FEATURES AND FACTORS OF SUBJECTIVE WELL-BEING OF MOTHERS RAISING CHILDREN WITH ORGANIC NERVOUS SYSTEM LESIONS

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Summary

Introduction. Given the significant number of children with special needs in Ukraine and worldwide, there is an acute need for a detailed study of the peculiarities of their families, especially mothers, who are the main caregivers. The life of a mother of a child with an organic nervous system lesion often requires full concentration on the child's needs, which leads to the abandonment of professional self-realization and a change of the usual way of life to round-the-clock care. This is accompanied by a high level of stress, a decrease in life satisfaction, and emotional burnout, which negatively affects her SWB.

Methods. Brief Multidimensional Wellbeing Questionnaire "PERMA-Profiler" *(Savchenko, O. & Lavrynenko, D., 2023)*; Patient Health Questionnaire 9 *(List of valid... assistance, 2023)*; Generalized Anxiety Disorder 7 *(List of valid... assistance, 2023)*; Connor-Davidson Resilience Scale (CD-RISC-10) *(Shkolina, N. V., 2020)*.; Posttraumatic Growth Inventory (PTGI) *(Zubrovsky, D., 2018)*; Coping Inventory for Stressful Situations (CISS) (adapted by T. Kryukova) *(Karamushka, L. M., Kredentcer, O. V., & Tereshchenko, K. V., 2022)*; The Shwartz Value Survey (SVS) (adaptation by I. Semkiw) *(Nahrniak, K. M., 2017)* and questionnaire.

Sample. The empirical study sample includes 93 mothers who raise children with organic nervous system lesions.

Results. Three types of mothers were identified, depending on the level of their SWB and psychological characteristics: Type 1 – high level of SWB with personal growth; Type 2 – moderately-low level of SWB with preserved productivity and with pronounced anxiety and depressive symptoms; Type 3 – low level of SWB without personal growth. The factors of SWB were determined for mothers in the cluster with a high level of SWB, and for mothers from the clusters with low and moderately-low levels of SWB.

Key words: clusters, values, personal growth, posttraumatic growth, coping strategies, anxiety, depressive symptoms.

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1. Introduction

The problem of subjective well-being (SWB) is central to modern positive psychology, gaining particular relevance in the context of studying individuals experiencing prolonged stressful situations and facing the challenges of extreme motherhood. Given the significant number of children with special needs in Ukraine and globally, there is an urgent need for a detailed study of the characteristics of their families, especially mothers, who are the primary caregivers. The life of a mother raising a child with an organic nervous system lesion often demands complete focus on the child's needs, leading to the abandonment of professional self-realization and a shift in the usual lifestyle to round-the-clock care *(Mushkevych, 2016)*.

This is accompanied by high levels of stress, reduced life satisfaction, and emotional burnout, negatively impacting her SWB *(Maistruk, 2010; Smith & Blamires, 2022)*. According to official data from the Ministry of Healthcare of Ukraine at the end of 2023, approximately 159,000 children with special needs were registered in medical and preventive institutions, specialized schools, and boarding facilities *(UNICEF Ukraine, 2024)*. While the father typically assumes responsibility for the family's financial well-being and seeking additional resources for the child's rehabilitation and treatment *(Falovska, 2021)*, the mother often bears the primary caregiving burden. Therefore, identifying factors that support or deplete a woman's internal resources is critically important for developing targeted psychological assistance programs aimed at preserving her mental health and resilience. This underlies the relevance and choice of the present study's topic.

The aim of the article is to study the features and factors of SWB of mothers raising children with organic nervous system lesions. In accordance with this aim, the following objectives were set: to determine the level of SWB and its psychological characteristics in mothers raising children with organic nervous system lesions, to identify types of psychological functioning of mothers depending on their level of SWB, and to reveal the leading psychological factors of mothers' SWB in different clusters.

