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Associations between features of eating disorders and the intensity and types of J. Young's early maladaptive schemas in a group of young Poles

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Abstract

Introduction: Patients suffering from eating disorders (EDs) have attracted particular interest among researchers and clinicians due to the exceptionally high mortality rates observed in this population.The first symptoms of EDs typically appear during adolescence and early adulthood, which may indicate the crucial role of early life experiences in their development.The aim of the study was to examine the associations between the intensity of early maladaptive schemas and the presence of eating disorder features in a group of young adults in Poland.

Material and methods: The study included 231 participants: 75.5% women, 22.1% men. The mean age of the participants was 25.75(SD=7.79).Two questionnaires were used in the study:The Eating Attitudes Test (EAT-26) to assess eating disorder symptoms, and the Young Schema Questionnaire (YSQ-S3-PL) to measure the intensity of early maladaptive schemas.

Results: Differences in the intensity of early maladaptive schemas between individuals with and without eating disorder symptoms were found across all 18 schemas. The study participants reporting eating disorder symptoms scored higher on all analyzed variables and schema domains. Statistically significant correlations were identified between the EMS and specific eating habits, with the strongest associations observed for Bulimia and Food Preoccupation. The intensity of individual schemas was more strongly differentiated by gender among participants without eating disorder symptoms than among those reporting such symptoms.

Conclusions: 1. Individuals reporting symptoms of eating disorders display higher intensity of early maladaptive schemas compared to those not reporting such symptoms. 2. Specific maladaptive eating habits are associated with the intensity of EMS, allowing for the identification of distinct schema profiles linked to particular eating disorder symptoms.

Keywords: exploding head syndrome, parasomnias, sleep disorders

Streszczenie

Wprowadzenie: Grupa pacjentów cierpiących na zaburzenia odżywiania (ZO) wzbudza szczególne zainteresowanie naukowców oraz klinicystów z uwagi na jedne z najwyższych współczynników śmiertelności, które są wśród tych osób obserwowane. Pierwsze symptomy ZO ujawniają się zazwyczaj w okresie dojrzewania oraz we wczesnej dorosłości, co może wskazywać na kluczową rolę, jaką odgrywają w ich powstawaniu wczesne doświadczenia życiowe. Celem badania jest poznanie powiązań pomiędzy intensywnością wczesnych nieadaptacyjnych schematów, a występowaniem cech zaburzeń odżywiania w grupie dorosłych Polaków.

Materiał i metody: W badaniu wzięło udział 231 osób (75,5% kobiet, 22,1% mężczyzn). Średnia wieku w badanej grupie wynosiła 25,75 (SD = 7,79). W badaniu zostały wykorzystane do oceny objawów zaburzeń odżywiania – Eating Attitudes Test (EAT-26) oraz Kwestionariusz Schematów Younga (YSQ-S3-PL), do pomiaru natężenia wczesnych nieadaptacyjnych schematów.

Dyskusja: Różnice w nasileniu wczesnych nieadaptacyjnych schematów między osobami z objawami zaburzeń odżywiania a osobami ich nieposiadającymi występują we wszystkich 18 wczesnych nieadaptacyjnych schematach. Osoby z objawami zaburzeń odżywiania uzyskują wyższe wyniki we wszystkich analizowanych zmiennych oraz ich domenach. Stwierdzono statystycznie istotne korelacje między EMS a poszczególnymi nawykami żywieniowymi, przy czym najsilniejsze zależności zaobserwowano w przypadku bulimii oraz zaabsorbowania jedzeniem. Natężenie poszczególnych schematów jest silniej różnicowane przez płeć badanych w grupie osób bez objawów zaburzeń odżywiania w porównaniu do badanych deklarujących obecność takich objawów.

Wnioski: 1. Osoby deklarujące obecność objawów zaburzeń odżywiania prezentują wyższe nasilenie wczesnych

nieadaptacyjnych schematów, w porównaniu do osób niezgłaszających takich symptomów. 2. Poszczególne dezadaptacyjne nawyki żywieniowe są związane z poziomem nasilenia EMS, co pozwala na wyróżnienie specyficznych profili schematów powiązanych z poszczególnymi objawami zaburzeń odżywiania.

