ORIGINAL ARTICLE

CONTENTS

Study of the cognitive aspects of subjective well-being and Mental Health stability among internally displaced schoolchildren

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ABSTRACT

Aim: A study of cognitive indicators of subjective well-being and mental health stability among internally displaced children in general secondary education institutions, including those with hearing-related disabilities.

Materials and Methods: To measure the cognitive aspects of subjective well-being in internally displaced children, the "Cognitive Features of Subjective Well-Being (CFSWB-3)" technique (O. Kalyuk, O. Savchenko) was used as a diagnostic tool. To assess mental health levels, the Mental Health Continuum – Short Form questionnaire (C.L.M. Keyes, adapted by E. Nosenko and A. Chetveryk-Burchak) was applied. Statistical processing and data analysis were conducted using the R programming environment, version 4.4.3 (2025-02-28 UCRT), in the RStudio IDE 2026.05.1 (Posit Software, PBC). Data processing and visualization were performed using the tidyverse, ggplot2, tibble, gt, and other packages.

Results: The relevance of studying the cognitive aspects of subjective well-being and mental health stability in internally displaced children is driven by the fact that under wartime conditions, they constantly experience emergencies that impact psychological health and increase vulnerability. Their traumatic experience has a significant long-term negative impact on their subjective well-being. The total sample comprised 30 individuals aged 15–16 years. Group 1 included 16 pupils from general secondary education institutions who held internally displaced status (9 male and 7 female respondents). Group 2 consisted of 14 pupils from a special school (6 male and 8 female respondents) who, alongside the vulnerability factor of internal displacement, also had hearing-related disabilities. The study results revealed a predominance of low and average levels of overall life satisfaction in both groups. Overall life satisfaction scores in Group 2 were found to be significantly lower ($p=0.0195$). A significant difference was identified between the groups across hedonic, psychological, and social well-being indicators (ranging from $r=0.5502$ to $r=0.7629$). The "languishing" (depression) level was absent in both groups. A distinctive feature of Group 2 was that all children exhibited a moderate level of mental health stability. In Group 1, a "flourishing" level was observed in 62% of respondents, with 38% demonstrating a moderate level. Several correlations were identified between the CFSWB-3 and MHC-SF indicators: 1) Between satisfaction with relationships with others and psychological well-being ($r=0.41$, $p<0.05$); 2) Between the overall CFSWB-3 scale and psychological well-being (MHCSF) ($r=0.49$, $p<0.01$); 3) Group-level correlations: a negative (inverse) correlation in Group 2 between satisfaction with one's own life and social well-being ($r=-0.59$, $p<0.01$).

Conclusions: Regarding subjective well-being indicators, both groups demonstrated a predominance of low satisfaction with one's own life and relationships with others, a complete absence of high satisfaction levels, and low overall life satisfaction in more than half of the respondents. The absence of "languishing" indicators was also established. Children in Group 2 exhibited lower overall life satisfaction, moderate mental health stability, and lower mental health stability scores across general characteristics as well as their hedonic, psychological, and social components. The absence of stable and systemic correlations between the cognitive aspects of children's subjective well-being and their mental health stability level may indicate the autonomy of various aspects of mental health, manifested more vividly by a specific dissociation between the cognitive component of well-being and the emotional, social, and functional aspects of mental health under stress factors.

KEYWORDS: war, general secondary education institution, internally displaced children, children with disabilities, hearing impairment, mental health, mental health stability, subjective well-being.

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INTRODUCTION

In the context of full-scale warfare, the population of Ukraine is constantly forced to experience emergency situations, which negatively impacts psychological health [1] and increases the vulnerability of various social groups, particularly children. The traumatic experience acquired during war, especially regarding categories such as internally displaced persons, has

a significant long-term negative impact on their subjective well-being [2; 3]. Internally displaced children, as one of the most vulnerable population groups, suffer disproportionately from factors that exacerbate psychosocial stress (loss of housing, livelihoods, social connections, etc.) [3]. Therefore, studying the cognitive aspects of subjective well-being and mental health stability in children of this category under conditions of prolonged war becomes particularly relevant.

