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THE ROLE OF EARLY MALADAPTIVE SCHEMAS IN THE CHANGE IN GENERAL MENTAL HEALTH AND WELL-BEING DURING THE COVID-19 CORONAVIRUS PANDEMIC

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Abstract

This presented research aimed to determine the role of early maladaptive schemas in the change in general mental health and well-being during the COVID-19 coronavirus pandemic. We focused on changes in mental health (anxiety and depressive symptoms, morbid thoughts, and suicidal ideation) and well-being. Our retrospective study included 499 adults (316 women and 173 men). We employed the following research tools: the General Health Questionnaire (GHQ-30), the shortened version of the WHO Quality of Life Questionnaire (WHOQOL-BREF), the HASS-BREF Scale to assess the severity of suicidal ideations and behaviors, and Young Schema Questionnaire (YSQ-S3-PL). The questionnaires' instructions for the subjects were modified to obtain information for three specific periods: before the pandemic, at the most difficult moment of the pandemic for individuals, and in the last two weeks (the time period preceding data collection; January/February 2021). Results of the research indicate that during the COVID-19 pandemic, many people declared a significant increase in the number of depressive or anxiety symptoms. Early maladaptive schemas (Abandonment, Insufficient Self-Control) predict negative changes in mental health. In addition, other early maladaptive schemas (Self-Sacrifice, Unrelenting Standards) predict negative well-being changes. Interestingly, the Subjugation schema can temporarily play an adaptive role in exceptional situations, such as a pandemic.

Keywords: COVID-19 pandemic, early maladaptive schemas, mental health, well-being, suicidal thoughts.

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Early maladaptive schema therapy is one of the most popular models in the cognitive-behavioral approach. Schemas therapy aims to restore mental well-being and shape the ability to independently care for and meet their emotional needs. It emphasizes a deep therapeutic relationship and the patient's basic universal emotional needs, distinguishing schema therapy from a wide range of CBT (Rafaeli et al., 2011). Schema therapy are described as an emerging 'third wave' psychotherapy (Spedding & Chibanda, 2019). Jeffrey E. Young (1999, in Young et al., 2003), the creator of this therapy, defines an early maladaptive schema (EMS) as a broad, pervasive theme or pattern comprised of memories, emotions, cognitions, and bodily sensations regarding oneself and relationships with others. Schemas develop during childhood or adolescence due to unmet needs, and the emphasis is placed on the interaction of the environment and the child's temper. The following EMS may result from deprivation of the need for safe attachment: Abandonment, Mistrust/Abuse, Emotional Deprivation, Defectiveness, and Social Isolation. In contrast, deprivation of the need for autonomy can lead to EMS: Dependance, Vulnerability to Harm, Enmeshment, and Failure. Deprivation of the need for realistic boundaries can lead to the perpetuation of other EMS: Entitlement, Insufficient Self-Control. Deprivation of the need for self-expression can result in the emergence of three other EMS: Subjugation, Self-Sacrifice, and Approval Seeking. Finally, the result of the frustration of the need for spontaneity can be the formation of EMS: Negativity/Pessimism, Emotional Inhibition, Unrelenting Standards, and Punishment (Young et al., 2003). EMS also occur in healthy people, but they are smaller and may remain inactive until the individual is in a stressful situation.

Results of a few studies indicate that EMS drives vulnerability to symptoms of anxiety and depression (Cámara & Calvete, 2012; Harris & Curtin, 2002; Jabłoński & Chodkiewicz, 2017; Mącik, 2018). Symptoms of depression are associated with such schemas as Social Isolation, Failure, Emotional Inhibition (Cámara & Calvete, 2012), Defectiveness, Insufficient Self-Control, and Vulnerability to Harm (Harris & Curtin, 2002), while anxiety symptoms are associated with Abandonment, Mistrust, and Unrelenting Standards (Cámara & Calvete, 2012). Other studies (Shahamat, 2011) point to a significant relationship between EMS of Defectiveness and symptoms of mental disturbances (somatization, anxiety, and depression). According to Cormier et al. (2011), the most characteristic schemas for depressed patients are Defectiveness, Dependence, and Vulnerability to Harm. Interesting research on the results of the COVID-19 pandemic (especially the quarantine) was conducted in Portugal (Faustino et al., 2022). They showed several positive associations between EMS (Mistrust/Abuse, Vulnerability to Harm, Negativity/Pessimism) and COVID-19 anxiety and negative associations between all schemas and psychological well-being. However, no studies have analyzed the dynamics of the appearance and changes in such symptoms in the context of the COVID-19 pandemic experience. Our research attempts to fill this gap and identify which EMS are predictors of change in general mental health and well-being during

