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Mental Health and Psychosocial Adjustment in Ukrainian Refugee Children in Romania

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Abstract: *In the context of Russia's invasion of Ukraine in February 2022, over 6.6 million people have sought refuge in Europe, with more than 1.6 million Ukrainians having arrived in Romania since the beginning of the conflict. Among them, approximately 83,748 individuals are still in the country, of which 30% are children (UNICEF, 2023). The exposure of children to war and military aggression can be viewed as a violation of their fundamental human rights. The impact of war and displacement can have negative consequences on young people, given that this stage is crucial for their physical, mental, and neural growth. Because of the distinct developmental phase they are in, children who are refugees of war are more vulnerable to experiencing psychological disorders. Within the context of forced migration, child refugees frequently encounter challenges related to isolation, community fragmentation, and cultural displacement. These circumstances often create substantial obstacles for children and young people seeking access to healthcare and mental health services. These hurdles encompass language barriers, mental health stigma, cultural beliefs surrounding mental well-being, and healthcare professionals lacking the necessary skills to effectively engage across diverse cultural contexts. Children and adolescents who have suffered significant war-related trauma may be handling these experiences in ways that complicate or impact their current self-image or their views of others and the surrounding world.*

This research aims to investigate the occurrence of mental health problems that interfere with social adaptation among young refugees who have recently resettled from Ukraine to Romania, in the municipality of Cluj-Napoca. The research data will be collected using the APS-SF tool for assessing psychopathology and problems interfering with psychosocial adjustment in adolescents aged 12-18 years and the Decision-Making Capacity Test that measures decision-making ability i.e. the ability to choose rationally between several available alternatives. The research targets 19 Ukrainian children and adolescents who are currently refugees in Cluj-Napoca, aged between 12 and 18 years old.

Keywords: *Ukrainian adolescents refugee; children and adolescents; war-related trauma; forced migration; decision-making capacity; Ukraine; adolescents; refugee.*

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1. Introduction

The ongoing conflict in Ukraine has created a significant humanitarian crisis, particularly affecting children who have been displaced from their homes. Ukrainian child refugees face numerous challenges, including the trauma of war, displacement, and the subsequent struggles of adapting to new environments. Research on the mental health of Ukrainian refugee children has been expanding, particularly in response to the recent conflicts. Several studies have highlighted significant issues faced by these children, including high levels of psychological distress, anxiety, and depression.

1. **General Findings:** Ukrainian refugee children are at high risk for mental health issues due to the traumatic experiences of war and displacement. Common problems include post-traumatic stress disorder (PTSD), anxiety, depression, and somatic complaints such as headaches and stomach aches (Lemonjava, 2020; Health Cluster Ukraine, 2022).
2. **Quality of Life and Mental Health Outcomes:** A study conducted among Ukrainian refugees in Germany found that female refugees reported significantly higher levels of psychological distress and depressive symptoms compared to males. The study used various tools like the EUROHIS-QOL 8-item Index to measure life satisfaction and mental health outcomes, revealing that a large proportion of refugees experienced severe psychological distress (Buchcik, 2023).
3. **Resilience and Coping Mechanisms:** Research conducted in Estonia focused on the resilience and daily functioning of Ukrainian refugee children. The study identified key challenges and coping strategies, emphasising the need for tailored interventions to support these children effectively (Lemonjava, 2020; Karbasi, et al., 2022).
4. **School-based Interventions:** Schools have been identified as critical venues for mental health screenings and interventions for refugee children. Implementing mental health services within school settings can provide accessible and effective support, helping to address issues early and prevent long-term psychological damage (Buchcik, 2023; Nicoară, et al., 2023).

Overall, the research underscores the urgent need for comprehensive mental health support and culturally sensitive interventions to assist Ukrainian refugee children. Ensuring these children receive appropriate care and psychological screening is crucial for their well-being and integration into host communities. (Bagheri, et al., 2019).

2. Research context

From February 24, 2022, to March 31, 2024, over 7.6 million crossings from Romania to Ukraine and nearly 3.7 million crossings from Ukraine to Romania were recorded. Among these, 151,145 received temporary protection, 4,475 applied for asylum, and 179 received international protection. Of those who benefited from temporary protection, 18.70% are children aged between 7 and 18. These adolescents face various difficulties as they begin to integrate into the educational and social system in Romania (UNHCR, 2024). There are several causes related to the war that have led to the migration of refugees from Ukraine to Romania. Additional reasons include the deterioration of economic and social conditions in war-affected regions, as well as the search for a better and safer life. Limited access to basic services such as healthcare and education has also driven some refugees to seek protection in Romania, where they hope to find more opportunities and support (UNICEF, 2022).

By January 2023, 47,851 Ukrainian children were in Romania, which represents almost half of the total number of 107,241 refugees who arrived in the country. Since the beginning of the war, over 3,000 Ukrainian refugees have sought temporary protection in Cluj-Napoca, with immigration authorities monitoring 1,099 Ukrainians in 2023. Cluj has provided a range of national assistance programs, such as rent assistance and material aid. Additionally, several Romanian and Ukrainian teachers have been hired to help Ukrainian children integrate into the Romanian educational system, and necessary material resources have been provided, along with allowances for food, school supplies, and clothing. These steps are essential for helping young Ukrainians adapt to their new

environment and for providing them with a stable and continuous education. Consequently, 18.70% of Ukrainian refugee adolescents who received temporary protection are aged between 7 and 18. This represents a significant portion of the refugee population and underscores the need for specific measures to help them integrate socially and educationally (UNHCR, 2023).

3. Mental Health Impact on Adolescent War Refugees

Exposure to war, residing in conflict zones, and experiencing forced displacement can generate or heighten the risk of various direct and indirect physical and mental health issues, especially among children (Bürgin et al., 2022; Charlson et al., 2019; World Health Organization, 2018; Yule, 2003). These circumstances deprive children of essential developmental opportunities and infringe on their rights to grow up in safe, nurturing, and child-friendly environments (Bürgin, et al. 2022; Onuc, et al., 2024).