A. Kharytynskyi emphasized the need to investigate the characteristics of individual subjective well-being under conditions of war and to understand the psychological essence of this phenomenon. In his view, studying this phenomenon allows for the targeted tracking of the negative impacts of specific factors and the identification of concrete forms of tailored psychological assistance for vulnerable populations. Having conducted a theoretical and methodological analysis of research on individual subjective well-being, the scholar conceptualizes subjective well-being as a multifaceted, integrative category that encompasses the substantive characteristics of a person's complex experience of satisfaction, fosters the realization of their potential, and facilitates the conscious construction of their unique life identity [4].

Comparing the hedonic and eudaimonic approaches to understanding individual subjective well-being and the possibilities of adapting them to the level of psychological practice under the conditions of prolonged war in Ukraine, V. Ostrova and P. Poltoratska conclude that, according to the former approach, subjective well-being implies the dominance of a positive emotional state over a negative one, resulting in the satisfaction of needs. According to the latter approach, individual well-being is a long-term process of self-realization throughout the lifespan, the outcome of which is a specific level of realization across various aspects of positive functioning [1].

Within the framework of this publication, the empirical study conducted by N. Kostruba and L. Liashko is of particular value to us. They investigated the manifestations of psychological resilience during wartime among Ukrainian higher education students aged 18–24 (50 respondents). The scholars revealed statistically significant relationships between psychological resilience and the overall indicator of mental health stability, hedonic well-being, social well-being, and psychological well-being. They also concluded that young people with high psychological resilience are able to remain somewhat independent of external influences, maintain a balance between the strength of personal impact and sensitivity to environmental influences (particularly stressful situations under wartime conditions), as well as demonstrate a predominance of positive emotions over negative ones [5]. While this study addresses issues of vulnerability during war, it should be noted that it does not address the manifestations of psychological resilience under wartime conditions among general secondary education pupils, particularly those among internally displaced persons, which highlights the expediency of conducting such research.

Among scientific studies dedicated to the mental health issues of senior high school students, a study by Z. Şimşir Gökalp, involving 405 students aged 13 to 18, is particularly noteworthy. According to the findings of this study, resilience mediates the relationship between self-control and psychological well-being [6]. However, this study also does not include students from among internally displaced persons.

In their review of risk and protective factors for the mental health of children and adolescents who have been forcibly displaced to high-, middle-, and low-income countries, M. Fazel, R. Reed, C. Panter-Brick, A. Stein, et al. emphasize the need for research into protective factors that positively influence a child's psychological functioning, as well as the context and interactions among the many predictor variables identified as influencing mental health vulnerability and resilience [7; 8]. In their scientific work, B. Perelli-Harris, J. Zavisca, N. Levchuk, and T. Gerber examine the gap in subjective well-being between internally displaced persons and local residents. They note that this gap diminishes after accounting for economic and housing status, as well as support from local networks [9]. In turn, O. Toren, T. Novoseller, D. Selig, M. Bar, and G. Madar revealed that displacement status per se is not a direct predictor. Instead, individual emotional well-being and emotional functioning serve as significant predictors of anxiety, fully mediating the relationship between displacement and anxiety [10]. Furthermore, L. Karamushka demonstrated that coping strategies act as a substantial psychological factor of subjective well-being [11]. A study on the psychological well-being of child refugees demonstrated a significantly higher frequency of stress reactions among children whose mothers had difficulty coping with displacement-related stress. Furthermore, children residing in collective shelters faced a higher mental health risk than their peers living with host families [12].

S. Arakelyan & A. Ager emphasize that interventions aimed at improving the mental health and psychosocial well-being of internally displaced children should place greater focus on promoting positive proximal processes between the active, developing child and "significant

others" (parents, peers, adults, teachers, etc.), symbols (culture, language, belief systems), and objects (policies and institutions) within their daily environment [13].