the COVID-19 coronavirus pandemic. Study during the pandemic is justified because the dysfunctional nature of schemas is particularly visible when an individual faces difficulties or a threat. The current knowledge of the role of EMS during the COVID-19 pandemic will allow therapists to better plan therapeutic interventions in pandemic-like situations (e.g., war, natural disasters, new pandemics in the future, etc.).

Since emotional responses (e.g., anxiety) to the COVID-19 pandemic are common (WHO, 2022; Xiong et al., 2020), we assume that most reactions to the current pandemic situation may be considered a natural response to a crisis. A defining feature of a crisis is that it poses a risk to some significant interests of a person; in a pandemic, health and life are at risk, as life plans and relationships. The following characteristics of a situational crisis (as listed by Miller, 2011) may apply to the COVID-19 pandemic: suddenness (rapid spread of the coronavirus and a sharp increase in cases), unpredictability (we do not know how long the pandemic will last and how it will be progressing), intensity (considering the number of cases and deaths) and finally uncontrollability (the absence of fully effective medication, risk of becoming infected in several places). Therefore, emotional and behavioral reactions typical of a psychological crisis can be expected. During a pandemic, several needs (such as security, autonomy, and spontaneity) are frustrated, particularly if a person directly experiences disease or social isolation. During the coronavirus pandemic, an EMS may be triggered by the feeling of threat, i.e., the frustration of the core emotional need for security and any other difficulties preventing fulfilling one's needs. We hypothesized that EMS are potential predictive factors influencing the extent of psychological burden during the COVID-19 pandemic.

For these theoretical and empirical reasons, we hypothesized that (1) there is a significant relationship between the level of activation of all EMS (e.g., Insufficient Self-Control, Abandonment, Vulnerability to Harm, Social Isolation, Defectiveness, Enmeshment/Undeveloped Self, Entitlement Emotional Deprivation, Unrelenting Standards) and indicators of the deterioration of health and well-being; (2) EMS are significant predictors of the change in general mental health during the COVID-19 coronavirus pandemic, and (3) EMS are significant predictors of the change in well-being during the COVID-19 coronavirus pandemic.

Material and methods

Online surveys were conducted in Poland between January 15 and February 7, 2021, in a group of 499 participants (see Table 1). The average age of the respondents was 31.31 (between the ages of 18 to 72; SD = 12.48). Facebook advertisements were used for recruiting participants.

Table 1. Frequency statistics for sociodemographic variables

Sociodemographic variables		*n*	%
Gender	Female	316	63
	Male	173	35
	Other	10	2
Education	Primary education	3	1
	Lower secondary education	21	4
	Vocational education	24	5
	Secondary education	132	26
	Incomplete higher education	102	20
	Higher education	217	43
Terms of occupation	Unemployed	29	6
	Student	208	42
	Employee/self-employee	242	48
	Pensioner	20	4
Mode of professional work	Stationary work	101	20
	Online work	222	44
	Mixed work	90	18
	Not applicable	86	17
Lives alone	Yes	75	15
	No	424	85
Romantic relationship	No	167	33
	Informal	157	31
	Formal	131	26
	No response	44	9
Have children	No	373	75
	Yes – one	50	10
	Yes – two	54	11
	Yes – three or more	21	4
	No response	2	0
Material status	Insufficient	102	20
	No response	151	30
	Sufficient	246	49
Diagnosed severe somatic disease before the pandemic	Yes	25	5
	No	450	90
	No response	24	5
Diagnosed mental illness before the pandemic	Yes	89	18
	No	387	78
	No response	23	5
Contact with a COVID-19 patient	Yes	290	58
	No	209	42
Positive COVID-19	Yes	66	13
	No	422	85
	No response	11	2
Quarantine	Yes	170	34
	No	329	66