2. Main part

One of the most common nosologies caused by organic nervous system lesions is cerebral palsy (CP). CP syndrome is considered a consequence of disturbances in the processes of early prenatal or postnatal brain development. This type of disorder is complex, profound, and typically irreversible *(Kleshcherova, 2019)*. CP is not exclusively a physical impairment, as it is often popularly understood, but represents a complex neurodevelopmental disorder that is the leading cause of neurological disorders in childhood *(Rosenbaum et al., 2007)*. In addition to motor impairments, this syndrome is accompanied by a wide range of non-physical difficulties, including epileptic seizures, sensory and perceptual dysfunctions, learning disabilities, difficulties in social interaction, and behavioral deviations.

Receiving such a diagnosis changes the entire family's way of life. In addition to daily chores, parents must regularly visit doctors and rehabilitation centers. A significant amount of time is spent on additional classes, rehabilitation, and special education for the child. The physical and psychological burden on parents sharply increases, which can cause emotional burnout and stress *(Smith & Blamires, 2022)*. Therefore, modern research emphasizes the need for comprehensive family support.

The daily lives of mothers caring for children with CP undergo a significant burden, as they most often play the role of primary caregivers. For instance, one systematic review found that the majority of study participants were mothers (184 out of 226 individuals) *(Elangkovan & Shorey, 2020)*. O. Yefimova, based on conducted research, concluded that with the appearance of a child with developmental disorders in the family, there is an almost complete change in the social status of mothers – 50% of mothers are forced to leave their main job and dedicate themselves to the child. To some extent, mothers of such children become "social invalids" due to the hopelessness of the situation *(Shevchuk & Vlasova, 2021)*. At the same time, authors note significant differences between the psycho-emotional state of mothers and fathers. In this regard, mothers are more vulnerable to emotional difficulties and chronic stress *(Smith & Blamires, 2022)*. Most studies by Western authors emphasize a wide range of neurotic and psycho-emotional disorders observed in parents of children with CP *(Mushkevych, 2016)*,

including a decrease in emotional background, increased anxiety, frequent manifestations of emotional burnout, depression, apathy, and irritability *(Smith & Blamires, 2022)*. Studies show that one of the most pronounced emotional manifestations of parents of a child with developmental disabilities is anxiety *(Rakhmanov, 2016)*. Changes in the personal sphere are also observed, namely: impaired self-identity, decreased self-esteem, feelings of helplessness, guilt, and emotional isolation *(Elangkovan & Shorey, 2020)*. Research conducted in Great Britain showed that about 75% of almost a thousand surveyed parents of children with craniocerebral injuries, including CP, rated their parenting as extremely stressful. Similar conclusions were obtained in a number of international studies, which confirmed that parents of children with CP have lower indicators of psychosocial well-being compared to parents of neurotypical children *(Cheshire et al., 2010)*.

Thus, the functioning of mothers raising a child with an organic nervous system lesion changes comprehensively, encompassing various spheres of life. This requires a holistic interdisciplinary approach to psychological support, with mandatory consideration not only of the mothers' personal state but also of the peculiarities of their social interaction and psychosomatic well-being, and from this, to a significant extent, depends on how well the child can adapt to social life.

3. Results

SWB was assessed using the "Well-being" scale of the Brief Multidimensional Wellbeing Questionnaire “PERMA-Profiler” *(adaptation by Savchenko & Lavrynenko, 2023)*.

The results of the empirical study indicate that the largest percentage (58.4%) of mothers in our study, who are raising children with organic nervous system lesions, have an average level of SWB, while others fall into the low (13.5%) and high (28.1%) levels. Such results allow us to assert that women with the unique experience of motherhood, raising children with physical disabilities, experience less life satisfaction, as a result of forced self-sacrifice, chronic fatigue, and prolonged stress.

The results of the correlation analysis revealed an inverse correlation between the level of SWB and:

– The level of anxiety (−0.382∗∗∗) and depressive symptoms (−0.536∗∗∗), which indicates that anxiety and depressive symptoms are significant negative factors for SWB.

– The emotion-oriented coping strategy (−0.463∗∗∗) – a decrease in emotional reactivity is associated with an increased sense of well-being.

– A direct correlation was found between SWB and the following indicators:

– Task-oriented coping (0.285∗∗∗), avoidance strategy (0.324∗∗∗), and the social diversion subscale (0.473∗∗∗) – under conditions of prolonged stress, mothers tend to mobilize efforts for active problem-solving, while also using avoidance and seeking social support as additional adaptive strategies.