The population structure of a nation is vulnerable to external shocks, such as famines, diseases, and wars. The shock of war, in particular, leads to both short-term and long-term repercussions in mental and physical health (Bogic et al., 2015), mortality (Guha-Sapir et al., 2018), and permanent migration out of the country. Previous studies have found elevated levels of psychological pathologies among refugee children and adolescents, particularly post-traumatic stress disorder (PTSD), depression, and anxiety disorders, during periods of war and migration to safety (Bronstein & Montgomery, 2011).

Similar to natural disasters and political conflicts in other parts of the world (Mehmood et al., 2022; Barzgar, et al., 2023), the war between Russia and Ukraine is likely associated with an increased risk of mental health crises among populations, including refugee children and adolescents. Forced migration places additional burdens on children and adolescents, exacerbating the typical challenges of growing up. For instance, before or during migration, they may have faced traumatic events such as war, the loss of loved ones, or exposure to violence. Additionally, these young individuals often encounter difficulties in adjusting to new environments, dealing with racial discrimination, and navigating complex legal immigration procedures (Hart, et al., 2022).

Prioritising safety can enhance children's lives, even if some aspects of their well-being may decline. Safety can be fostered through interactions with others who normalise various reactions to the abnormal circumstances of war. According to Vygotsky's cultural-historical theory (Zavershneva & van der Veer, 2018), refugees are developing new inter-functional psychological systems as they adapt to their new social and developmental environments. It is crucial to assist them in constructing new, dynamic systems of meaning that are practical during these challenging times. For example, children often enjoy listening to patriotic Ukrainian music, which can be both inspiring and soothing. Reflecting on and discussing the content of this music can help them create resilient autobiographical experiences. In Vygotsky's framework, the development of higher mental functions serves as a psychological tool to navigate new life situations with resilience and self-compassion. Through intersubjective situations, children can create dynamic systems of meaning and engage in dialogues that are beneficial for both themselves and others.

The psychological reactions of children to trauma are comparable to those of adults, with one key difference, children's reactions are mediated through a developing organism that continues to mature physically, cognitively, emotionally, and socially, and typically exists within a family system. Children are still grappling with issues of separation and individuation, evolving definitions of self and others, and the consolidation of adaptive mechanisms to cope with both internal and external stressors. The derived effects of exposure to war-related stressors on the developing child are extensive, affecting the elaboration and consolidation of personality structures, identity formation, adaptive and coping mechanisms, internalised standards of right and wrong, intrinsic

mechanisms for modulating aggressive impulses, habitual ways of relating to others and enduring neurobiological consequences (Söderbaum., 2003).

The most potent predictor of adverse psychological effects in war is the degree of exposure (Vizek-Vidović, Kuterovac-Jagodic & Arambasic, 2000; Yule, 2000). War-related traumas are diverse and accumulate over time. Children's psychological responses to trauma are linked to parental responses (Green et al., 1991; Smith et al., 2001).

Several authors have observed that older children are more vulnerable than younger children to the psychological effects of trauma (Bloch et al. 1956; Green et al. 1991). Younger children's psychological responses resonate with parental responses because they have less cognitive capacity to independently assess dangers. Vizek-Vidović et al. (2000) compared younger children (grades 2-5) with an older group (grades 6-8) in Croatia and found that older children are more vulnerable to the psychological effects of trauma.

Coşciug et al. (2024) emphasise the necessity of mental health services and psychosocial support, noting that 33% of Ukrainian community members in Northwestern Romania have chronic illnesses requiring ongoing medical care, while 44% reported that at least one member needs mental health services. However, access to such services is limited by language barriers and insufficient awareness of these issues.

A study conducted in Germany revealed that more than half of the Ukrainian refugee adolescents had high mental health assessments, and approximately 45% reported clinically significant levels of PTSD. The sample included 42 adolescents (Catani et al., 2023). The authors also concluded that in their sample, female adolescents reported higher levels of mental health problems and war-related concerns compared to males. These psycho-emotional changes have been identified in other studies as well.

Tereshchenko and Tolkunova (2023) found that Ukrainian adolescents showed behavioral changes such as increased stress and anxiety, which could lead to long-term psychological issues. Their study involved 4,694 young people from Ukraine. Several studies have demonstrated that refugees face a multitude of challenges during the acculturation process or integration into the local community (Delcea et al., 2023). Social status and social connections play a major role in refugees' ability to overcome the obstacles they may encounter during the acculturation process, which can include depression, anxiety, and discrimination (Gonsalves, 1992; Bouton, 2016; Khader et al., 2021).

4. Methodology

The primary objective of this study is to explore the mental health status of Ukrainian adolescent refugees, with a particular focus on identifying predictors of variation in mental health scores. The aim is to identify the prevalence and types of mental health issues faced by Ukrainian adolescent refugees, such as PTSD, anxiety, depression, and other psychological disorders. By doing so, they provide a clearer picture of the mental health landscape within this vulnerable population.

In the secondary analysis of the data, the following hypotheses are being tested:

(1) Gender as a Predictor - *Gender is a significant predictor of variation in mental health scores across all measured dimensions.* It is hypothesised that female participants will exhibit higher scores on these dimensions, indicating greater psychological distress or challenges.

(2) Duration of Stay in Ukraine as a Predictor - *A longer period of stay in Ukraine prior to migration predicts higher scores across all measured dimensions of mental health.* This suggests that prolonged exposure to the conflict environment in Ukraine is associated with increased mental health challenges.

4.1. Sample

This sample consists of 19 individuals (See Tab.1), of whom 12 are women and 7 are men, representing approximately 63% and 37% of the total, respectively. The average age of the participants is around 14.6 years, ranging from 12 to 21 years old. Most of the study's participants are young, with the predominant age range being between 12 and 14 years. The duration of their stay in Romania varies significantly. The majority, specifically 10 participants, have been in Romania for less than 14 months. The rest are distributed across different duration categories, ranging from less than 3 months to nearly 28 months.