The research project (design and course of the study, questionnaires, and instructions) was approved by the Research Ethics Committee at University [affiliation]. The study instruments included a standard instruction for psychometric tests, GDPR privacy notice, consent to participation in the study, particulars (to measure sociodemographic variables: gender, age, education, occupation, etc.) as well as questions about health, contacts with people with coronavirus infections, quarantine, general functioning during the pandemic and psychometric tools such as YSQ-S3-PL, GHQ-30, WHOQOL-BREF, HASS-BREF.

The Young Schema Questionnaire (YSQ-S3-PL) is a self-report questionnaire focused on assessing 18 EMS. The Polish version of the questionnaire was used (Oettingen et al., 2017). The reliability coefficient in our sample, measured with Cronbach's alpha for individual scales, was between 0.62 and 0.81. The discriminatory validity of the questionnaire is satisfactory.

David Goldberg's General Health Questionnaire (GHQ-30) in Polish was used to assess the mental health of adults, more specifically, non-psychotic mental health disturbances, in the general population. The GHQ-30 questionnaire helps identify people whose health deteriorated due to experiencing difficulties or mental diseases in the general population. The questionnaire has three scales: depression and anxiety, general functioning, and interpersonal relations. The internal consistency of the GHQ scale in our sample, as measured by Cronbach's alpha, is up to 0.97 (Frydecka et al., 2010).

The World Health Organization Quality of Life Questionnaire (WHOQOL-BREF) in Polish (Jaracz et al., 2006) was used to evaluate well-being in four domains: physical health, psychological health, social relationships, and environment (Whoqol Group, 1995). Well-being is the most natural aspect of the subjective quality of life (Olthuis and Dekkers, 2005). Cronbach's alpha was considered adequate ($\alpha = 0.92$).

The brief Polish version of the Harkavy Asnis Suicide Survey (HASS-BREF) was used to assess suicidal thoughts and behavior (Friedman and Asnis, 1989). The complete version of the scale includes 20 statements; 10 were used for this study. In earlier pilot studies, the reliability of the half created from selected items was satisfactory and the reliability of the full tool checked with split-half (Spearman-Brown) method was high. HASS-BREF also had good reliability in our sample ($\alpha = 0.92$).

For the three questionnaires (GHQ-30, WHOQOL-BREF, and HASS-BREF), the instructions for the respondents were modified to collect information about the respondents' health, well-being, and severity of suicidal ideation in three time periods: 1) before the pandemic, 2) at the most difficult time during the

pandemic, 3) over the last two weeks before participation in the study (between January 15 and February 7, 2021).

The authors tested the reliability of tools using the internal consistency method. The reliability of the tools, as measured by Cronbach's alpha, is high, ranging from 0.92 to 0.96 for tools used to evaluate health and well-being. As for the early maladaptive schema questionnaire, given the number of questions for each scale (only 5), the reliability coefficients seem satisfactory (0.64 to 0.92).

Results and analysis

Quantitative analysis, using PS IMAGO PRO 7 (IBM SPSS Statistics 27), was conducted for the sample (variables statistics, means comparison, non-parametric options for correlation coefficients, regression analysis). A backward stepwise linear regression was used to identify possible predictors of the outcome change in GHQ/WHOQOL out of EMS that correlate with the dependent variable. At each step, variables were chosen based on p-values, and a p-value threshold of 0.1 was used to limit the number of variables included in the final model.

Table 2 presents descriptive statistics for the main variables.

Table 2. The mean results in HASS-BREF, GHQ-30, and WHOQOL-BREF for the whole sample for the two periods: before the pandemic, and at the most difficult time (N = 499)

	M	*SE*	*SD*
HASS-BREF			
Before	4.32	.28	6.21
Difficult	5.24	.5	7.75
GHQ-30			
Before	56.37	.61	13.68
Difficult	80.62	.91	20.25
WHO-QOL-BREF			
Before	96.72	.74	16.48
Difficult	78.52	.80	17.8

Note: M – mean, *SE* – standard error, *SD* – standard deviation, Before – before the pandemic COVID-19, Difficult – the most difficult time of the pandemic COVID-19 for individuals.