– Values of self-direction (0.353∗∗∗), benevolence (0.281∗∗∗), stimulation (0.271∗∗∗), hedonism (0.233∗∗), achievement (0.159∗), and security (0.153∗) – mothers' internal sense of well-being is largely associated with the desire for personal freedom, while achievement and security play a secondary but important role in maintaining psychological balance.

– Resilience (0.430∗∗∗) – the higher the level of resilience in mothers, the higher their level of SWB, as women who are able to overcome stress and find internal resources to overcome difficulties more often demonstrate a higher level of life satisfaction, positive mood, energy, and conscious life meanings.

– Posttraumatic growth in terms of "Relationship to Others" (0.290∗∗), which may indicate a relatively smaller impact of interpersonal re-evaluation on the sense of well-being; "Personal Strength" (0.423∗∗∗) and "New Possibilities" (0.352∗∗∗), which indicates the leading role of internal resources and the ability to form a positive psychological state under difficult life circumstances. The overall posttraumatic growth index also demonstrates a medium-strength correlation (0.367∗∗∗) with SWB, confirming that difficulties can have a transforming and strengthening effect on the individual, contributing to an increase in their life satisfaction.

– The level of financial well-being (0.215∗∗) and the subjective assessment of the child's illness severity (−0.325∗∗), which indicates that a higher level of financial security contributes to an increase in SWB, while the subjective perception of the child's illness has a negative impact on its level.

To identify types of psychological functioning in mothers of children with organic nervous system lesions, a K-means cluster analysis was performed based on psychological characteristics that have significant associations with SWB and its components from the PERMA-Profiler (Table 1). The Gap-statistic method was used to determine the optimal number of clusters, which indicated the presence of three optimal clusters, uniting 93 mothers.

The first cluster, "low without personal growth", is characterized by vulnerability with low SWB and included 24 mothers. It demonstrates: 1) a very low level of posttraumatic growth, indicating an absence of positive changes during the traumatic situation of motherhood; 2) value orientations showing a lack of internal resources, specifically: low scores on scales of stimulation, self-direction, security, achievement, benevolence, hedonism; 3) a high level of maladaptive coping strategies, indicating ineffective ways of problem-solving; 4) low scores on PERMA scales; 5) a level of resilience indicating a reduced ability to adapt to stressful events and challenges and less psychological flexibility; 6) a high level of depressive symptoms and anxiety. This cluster demonstrates the lowest level of SWB, emotional resources, adaptive strategies, and personal and posttraumatic growth, indicating a need for professional psychological assistance.

The second cluster, "moderately-low SWB with preserved productivity and marked anxiety and depressive symptoms", included 23 mothers with internal resources but simultaneously high anxiety and depressive symptoms. This indicates a need for developing mechanisms to cope with emotional overload, as shown by their characteristic features: 1) a minimal level of posttraumatic growth, with all its indicators being negative and tending towards zero, suggesting an insufficient awareness of new possibilities, reduced personal strength, and difficulties in re-evaluating life values and relationships; 2) a high orientation towards achievement and security, indicating a desire for goal achievement and stability, with lower priority for self-direction, hedonism, and stimulation, and the lowest orientation towards benevolence, indicating a reduced focus on support and harmony in relationships with others; 3) this group also showed a non-high orientation towards constructive task-solving, but simultaneously a high orientation towards emotions in problem-solving, while avoidance and social diversion strategies were not dominant; 4) the highest scores among SWB components from the PERMA model were on the "achievement" scale and negative emotions, indicating a contradictory internal state, while other component indicators had a negative connotation, suggesting the need for external specialized support to improve SWB; 5) resilience indicators were not high but already positive, indicating a tendency towards better adaptability; 6) increased levels of anxiety and depressive symptoms. Despite positive dynamics in SWB, value orientations, and coping strategies, this group still demonstrates psychoemotional tension, requiring the development of self-regulation and stress resistance.

