23	0.03
Prosocial Behaviour Scale	-0.15	-0.12	-0.16	-0.14	-0.06
Overall score	0.32**	0.33**	0.24*	0.25*	0.21

Notations: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Source: Own study.

The data shown in Table 4 indicates that there were statistically significant relationships between the severity of the participants' mental health symptoms (somatic symptoms, anxiety, insomnia) and mother-rated severity of child emotional difficulties. Elevated levels of child hyperactivity correlated with increased depressive symptoms in the mother.

Discussion

The results of the statistical analyses indicated that in our sample there existed statistically significant correlations between the mothers' increased mental health symptoms and their preference for emotion-focused and avoidance coping, a low sense of coherence, high ASRS scores, and high mother-rated SDQ emotional problem scores.

The finding that the mothers' use of emotion-focused and avoidance coping styles in response to stressful situations was positively statistically significantly correlated with their severe psychopathological symptoms, such as somatoform symptoms, anxiety, insomnia, and difficulty performing daily tasks, corresponds with the observations made by other authors (Benson, 2010; Hastings et al., 2005; Willis et al., 2016). Those researchers emphasize that the ways and styles parents of children with ASD use to deal with stress affects their mental health (Benson, 2010; Hastings et al., 2005; Willis et al., 2016) and play an important role in adapting to child-rearing problems (Baxter et al., 2000; Hastings & Taunt, 2002). Significant relationships were revealed between the mothers' increased depressive symptoms and emotion-focused coping style. This result is consistent with those reported by Little (2002), who described a relationship between the mother's pessimistic outlook for her child's future and severe depression in the mother. Our results do not confirm Willis et al.'s (2016) and Benson's (2010) observations. They described significant correlations between the use of avoidance coping, and distraction coping, and severe depressive symptoms in mothers of children with ASD.

On the other hand, our finding that there are statistically significant associations between the mother's low sense of coherence (low ability to understand stimuli coming from the internal and external environment, low resourcefulness, low self-trust and trust in one's own abilities, and a low sense of purpose in making an effort) and their severe somatic and depressive symptoms, anxiety, insomnia, and difficulties in performing daily tasks is consistent with literature data. Olsson and Hwang (2002) found that parents of children with disabilities who had a low sense of coherence were at a higher risk of developing depression compared to parents who had a high sense of coherence. Kuhn and Carter (2006) pointed out that indicators of mental resilience, including self-efficacy, self-acceptance, and a sense of coherence, were predictors of good coping. In Bekhet's study, a lack of self-efficacy in parents of children with ASD correlated with severe depressive symptoms (Bekhet et al., 2012). Similarly, Kuhn and Carter (2006) found that maternal guilt, increased depressive symptoms, and elevated levels of stress were negatively correlated with self-efficacy (Kuhn & Carter, 2006). Conversely, a high sense of self-efficacy and competence was associated with a lower level of depression and stress in mothers of children with autism (Kuhn & Carter, 2006). It also increased their resistance to

difficult situations and protected them against developing mental health symptoms (Bekhet et al., 2012; Benson, 2010).

The analyses we conducted revealed that there was a significant relationship between the mothers' mental health symptoms and the occurrence of severe ASD symptoms in their children – social, self-regulation, and communication problems, and sensory sensitivity. Our finding that there were significant correlations between the participants' increased depressive symptoms and severe ASD symptoms they observed in their children, such as atypical behaviours, stereotypy, sensory sensitivity, and social difficulties, is consistent with the results obtained by other authors (Ekas & Whitman, 2010; Tomeny, 2016; Weitlauf et al., 2012).

Increased problems in dealing with everyday tasks and symptoms of anxiety and insomnia in the mothers were associated with the child's increased social and communication problems and sensory sensitivity. Significant positive correlations were also found between increased maternal depressive symptoms and the child's hyperactivity and concentration deficits, and also between the participants' severe somatic disorders, symptoms of anxiety, insomnia, and difficulties in everyday functioning, and symptoms of, mainly emotional, deficits in the child. Comparable results were obtained by Ekas and Whitman (2010), who showed that lower severity of child ASD symptoms was associated with a better psychological well-being and life satisfaction, and lower levels of depression in the mother. In Weitlauf et al.'s study (2012) mothers of children with autism reported higher levels of depression than mothers of children with other developmental disorders. These authors investigated the relationship between the severity of child symptoms and behavioural problems and symptoms of depression in mothers. The results of their study suggest that depression in mothers is associated with the child's behavioural problems. Tomeny (2016) described the relationship between child ASD symptoms and maternal stress and psychopathological symptoms, such as depression, anxiety, obsessive-compulsive symptoms, as well as severe somatic problems and hostility towards the self or others. As parents of children with ASD may be at an increased risk of developing mental health problems, there is a need for providing them with additional mental health support (Tomeny, 2016; Seymour et al., 2017). Similarly, Naheed et al. (2019) point out that parents require mental health and childcare support, which can improve their quality of life and prevent the development of depression.

According to Halstead et al. (2018) better adaptive skills in mothers of children with ASD are associated with their better well-being, lower levels of depressive and anxiety symptoms, lower sense of solitude, and better functioning of the family. Support provided to parents may reinforce their sense of competence and agency, and their worth as parents, help them see the effects of working with their child, and protect them against discouragement, resignation, depression, or other psychopathologi-

cal symptoms. At the same time, it is important to draw the attention of psychologists and doctors engaged in the therapy of children with ASD to the mental condition of the parents, whose good mental health is an important condition for providing optimal help to the child.

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