Adopting a socio-ecological approach focused on multidimensional aspects of psychological functioning, G. Veronese, A. Pepe, G. Sala, I. Yamien, and M. Vigliaroni investigated the relationship between subjective well-being across various domains and psychological distress among internally displaced adolescents living in refugee camps. Their findings revealed that the adolescents exhibited low levels of psychological distress despite numerous traumatic experiences and ongoing stressful conditions in the camps. The scholars hypothesized that youth maintain positive psychological functioning when subjective well-being and other personal and relational resources act as protective factors [14]. Another study by G. Veronese, A. Pepe, G. Sala, and M. Vigliaroni on measuring subjective well-being among an understudied population of internally displaced and refugee youth from West Africa highlights several shortcomings during the translation and cultural adaptation of the subjective well-being assessment scale for the target population. Through the analysis of a real empirical case, the authors revealed the dynamic and culturally driven nature of the subjective well-being construct [15]. B. Çakır-Mete, A. Ergün, and A. Şafak, having conducted a thematic analysis of online semi-structured interviews with 10 non-governmental organization workers in psychosocial support within Syrian camps, emphasized the inseparability of children's mental health from basic needs. They also underscored the role of place attachment in return processes and the importance of a holistic approach that accounts for context-specific stressors and the resources available during this period [16].

The authors of this article themselves, in previous publications in collaboration with other scholars, have examined certain aspects of the problem under study. Specifically, they identified stress level indicators in internally displaced persons who relocated from active combat zones [17]; outlined the legal and technological foundations for providing assistance to vulnerable population groups under wartime conditions [18]; and defined the specifics of working with internally displaced families and host communities, as well as prospects for ensuring their sustainable development [19].

However, the study of the cognitive aspects of subjective well-being and mental health stability in internally displaced children-particularly those who, alongside forced displacement, possess additional vulnerability factors-remains under-researched, which served as one of the key motivations for selecting this research focus.

AIM

The aim of the article is to study the indicators of cognitive aspects of subjective well-being and mental health stability among children in general secondary education institutions who hold internally displaced person status, as well as children who, alongside this vulnerability factor, have a hearing-related disability.

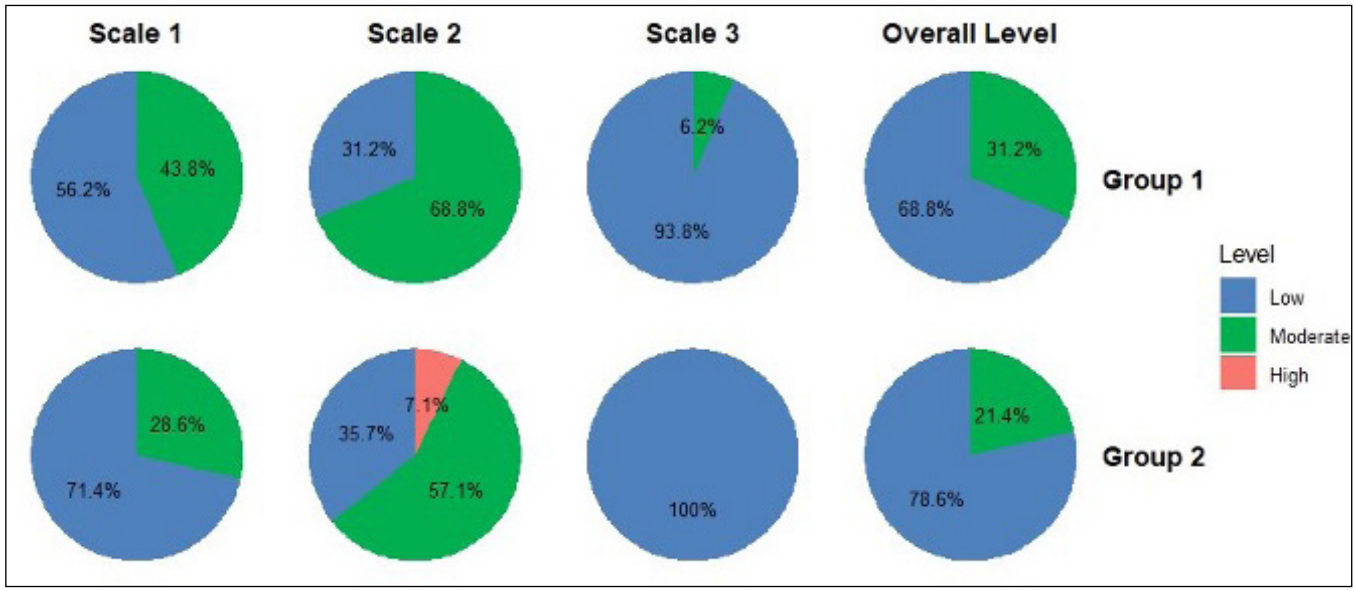
Research tasks:

1. to identify the indicators of cognitive aspects of subjective well-being and mental health stability among the specified vulnerable groups of children;
2. to compare the outlined indicators across the respective groups;
3. to determine the relationships between the indicators of cognitive aspects of subjective well-being and mental health stability in internally displaced children in general secondary education institutions.

MATERIALS AND METHODS

The study was conducted from September 2025 to April 2026 in the city of Ternopil across three types of general secondary education institutions (hereinafter referred to as GSEIs): a gymnasium, a lyceum, and a special school. The total sample comprised 30 individuals aged 15–16 years. The first group included 16 students holding internally displaced person (IDP) status (GSEI types: gymnasium, lyceum), whereas the second group was formed of 14 students who, along with being internally displaced, had a certified disability associated with hearing impairment and attended a special school. In the first group, the proportion of male participants was 9, and female participants was 7; in the second group, there were 6 male and 8 female participants, respectively.

To measure the cognitive aspects of subjective well-being, the "Cognitive Features of Subjective Well-Being (CFSWB-3)" instrument [20] was employed [20]. The methodology is grounded in modern approaches to understanding subjective well-being with a primary focus on its cognitive component-specifically, how individuals evaluate their quality of life across various domains. The core instrument consists of a standardized Likert-type questionnaire featuring several subscales. These subscales measure three independent aspects of life satisfaction: "Satisfaction with One's Own Life", "Dissatisfaction with Oneself and Disillusionment with Life", and "Satisfaction with Relationships with Others". An overall life satisfaction score is calculated using a designated formula. Primary results (subscale scores and the overall index) are transformed according to a standardized algorithm into a 9-point stanine scale, supplemented by a generalized 3-level categorical interpretation scale classifying levels as low, average, or high.



Notes:
• Scale 1 – Satisfaction with One's Own Life
• Scale 2 – Dissatisfaction with Oneself and Disillusionment with Life
• Scale 3 – Satisfaction with Relationships with Others
• Overall Level – Overall Level of Life Satisfaction

Fig. 1. Comparison of life satisfaction levels assessed by the CFSWB-3 methodology between study groups
Source: Own materials

To assess mental health levels, the "(MHC-SF Mental Health Continuum – Short Form" C. Keyes; adapted by E. Nosenko & A. Chetveryk-Burchak was utilized [21]. This instrument accounts for the three-component structure of mental health, conceptualized as the experience of hedonic, psychological, and social well-being [22]. The questionnaire enables the classification of mental health status into categorical levels: "flourishing", "moderate" and "languishing" [21].

Standard descriptive statistical methods were applied to summarize the data. The normality of data distributions was tested using the Shapiro-Wilk test alongside graphical visualization methods, including frequency histograms overlaid with theoretical normal curves, normal probability plots (Normal P-Plots), and box plots. In the absence of normal distribution, robust descriptive statistics were used, namely the median (Mdn) as a measure of central tendency and the interquartile range (IQR) as a measure of data variability.