Table 1

Cluster Analysis of Mothers' Subjective Well-being

	Indicator	Cluster 1, n = 24	Cluster 2, n = 23	Cluster 3, n = 46
PTGI	Index	-0.776	-0.252	1.109
	Relationship to Others	-0.692	-0.029	0.840
	New Possibilities	-0.513	-0.394	0.997
	Personal Strength	-0.858	-0.229	0.872
Values	Benevolence	-0.478	-0.060	0.537
	Self-direction	-0.868	0.382	0.227
	Stimulation	-0.932	0.272	0.442
	Hedonism	-0.438	0.349	0.306
	Achievement	-0.495	0.866	-0.001
	Security	-0.636	0.666	-0.081
Coping Strategies	Task-Oriented Coping	-0.658	0.317	0.259
	Emotion-Oriented Coping	0.633	0.651	-0.128
	Avoidance	-0.547	0.001	0.552
	Social Diversion Subscale	-0.956	-0.371	0.626
PERMA	Positive Emotions	-1.228	-0.571	0.744
	Engagement	-1.318	0.218	0.510
	Relationships	-1.365	-0.351	0.532
	Meaning	-1.371	-0.224	0.704
	Achievement	-0.707	0.843	0.014
	Negative Emotions	-0.035	0.850	-0.270
	Health	-0.987	-0.137	0.478
Resilience		-0.583	0.037	0.355
Depressive Symptoms		0.620	0.875	-0.521
Anxiety		0.333	1.000	-0.267

The third cluster, "high SWB with personal growth", was the largest (n=46), characterized by optimal SWB, functional coping strategies with conscious values, and low levels of anxiety and depression. This cluster shows: 1) the highest level of posttraumatic growth, indicating significant positive changes after experiencing a crisis (awareness of new possibilities, increased personal strength, and re-evaluated, adapted values); 2) the most developed values: benevolence, stimulation, hedonism, self-direction, indicating an orientation towards openness to new experiences, satisfaction, self-expression, and maintaining harmonious relationships with others. In contrast, values such as achievement and security are less pronounced and require additional attention in the process of psychological support to strengthen feelings of stability, responsibility, and confidence in one's achievements; 3) moderately balanced coping strategies characterized by a high orientation towards tasks, indicating a desire for active problem-solving, a low level of emotion-oriented coping, indicating limited emotional involvement in overcoming difficulties, active engagement in social support, and the use of avoidance strategies, which can be an adaptive response to temporary overload, but also requires careful analysis for long-term problem avoidance; 4) a positive PERMA profile is observed; 5) resilience is moderately high (0.36), indicating the mothers' ability to adapt to difficult life circumstances

and effectively recover after stressful events; 6) low levels of anxiety and depressive symptoms indicate a stable emotional state and the absence of pronounced signs of psychological distress in most members of this cluster group. This group is characterized by a stable psychological state, adaptive coping strategies, and a resourceful value orientation, indicating a good level of psychological adaptation to SWB.

