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Stress and unmet need for psychological help in wartime Ukraine

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Abstract

Protracted war may generate sustained population stress, yet distress may not translate into professional mental health care. A national online cross-sectional survey of adults residing in Ukraine (April 2024) assessed perceived stress (PSS-10), war-related experiences, self-rated mental state, perceived need for psychological help, recent help-seeking, barriers, and coping strategies (N = 1,323). Mean PSS-10 was 21.89 (SD 5.73); 27.04% met the high-stress threshold (≥ 27), and 69.91% reported moderate stress. In adjusted models, perceived stress was strongly patterned by sociodemographic factors, whereas most single war-event indicators showed limited independent associations, potentially reflecting the ubiquity and clustering of war exposures. The stress-to-care cascade revealed a pronounced gap between need and care receipt: perceived need increased sharply with stress severity but help-seeking among those reporting need remained low, yielding substantial unmet need. Among respondents with unmet need, the most frequently endorsed barriers were cost, doubts about effectiveness, difficulties finding or contacting providers, and norms discouraging psychological help. High stress was also associated with reduced social and activity-based coping and increased alcohol use. These cross-sectional self-report findings indicate that, under protracted war, unmet need concentrates among those with the greatest distress, underscoring the importance of affordable, navigable, low-threshold pathways from need recognition to help-seeking.

Introduction

Since February 2022, Ukrainians have lived under conditions of protracted war characterised by recurrent security threats, uncertainty, displacement, disruption of everyday routines, and sustained economic pressure. In such environments, psychological strain is shaped not only by acute traumatic exposure but also by the ongoing accumulation of stressors that repeatedly tax coping capacity.

Stress appraisal theory highlights that outcomes depend on how demands are evaluated relative to available coping resources [1], while resource-based perspectives emphasise cumulative resource loss (e.g., safety, income, social ties, predictability) as a central pathway to escalating distress under prolonged crises [2].

Recent evidence points to a substantial mental health burden among Ukrainians during the full-scale war. A national online assessment in September 2023 reported that approximately one in three adults screened positive for at least one mental health disorder, with financial concerns and war-related life disruption emerging as consistent risk factors [3]. Other nationwide surveys have likewise documented elevated levels of stress, anxiety, and post-traumatic stress symptoms, underscoring the salience of sustained threat and chronic strain [4]. Convergent findings suggest that war-related psychological burden is observed across diverse subgroups (e.g., displaced populations, students, and occupational cohorts), reinforcing a systemic pattern shaped by chronic threat and different disruption during wartime [5; 6; 7].

Within this landscape, perceived stress is a particularly informative construct for wartime monitoring. It captures appraisals of overload and uncontrollability that are sensitive to both exposure intensity and constrained coping capacity and can serve as a pragmatic monitoring indicator under wartime field constraints [7; 8].

However, documenting high stress levels is only part of the public health and policy challenge. Elevated distress does not automatically translate into professional help-seeking. Across conflict-affected and displaced populations, barriers can operate on both the demand side (e.g., stigma, low mental health literacy, preference for self-reliance, low perceived usefulness) and the supply side (e.g., affordability, availability, navigation complexity, time constraints), producing substantial unmet need even where services exist [10]. Help-seeking can be treated as a staged pathway from need recognition to service use where unmet need may arise from breakdowns at different steps, especially under prolonged stress. In Ukraine, these challenges are additionally shaped by historical and structural legacies and by war-driven disruption and overload. An interdisciplinary desk review highlighted persistent constraints related to stigma, accessibility, costs, and limited awareness of services, alongside a rapid expansion of helplines and community-based supports that can create a complex and uneven help-seeking landscape [11].

System-level monitoring and humanitarian needs assessments similarly point to sustained demand for mental health support and to access constraints (including affordability and navigation barriers), suggesting a high likelihood of unmet need during prolonged war [12; 13; 14].