Table 1. Socio-demographic characteristics of the sample

No.	Gender	Age	The duration of their stay in Romania	The city of origin (from Ukraine)
1	F	18	>14 months	Kiev
2	M	14	>14 months	Harkov
3	F	13	> 5 months	Zaporoje
4	M	12	>14 months	Kiev
5	F	12	>7 months	Kiev
6	F	14	> 28 months	Odessa
7	F	14	> 18 months	Mikolaev
8	F	14	> 14 months	Odessa
9	F	14	> 17 months	Odessa
10	M	14	> 14 months	Cercasi
11	F	17	> 8 months	Dnipro
12	M	17	> 9 months	Kiev
13	F	14	>14 months	Kiev
14	F	13	> 3 months	Harkov
15	F	13	>19 months	Odessa
16	F	16	> 6 months	Odessa
17	M	15	>27 months	Donbas
18	M	19	> 3 months	Harkov
19	M	21	>14 months	Donetk

Source: Generated by the author.

4.2. Measurement

Two self-reported questionnaires were applied. The first instrument is a scale measuring adolescent disorders (APS - SF). The **Adolescent Psychopathology Scale - Short Form (APS-SF)** is a psychological assessment tool designed to evaluate emotional and behavioral disorders in adolescents. Developed by Cognitrom, this scale is part of a broader set of tools used to detect and monitor psychological issues during adolescence, a critical period for mental health development. It is an assessment tool for psychopathology and psychological problems that interfere with the psychosocial adaptation of adolescents aged 12 to 18, comprising 14 dimensions coded as follows in this study: (1) **CND** - Conduct Disorder; (2) **TOP** - Oppositional Defiant Disorder; (3) **SUB** - Substance Dependence; (4) **PVF** - Predisposition to Violence/Anger; (5) **PS** - School Problems; (6) **AG** - Generalised Anxiety; (7) **SPT** - Post-Traumatic Stress; (8) **DEP** - Major Depressive Disorder; (9) **TA** - Eating Disorder; (10) **SUI** - Suicidal Behaviors; (11) **CS** - Self-Concept; (12) **PI** - Interpersonal Problems; (13) **DEF** - Defensive Attitude; (14) **CR** - Response Consistency. The scale consists of a series of questions that evaluate the symptoms of various psychological disorders. Adolescents respond to these questions on a Likert scale, which allows for the assessment of the

severity of symptoms. APS-SF is crucial for early intervention and the effective management of psychological problems in adolescents, helping to ensure their overall well-being and success in life. The scale's design makes it a reliable and efficient tool for both clinical practice and research.

The interpretation of results in the first stage of analysis was based on the reference ranges of the interpretation protocol (0 - 100T), as follows: Scores recorded for the first 12 measured dimensions with *T* scores below 60 indicate a normal level of symptomatology, scores with *T* scores between 60 and 64 indicate a subclinical level of symptomatology and values with *T* scores > 65 indicate a clinical level of symptomatology. For the scores recorded for dimensions 13 and 14, values corresponding to *T* scores < 65 (for dimension 13) and *T* scores < 70 (for dimension 14 indicate a valid protocol).

The second instrument administered includes a test measuring decision-making ability (coded in the data analysis and interpretation process as **CD**), within the context of understanding an individual's capacity to rationally choose between multiple available alternatives. The **Decision-Making Test** from the PED-B (Profilul de Evaluare Decizională pentru Adolescenți B) is a cognitive assessment tool developed by Cognitrom, designed to evaluate decision-making abilities in adolescents. This test is part of a broader battery of tests designed to assess various cognitive functions, specifically focusing on how adolescents make decisions under different scenarios. The test typically uses a multiple-choice format where each choice reflects different decision-making strategies. Decision-making is not solely a cognitive process; emotional stability and the ability to regulate emotions also play a significant role. The instrument examines how well individuals manage their emotions during decision-making processes, which can impact the quality of their decisions. The interpretation was based on the numerical scores recorded for each respondent. The interpretation protocol's interval comprises the following variables: **1** - *the obtained level may reflect a very low capacity for rational analysis of decision-making situations* **2** - *a low...*; **3** - *an average*, **4** *a good*, and **5** *a very good capacity for rational analysis of decision-making situations. This means that individuals may sometimes be influenced by a series of factors (often subconscious) related to the limits of human rationality. In everyday life, individuals with this level tend to make generalizations in some situations, analyse information superficially, and in other situations, manage to consider the available arguments for each decision-making alternative.*

4.3. Ethics

All participants and their parents were informed about the adherence to ethical principles, including confidentiality, the voluntary nature of participation, and the social relevance of the study. Each participant signed an informed consent form, which detailed the purpose and objectives of the research, along with assurances that the data would remain confidential and would not be used for any purposes other than those specified. The study protocol and assessment instructions were thoroughly explained, and a support person was made available throughout the completion process to provide additional information as needed.

5. Results

The results will be presented in two stages. The first stage discusses the outcomes recorded by participants in terms of the Decision-Making Capacity Index and the dimensions measured by the scale for psychopathology and psychological problems that interfere with the psychosocial adaptation of adolescents aged 12 to 18. The second stage presents the results obtained from additional statistical analyses, aimed at identifying correlations and testing the hypotheses defined in this research.

The interpretation of the results from the initial analysis reveals significant differences in decision-making capacity and levels of psychopathology among the participants (see Table 2). Decision-making capacity scores range from 0 to 7, indicating a wide spectrum of decision-making competencies. Participants with lower scores (CD between 0 and 3) exhibit reduced decision-making capacity, experiencing difficulties in evaluating options and potentially being more susceptible to emotional or situational influences. This observation is further supported by higher

scores on certain APS-SF dimensions, indicating the presence of psychological difficulties. Conversely, participants with moderate CD scores (4-6) demonstrate a more balanced decision-making capacity, generally capable of rationally evaluating available options, although they may sometimes face challenges such as a tendency to generalise or analyse information superficially. This group generally exhibits T scores below 60 on the APS-SF dimensions, suggesting a normative symptomatology.