Słowa kluczowe: zaburzenia odżywiania, wczesne nieadaptacyjne schematy, dezadaptacyjne nawyki żywieniowe

Introduction

Eating disorders (EDs) are a group of mental disorders characterized by persistent and distorted beliefs regarding body weight, body shape and food intake, as well as abnormal eating behaviors and destructive dietary patterns. [1] A characteristic feature of EDs is an elevated level of anxiety related to appearance, body shape and potential weight gain.

According to a review of studies conducted by Galmiche et al., [2] lifetime prevalence estimates of eating disorders range from 2.2% for men to 8.4% for women, with an overall global increase in prevalence of 4.3% over the past 17 years. There is a growing evidence confirming that eating disorders and related behaviors are common among individuals across income groups, in both Western and non-Western cultures, among different genders, and within sexual minority groups. [3-6]

The eleventh edition of the International Classification of Diseases (ICD-11) [7] introduces several significant changes to this group of disorders: a new diagnostic category ofbinge eating disorder (BED); elimination of the amenorrhea criterion in anorexia nervosa; a relaxation of the underweight threshold (a BMI value indicating anorexia is 18.5 kg/m^2 or less, previously 17.5 kg/m^2 or less); greater emphasis on excessive preoccupation with body weight and shape as essential for diagnosis; and according to bulimia nervosa, a reduced frequency of binge eating episodes required for diagnosisto once per week for one month (previously twice per week for three months in ICD-10). The new classification also highlights the subjective loss of control over food intake and the altered manner and quantity of food consumption. [7]

It should be emphasized, however, that nearly half of individuals treated for eating disorder symptoms do not meet full diagnostic criteria. A notable characteristic of EDs is the high variability of diagnoses, resulting from frequent "transitions" between diagnostic categories and the frequent comorbidity of different disorders. [8-10]

The population of patients suffering from eating disorders attracts particular attention from researchers and clinicians due to the exceptionally high mortality rates observed among these individuals. [11] This also applies to unspecified eating disorders, which are often perceived as less life-threatening. [12] The presence of suicidal thoughts and attempts is strongly associated with eating disorder symptoms, as is an increased risk of self-harm. [13-15]

Cognitive-behavioral techniques are among the primary methods used in the treatment of eating disorder symptoms. [16] Considering that eating disorder symptoms most often emerge during adolescence and early adulthood, early life experiences are believed to play a crucial role in their etiology. [17] Therefore, there are grounds for expanding cognitive-behavioral interventions with elements of J. Young's theory and therapy of early maladaptive schemas (EMS). [18] This concept is relatively new, and there is still limited empirical evidence linking its key assumptions with the severity of eating disorder symptoms. However, studies conducted to date [19] indicate that Young's theory may significantly contribute to explaining the complex etiology of these disorders.

This theory concerns the understanding of human personality structure, including its developmental aspects. According to the authors of the concept, [20] early maladaptive schemas are defined as: "1) a broad, pervasive theme or a pattern, 2) comprised of memories, emotions, cognitions, and bodily sensations, 3) regarding oneself and one's relationships with others, 4) developed during childhood or adolescence, 5) elaborated throughout one's lifetime, and 6) dysfunctional to a significant degree." [20] A schema is considered pathological when it is associated with maladaptive emotional experiences, symptoms, and social difficulties, although each individual may exhibit a single schema or a combination of several. [21] Increased activation of schemas influences the individual's interpretation of their environment and interpersonal relationships. [22] From a developmental perspective, negative childhood experiences lead to the frustration of early childhood needs, forming the foundation of early maladaptive schemas that, through their persistence, increase the risk of psychopathology. [23-24] These schemas are characterized by relative stability and typically reflect assumptions and beliefs that once served as adaptive mechanisms for coping with strongly negative emotions but later become maladaptive. [25]