Despite growing evidence on the prevalence and correlates of wartime mental health problems in Ukraine, analyses linking perceived stress to both coping and concrete help-seeking pathways within a single wartime dataset remain limited [10; 11]. Such integration is necessary to identify access bottlenecks and to inform low-threshold, scalable support options that are feasible under wartime constraints.

Against this background, a national online survey of adults residing in Ukraine was used to examine perceived stress and its associations with help-seeking in a comprehensive manner. Specifically, three research questions were addressed:

(RQ1) What is the prevalence and distribution of perceived stress in the war-affected population, and which sociodemographic and war-related factors are associated with higher perceived stress?

(RQ2) How do self-rated mental state and the stress-to-care cascade (perceived need for psychological help, professional help-seeking, and unmet need) differ by levels of perceived stress?

(RQ3) What factors are associated with help-seeking profiles, and which barriers and coping strategies are reported?

By linking stress appraisal to coping and help-seeking pathways, the study aims to provide actionable evidence to strengthen uptake of mental health support and reduce access barriers for civilians living

under conditions of prolonged war.

Results

This section reports three complementary result blocks. Section 1 describes the distribution of perceived stress under protracted war and identifies sociodemographic and war-related factors. Section 2 examines how stress severity maps onto self-rated mental state and the stress-to-care cascade (perceived need, professional help-seeking, and unmet need). Section 3 reports help-seeking profiles, barriers among respondents with unmet need, and coping strategies across stress groups.

1. Distribution of perceived stress and associated factors

Perceived stress was assessed using the Perceived Stress Scale (PSS-10; range 0–40) (Fig. 1A). The mean PSS-10 score was 21.89 (SD 5.73). In the analytic sample with available PSS-10 categorization, 27.04% were classified as high stress (27–40), 69.91% as moderate stress (14–26), and 3.06% as low stress (0–13) (Supplementary Information, Table S1A).

1. (A) Distribution of perceived stress categories (PSS-10; N = 1,323).
2. (B) Distribution of PSS-10 scores by war-exposure intensity quartiles derived from the cumulative count of war-related events (analytic N as in Supplementary Information, Table S1B). Tukey HSD pairwise comparisons are reported in Supplementary Information, Table S1C.

To examine whether greater cumulative war burden was associated with higher perceived stress, PSS-10 scores were compared across war-exposure intensity quartiles defined as quartiles of the cumulative count of war-related events (ranging from 0 to 13) (Fig. 1B). Overall, respondents with the highest level of war intensity have around 1.3–1.5 higher PSS-10 level (see Supplementary Information, Table S1B). Pairwise Tukey HSD comparisons indicated statistically significant difference in stress level in the 4th quartile compared to 1st and 2nd, whereas other contrasts were not statistically significant (Supplementary Information, Table S1C).

Because a cumulative intensity index can mask heterogeneity in specific exposures, event-level differences in perceived stress were examined by comparing respondents who reported each war-related experience with those who did not (Fig. 2; Supplementary Information, Table S2).

These event-level contrasts are descriptive and do not account for multiple comparisons or co-occurrence of events. Points show unadjusted mean differences in PSS-10 (Yes minus No) for each event, with 95% confidence intervals; positive values indicate higher perceived stress among respondents reporting the event. Numerical estimates and high-stress percentage-point differences are provided in Supplementary Information, Table S2.

The largest unadjusted mean differences were observed for physical or sexual violence and for hunger and lack of water. Other deprivation-related exposures, including prolonged cold indoor conditions and loss of housing or home, also showed positive mean differences, whereas several common exposures

(e.g., shelling or bombardment, witnessing death due to shelling) were associated with smaller shifts in PSS-10. Estimates for some events were imprecise due to small exposed subsamples (e.g., physical or sexual violence, n = 28; served in the Armed Forces, n = 58) and should be interpreted cautiously.