To gain a deeper understanding of intergroup differences after clustering mothers by their SWB level, a one-way non-parametric analysis of variance using the Kruskal-Wallis criterion was conducted. This approach is appropriate due to the lack of normal distribution for some variables, which was previously established using the Shapiro-Wilk test. The analysis results indicated statistically significant differences between mother clusters across a range of psychological characteristics: the highest effect sizes were observed for the scales of depressive symptoms (χ^2=34.03; p<0.001; ε^2=0.369) and anxiety (χ^2=28.58; p<0.001; ε^2=0.311), indicating a strong association between emotional disturbances and the level of SWB. Significant intergroup differences were found for all key indicators of posttraumatic growth. The highest values were obtained for the posttraumatic growth scales: personal strength (χ^2=27.96; p<0.001; ε^2=0.304), new possibilities (χ^2=22.10; p<0.001; ε^2=0.24), and the overall posttraumatic growth index (χ^2=27.15; p<0.001; ε^2=0.030). This indicates that the ability to transform crisis experience into positive changes varies significantly depending on the level of SWB. Substantial differences were also observed in the components "Relationship to Others" (χ^2=13.67; p=0.001; ε^2=0.149), "Appreciation of Life" (χ^2=10.75; p=0.005; ε^2=0.116), and "Spiritual Change" (χ^2=7.03; p=0.030; ε^2=0.076). Although the effect size for these indicators is smaller, it is statistically significant and indicates the importance of these characteristics in the structure of SWB of mothers raising children with organic nervous system lesions. The highest effects were recorded for the following values: achievement (χ^2=25.48; p<0.001; ε^2=0.277), self-direction (χ^2=23.72; p<0.001; ε^2=0.258), universalism (χ^2=20.76; p<0.001; ε^2=0.226), stimulation (χ^2=16.76; p<0.001; ε^2=0.182), and security (χ^2=14.87; p<0.001; ε^2=0.161). These results suggest that mothers with a high level of SWB are characterized by more pronounced autonomous and self-oriented value orientations. At the same time, significant differences were also found for the "Benevolence" (χ^2=10.37; p=0.006; ε^2=0.113) and "Hedonism" (χ^2=9.09; p=0.011; ε^2=0.099) scales, indicating differentiation in the mothers' value orientation system, particularly in the need to establish warm relationships with others and the pursuit of satisfaction and life pleasures. Different approaches to stress coping also demonstrated a statistically significant difference between groups. The most pronounced differences were found for: emotion-oriented coping (χ^2=22.60; p<0.001; ε^2=0.246), social diversion (χ^2=20.83; p<0.001; ε^2=0.226), and task-oriented coping (χ^2=16.75; p<0.001; ε^2=0.182). Thus, emotional regulation and the use of social support differ significantly depending on the level of SWB, which must be considered when constructing an intervention program. A key step was comparing the PERMA model indicators. All five main and two additional components of the model demonstrated statistically significant intergroup differences: positive emotions (χ^2=44.78; p<0.001; ε^2=0.487), meaning in life (χ^2=41.12; p<0.001; ε^2=0.447), achievement (χ^2=34.03; p<0.001; ε^2=0.370), relationships (χ^2=32.44; p<0.001; ε^2=0.353), engagement (χ^2=31.81; p<0.001; ε^2=0.346), negative emotions (χ^2=30.34; p<0.001; ε^2=0.330), and health (χ^2=22.96; p<0.001; ε^2=0.250). The most pronounced differences were observed in the overall well-being level (χ^2=46.96; p<0.001; ε^2=0.51). The obtained results confirm the validity of the model as an indicator of SWB in this sample and highlight its importance as a theoretical and methodological basis for a psychological support program for mothers of children with organic nervous system lesions. The results of the one-way non-parametric analysis of variance using the Kruskal-Wallis criterion revealed

statistically significant differences between the three mother clusters across most of the studied psychological variables. This indicates the psychological heterogeneity of the groups of mothers and confirms the expediency of a differentiated approach in psychological support.

To gain a deeper understanding of the impact of psychological and social factors on the SWB of mothers raising children with organic nervous system lesions, multiple linear regression analysis was conducted within the identified clusters, with the PERMA well-being criterion as the dependent variable. This allowed for investigating the specificity of well-being predictors within distinct groups of mothers with varying levels of SWB and identifying unique factors that determine the variability of their SWB.

The model constructed for mothers in the high SWB cluster (n=46) was statistically significant and well-fitted according to the data: the multiple regression coefficient (R=0.860) indicates a strong positive linear relationship, and the coefficient of determination (R^2=0.740) indicates that 74% of the variation in the well-being indicator can be explained by the set of independent predictors included in the model: 1) "Benevolence" value (β=0.543; p=0.004) – positively associated with the level of SWB, indicating the importance of an orientation towards benevolent interaction with others for maintaining a high emotional and psychosocial status; 2) Depressive symptoms (β=−0.087; p=0.040) – has a negative contribution, which is consistent with theoretical provisions about the destructive impact of depressive symptoms on overall well-being; 3) Anxiety level (β=0.075; p=0.050) – this indicator has a positive coefficient value, which may indicate not pathological anxiety, but increased mobilization or tension associated with responsibility for a child with an organic nervous system lesion. Within a high level of SWB, this can be interpreted as adaptive anxiety that activates mothers' resources. Other variables, including coping strategies, financial status, severity of the child's illness, resilience, and posttraumatic growth index and components, did not reach a statistically significant level, although some showed tendencies towards significance (e.g., "avoidance" coping p=0.083). Thus, for mothers in the high SWB cluster, the regression model is as follows: Well-being = 7.067 + 0.543 (Benevolence value) – 0.087 (depressive symptoms level) + 0.075 (anxiety level) + ε.