Early maladaptive schemas may therefore be regarded as one of the theoretical models explaining the etiology of eating disorders. [22] EMS constitute

broad patterns of thinking about oneself, others, and the world, encompassing excessive preoccupation with appearance and body weight, which in turn lead to a range of maladaptive behaviors. [22] A meta-analysis of [29] studies [19] revealed that individuals with eating disorders displayed significantly higher intensity across all early maladaptive schemas – except for the Entitlement/ Grandiosity schema – compared with individuals without such disorders. It may therefore be inferred that the needs most relevant to the etiology of eating disorders include secure attachment to others, autonomy, competence and identity, freedom to express genuine needs and emotions, as well as spontaneity and play. [20,26] In the cited studies, the Unrelenting Standards/Hypercriticalness schema consistently emerged as a significant feature across all eating disorder diagnoses. [19]

Aim

The aim of the described study was to examine the associations between the intensity of early maladaptive schemas and the presence of eating disorder features in a group of young Poles, as well as to assess potential differences in the profiles of early maladaptive schemas corresponding to specific eating habits as measured by the Eating Attitudes Test (EAT-26).

Material and Method

The study involved 231 participants aged between 18 and 55 years (M = 25.75; SD = 7.79), recruited using the snowball sampling method via social media. Of the total sample, 75.5% were women, 22.1% were men, and 3.5% identified their gender as "other". The sociodemographic characteristics of the study group are presented in Table 1.

The study was conducted between September 2023 and January 2024. Data were collected from 231 individuals through an online survey created on the Microsoft Forms platform. The questionnaire was distributed via Facebook and Instagram, both on the researcher's private profile and in groups dedicated to eating disorder topics.

Inclusion criteria for participation in the study included age (over 18 years) and informed consent to participate.

Based on the results of the Eating Attitudes Test (EAT-26), the participants were divided into two groups: individuals with symptoms of eating disorders (Group 1, n = 58), individuals without eating disorder symptoms (Group 2, n = 173).

The research procedure was carried out in accordance with the Declaration of Helsinki of the World Medical Association [27] and the ethical principles of the Belmont Report. [28]

In order to assess the intensity of early maladaptive schemas, the Young Schema Questionnaire (YSQ-S3-PL) was used. The internal consistency of the subscales, as measured by Cronbach's alpha coefficient, ranged from 0.70 to 0.90. The instrument demonstrated satisfactory

Table 1. Sociodemographic characteristics of the study group

		Total		**Participants with eating disorder symptoms**		**Participants without eating disorder symptoms**	
Variable	Subgroup	N = 231	%	n = 58	%	n = 173	%
Gender	Female	172	75.5	49	84	123	71
	Male	51	22.1	3	5	48	28
	Other	8	3.5	6	10	2	1
Place of residence	City with more than 500,000 inhabitants	108	47	26	45	82	47
	City with 150,000 to 500,000 inhabitants	39	17	13	22	26	15
	City/town with up to 150,000 inhabitants	51	22	12	20	39	23
	Rural area	33	14	7	12	26	15
Education	Primary	1	0.4	0	0	1	0.6
	Vocational	1	0.4	0	0	1	0.6
	Secondary	120	52	34	59	86	50
	Higher	109	47	24	41	85	49

Notes: N – total number of participants in the study group; n – number of participants in the subgroup; % – percentage of the subgroup in relation to the total sample.

theoretical validity. [29] To identify individuals exhibiting features of eating disorders, the Eating Attitudes Test (EAT-26) was applied. It is one of the most commonly used instruments for measuring abnormal eating habits and is a shortened version of the original Eating Attitudes Test scale and contains 26 items related to attitudes toward eating. Three subscales are distinguished within the test: Diet, Bulimia and Food Preoccupation, and Oral Control. The test is particularly useful for screening purposes, as it captures specific elements of the most common eating disorders. A total score above 20 points indicates an actual risk of the presence of such disorders. [30]

Statistical Methods

Statistical analyses were performed using IBM SPSS Statistics 29.0. The significance level was set at $p = 0.05$. In order to assess the normality of distribution of the studied variables, the Shapiro–Wilk test was applied. As the test results were statistically significant, non-parametric equivalents of the tests were used for further analysis. Spearman's rank correlation coefficient was employed to determine the relationships between variables, as well as their direction and strength. The Mann–Whitney U test was used to assess the significance of differences between the measured variables. Descriptive statistics for the results obtained from the YSQ-S3-PL and EAT-26 questionnaires for the entire study group are presented in Table 2.