To assess the degree of uncertainty of the median and construct its 95% confidence interval, a bootstrap replication procedure with bias-corrected and accelerated (BCa) confidence intervals was applied following standard methodology [23; 24]. The bootstrap procedure was conducted using R = 5,000 replications.

Unlike the percentile approach, the BCa method incorporates corrections for estimation bias and accounts for the skewness of the statistic's distribution, providing higher accuracy and robustness in interval estimation and, consequently, confidence limits, particularly for small samples and non-normal distributions [25]. The lower and upper bounds of the confidence interval were determined using adjusted percentiles of the bootstrap distribution, calculated taking into account the bias and acceleration parameters. This approach does not require the assumption of normality and relies directly on the empirical distribution of the generated bootstrap estimates.

Given the frequent departures of sample distributions from normality, non-parametric statistical methods were predominantly employed, specifically the Mann-Whitney U-test for comparing two independent groups. To evaluate the relationships between indicators, Spearman's rank correlation coefficient (ρ) was applied.

Statistical processing and data analysis were conducted using the R software environment version 4.4.3 (2025-02-28 UCRT) within the RStudio IDE 2026.05.1 integrated development environment (Posit Software, PBC). Data wrangling and visualization were performed using the tidyverse, ggplot2, tibble, gt packages, among others.

Data collection and analysis were carried out in full compliance with ethical and legal standards governing human subjects research.

RESULTS

As a result of the diagnostics evaluating the cognitive aspects of subjective well-being among internally dis-