Further analysis showed a significant relationship between the activation level of EMS and indicators of the deterioration of health or well-being and the change in general mental health/well-being during the COVID-19 coronavirus pandemic (see Table 3).

Table 3. Correlation coefficients (rho) between early maladaptive schemas and GHQ-30, HASS-BREF, WHOQOL-BREF, and change in GHQ-30, HASS-BREF, WHOQOL-BREF

	HASS (B)	HASS (MD)	HASS (Ch)	GHQ (B)	GHQ (MD)	GHQ (Ch)	WHO-QOL (B)	WHO-QOL (MD)	WHO-QOL (Ch)
ED	.30**	.30**	.081	.37**	.22**	.016	-.47**	-.39**	-.046
AB	.42**	.45**	.153**	.37**	.41**	.229**	-.32**	-.42**	.149**
MA	.41**	.42**	.133**	.37**	.35**	.149**	-.39**	-.43**	.075
SI	.52**	.41**	.023	.47**	.34**	.092*	-.43**	-.42**	.029
DS	.40**	.40**	.109*	.42**	.29**	.050	-.50**	-.42**	-.043
FA	.40**	.40**	.083	.45**	.35**	.111*	-.44**	-.43**	.038
DI	.39**	.39**	.081	.48**	.35**	.084	-.46**	-.43**	.018
VU	.42**	.44**	.157**	.42**	.41**	.185**	-.42**	-.48**	.105*
EM	.26**	.30**	.142**	.35**	.24**	.052	-.38**	-.34**	-.002
SB	.40**	.41**	.124**	.45**	.36**	.109*	-.43**	-.45**	.067
SS	.14**	.14**	.103*	.13**	.16**	.107*	-.10*	-.22**	.132**
EI	.25**	.26**	.085	.34**	.31**	.131**	-.35**	-.39**	.060
US	.29**	.27**	.083	.27**	.31**	.177**	-.20**	-.37**	.178**
ET	.20**	.22**	.075	.25**	.17**	.023	-.23**	-.25**	.028
IS	.36**	.39**	.087	.36**	.36**	.169**	-.33**	-.41**	.123**
AS	.30**	.33**	.085	.29**	.31**	.165**	-.22**	-.32**	.134**
NP	.49**	.48**	.096*	.47**	.43**	.188**	-.42**	-.47**	.103*
PU	.39**	.37**	.083	.35**	.29**	.103*	-.33**	-.35**	.030

Note. B – before the pandemic COVID-19, MD – the most difficult time of the pandemic COVID-19, Ch – change (value for the most difficult time of the pandemic minus the pre-pandemic score), ED – Emotional Deprivation schema, AB – Abandonment schema, MA – Mistrust/Abuse schema, SI – Social Isolation schema, DS – Defectiveness schema, FA – Failure schema, DI – Dependance schema, VU – Vulnerability to harm schema, EM – Enmeshment schema, SB – Subjugation schema, SS – Self-Sacrifice schema, EI – Emotional inhibition schema, US – Unrelenting Standards schema, ET – Entitlement schema, IS – Insufficient Self-Control schema, AS – Approval Seeking schema, NP – Negativity/Pessimism schema, PU – Punishment schema, *p < .005, **p < .001.

All correlations between EMS and the main variables (i.e., general mental health, morbid thoughts, and well-being) were significant (r from 0.1 to 0.52, $p < 0.005$ or $p < 0.001$). Moreover, a relationship was also observed between EMS and negative change in general mental health and a negative shift in well-being. In this case, not all correlations turned out to be statistically significant. The negative role of changes during the COVID-19 pandemic has been revealed for schemes: Abandonment, Vulnerability to harm, Subjugation, and Negativity/Pessimism.