Table 2. Summary of results obtained from the YSQ-S3-PL and EAT-26 questionnaires in the study group (N = 231)

	M	SD	Min	Max
YSQ-S3-PL				
Emotional Deprivation	12.56	6.55	5	30
Abandonment/Instability	18.55	7.49	5	30
Mistrust/Abuse	15.92	6.94	5	30
Social Isolation/Alienation	16.59	6.77	5	30
Defectiveness/Shame	13.01	7.44	5	30
Failure	15.18	7.58	5	30
Dependence/Incompetence	13.59	6.04	5	30
Vulnerability to Harm or Illness	15.53	7.03	5	30
Enmeshment/Undeveloped Self	11.19	5.61	5	29
Subjugation	14.17	6.18	5	30
Self-Sacrifice	16.47	5.92	5	30
Emotional Inhibition	15.48	6.37	5	30
Unrelenting Standards/Hypercriticalness	17.53	6.61	5	30
Entitlement/Grandiosity	15.06	4.98	5	30
Insufficient Self-Control/Self-Discipline	17.82	6.43	5	30
Approval-Seeking/Recognition-Seeking	19.27	6.10	5	30
Negativity/Pessimism	17.99	7.27	5	30
Punitiveness	14.66	7.12	5	30
EAT-26				
Total score	13.09	12.9	0	52
Diet	8.34	8	0	31
Bulimia and Food Preoccupation	2.67	3.92	0	14
Oral Control	2.08	2.89	0	13

Notes: YSQ-S3-PL – Young Schema Questionnaire; EAT-26 – Eating Attitudes Test; M – mean; SD – standard deviation; Min – minimum value; Max – maximum value.

In the studied group, the highest intensity was observed for the following schemas: Approval-Seeking/Recognition-Seeking, Abandonment/Instability, and Negativity/Pessimism.

Results

In the first stage of the analysis, an attempt was made to determine whether the intensity of individual early maladaptive schemas differentiates individuals with eating disorder symptoms from those without such

symptoms. For this purpose, the Mann–Whitney U test was applied. The obtained results are presented in Table 3.

Table 3. Comparison of EMS intensity between the study groups

	Eating disorder symptoms (n = 58)		**No eating disorder symptoms** (n = 173)		**Mann–Whitney U test**	
	M	**SD**	**M**	**SD**	**Z**	**p**
YSQ-S3-PL						
Emotional Deprivation	16.59	6.62	11.21	5.97	5.198	<0.001*
Abandonment/Instability	23.02	5.99	17.06	7.36	5.279	<0.001*
Mistrust/Abuse	21.17	5.47	14.16	6.41	6.664	<0.001*
Social Isolation/Alienation	20.97	5.99	15.13	6.38	5.610	<0.001*
Defectiveness/Shame	18.05	6.61	11.32	6.93	6.130	<0.001*
Failure	19.61	7.40	13.85	7.18	4.620	<0.001*
Dependence/Incompetence	16.62	5.93	12.57	5.75	4.382	<0.001*
Vulnerability to Harm or Illness	20.12	6.53	13.99	6.52	5.623	<0.001*
Enmeshment/Undeveloped Self	13.79	6.44	10.31	5.04	3.677	<0.001*
Subjugation	18.47	6.38	12.73	5.42	5.699	<0.001*
Self-Sacrifice	19.16	5.49	15.57	5.81	4.031	<0.001*
Emotional Inhibition	17.69	5.72	14.73	6.42	3.309	<0.001*
Unrelenting Standards/ Hypercriticalness	21.16	6.12	16.32	6.34	4.754	<0.001*
Entitlement/Grandiosity	16.07	4.46	14.72	5.12	1.995	0.046*
Insufficient Self-Control/Self-Discipline	21.12	5.77	16.71	6.27	4.558	<0.001*
Recognition-Seeking	22.55	5.52	18.17	5.90	5.007	<0.001*
Negativity/Pessimism	23.03	5.88	16.30	5.91	6.093	<0.001*
Punitiveness	19.16	6.54	13.15	6.67	5.579	<0.001*

*Notes: YSQ-S3-PL – Young Schema Questionnaire; n – number of participants; M – mean; SD – standard deviation; Z – standardized test statistic; p – significance; * p < 0.05.*

The obtained results indicate that differences in the distributions between individuals with and without eating disorder symptoms were statistically significant across all schemas in the studied group. Among participants with eating disorder symptoms, the mean scores for all YSQ-S3-PL scales were higher, indicating that, on average, these individuals exhibited a greater number and higher intensity of early maladaptive schemas. The largest differences were observed in the following schemas: Mistrust/Abuse, Defectiveness/Shame, Negativity/ Pessimism, Abandonment/Instability, and Punitiveness.