Participants with high CD scores (7) display advanced decision-making capacity, being able to make well-grounded decisions by critically analysing the available arguments. They tend to have lower T scores across most APS-SF dimensions, indicating the absence of major clinical problems.

The analysis of T scores on the APS-SF dimensions highlights notable clinical and subclinical cases. For instance, participants with T scores > 65 on dimensions such as SUB, PVF, AG, PTS, DEP, and others exhibit symptoms that warrant increased clinical attention. Notably, participant 3, with a CD score of 6, shows T scores > 65 across multiple dimensions, suggesting a significant presence of psychopathological issues. Similarly, participant 11, despite having a CD score of 3, demonstrates extensive clinical symptomatology, indicating the presence of severe disorders, particularly in the dimensions of SUB, PVF, AG, and SUI.

Table 2: Decision Capacity Scores (CD) and APS-SF Dimensions for Participants.

No.	CD	Dimensions from APS-SF													
		CND	TOP	SUB	PVF	PS	AG	SPT	DEP	TA	SUI	CS	PI	DEF	CR
1	4	45	55	56	58	51	50	50	53	49	44	49	49	39	45
2	4	49	53	43	46	49	47	45	44	53	46	49	47	55	53
3	6	49	64	100	61	71	62	64	61	52	61	66	69	45	63
4	7	42	47	47	37	41	41	43	42	42	45	57	41	51	59
5	6	49	55	59	59	65	64	64	61	52	61	66	69	58	54
6	5	46	41	44	44	52	56	62	61	40	53	58	69	48	44
7	3	51	49	61	46	55	54	46	50	40	44	55	43	64	44
8	0	51	55	52	58	58	51	54	56	51	44	55	50	56	44
9	2	46	49	44	48	50	51	49	50	40	49	44	52	48	65
10	3	46	50	43	46	55	47	54	55	53	54	49	49	40	44
11	3	66	76	100	80	73	73	74	80	62	99	67	76	48	70
12	3	46	54	41	55	67	64	66	65	43	58	62	57	48	45
13	3	51	49	77	51	52	54	54	45	44	53	38	52	48	44
14	6	51	58	59	48	65	54	51	56	40	45	53	50	58	45
15	1	49	58	59	53	65	60	58	58	83	51	61	52	51	45
16	2	40	43	44	36	42	42	39	50	40	44	37	42	39	45
17	1	52	47	50	41	52	60	54	55	48	46	42	47	55	44
18	3	57	71	49	58	59	58	48	57	56	46	46	47	56	45
19	3	44	53	47	47	53	51	60	46	47	45	45	49	39	59

Source: Generated by the author.

Recent studies highlight that exposure to violence and war has a significant impact on the mental health of young people, increasing the risk of developing anxiety disorders, depression, and post-traumatic stress disorder. Henkelmann et al. (2020) examined the prevalence of PTSD, anxiety disorders (AD), and depressive disorders (DD) among refugees in high-income countries, based on the evaluation methods used in studies (clinical interviews or self-reported assessments). The average prevalence rates were found to be 30% for AD, 36% for DD, and 34% for PTSD. As expected, the prevalence rates differed between diagnosed cases and self-reported cases: 13% vs. 42% (95% CI 8–52%) for AD, 30% vs. 40% (95% CI 23–48%) for DD, and 29% vs. 37% (95% CI

22–45%) for PTSD. These prevalence rates were consistent regardless of factors such as the continent of origin or resettlement, duration of residence, mean age, gender distribution, and the methodological quality of the study. The authors highlighted that adult refugees exhibited high rates of AD, DD, and PTSD, not only in comparison to non-refugee populations but also to those living in conflict or war zones. This indicates that exposure to conflict and war is not the sole factor increasing vulnerability among refugees; the process of fleeing and post-migration challenges may also exacerbate trauma-related symptoms.

In particular, studies have demonstrated that refugee adolescents are more likely to experience decision-making difficulties as a result of psychological trauma (Hodes, 2022; Scharpf et al., 2021). This finding is supported by data from the present study, where participants with lower CD scores frequently exhibited high *T* scores on APS-SF dimensions, such as generalised anxiety disorder (GAD) and post-traumatic stress (PTS). The continuous exposure to stress and instability caused by armed conflict contributes to challenges in information processing and rational decision-making, a trend observed in several recent studies on refugee populations (Schwartz et al., 2022).

Furthermore, the high level of uncertainty and lack of a stable social support framework can exacerbate psychological issues and limit access to necessary resources for coping with stress. Ukrainian refugee adolescents, particularly those with high scores in dimensions such as suicidal behaviors (SUI) and propensity for violence/anger (PVF), require specific interventions and appropriate psychological support. Studies suggest that trauma-informed interventions and community support programs can play a crucial role in alleviating symptoms and enhancing decision-making abilities (Cai et al., 2022).

The closeness to and length of exposure to war events have been linked to a heightened risk of developing psychological disorders. The impact on mental health outcomes is influenced by age and gender, with females potentially being more prone to internalising symptoms. However, there is considerable variation among individuals, as their perceptions of events can differ (Dulaney et al., 2018; Smid, 2020), and they may have distinct temperaments or personality traits (Karam et al., 2024).

As expected, the literature indicated that a longer duration of settlement (≥ 2 years) correlates with a lower prevalence of PTSD and depression. While comprehensive studies on psychiatric disorders in young refugees from Ukraine are lacking, the general principle that greater exposure to numerous war events increases risk was confirmed by a study of adolescents in the Donetsk region. This study found that adolescents exposed to war events after the Russian incursion in 2014 had a significantly higher risk of PTSD, severe depression, and anxiety compared to peers in peaceful regions of Ukraine (Osokina et al., 2022).