Given the specificity of mother distribution in the cluster division and the peculiarities of performing regression analysis, it was found that in two (clusters 1 and 2) out of three clusters, the number of mothers was less than the number of independent variables that showed significant correlational relationships with the SWB indicator. This creates statistical limitations regarding the correct application of linear regression, particularly coefficient instability and insufficient statistical significance. Therefore, it was decided to combine the two clusters – mothers with low (n=24) and moderately low (n=23) SWB – into one group. Such a combination is justified not only statistically but also psychologically, as the profiles of these clusters are characterized by similar indicators of anxiety and depressive symptoms, stress resistance levels, and less pronounced resource factors compared to the third cluster, which demonstrates a high level of SWB.

The results of the multiple linear regression analysis for mothers with low and moderately low SWB were statistically significant with a sufficient level of explanatory power: the multiple regression coefficient (R=0.791) indicates a strong positive linear relationship, and the coefficient of determination (R^2=0.625) indicates that 62.5% of the variation in the well-being indicator is explained by the used predictors. This is a fairly high indicator, suggesting good explanatory power of the model, which included the following factors: 1) Subjective assessment of the child's illness severity "Very severe" (β=−2.512; p<0.001) – this is the most significant predictor, indicating that with an increase in the severity of the child's illness, the mother's SWB significantly decreases. This highlights the increasing physical, emotional, and financial

burden associated with caring for a child with more serious health problems, which directly affects her internal state. The subjective assessment of the child's illness severity "Severe" also acts as a predictor for SWB (β=−0.82; p=0.046); 2) The depressive symptoms indicator showed high statistical significance (β=−0.093; p=0.001) with a negative coefficient. This indicates that a higher level of depressive symptoms in the mother significantly reduces her SWB. This result is expected and emphasizes the critical need for qualified assistance to mothers in overcoming depressive states, which is one of the key obstacles to achieving their internal harmony. 3) Family financial well-being level 5 (We can afford to buy almost anything we want) (β=1.433; p=0.028). The positive coefficient and significant p-value indicate that a better financial situation is positively associated with mothers' SWB. The availability of sufficient material resources likely reduces the level of stress associated with paying for treatment, rehabilitation, special equipment, and meeting the child's daily needs, which positively affects the mother's overall well-being; 4) "Benevolence" value (β=0.295; p=0.038) – a higher orientation towards caring for the well-being of others, supporting close relationships, and tolerance positively affects mothers' SWB. This may indicate that women who are more inclined to empathy and altruism can find additional sources of meaning and satisfaction in their caregiving role; 5) "Self-direction" value (β=0.531; p=0.006). This predictor was positive and statistically significant, indicating that a higher orientation towards independence of thought, action, creativity, and choosing one's own path is positively associated with an increased level of mothers' SWB. This may indicate that mothers who are able to maintain or develop their autonomy and personal flexibility, despite the challenges of motherhood, adapt better and maintain their internal resources; 6) The "social diversion" coping strategy has a positive and statistically significant impact on SWB (β=0.131; p=0.028). The result indicates that using a strategy that involves diversion or support in social interactions positively correlates with the level of well-being. This emphasizes the importance of social support, the opportunity to distract from problems, communicate, and feel part of a community, which contributes to better psychological adaptation.

4. Conclusions

The conducted research confirms that mothers raising children with organic nervous system lesions face significant psychological challenges that affect their SWB. The identification of three typological groups of mothers with different well-being profiles and the identification of specific factors for each group (including psychoemotional state, value orientations, and coping strategies) emphasize the need for differentiated approaches in psychological support.

5. Prospects for further research

Further research can focus on the development and approbation of targeted psychological intervention programs adapted to the identified types of mothers. Also promising is the study of long-term changes in mothers' SWB, the dynamics of their psychological resources, and the impact of social support on each of the identified groups. The study of the father's and other family members' roles in shaping the well-being of families raising children with special needs is also of significant interest.

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