To examine potential associations between specific eating habits and EMS, a correlation analysis was performed using Spearman's rank correlation coefficient. The obtained results are presented in Table 4.

Table 4. Associations between specific eating habits and EMS in the study group (N = 231)

	EAT-26 Spearman's rho		
	Diet	**Bulimia and Food Preoccupation**	**Oral Control**
YSQ-S3-PL			
Emotional Deprivation	0.336*	0.349*	0.207*
Abandonment/Instability	0.362*	0.396*	0.302*
Mistrust/Abuse	0.383*	0.460*	0.328*
Social Isolation/Alienation	0.340*	0.402*	0.292*
Defectiveness/Shame	0.410*	0.427*	0.278*
Failure	0.332*	0.338*	0.255*
Dependence/Incompetence	0.247*	0.362*	0.235*
Vulnerability to Harm or Illness	0.343*	0.487*	0.331*

Enmeshment/Undeveloped Self	0.192*	0.262*	0.187*
Subjugation	0.348*	0.387*	0.356*
Self-Sacrifice	0.297*	0.286*	0.201*
Emotional Inhibition	0.197*	0.213*	0.225*
Unrelenting Standards/ Hypercriticalness	0.369*	0.368*	0.381*
Entitlement/Grandiosity	0.167*	0.202*	0.191*
Insufficient Self-Control/Self-Discipline	0.250*	0.331*	0.217*
Recognition-Seeking	0.328*	0.365*	0.263*
Negativity/Pessimism	0.391*	0.481*	0.370*
Punitiveness	0.442*	0.392*	0.410*

*Notes: YSQ-S3-PL – Young Schema Questionnaire; EAT-26 – Eating Attitudes Test; N – total number of participants; * p < 0.05.*

The results of the analyses indicate that all EMS are statistically significantly correlated with the individual subscales of the EAT-26 test. The Dieting scale shows the strongest associations with the following schemas: Punitiveness, Defectiveness/Shame, Negativity/ Pessimism, and Mistrust/Abuse. Regarding the Bulimia and Food Preoccupation scale, the strongest correlations were found with the schemas: Vulnerability to Harm or Illness, Negativity/Pessimism, Mistrust/Abuse, and Defectiveness/Shame. For the Oral Control scale, the strongest associations were observed with the schemas: Punitiveness, Unrelenting Standards/Hypercriticalness, Negativity/Pessimism, and Subjugation.

In the final stage of the analyses, differences in the distributions of EMS intensity were examined among female and male participants within the following groups: the overall sample, participants without eating disorder symptoms, and participants with eating disorder symptoms. Participants identifying their gender as "other" were excluded from this analysis due to the small sample size. For this purpose, the Mann–Whitney U test was applied. The obtained results are presented in Tables 5–7.

Table 5. Differences in EMS intensity between female and male participants (N = 223)