Table 1

Associations of sociodemographic characteristics and war-related experiences with perceived stress

Predictor	Model 1: Base specification		Model 2: Demographics and war events		Model 3: Demographics and war intensity (quartiles)	
	b	SE	b	SE	b	SE
Women (vs Men)	1.206***	(0.331)	1.189***	(0.346)	1.192***	(0.330)
Age 30–39 (vs 18–29)	-0.552	(0.601)	-0.471	(0.601)	-0.591	(0.597)
Age 40–49 (vs 18–29)	-1.030*	(0.613)	-0.838	(0.613)	-0.995	(0.610)
Age 50–59 (vs 18–29)	-2.506***	(0.594)	-2.436***	(0.601)	-2.496***	(0.594)
Age 60+ (vs 18–29)	-4.301***	(0.537)	-4.109***	(0.549)	-4.255***	(0.536)
Married (vs No partner/ Other)	-0.245	(0.358)	-0.282	(0.359)	-0.261	(0.357)
Has partner (vs. No partner/ Other)	0.177	(0.529)	0.301	(0.537)	0.184	(0.535)
Has children under 18 (vs No children under 18)	-0.615	(0.441)	-0.688	(0.438)	-0.664	(0.441)
Urban (vs Rural)	0.153	(0.399)	-0.056	(0.404)	0.129	(0.397)
Central region (vs Western reference region)	-0.452	(0.425)	-0.631	(0.433)	-0.560	(0.428)
Southern region (vs Western reference region)	0.331	(0.439)	-0.002	(0.462)	0.130	(0.447)
Eastern region (vs Western reference region)	-0.108	(0.601)	-1.081	(0.680)	-0.532	(0.632)
Kyiv (vs Western reference region)	-0.256	(0.608)	-0.695	(0.633)	-0.386	(0.613)

Note. Entries are unstandardized regression coefficients (b) with standard errors (SE). "—" indicates that the predictor was not included in the respective model. Higher PSS-10 scores indicate higher perceived stress (range 0–40). Model 1 includes sociodemographic factors and war-related experiences (coded 1 for "Yes", 0 for "No"). Model 2 includes sociodemographic factors and war-related intensity quartiles. Coefficients are interpreted relative to the omitted reference categories (male; age 18–29; urban; Western macroregion; employed; "insufficient even for food" as the lowest financial-status category). Observations reflect complete cases for covariates included in the models. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The base regression with only demographic characteristics is presented in Supplementary Information, Table S3.

Predictor	Model 1: Base specification		Model 2: Demographics and war events		Model 3: Demographics and war intensity (quartiles)	
	b	SE	b	SE	b	SE
Unemployed (vs employed)	1.124***	(0.376)	1.208***	(0.390)	1.142***	(0.375)
Retired (vs employed)	0.742	(0.473)	0.960**	(0.476)	0.796*	(0.472)
Financial status: daily needs only (vs insufficient even for food)	-0.495	(0.544)	-0.393	(0.540)	-0.501	(0.540)
Financial status: generally sufficient (vs insufficient for even food)	-1.833***	(0.567)	-1.719***	(0.567)	-1.827***	(0.563)
Financial status: relatively comfortable (vs insufficient even for food)	-2.646***	(0.664)	-2.513***	(0.661)	-2.620***	(0.660)
Separation from family or close ones (Yes vs No)	—	—	0.536	(0.340)	—	—
Death of family or close ones (Yes vs No)	—	—	-0.576*	(0.337)	—	—
Physical or sexual violence (Yes vs No)	—	—	1.736	(1.121)	—	—
Loss of housing or home (Yes vs No)	—	—	0.414	(0.458)	—	—
Prolonged cold indoor conditions (Yes vs No)	—	—	0.841**	(0.396)	—	—

Note. Entries are unstandardized regression coefficients (b) with standard errors (SE). "—" indicates that the predictor was not included in the respective model. Higher PSS-10 scores indicate higher perceived stress (range 0–40). Model 1 includes sociodemographic factors and war-related experiences (coded 1 for "Yes", 0 for "No"). Model 2 includes sociodemographic factors and war-related intensity quartiles. Coefficients are interpreted relative to the omitted reference categories (male; age 18–29; urban; Western macroregion; employed; "insufficient even for food" as the lowest financial-status category). Observations reflect complete cases for covariates included in the models. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The base regression with only demographic characteristics is presented in Supplementary Information, Table S3.