The accumulation of traumatic events and losses places unaccompanied asylum-seeking children (UASC) at a particularly high risk of psychological distress and psychiatric disorders. The prevalence of PTSD in this group can be as high as 40% (Fazel et al., 2012; Hodes et al., 2008; Jakobsen et al., 2017; Jakobsen et al., 2014).

To identify score variations based on gender and the duration of exposure to war recorded by participants, additional statistical analyses were conducted. A *t*-test was used to identify gender-based variations, and linear regression was applied to determine score variations among participants who left the conflict zone later compared to those who had the opportunity to leave earlier.

Following the analyses (See Tab.3), statistically significant differences were identified between girls' and boys' participants in the evaluation scores for only two dimensions. One dimension is the *PI* score (T-score), where a marginally significant difference was observed. Girls had an average score of 56.08 ($SD = 11.445$), while boys had an average score of 48.14 ($SD = 11.445$). The *t*-test indicated a value of [$F = 9.411$, $t(19) = 2.113$, $p = .051$], suggesting that girls tend to have higher scores than boys. However, the difference is not very pronounced, indicating that further investigations and the inclusion of other factors are necessary to validate the significance of the score variation in this dimension.

Table 3. Descriptive statistics on the investigated variables

Variables	Group	N	Mean	Std. Deviation	Std. Error Mean
CND	Female	12	49.50	6.157	1.777
	Male	7	48.00	5.132	1.940
TOP	Female	12	54.33	9.452	2.728
	Male	7	53.57	8.203	3.100
CD	Female	12	3.42	2.021	.583
	Male	7	3.43	1.813	.685
CS	Female	12	54.08	10.423	3.009
	Male	7	50.00	7.071	2.673
CR	Female	12	50.67	9.764	2.819
	Male	7	49.86	6.986	2.641
PI	Female	12	56.08	11.445	3.304
	Male	7	48.14	4.741	1.792
DEF	Female	12	50.17	7.650	2.208
	Male	7	49.14	7.151	2.703
SUB	Female	12	62.92	19.630	5.667
	Male	7	45.71	3.402	1.286
SUI	Female	12	54.00	15.492	4.472
	Male	7	48.57	5.224	1.974
TA	Female	12	49.42	12.703	3.667
	Male	7	48.86	5.336	2.017
AG	Female	12	55.92	7.971	2.301
	Male	7	52.57	8.304	3.139
DEP	Female	12	56.75	8.976	2.591
	Male	7	52.00	8.287	3.132
SPT	Female	12	55.42	9.510	2.745
	Male	7	52.86	8.255	3.120
PS	Female	12	58.25	9.488	2.739
	Male	7	53.71	8.098	3.061
PVF	Female	12	53.50	11.074	3.197
	Male	7	47.14	7.335	2.773

Source: Generated by the author.

A significant difference was also identified in the **SUB** score (T-score). Girls had an average score of 62.92, considerably higher compared to the boys' average of 45.71. The *t*-test showed a value of [$F = 6.340$, $t(19) = 2.960$, $SD = 19.630$, $p < .05$], confirming that the difference is statistically significant. The confidence interval for the mean difference ($MD = 17.202$) ranges from 4.554 to 29.851, indicating a clear difference between the two groups.

In the analysis of scores on other dimensions, no statistically significant differences were identified concerning the variation in scores based on the respondent's gender (See Tab.4). For **CND**, Levene's test indicated the equality of variances between girls and boys [$F = .016$, $SD = 6.157$, $t(19) = .542$, $p > .05$]. For the **TOP** score, the equality of variances was confirmed [$F = .323$, $SD = 54.33$, $t(19) = .177$, $p > .05$]. **Decision-making capacity** also showed equal variances [$F = .750$, $SD = 2.021$, $t(19) = -0.013$, $p > .05$]. The **CS** score had equal variances as well [$F = 1.248$, $SD = 10.423$, $t(19) = .916$, $p > .05$]. For the **CR** score, the mean difference of 0.810 points is not significant [$F = 1.237$, $SD = 9.764$, $t(19) = .192$, $p > .05$], with non-significant variations also observed in the **DEF** dimension [$F = .010$, $SD = 7.650$, $t(19) = .288$, $p > .05$]. The **SUI** score indicated a mean difference of 5.429 points, which is not significant, confirming the equality of variances [$F = 1.547$, $SD = 15.492$, $t(19) = .889$, $p > .05$]. The **TA** score showed equal variances [$F = 1.669$, $SD = 12.703$, $t(19) = .110$, $p > .05$]. For the **AG** score, the *t*-test showed a mean difference

of 3.345 points, which is not significant [$F = .226, SD = 7.971, t(19) = .869, p > .05$]. Scores on the **DEP** and **SPT** dimensions also showed equal variances [$F = .062, SD = 8.976, t(19) = 1.143, p > .05$] for DEP and [$F = .184, SD = 9.510, t(19) = .592, p > .05$] for SPT, respectively.

Table 4: Independent sample t-test conducted between gender and all dimensions included in APS – SF

	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>p</i>
VD: Decision-making capacity					
<i>Time exposed to war</i>	.065	.048	.321	1.353	.194
$F = 1.830; p > .05; R^2 = .097; N = 19$					

Source: Generated by the author.

Modeling the duration of settlement and the decision-making capacity score, the linear regression results indicate that a longer duration of time spent in Ukraine is not a statistically significant predictor of the decision-making capacity score [$R^2(19) = .097, F = 1.830, b = .065, \beta = .048, t(19) = 1.353, p > .05$]. The correlation coefficient between the predictor variable (time exposed to war) and the dependent variable (decision-making capacity score) suggests a positive but statistically insignificant correlation. Additionally, the model explains only a small portion of the variance in decision-making capacity scores (9.7%).