	Women (n = 172)		**Men** (n = 51)		**Mann–Whitney U test**	
	M	**SD**	**M**	**SD**	**Z**	**p**
YSQ-S3-PL						
Emotional Deprivation	12.17	6.60	13.18	5.96	1.316	0.188
Abandonment/Instability	19.13	7.84	16.02	6.04	-2.612	0.009*
Mistrust/Abuse	16.08	7.37	14.59	5.17	-0.961	0.336
Social Isolation/Alienation	16.39	7.28	16.43	4.61	0.390	0.697
Defectiveness/Shame	13.17	7.74	11.80	6.02	-0.712	0.477
Failure	15.33	7.91	14.12	6.23	-0.615	0.539
Dependence/Incompetence	13.89	6.29	12.41	5.08	-1.127	0.260
Vulnerability to Harm or Illness	16.17	7.21	12.61	5.63	-3.034	0.002*
Enmeshment/Undeveloped Self	11.52	5.96	10.41	4.46	-0.639	0.523
Subjugation	14.10	6.43	13.75	5.32	-0.002	0.998
Self-Sacrifice	16.40	6.08	16.51	5.12	0.230	0.818
Emotional Inhibition	15.15	6.50	16.20	5.91	1.224	0.221
Unrelenting Standards/ Hypercriticalness	17.47	6.99	17.12	4.85	-0.187	0.852
Entitlement/Grandiosity	14.80	5.08	15.69	4.62	1.474	0.141
Insufficient Self-Control/Self-Discipline	18.06	6.68	16.71	5.48	-1.184	0.236
Recognition-Seeking	19.54	6.30	17.75	5.43	-1.979	0.048*
Negativity/Pessimism	18.59	7.54	15.25	5.67	-2.887	0.004*
Punitiveness	14.77	7.66	13.86	4.89	0.121	0.903

*YSQ-S3-PL – Young Schema Questionnaire; n – number of participants; M – mean; SD – standard deviation; Z – standardized test statistic; p – significance; * p < 0.05.*

The schemas whose intensity levels are differentiated by gender in the overall group are: Abandonment/Instability, Vulnerability to Harm or Illness, Approval-Seeking/Recognition-Seeking, and Negativity/Pessimism. Among women, the intensity of these schemas is significantly higher than among men. The largest difference is observed in the Vulnerability to Harm or Illness schema.

Table 6. Differences in EMS intensity between female and male participants among individuals without eating disorder symptoms (n = 171)

	Women (n = 123)		**Men** (n = 48)		**Mann–Whitney U test**	
	M	**SD**	**M**	**SD**	**Z**	**p**
YSQ-S3-PL						
Emotional Deprivation	10.54	5.78	12.77	5.86	2.446	0.014*
Abandonment/Instability	17.69	7.92	15.40	5.64	-1.598	0.110
Mistrust/Abuse	14.10	6.91	14.25	5.09	0.776	0.437
Social Isolation/Alienation	14.67	6.99	15.94	4.24	1.811	0.070
Defectiveness/Shame	11.33	7.40	11.17	5.43	0.742	0.458
Failure	13.83	7.66	13.69	5.89	0.481	0.631
Dependence/Incompetence	12.61	5.95	12.08	4.97	-0.091	0.927
Vulnerability to Harm or Illness	14.41	6.80	12.81	5.68	-1.197	0.231
Enmeshment/Undeveloped Self	10.40	5.25	10.27	4.53	0.266	0.790
Subjugation	12.36	5.44	13.42	5.23	1.285	0.199
Self-Sacrifice	15.42	5.99	16.31	5.14	1.095	0.273
Emotional Inhibition	14.12	6.52	16.00	5.96	2.033	0.042*
Unrelenting Standards/ Hypercriticalness	16.09	6.87	17.00	4.69	1.317	0.188
Entitlement/Grandiosity	14.30	5.27	15.73	4.71	2.086	0.037*
Insufficient Self-Control/Self-Discipline	16.82	6.60	16.42	5.48	-0.064	0.949
Recognition-Seeking	18.41	6.10	17.40	5.39	-1.098	0.272
Negativity/Pessimism	16.75	7.34	15.13	5.77	-1.186	0.236
Punitiveness	12.96	7.21	13.54	4.86	1.676	0.094

*YSQ-S3-PL – Young Schema Questionnaire; n – number of participants; M – mean; SD – standard deviation; Z – standardized test statistic; p – significance; * p < 0.05.*

The schemas whose intensity is differentiated by gender among individuals without eating disorder symptoms are: Emotional Deprivation, Emotional Inhibition, and Entitlement/Grandiosity. These schemas show higher intensity levels among men.