Predictor	Model 1: Base specification		Model 2: Demographics and war events		Model 3: Demographics and war intensity (quartiles)	
	b	SE	b	SE	b	SE
Displaced within Ukraine (Yes vs No)	—	—	0.417	(0.426)	—	—
Displaced abroad (Yes vs No)	—	—	-0.094	(0.429)	—	—
Occupation by Russian troops (Yes vs No)	—	—	-0.875*	(0.498)	—	—
Witnessing deaths due to shelling (Yes vs No)	—	—	0.634	(0.425)	—	—
Shelling or bombardment (Yes vs No)	—	—	0.317	(0.342)	—	—
Hunger and lack of water (Yes vs No)	—	—	0.524	(0.622)	—	—
Served or serving in the Armed Forces (Yes vs No)	—	—	-0.722	(0.789)	—	—
Close family member served or serving (Yes vs No)	—	—	-0.197	(0.322)	—	—
Friends, acquaintances served or serving (Yes vs No)	—	—	-0.215	(0.415)	—	
2nd quartile (vs. 1st)	—	—	—	—	0.184	(0.384)
3rd quartile (vs. 1st)	—	—	—	—	0.429	(0.484)
4th quartile (vs. 1st)	—	—	—	—	1.220***	(0.448)
Constant	24.246***	(0.898)	23.990***	(1.014)	24.041***	(0.912)

Note. Entries are unstandardized regression coefficients (b) with standard errors (SE). "—" indicates that the predictor was not included in the respective model. Higher PSS-10 scores indicate higher perceived stress (range 0–40). Model 1 includes sociodemographic factors and war-related experiences (coded 1 for "Yes", 0 for "No"). Model 2 includes sociodemographic factors and war-related intensity quartiles. Coefficients are interpreted relative to the omitted reference categories (male; age 18–29; urban; Western macroregion; employed; "insufficient even for food" as the lowest financial-status category). Observations reflect complete cases for covariates included in the models. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The base regression with only demographic characteristics is presented in Supplementary Information, Table S3.

Predictor	Model 1: Base specification		Model 2: Demographics and war events		Model 3: Demographics and war intensity (quartiles)	
	b	SE	b	SE	b	SE
Adj. R-Square	0.113	—	0.124	—	0.116	—
N obs.	1290	—	1290	—	1290	—

Note. Entries are unstandardized regression coefficients (b) with standard errors (SE). "—" indicates that the predictor was not included in the respective model. Higher PSS-10 scores indicate higher perceived stress (range 0–40). Model 1 includes sociodemographic factors and war-related experiences (coded 1 for "Yes", 0 for "No"). Model 2 includes sociodemographic factors and war-related intensity quartiles. Coefficients are interpreted relative to the omitted reference categories (male; age 18–29; urban; Western macroregion; employed; "insufficient even for food" as the lowest financial-status category). Observations reflect complete cases for covariates included in the models. * p < 0.10, ** p < 0.05, *** p < 0.01. The base regression with only demographic characteristics is presented in Supplementary Information, Table S3.

Table 1 shows consistent sociodemographic patterning of perceived stress. Women reported higher PSS-10 scores than men, and stress decreased with age relative to the 18–29 group, with the largest difference observed for adults aged 60+. Not having a job was associated with higher perceived stress, whereas better self-rated financial situation was associated with lower stress compared with the most financially constrained reference category, including "generally sufficient" and "relatively comfortable".