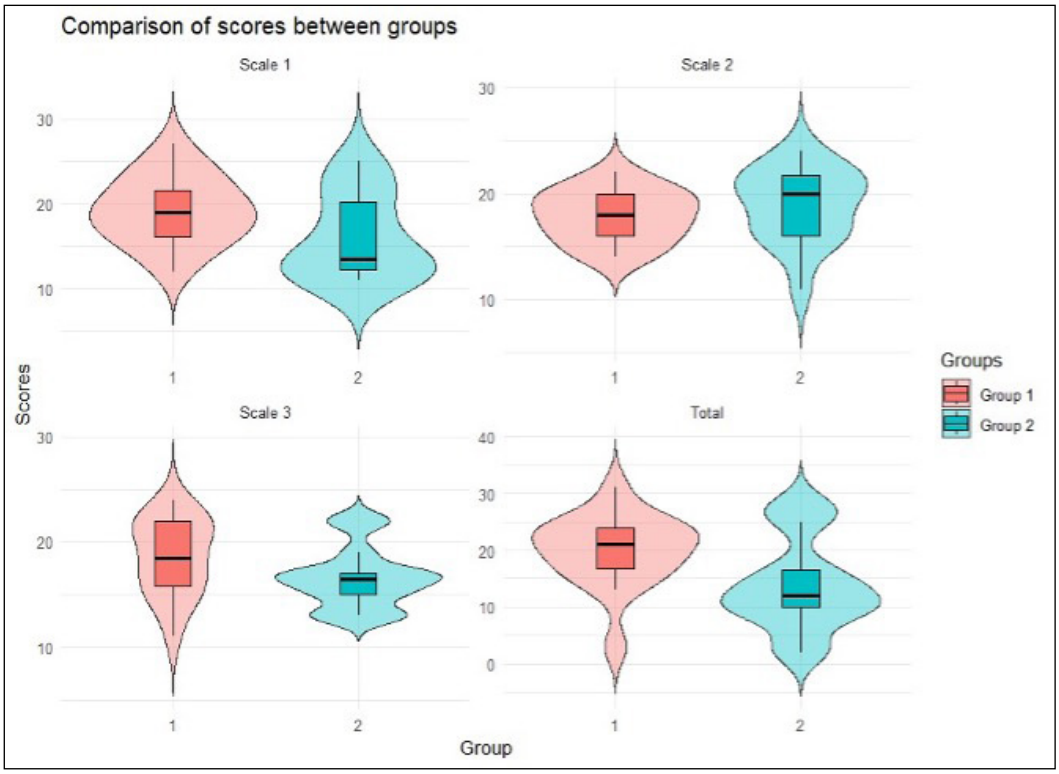


Fig. 2. Comparison of CFSWB-3 scores across study groups

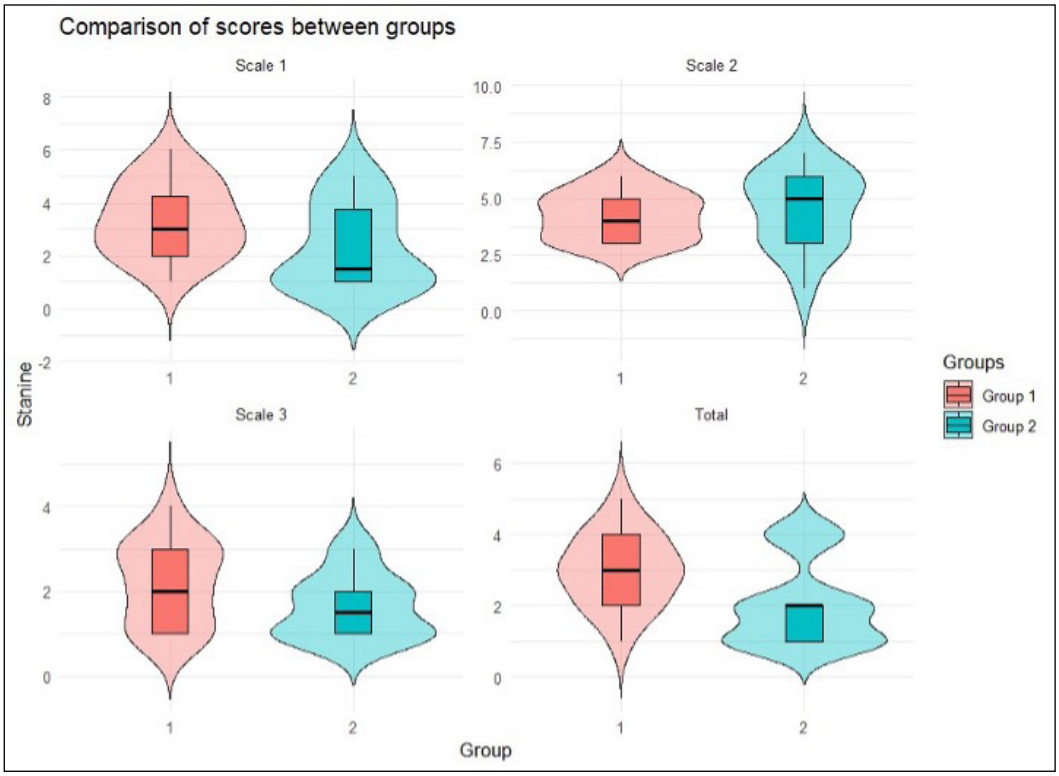


Fig. 3. Comparison of CFSWB-3 stanine scores across study groups

placed children, low and average levels of overall life satisfaction were found to predominate in both groups. Specifically, more than half of the respondents demonstrated a low overall level of life satisfaction, while a high level was entirely absent. Across Scale 1 and Scale 3 (Satisfaction with One's Own Life and Satisfaction with Relationships with Others), a low level of satisfaction also prevailed in both groups.