Table 7. Differences in EMS intensity between female and male participants among individuals with eating disorder symptoms

	Women (n = 49)		**Men** (n = 3)		**Mann–Whitney U test**	
	M	**SD**	**M**	**SD**	**Z**	**p**
YSQ-S3-PL						
Emotional Deprivation	16.27	6.78	19.67	3.79	0.963	0.335
Abandonment/Instability	22.73	6.42	26.00	2.65	0.651	0.515
Mistrust/Abuse	21.06	6.06	20.00	3.61	-0.394	0.694
Social Isolation/Alienation	20.69	6.18	24.33	2.89	0.885	0.376
Defectiveness/Shame	17.82	6.59	22.00	7.00	1.140	0.254
Failure	19.08	7.33	21.00	8.89	0.354	0.723
Dependence/Incompetence	17.10	6.03	17.67	4.73	0.256	0.798
Vulnerability to Harm or Illness	20.59	6.31	9.33	4.04	-2.498	0.012*
Enmeshment/Undeveloped Self	14.33	6.72	12.67	2.52	-0.236	0.813
Subjugation	18.47	6.69	19.00	4.58	0.177	0.860

Self-Sacrifice	18.86	5.64	19.67	4.16	0.197	0.844
Emotional Inhibition	17.73	5.73	19.33	4.62	0.334	0.738
Unrelenting Standards/ Hypercriticalness	20.94	6.08	19.00	8.00	-0.492	0.623
Entitlement/Grandiosity	16.06	4.40	15.00	3.46	-0.533	0.594
Insufficient Self-Control/Self-Discipline	21.18	5.84	21.33	3.06	-0.197	0.844
Recognition-Seeking	22.39	5.96	23.33	2.08	-0.217	0.829
Negativity/Pessimism	23.22	5.92	17.33	3.79	-1.751	0.080
Punitiveness	19.31	6.89	19.00	1.00	-0.374	0.709

*Notes: YSQ-S3-PL – Young Schema Questionnaire; n – number of participants; M – mean; SD – standard deviation; Z – standardized test statistic; p – significance; * p < 0.05.*

The only schema whose intensity is differentiated by gender among individuals with eating disorder symptoms is Vulnerability to Harm or Illness. It should be noted that the low representation of men limits the ability to draw firm conclusions.

An analysis of the results presented in Tables 5–7 shows that gender differentiates some of the early maladaptive schemas to a greater extent within the group of individuals without eating disorder symptoms. Moreover, in the group without eating disorder symptoms, the differentiated schemas show higher intensity among men, whereas in the other two groups, the higher intensity is observed among women.

Discussion

Research on the relationship between EMS and eating disorders has been conducted for over twenty years. It has been demonstrated that, regardless of the specific type of disorder analyzed, individuals diagnosed with an eating disorder score higher on most EMS compared to healthy individuals. [19,31-32] The results obtained in the present study are consistent with these findings. Individuals with eating disorders often experience stigmatization. [33] The stigma associated with eating disorders is linked to feelings of shame, fear of criticism, and social isolation. [34] Difficulties in regulating and processing these negative emotions may activate and reinforce early maladaptive schemas, particularly those within the domains of Disconnection and Rejection, Impaired Autonomy and Performance, and Impaired Limits. [35] This suggests a potential bidirectional relationship between schemas and behaviors characteristic of eating disorders.

Our results indicate statistically significant differences in the intensity of all EMS between individuals with eating disorder symptoms and those without such symptoms. The strongest differences were observed in the schemas: Mistrust/Abuse, Defectiveness/Shame, Negativity/Pessimism, Abandonment/Instability, and Punitiveness. These schemas belong to the domains of Disconnection and Rejection and Overvigilance and Inhibition. In the group of individuals with eating disorder symptoms, the highest scores were found for the schemas: Abandonment/Instability, Negativity/Pessimism, Approval-Seeking/Recognition-Seeking, Mistrust/ Abuse, Unrelenting Standards/Hypercriticalness, and Insufficient Self-Control/Self-Discipline. These results partially align with findings from previous research. A meta-analysis encompassing 11 studies [19] indicated that the schemas most relevant to eating disorders include: Abandonment/Instability, Defectiveness/Shame, Social Isolation, and Self-Sacrifice. The domain most frequently reported in studies on eating disorders is Disconnection and Rejection. [19]