Because war-related events frequently co-occur and exposed and non-exposed groups may differ in background characteristics, multivariable linear regression models were fitted to estimate adjusted associations with PSS-10 under two alternative war-exposure specifications (Table 1). In the war-event specification (Model 2), prolonged cold indoor conditions remained positively associated with perceived stress (b = 0.841, SE = 0.396), whereas occupation by Russian troops was negatively associated (b = −0.875, SE = 0.498); given the null unadjusted difference for occupation (Supplementary Information, Table S2), this coefficient should be interpreted cautiously as an adjusted association in the context of overlapping exposures. In the war-intensity specification (Model 3), only the highest exposure quartile was associated with higher perceived stress (4th vs 1st quartile: b = 1.22, SE = 0.460), whereas the 2nd and 3rd quartiles did not differ from the reference category. Taken together, the adjusted models indicate limited independent associations for most single war-related events, whereas cumulative exposure differences emerged primarily at the highest intensity level after adjustment for sociodemographic covariates.

2. Stress-to-care cascade and unmet needs across stress severity

Following Section 2.1, the stress-to-care cascade was examined across PSS-10 stress groups to explore perceived mental help need, help-seeking behavior, and unmet needs.

Subjective distress increased sharply with stress severity: the share reporting a poor self-rated mental state rose from 26.97% in the low-stress group to 69.65% in the moderate-stress group and 95.04% in

the high-stress group (Supplementary Information, Table S3). At the within-group level (denominator = all respondents in each stress group), the share reporting no perceived need declined from 95.5% (low) to 63.1% (moderate) and 26.7% (high), while the combined share with perceived need (need met and need unmet) increased correspondingly (Fig. 3).

However, higher levels of need did not necessarily translate into care receipt. Across stress-level groups, the proportion of respondents with needs met (defined as those who reported needing mental health support and were seeking it) increased from 0.0% in the low-stress group to 12.8% in the moderate-stress group and 21.4% in the high-stress group. Meanwhile, the prevalence of unmet need (defined as reporting a need for help but not seeking it) rose from 4.5% to 24.2% and 51.9%, respectively (Fig. 3).

Notably, in the high-stress group, unmet need accounted for more than half of the group (51.9%), indicating that non-receipt of professional support becomes the dominant state under severe stress.

When examined conditional on perceived need (denominator = respondents reporting need; Supplementary Information, Table S5, Panel B), help-seeking did not increase with stress severity. Among respondents reporting need, 34.54% in the moderate-stress group sought professional help, compared with 29.17% in the high-stress group, while unmet need remained high in both groups (65.46% and 70.83%, respectively). For low-stress group these results should be interpreted with caution because of small number of observations (n = 4) (Supplementary Information, Table S5). The broader context of lifetime patterns of professional service use and intentions to seek help is provided in Supplementary Information, Table S5 (Panel A).

Overall, higher stress severity was associated with greater perceived need, but also with a larger burden of unmet need, particularly in the high-stress group.

3. Help-seeking profiles, barriers, and coping strategies

Multinomial logistic regression models were used to examine three help-seeking behaviors (never sought and do not intend to seek help, never sought but intend to seek help, and having applied for professional psychological help) under two alternative war-exposure specifications. In the full sample, higher perceived stress was associated with a lower probability of reporting no intention to seek help and a higher probability of intending to seek help, with only a small increase in probability to apply for help (Supplementary Information, Table S6, Panel A). However, in the need-recognised subsample, PSS-10 was not associated with help-seeking behavior, demonstrating an intention-to-action gap among those acknowledging need (Supplementary Information, Table S6, Panel B).

Several war-related factors were associated with help-seeking profiles. Separation from family or close ones was positively associated with having applied for help; close family member military service was associated with a higher probability of intending to seek help. Internal displacement within Ukraine was associated with a lower probability of the “never and do not intend” profile; while physical or sexual violence was associated with a higher probability of the “never and do not intend” profile. In models

using cumulative war burden, the highest exposure quartile was associated with a lower probability of the “never and do not intend” profile and a higher probability of having applied for help in the full sample, with a similar positive association for having applied for help in the need-recognised subsample (Supplementary Information, Table S6, Panels C and D).

To contextualise the intention-to-action gap, barriers to professional help-seeking were examined among respondents with unmet need (Fig. 4; Supplementary Information, Table S7).