Further regression tests were conducted to provide predictors of change between the time before the pandemic and the most difficult time of the pandemic). A backward stepwise linear regression analysis ($F = 10.139$, $p < 0.001$, $N = 499$) was performed to identify predictors of the dependent variable "change in general mental health" (value for the most difficult time of the pandemic minus the pre-pandemic score). The results showed that Abandonment, Subjugation, and Insufficient Self-Control were predictors of changes in mental health. The negative value of the beta coefficient for Subjugation means that as the schema becomes stronger, the

difference in general mental health is smaller. See Table 4 for a more detailed presentation of the results.

Table 4. Standardized and unstandardized coefficients of regression for variable change in GHQ

Variables	B	SE	Beta
Abandonment schema	.646	.176	.216
Subjugation schema	-.362	.210	-.104
Insufficient Self-Control schema	.371	.184	.108
R2 = .051			

The model accounts for 5.2% of the variance in GHQ change (most difficult time minus pre-pandemic).

In the same way, regression analysis ($F = 9.021$, $p < 0.001$, $N = 499$) was performed for the dependent variable "change in the subjective evaluation of well-being" (score for the pre-pandemic score minus the most difficult time of the pandemic). Self-Sacrifice and Unrelenting Standards were predictors of changes in the subjective evaluation of well-being during the COVID-19 pandemic. The well-being assessment changes more when the schemas are activated. The results are presented in Table 5.

Table 5. Standardized and unstandardized coefficients of regression for variable change in WHOQOL

Variables	B	SE	Beta
Self-Sacrifice schema	.289	.159	.09
Unrelenting Standards schema	.412	.145	.141
R2 = .039			

The model accounts for 3.9% of the variance in WHOQOL change (most difficult time minus pre-pandemic).

The lack of regression analysis concerning HASS-BREF is because the severity of suicidal ideations and behaviors concerned only a very small percentage of the sample (6% in the most difficult moments).

Discussion and conclusions

The research presented here aimed to determine predictors of change in general mental health and well-being during the COVID-19 coronavirus pandemic. Interestingly, the important predictors of changes in general mental health turned out to be Abandonment and Insufficient Self-Control. The Abandonment schema is

related to the frustration of attachment. In people with a strong Abandonment schema, the consequences of the pandemic situation, where it was impossible to fulfill the attachment need, could be more severe. The consequences include strong fear of losing close ones, a breakdown of relationships, and the resulting impact on the feeling of safety. The Insufficient Self-Control schema is related, on the one hand, to a low tolerance for frustration in achieving one's goals and, on the other hand, too little capacity to control own emotions and impulses (Roediger et al., 2018). During the pandemic, with social isolation and several externally imposed constraints, discomfort and frustration with different goals were unavoidable. Consequently, Insufficient Self-Control schema activation could aggravate symptoms of mental health disturbances related to emotions (e.g., anxiety) or depressive symptoms. It could contribute to a decrease in well-being. Presumably, people with a deficit in self-control experienced the largest drop in well-being and mental health deterioration subjectively. Unrelenting Standards schema may have contributed to a reduction in well-being, as it was only possible to meet some of the obligations and requirements of the new and unstable situation. This corresponds to the findings of other authors (Flett and Hewitt, 2020) on the psychological problems associated with the global health crisis among vulnerable perfectionists.

The results of our study on the predictive significance of such schemas as Insufficient Self-Control and Abandonment for the subjective evaluation of mental health are consistent with the findings of other researchers (Cámara, Calvete, 2012; Harris, Curtin, 2002) published before the COVID-19 pandemic.

The findings for protective factors are also interesting. The Subjugation schema, related to the surrender of control, proved to protect the respondents from the deterioration in mental health. Most likely, people who have learned to sacrifice some of their needs, despite the emotional consequences, were more resistant to the frustration of their needs caused by the pandemic, which could have mitigated the risk of developing mental health disturbances. Although it might be expected that another schema that involves sacrificing one's needs for others, namely Self-Sacrifice, should have a similar function, our study showed that this was not the case. The schema contributed to the lowering of well-being. This means that the frustration of different needs during the pandemic could be so significant that even those ordinarily willing to give up fulfilling their needs still feel the psychological consequences of that frustration.