Table 5. Simple linear regression model between the variables of interest.

Variables	Levene's Test		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
CND	.016	.901	.542	17	.595	1.500	2.766	-4.336	7.336
			.570	14.667	.577	1.500	2.631	-4.118	7.118
TOP	.323	.577	.177	17	.861	.762	4.295	-8.300	9.823
			.184	14.235	.856	.762	4.130	-8.082	9.606
CD	.750	.398	-.013	17	.990	-.012	.927	-1.968	1.945
			-.013	13.875	.990	-.012	.900	-1.943	1.920
CS	1.248	.279	.916	17	.373	4.083	4.460	-5.326	13.493
			1.015	16.441	.325	4.083	4.024	-4.429	12.596
CR	1.237	.282	.192	17	.850	.810	4.225	-8.104	9.723
			.210	16.077	.837	.810	3.862	-7.375	8.994
PI	9.411	.007	1.734	17	.101	7.940	4.579	-1.720	17.601
			2.113	15.901	.051	7.940	3.759	-.031	15.912
DEF	.010	.922	.288	17	.777	1.024	3.556	-6.479	8.527
			.293	13.421	.774	1.024	3.490	-6.493	8.540
SUB	6.340	.022	2.272	17	.036	17.202	7.571	1.228	33.176
			2.960	12.103	.012	17.202	5.811	4.554	29.851
SUI	1.547	.230	.889	17	.387	5.429	6.108	-7.458	18.315
			1.110	14.683	.285	5.429	4.889	-5.011	15.868
TA	1.669	.214	.110	17	.914	.560	5.088	-10.176	11.295
			.134	15.981	.895	.560	4.185	-8.313	9.432
AG	.226	.641	.869	17	.397	3.345	3.848	-4.772	11.463
			.860	12.253	.407	3.345	3.892	-5.115	11.805
DEP	.062	.806	1.143	17	.269	4.750	4.156	-4.019	13.519
			1.169	13.559	.263	4.750	4.065	-3.995	13.495
SPT	.184	.674	.592	17	.561	2.560	4.322	-6.559	11.678
			.616	14.234	.548	2.560	4.156	-6.340	11.459
PS	.985	.335	1.057	17	.305	4.536	4.291	-4.517	13.588
			1.104	14.415	.288	4.536	4.107	-4.250	13.321
PVF	.818	.378	1.348	17	.195	6.357	4.716	-3.594	16.308
			1.502	16.577	.152	6.357	4.232	-2.588	15.303

Source: Generated by the author.

Table 6: Correlational Analyses Between Variables Measured in APS - SF and variable „Time exposer to war”

VD		Correlations													
		CND	SUB	TA	TOP	CS	PVF	CR	DEF	SUI	PI	PS	AG	SPT	DEP
Time (w ex)	Pearson	.262	.256	.081	.605**	.298	.410	.168	.109	.263	.220	.437	.262	.063	.404
	Sig. (2-tailed)	.278	.290	.743	.006	.216	.081	.493	.657	.276	.365	.062	.278	.797	.086
CND	Pearson		.605**	.405	.770**	.309	.745**	.225	.428	.656**	.447	.624**	.718**	.463*	.631**
	Sig. (2-tailed)		.006	.085	.000	.199	.000	.355	.068	.002	.055	.004	.001	.046	.004
SUB	Pearson			.295	.612**	.439	.690**	.463*	.018	.681**	.600**	.618**	.590**	.520*	.492*
	Sig. (2-tailed)			.220	.005	.060	.001	.046	.941	.001	.007	.005	.008	.022	.032
TA	Pearson				.553*	.365	.480*	.079	.015	.339	.228	.474*	.410	.345	.367
	Sig. (2-tailed)				.014	.124	.038	.746	.950	.156	.349	.040	.082	.148	.122
TOP	Pearson					.447	.853**	.400	.129	.596**	.425	.741**	.630**	.463*	.612**
	Sig. (2-tailed)					.055	.000	.090	.600	.007	.070	.000	.004	.046	.005
CS	Pearson						.574*	.342	.255	.576**	.686**	.713**	.605**	.664**	.658**
	Sig. (2-tailed)						.010	.152	.292	.010	.001	.001	.006	.002	.002
PVF	Pearson							.399	.040	.765**	.694**	.794**	.763**	.708**	.764**
	Sig. (2-tailed)							.091	.870	.000	.001	.000	.000	.001	.000
CR	Pearson								-.174	.570*	.448	.214	.241	.346	.218
	Sig. (2-tailed)								.475	.011	.055	.380	.320	.147	.370
DEF	Pearson									-.098	-.057	.211	.247	-.102	.029
	Sig. (2-tailed)									.690	.818	.386	.309	.678	.908
SUI	Pearson										.801**	.642**	.732**	.767**	.810**
	Sig. (2-tailed)										.000	.003	.000	.000	.000
PI	Pearson											.695**	.768**	.873**	.787**
	Sig. (2-tailed)											.001	.000	.000	.000
PS	Pearson												.863**	.787**	.803**
	Sig. (2-tailed)												.000	.000	.000
AG	Pearson													.844**	.843**
	Sig. (2-tailed)													.000	.000
SPT	Pearson														.792**
	Sig. (2-tailed)														.000

Source: Generated by the author. Note: *Correlation is significant at the 0.01 level (2-tailed). **Correlation is significant at the 0.05 level (2-tailed).

On the other hand, the analysis of correlation coefficients (See Table 6) identifies significant correlations between the scores recorded on the dimensions measured within the APS – SF scale, reflecting the profound impact of prolonged exposure to stress and violence. The longer time that adolescents spend in Ukraine before taking refuge in other countries is strongly correlated with Oppositional Defiant Disorder (TOP) ($r = .605, p < .01$), indicating that prolonged exposure to hostile and insecure environments amplifies oppositional and defiant behaviors. Other positive correlations, although not statistically significant, include Predisposition to Violence and Anger (PVF) ($r = .410, p > .05$) and high scores on the Post-Traumatic Stress (SPT) dimension ($r = .404, p > .05$).