The most frequently reported barriers were the high cost of psychological help (71.2%), beliefs about its limited effectiveness (67.2%; “there are problems a psychologist cannot help with”), and broader norms and logistic difficulties, including that it is not common to consult a psychologist in Ukraine (64.8%) and that finding and contacting a psychologist is a very complicated process (64.0%). Compared with the full sample, all reported barriers were higher in the high-stress subgroup, with the largest difference for perceived ineffectiveness and access-related constraints.

Against this backdrop, coping behaviours were examined to characterise how distress is managed when professional support is not sought (Fig. 5; Supplementary Information, Table S8).

Among the suggested coping strategies, seven differed significantly across the low-, moderate-, and high-stress groups. The high-stress group reported lower endorsement of most social and activity-based strategies, including talking to friends and family, spending time with children, work or studying, and sport or physical activity. In contrast, alcohol use was more prevalent in the high-stress group (20.61%) than in the low-stress (8.99%) and moderate-stress (13.48%) groups. Overall, social and activity-based strategies were most common in the low-stress group and declined with increasing stress severity, whereas alcohol use showed the opposite trend.

Discussion

This study indicates a substantial population-level stress burden among adults residing in Ukraine under protracted war conditions. Most respondents fell in the moderate stress range and more than one quarter met the high-stress threshold. This distribution is consistent with recent population evidence from Ukraine documenting sustained psychological strain during the full-scale war [3; 4].

Several non-mutually exclusive mechanisms can plausibly account for the weak independent effects of single binary war-event indicators in adjusted models. First, war-related adversities tend to co-occur and cluster, so multivariable models have limited leverage to attribute unique variance to any one event once correlated exposures are entered simultaneously [15]. Empirically, recent Ukrainian war-zone samples document both high exposure prevalence and multi-stressor profiles, suggesting that cumulative exposure can be more informative than isolated events under active conflict [16]. Second, when exposure becomes widespread, exposed – non-exposed contrasts become less informative because the “non-exposed” subgroup is relatively small and may differ systematically in geography, resources, mobility, or reporting [15]. Third, binary indicators often fail to capture severity, timing/recency, and

duration, which may be central in protracted crises. Accordingly, measurement work increasingly emphasises broader, multidimensional representations of war-related stressors rather than isolated event flags [17]. Taken together, these considerations support the use of exposure profiles or latent or cumulative dimensions as potentially more valid representations of war-related adversity in chronic conflict contexts.

The persistence of strong sociodemographic factors in perceived stress is consistent with ecological accounts of conflict-related mental health, which propose two coupled pathways: a direct pathway through war-related violence and loss and an indirect pathway through the harsh conditions of everyday life (e.g., economic pressure, disrupted routines, caregiving load, constrained mobility) that shape coping capacity over time. In this framing, gender, employment status, and perceived financial situation act as markers of differential access to enabling resources and the accumulation of secondary stressors, potentially explaining stress variation more consistently than any single war event in contexts where many war-related exposures are widespread [18]. Ukrainian population evidence likewise highlights substantial mental health burden alongside clear sociodemographic patterning and strong links with financial hardship, reinforcing the interpretation that social position and resources remain central correlates of distress in a protracted crisis [3]. Converging evidence from recent geospatial analyses further suggests that mental health vulnerability during the war is shaped not only by conflict intensity but also by disrupted living conditions (e.g., housing damage, power outages, cold and damp housing and food insecurity), highlighting substantial spatial heterogeneity in risk across Ukraine [19].