Interpretation of the data obtained via the CFSWB-3 methodology indicates that these indicators reflect internally displaced children's dissatisfaction with their living conditions, a negative attitude toward certain activities and events, an inferiority complex, and self-doubt regarding their success. They experience a sense of danger and discomfort. Furthermore, they find it challenging to establish long-term, trusting relation-

Table 1. Comparison of life satisfaction indicators between groups

n_{G1} (Group 1)	n_{G2} (Group 2)	Me_{G1} [Q1; Q3]	Me_{G2} [Q1; Q3]	95% CI Me (G_1)	95% CI Me (G2)	W	U	p	Effect Size (r)
16	14	3 [2; 4]	2 [1; 2]	[2; 4]	[1; 2]	167	31	0.0195	0.4265

Table 2. Comparison of mental health stability indicators between groups

Mental Health Stability Indicator	n Group 1x	% Group 1	n Group 2	% Group 2
Flourishing	10	62	0	0
Languishing	0	0	0	0
Moderate level	6	38	14	100

Table 3. Comparison of mental health stability indicators between groups

Indicator	n_{G1}	n_{G2}	Me_{G1} [Q1; Q3]	Me_{G2} [Q1; Q3]	95% CI (G_1)	95% CI (G_2)	W	U	p	Effect size (r)
hedonic component of well-being	16	14	12 [9; 12]	9 [9; 9]	[9; 12]	[8; 8]	180.5	44.5	0.0026	0.5502
Social well-being	16	14	19 [17; 20]	14 [12.25; 15]	[17; 20]	[12; 14.5]	194.5	58.5	0.0006	0.6272
Psychological well-being	16	14	24 [19.75; 24]	16 [14.5;17.75]	[19; 24]	[13; 16]	212.0	76.0	0.0001	0.7629
Total Mental Health Stability Index	16	14	52.5 [50; 56]	40 [37; 42.5]	[50; 54.5]	[36; 41]	207.5	71.5	0.0001	0.7224

Table 4. Comparison of mental health indicators between groups

Group	Male		Female		U	p
	n	Me (Q1–Q3)	n	Me (Q1–Q3)		
Total	15	44 (37–53)	15	43 (40–51)	119.0	0.803
Group 1	9	53 (52–56)	7	51 (50–53)	33.5	0.873
Group 2	6	37 (34–41)	8	40 (39–43,25)	13.0	0.171

ships and rely on others. Communication is perceived by children in this category as forced, while peers and adults in their environment are viewed as obstacles to fulfilling their essential needs [20].

The trends observed on Scale 2 (Dissatisfaction with Oneself and Disillusionment with Life) appear quite natural. Given the inverted nature of this scale (which assesses dissatisfaction), average levels of dissatisfaction predominated, and high levels of dissatisfaction even emerged within the second group. Overall, this points to high levels of dissatisfaction among respondents in both groups regarding their achievements and activities; they derive little satisfaction from social interaction and feel uncomfortable in their social environment. The majority of life events are perceived negatively, accompanied by a prevailing sense of self-doubt, disbelief in receiving support from others, and feelings of life disillusionment [20].

The results obtained across these scales, which outline the cognitive aspects of subjective well-being among displaced children in both groups, are presented in Figure 1.

Comparing the indicators of overall life satisfaction in categorical terms (low, average, and high), it was found that the overall life satisfaction scores in the second group were significantly lower (p=0.0195). The difference between the indicators, represented by the effect size, was moderate (r = 0.426) (Table 1).

This situation may suggest that internally displaced children with disabilities, compared to those with only a single vulnerability factor (forced displacement), experience higher levels of dissatisfaction with their activities and achievements, as well as their social circle, feel more uncomfortable in the presence of others, and demonstrate greater self-doubt and disbelief in the possibility of receiving help and support from others.

At the same time, it should be noted that statistical analysis of the raw data from the subjective well-being test revealed several noteworthy statistical patterns. Specifically, the analysis yielded no statistically significant differences between the groups across the individual subscales (Scales 1, 2, and 3), whether evaluated using raw test scores or standardized stanine scores ($p > 0.05$). However, the integral well-being index (both raw and stanine data) demonstrated statistically significant intergroup differences ($p > 0.05$) (Fig. 2 and Fig. 3).

When comparing the groups by gender, no statistically significant difference was found between males in Group 1 and Group 2 ($p=0.246$). A similar trend was observed when comparing the scores among females between the first and second groups ($p=0.115$).