Other studies show a strong correlation between prolonged exposure to war-related trauma and increased rates of mental health problems. PTSD, depression, and anxiety are prevalent among refugee children, impacting their overall well-being (Konstantinov et al., 2023; Mihajlovic et al., 2023; Lev-Ari et al., 2024). Adolescents who spend more time in Ukraine before seeking refuge exhibit higher levels of oppositional defiant disorder, reflecting the impact of hostile and insecure environments (Duray-Parmentier, 2023). Other studies confirm that prolonged exposure to stress is correlated with an increased predisposition to violence, anger, and higher scores on post-traumatic stress dimensions (Lytvynenko & König, 2023; Rizzi et al., 2023).

The significant correlations were plotted in Figure 1 in the form of a model of psychological vulnerabilities in refugee minors in Ukraine. Conduct Disorder (CND) has been found to have strong and significant correlations with several other dimensions of psychological and behavioral issues. The results show that there is a notable connection between CND and Substance Dependence (SUB) ($r = .605, p < .01$), indicating that participants with conduct disorders are more likely to struggle with substance abuse. Similarly, there is a significant correlation with Oppositional Defiant Disorder (TOP) ($r = .770, p < .001$), which highlights the tendency of these children to exhibit defiant and oppositional behaviors.

CND score is further compounded by the significant correlation with suicidal behaviors (SUI) ($r = .656, p < .01$), which underscores the severe impact of CND on the mental health and well-being of affected children. School problems (SP) ($r = .624, p < .01$) and generalised anxiety (GA) ($r = .718, p < .001$) are also closely linked to CND, reflecting the broad spectrum of challenges these children face in their academic and social environments. Lastly, the correlation with major depression (DEP) ($r = .631, p < .01$) points to the deep emotional struggles associated with CND.

Substance dependence itself is closely related to other forms of psychological and behavioral dysfunction. It is significantly correlated with TOP ($r = .612, p < .01$), PVF ($r = .690, p < .001$), and suicidal behaviors ($r = .681, p < .001$). SPT and CS are also prominent among participants with these behavioral problems. Generalised anxiety and major depression have a significantly strong correlation ($r = .844, p < .001$), indicating a significant overlap between these, self-reported symptomology. Additionally, interpersonal problems and school problems are strongly linked to other disorders, reflecting the social and academic difficulties adolescents face amidst the trauma of conflict and displacement.

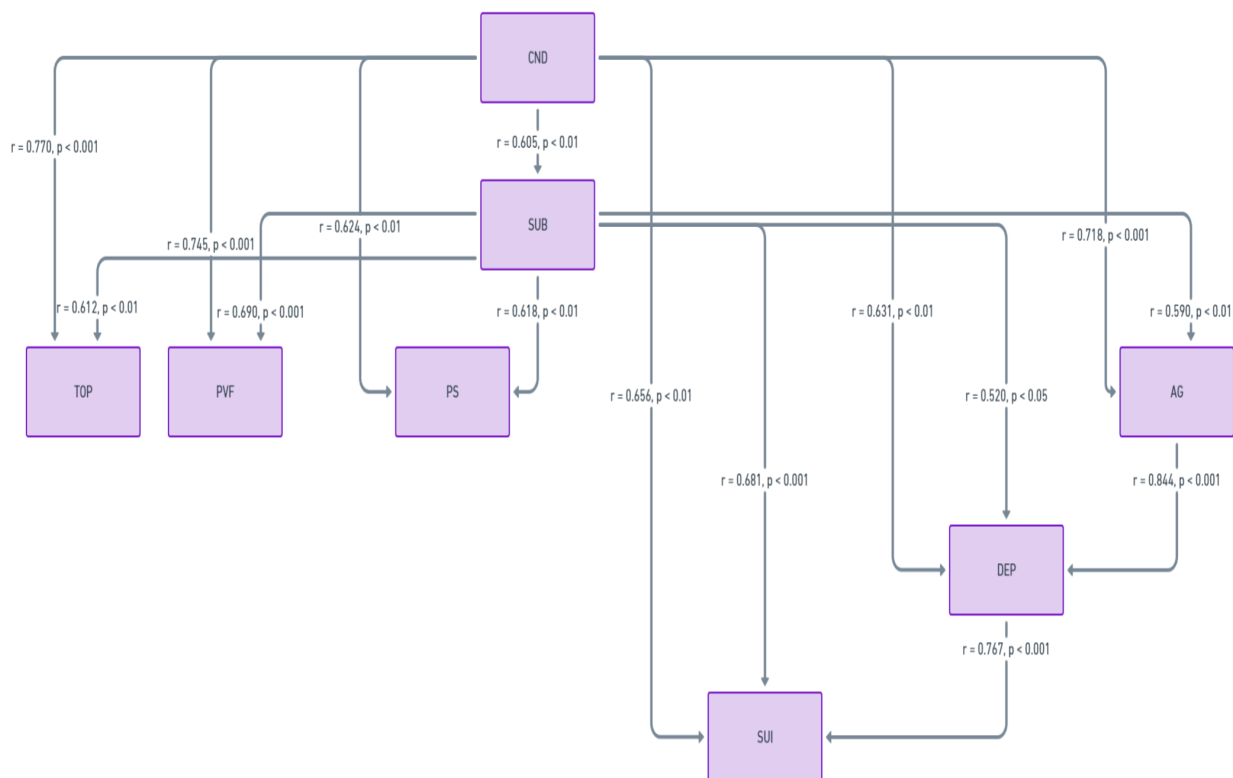


Figure 1. In the form of a model of psychological vulnerabilities in refugee minors in Ukraine

6. Conclusions and discussions

6.1. Conclusions

The situation of Ukrainian adolescent refugees in Cluj, like in other parts of Romania and Europe, is complex and challenging. The conclusion drawn from various observations and studies indicates that these adolescents face significant mental health challenges due to the trauma of displacement and the ongoing conflict in their homeland.