A central contribution of the study is mapping stress severity onto a stress-to-care cascade, clarifying where help-seeking breaks down. As stress severity increases, need recognition appears responsive; however, increases in perceived need are not matched by proportional increases in professional help-seeking, producing a large unmet-need segment. This pattern aligns with World Mental Health survey evidence showing that substantial barriers persist even after perceived need is acknowledged, and that most individuals report multiple barriers rather than a single obstacle [20]. Meta-analytic evidence similarly indicates that unmet need is common among people with mental health problems and is driven by a mix of structural barriers (access and navigation), financial barriers, and motivational/attitudinal barriers (including doubts about effectiveness and stigma-related concerns) [21]. In Ukraine, these pathways are plausibly further shaped by evolving but still consequential stigma-related attitudes [22], wartime strain and disruption affecting mental health system capacity and service delivery [13; 23], and contextual and cultural factors influencing help-seeking and service navigation described in wartime MHPSS syntheses [11].

Together, these mechanisms explain why unmet need becomes concentrated among those with the highest stress: the same individuals most likely to recognise need may face the greatest cumulative barriers to converting need into help-seeking. Yet increases in perceived need were not matched by proportional increases in professional help-seeking, producing a large unmet-need segment that became dominant in the high-stress group. In practical terms, the highest-stress group simultaneously showed

the greatest perceived need and the greatest likelihood of remaining unsupported, making unmet need a concentrated rather than evenly distributed problem.

Recent cross-national evidence from the World Mental Health (WMH) surveys similarly treats perceived need as an early step in the pathway to treatment and identifies perceived need as a distinct target for intervention [24]. Consistent with this staged view, WMH analyses show that treatment patterns and predictors can look different once analyses are conditioned on perceived need [25].

The help-seeking profile models reinforce this staged interpretation. In the full sample, higher stress was associated with a lower probability of reporting “never and no intention” to seek mental help and a higher probability of intending to seek help, whereas among respondents already acknowledging need, stress severity was not associated with a higher probability of having applied for professional help. This pattern is consistent with an intention-to-action gap: distress appears sufficient to increase need recognition and intention, but not sufficient to overcome constraints at the service engagement stage. In protracted crises, limited time, money, energy, and practical capacity may constrain the ability to initiate and sustain help-seeking steps, particularly when services are costly or difficult to locate. Within patient-centred access frameworks, this can be understood as a breakdown at the interface between health system characteristics (e.g., affordability, availability, approachability) and individual capacities to seek, reach, pay, and engage [26].

Barrier patterns among respondents with unmet need provide concrete insight into this bottleneck stage. The dominant barriers, such as affordability, perceived process complexity (finding and contacting providers), norms around psychological help, and doubts about effectiveness, span both opportunity constraints and acceptability/motivational barriers. This co-occurrence is consistent with other evidence showing that multiple barrier domains often operate simultaneously even among respondents with perceived need and highlighting the prominence of perceived treatment ineffectiveness alongside financial and nonfinancial enabling barriers [20]. It is also consistent with reviews mapping barriers across demand- and supply-side domains [10] and with Ukraine-specific synthesis highlighting persistent constraints related to stigma, costs, limited awareness of services, and uneven navigation pathways alongside rapid expansion of support options [11]. The generally higher perceived barriers in the high-stress subgroup suggests that those with the greatest distress may face the most constrained opportunity and acceptability simultaneously, helping to explain why unmet need concentrates at the top of the stress distribution.

These access constraints should be interpreted against the capacity of mental health services under wartime conditions. Evidence indicates that Ukraine’s inpatient mental health services experienced severe disruption and staff shortages during the invasion period, compounding pre-existing system vulnerabilities [13]. System-level assessments likewise document continuing health needs and access challenges in the adult population [14] and ongoing MHPSS programming and demand under war conditions [12]. Together, these sources support a conservative conclusion: even when perceived need is

high, system constraints and navigation barriers can make realised access difficult, especially for those under the highest burden.

Coping strategies further contextualise how distress is managed when professional support is not used. Socially embedded and structured activity-based strategies were less frequently endorsed in the high-stress group, whereas alcohol use increased with stress severity. Recent Ukraine-specific qualitative evidence describes alcohol misuse framed as “self-treatment” for distress and demoralization in conflict-affected men, shaped by socio-economic strain and cultural normalization [27]. Taken together, these patterns suggest that unmet need may co-occur with diminishing coping resources and, for some, increased reliance on potentially maladaptive regulation strategies, reinforcing the importance of low-threshold, reachable supports that reduce initiation burden.