Thus, the statistical difference between the first and second groups manifests only when comparing the groups at the level of the categorical three-level scale. This finding may be explained by the aggregation effect, wherein small yet systematic differences at the level of individual components accumulate and become statistically significant within the composite index. Furthermore, integral indices are characterized by higher reliability and lower susceptibility to random error, which enhances the sensitivity of the statistical analysis.

The consistency of the results between the raw and standardized (Stanine) scores demonstrates their stability and enhances the credibility of the conclusions drawn.

During the assessment of mental health stability in both groups, the indicator of "languishing" was found to be entirely absent. Specifically, in Group 1, 62% of the internally displaced children demonstrated a level of "flourishing", whereas a moderate level of mental health stability was present in 38% of respondents. A distinctive feature of the second group was that all internally displaced children with disabilities exhibited a moderate level of mental health stability (Table 2).

Diagnostics of mental health stability also revealed a statistically significant difference between the groups across the indicators of hedonic, psychological, and social well-being. Furthermore, the difference (effect size) was large (ranging from $r=0.5502$ to $r=0.7629$) (Table 3).

No significant differences in total mental health stability scores were found based on gender, neither within the sample as a whole nor separately within each group (Table 4).

Statistical analysis revealed several correlations between the parameters of the CFSWB-3 scale and the MHC-SF. Specifically, positive correlations were identified between the scores on the Satisfaction with Relationships with Others scale (CFSWB-3) and the Psychological Well-Being scale (MHCSF) $r=0.41$ $p<0.05$, as well as between the overall CFSWB-3 scale scores and the Psychological Well-Being scale scores (MHCSF) $r=0.49$ $p<0.01$. Certain correlations were also identified at the group level. In Group 2, a negative correlation was found between the Satisfaction with Life scale (CFSWB-3) and the Social Well-Being scale scores $r=-0.59$, $p<0.01$.

However, the identified correlations cannot be described as systemic. These findings may indicate the relative autonomy of the cognitive component of subjective well-being from the emotional, social, and functional aspects of mental health. This is consistent with Keyes' model, according to which different components of well-being (emotional, psychological, and social) are interrelated but not identical [26]. Such a result may suggest the possibility of a specific dissociation between the cognitive component of well-being and the emotional, social, and functional aspects of mental health. Theoretically, this situation aligns with Keyes' model, which accounts for the relative autonomy of various dimensions of mental health [26]. Nevertheless, the obtained correlations, combined with existing literature data, point to a complex interaction between the cognitive components of well-being and the emotional, social, and functional aspects of mental health.

CONCLUSIONS

The study conducted among general secondary education students with internally displaced person (IDP) status (Group 1) and children who, in addition to this vulnerability factor, have a hearing impairment disability (Group 2) revealed both similarities and differences in their subjective well-being and mental health stability indicators:

1. Low levels of satisfaction with one's own life and relationships with others predominated in both groups. A high overall level of life satisfaction was absent, whereas low overall life satisfaction was present in more than half of the respondents. Furthermore, overall life satisfaction scores were statistically significantly lower among children in Group 2 ($p=0.0195$).

2. Indicators of languishing were absent in both groups. Children in Group 1 demonstrated moderate

and flourishing levels of mental health stability. Conversely, Group 2 was characterized exclusively by moderate mental health stability levels. Comparing mental health stability across its dimensions, the indicators in Group 2 were lower both for the overall scores and across all individual components (hedonic, psychological, and social).

3. Particular attention should be paid to the absence of stable and systemic correlations between the indicators of cognitive aspects of children's subjective well-being and their level of mental health stability. This finding may be explained by the autonomy of various mental health dimensions, which becomes more pronounced through the specific dissociation between cognitive components of well-being and the emotional, social, and functional aspects of mental health under stressful conditions.

Future research should focus on fostering resilience among internally displaced children experiencing multiple vulnerability factors, as well as restoring their capacity to adapt to difficult life circumstances despite war-related traumatic experiences.

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CONFLICT OF INTEREST

The Authors declare no conflict of interest

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