- Mental Health Struggles:** Ukrainian adolescent refugees in Cluj are dealing with high levels of stress, anxiety, and depression, which are common among refugee populations. The disruption of their normal lives, separation from family members, and the uncertainty of their future contribute to these mental health issues.
- Risk of Substance Abuse:** There is a heightened risk of substance abuse among these adolescents, as they may turn to drugs or alcohol as a way to cope with the trauma and stress. This risk is exacerbated by the lack of structured support systems and the difficulties they face in integrating into a new society.
- Educational and Social Integration:** While Cluj has made efforts to integrate Ukrainian refugees into the educational system, these adolescents still face significant barriers, including language difficulties and cultural differences. Social integration is also challenging, as they may feel isolated from their peers, leading to further psychological distress.
- Need for Targeted Support:** The findings emphasise the urgent need for targeted mental health services and substance abuse prevention programs. Community-based support systems, involving schools, families, and local organizations, are crucial in helping these adolescents navigate their new lives and mitigate the long-term impact of their experiences.

6.2. Discussions

War-related trauma is also diverse and accumulates over time and studies have shown that refugee adolescents are more likely to experience difficulties in decision-making as a result of psychological trauma (Hodes, 2022; Scharpf et al., 2021) conclusion supported by the data from the present study, in which participants with lower CD/decision making capacity scores frequently exhibited higher T-scores on APS-SF dimensions such as generalised anxiety disorder (GAD) and post-traumatic stress disorder (PTS) in addition statistically significant differences were found between female and male participants in assessment scores on only two dimensions. The analysis shows that in the interpersonal problems dimension (T-score), where a marginally significant difference was observed, suggesting that girls tend to have higher scores than boys even though the difference is not very pronounced, indicates that further investigation and inclusion of other factors are needed to validate the significance of the score variation in this dimension (Berg et al., 2021; Yuan, 2023).

Another difference, this time statistically significant, was also identified in substance use where girls had a considerably higher mean score. Other dimensions did not show statistically significant differences in the variance of scores according to the sex of the respondent and in conduct disorder the variance between girls and boys was equal. Decision-making ability also showed equal variances in self-concept had equal variances, consistency of responses, and mean difference is not significant in the defensive attitude dimension either. Suicidality showed a mean difference, not significant, confirming the equality of variances and eating disorder showed equal variances. For generalised anxiety, the variance was not significant as well as for substance dependence and PTSD. (Sinopidis et al., 2023).

Time of exposure to war and level of decisional capacity suggest a positive but statistically insignificant correlation on the other hand, a longer period that adolescents spent in Ukraine before seeking refuge in other countries is strongly correlated with oppositional-defiant disorder, indicating that prolonged exposure to hostile and unsafe environments amplifies oppositional-defensive behaviors. We also identify other positive, though statistically insignificant, correlates of Predisposition to Violence and Anger and elevated scores on the Post-Traumatic Stress dimension, which has also been identified in other studies concluding that adolescents who spend more time in Ukraine before seeking refuge show higher levels of oppositional defiant disorder, reflecting the impact of hostile and unsafe environments (Duray-Parmentier, 2023) and others confirm that prolonged exposure to stress is correlated with an increased propensity to violence, anger and higher scores on dimensions of post-traumatic stress (Lytvynenko & König, 2023; Rizzi et al., 2023).

Conduct Disorders (CD) have strong and significant correlations with several other dimensions of psychological and behavioral problems, i.e., there is a notable link between (CND) and substance dependence (SUB). This indicates that participants with behavioral disorders are more likely to experience substance abuse. Studies have shown that Ukrainian adolescent refugees are at an increased risk of substance abuse due to the combined effects of trauma, stress, and the challenges of adjusting to new environments. Factors such as isolation, loss of family structure, and exposure to substance use in refugee settings contribute to this risk. Similarly, there is a significant correlation with Oppositional Defiant Disorder (ODD) which highlights the tendency of these children to exhibit oppositional defiant and oppositional behaviors. Conduct Disorder (CND), is aggravated by the significant correlation with suicidal behaviors which emphasises the severe impact of CND on adolescent mental health. School problems (PS) and generalised anxiety (GA) are also closely related to (CND), which is reflected in daily life. Finally, the correlation with major depression (MDD) indicates emotional vulnerabilities related to conduct disorder (CND) (Kronick. et al., 2021).

Substance dependence itself is closely related to other forms of psychological and behavioral dysfunctions, such as Oppositional Defiant Disorder (ODD) Predisposition to Violence/Fury (PVF), and Suicidal Behaviors (SUI). Post Traumatic Stress (PTS) and Self-Concept (SC) are also prominent among participants with these behavioral problems.

Generalised Anxiety (GA) and Major Depression (MDD) have a significantly strong correlation indicating a significant overlap between these self-reported symptomatology. In addition, interpersonal problems (IP) and school problems (SP) are strongly related to other disorders, reflecting the social and academic difficulties adolescents face amid the trauma of conflict and displacement.

The sample of 19 minors was limited only to children from Ukraine who were temporarily stationed in Cluj-Napoca, Romania. For this reason, we have a limit to the research because we did not take a larger sample, but it can be extrapolated with another similar research (Zhang, et al., 2021).

For example, a study entitled A Systematic Review of Autobiographical Memory and Mental Health Research on Refugees and Asylum (Khan et al., 2021), extracts from 254 articles on neurology issues regarding the episodic memory of refugees.

Another study titled Refugee Reception Re-examined: a Quantitative Study on the Impact of the Reception Period on Mental Health and Host Country Language Proficiency Among Syrian Refugees in the Netherlands shows mental health issues similar to our research (Damen, 2021).

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