Previous research suggests that intensified symptoms and behaviors characteristic of eating disorders – such as cognitive preoccupation with food and eating, compulsive eating patterns, purging, dietary restriction or excessive physical activity – may represent particularly dysfunctional strategies for avoiding unpleasant emotions triggered by the activation of early maladaptive schemas. However, due to their chronic nature, these behaviors ultimately contribute to the further reinforcement of those schemas. [36-37]

To date, studies investigating EMS specific to particular eating disorder types have yielded inconclusive results. Some studies found no significant differences in schema intensity between individuals with anorexia nervosa and those from other ED groups, while others reported the presence of such differences. [19] Hinrichsen et al. [38] found that the intensity of the Insufficient Self-Control/Self-Discipline schema was significantly lower among patients with anorexia nervosa compared to individuals with other eating disorders. In our study, this schema showed weaker correlations with the Dieting and Oral Control subscales (which are characteristic of anorexia) and stronger correlations with Bulimia and Food Preoccupation.

In the study by Pauwels et al., [39] patients with bulimia obtained significantly higher scores on the Insufficient Self-Control/Self-Discipline and Emotional

Deprivation schemas compared to individuals exhibiting restrictive attitudes typical of anorexia. Conversely, patients with predominantly restrictive eating patterns scored significantly higher on the Failure, Subjugation, and Unrelenting Standards/Hypercriticalness schemas. However, some studies have reported no significant differences in schema intensity between bulimia and other eating disorders. [19]

Previous research suggests that women tend to score higher in the domains of Disconnection and Rejection, Impaired Autonomy and Performance, and Other-Directedness, which may partially explain their greater susceptibility to developing eating disorders. [40-41] In our analysis, gender differences were observed in the schemas: Abandonment/Instability, Vulnerability to Harm or Illness, Approval-Seeking/Recognition-Seeking, and Negativity/Pessimism. These schemas belong to the domains Disconnection and Rejection, Impaired Autonomy and Performance, Other-Directedness, and Overvigilance and Inhibition.

In the group of individuals without eating disorder symptoms, gender differences in EMS intensity were found for the schemas: Emotional Deprivation (Disconnection and Rejection), Emotional Inhibition (Overvigilance and Inhibition), and Entitlement/Grandiosity (Impaired Limits). These schemas were more intense among men. In the group of individuals with eating disorder symptoms, significant gender differences were observed for only one schema, which may be related to the small number of male participants (N = 3).

The study results indicate that individuals with eating disorders are characterized by deficits in emotion regulation and expression, which may stem from experiences of a negative emotional environment during childhood. Therefore, therapeutic interventions should focus on addressing these areas. [42] Several studies have applied schema therapy to the treatment of eating disorder symptomatology, yielding promising results. [36, 43-44] Schema therapy may be beneficial both for individuals formally diagnosed with eating disorders and for those who exhibit related symptoms but do not meet full diagnostic criteria.

Although the questionnaire used in this study is not diagnostic in nature, it allows for the identification of symptoms that may affect an individual's functioning and well-being. This is particularly important, as more than half of those receiving treatment for eating disorders do not meet the criteria for any specific nosological category. [45] Thus, the obtained results may serve as a starting point for considering therapeutic approaches for individuals with problematic relationships with food who have not yet met diagnostic thresholds. The correlation analysis between eating habits (EAT-26) and schemas revealed that certain behaviors may be linked to personality traits. This finding could serve as a basis for further exploration of personality-related components of eating disorders and contribute to the development of more tailored therapeutic interventions.

Limitations

The study was conducted using self-report instruments, which may have led to subjective distortions or inaccuracies in participants' self-assessment of their behavior and experiences. Another limitation is the predominance of female participants, both in the overall sample and particularly in the group of individuals with eating disorder symptoms. Additionally, the EAT-26 used in this study is a screening tool and does not constitute a diagnostic instrument.

Conclusions

1. Individuals reporting symptoms of eating disorders display higher intensity of early maladaptive schemas compared to those not reporting such symptoms.
2. Specific maladaptive eating habits are associated with the intensity of EMS, which makes it possible to identify distinct schema profiles linked to particular symptoms of eating disorders.

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Conflict of interest

The authors have declared no conflict of interest.

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