Our research is not without limitations. The first one is the retrospective nature of the study. By asking the respondents about the pandemic's previous periods, we could find out how they evaluated the most difficult moments and their mental health after some time had passed. However, we cannot be sure if they actually felt like that. Another limitation is the use of self-report methods only for the evaluation of the mental state of the respondents. Objective tools (such as physiological tests) could provide more information. Another kind of limitation is that EMS measurement was a one-off. The results of our research do not allow us to determine to what extent the schemas contribute to the severity of symptoms of

anxiety and depression and to what extent it is symptoms (e.g., anxiety) that activate the schema. It is not known what the dynamics of EMS activation was over time. We may be dealing with a vicious circle: an active schema worsens mental health and lowers mood, which strengthens the schema, leading to further deterioration of mental health, etc. Yet another limitation, though justified, is that the study involved mainly volunteers and internet users. Our study did not cover many people in their late adulthood. Also, people with above-average severity of mental health disturbances (e.g., depression) did not participate in the study because their low mood and fatigue prevented them from engaging in a cognitively demanding task.

Our research on EMS provides new information on factors affecting a crisis response. The study showed that schemas might affect how people cope with the ongoing COVID-19 pandemic. Interestingly, the schemas that matter most to negative changes in general mental health in the COVID-19 pandemic situational crisis are linked to the frustration of two different needs: secure attachment and protection (Abandonment schema) and realistic limitations and self-control (Insufficient Self-Control schema). Therefore, the psychotherapist must focus on building a relationship with such a patient, setting boundaries, and supporting self-control-related competencies. Schema therapy can be a good model for working with a patient experiencing the pandemic's psychological effects.

As the research results presented above indicate, during the COVID-19 pandemic, many people declared a significant increase in the number of depressive or anxiety symptoms. It is known that the schemas are activated in particular in the most difficult moments when a person cannot meet the needs. However, therapeutic work outside the critical periods for the population, such as pandemics, natural disasters, or violent conflicts, is equally important. Psychoeducation in the field of maladaptive schemas and reactions to them can help people understand the role and importance of active schemas in their behaviors that aggravate problems in everyday life. For example, working with the Unrelenting Standards schema, especially on unhealthy perfectionism, by leaving the over-compensator mode and performing tasks while taking care of a sensitive child from the position of a healthy adult can help patients discover the pleasure of life. This schema enhances depressive and anxiety disorders. Patients feel inadequate in most areas, from personal to professional life. Work on reducing the impact of this schema on everyday functioning can improve people's well-being. Another example might involve working with someone with an active Abandonment schema. Regardless of whether it is the time of a pandemic or an economic crisis, the personal competence to distinguish the situation of real abandonment from the problem of escalating the fear of expected abandonment is very important. Therapeutic work with schema modes can help the patient to respond more adaptively instead of remaining in defensive or childlike modes. Imaginative techniques, such as an emotional bridge to the past with scenario change, can provide patients with an image and experience of possible fulfillment of their needs even in very difficult situations (e.g., getting help in the event of an accident or being a victim of aggression or harassment).

As part of the psychoeducation, the therapist can also show patients with an active Subjugation schema that it can temporarily play an adaptive role in exceptional situations, such as a pandemic or natural disasters. In some cases, temporary changes in conditions and subordination behaviors may be the adaptive solution. Therefore, the context (type of crisis, etc.) may provide a background for a greater or lesser impact of schema on mental health deterioration.

To sum up, the basic recommendation from the results of our research is that it is worth working on reducing the impact of maladaptive schemas on human functioning in everyday life, as this may act as a protective factor in the most difficult moments. This is a prevention with a possible clear positive role in the life of a person who struggles with specific difficulties in meeting needs. The second important recommendation concerns the therapeutic function of elaboration (reflection) with patients about the negative situations they experience (every person sooner or later may experience, for example, real rejection by someone, deception, or injury). The point is to normalize such situations in which it turns out that the world could be dangerous and not to interpret them in a way that would strengthen the schema. Empirical research of this type is, therefore, on the one hand, a contribution to the empirical testing of schema theory and, on the other hand, a source of guidance for therapeutic practice. Further research could concern which schemas are activated depending on the difficult (crisis) situation type, and the dynamics of activation of particular schemas over time.

Authors' note

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