Two war-related findings warrant cautious interpretation. The positive association of prolonged cold indoor conditions with stress likely reflects a broader deprivation or energy-insecurity pathway: difficulty keeping the home adequately warm has been linked to markedly higher psychological distress in longitudinal evidence, and large-scale studies similarly associate energy insecurity (including unsafe indoor temperatures) with elevated anxiety and depressive symptoms, suggesting that “cold indoor conditions” captures sustained resource constraints rather than a discrete event [28; 29]. In contrast, the negative association for war occupation experience should not be interpreted as protective; occupation in Ukraine has been documented as involving persistent patterns of serious human rights violations, making a true inverse effect implausible [30]. A more plausible explanation is measurement and selection: the binary “war occupied” indicator mixes heterogeneous timing (post-occupation vs ongoing threat), while conflict survey guidance highlights how conflict exposure measurement, timing, and selection biases can distort estimated associations in observational data [31]. In addition, extreme adversity can prompt recalibration of self-evaluations (response shift), potentially attenuating or altering associations in cross-sectional self-report outcomes [32].

Several limitations should be acknowledged. First, the cross-sectional design precludes causal inference about the direction of relationships between stress, barriers, coping, and help-seeking. Second, the measures were self-reported and may be affected by reporting bias. Third, online sampling may underrepresent individuals with limited connectivity or severe deprivation, and small exposed subgroups yield imprecise estimates. Fourth, war-event items were binary and did not capture timing or severity, limiting inference about independent event effects. Finally, help-seeking was assessed broadly and did not capture modality, quality, or continuity of care.

The findings carry implications for policy and service design. Interventions aimed solely at increasing awareness may have a limited impact if the primary bottleneck lies in translating recognised need into actual service use. Priority targets therefore include affordability, navigation support (clear pathways and trusted entry points), and low-threshold options that reduce initiation burden, alongside efforts to strengthen trust and perceived effectiveness, particularly considering the prominence of navigation complexity, and doubts about effectiveness in the barrier profile. The concentration of unmet need in the

highest-stress segment suggests that proactive outreach and simplified access pathways may be necessary for high-burden groups and for those facing deprivation-type constraints.

Overall, the findings suggest that under protracted war conditions, elevated stress is widespread, but unmet need concentrates where distress is greatest, underscoring the importance of strengthening affordable, navigable, low-threshold pathways from need recognition to help-seeking.

Methods

This study used cross-sectional survey data to examine perceived stress and its associations with war-related exposures and psychological help-seeking indicators among adults living in Ukraine. The survey was conducted by the sociological group "Rating" on the platform "Rating Online" from April 11 to April 23, 2024. The survey was conducted using the CAWI (Computer Assisted Web Interviewing) method, invitations were sent through messengers to a random sample of people. Eligibility criteria were age ≥ 18 years and self-reported residence in Ukraine (all regions except for the territories temporarily occupied by Russia) at the time of participation. Because the survey link was openly accessible and could be forwarded without restriction, the number of individuals who viewed the invitation or had access to the link could not be determined; therefore, a response rate could not be calculated. The resulting dataset should be interpreted as a non-probability online sample of internet-connected adults in Ukraine during the data-collection period.

Participation was voluntary and unpaid. Before starting the questionnaire, respondents received study information (purpose, procedures, approximate duration, and data protection) and provided electronic informed consent. No personally identifying information was collected, and responses were recorded anonymously.

The results were first presented at the analytical report [33].

Sample characteristics

Of N = 1,464 consenting respondents, N = 1,323 provided sufficient data to compute PSS-10 and were included in the primary analytic sample for descriptive stress distribution. Sociodemographic characteristics of the sample are presented in Table 2.

Table 2
Sociodemographic characteristics of the sample (N = 1,323)

Variable	N	%
Gender		
Male	488	36.9
Female	835	63.1
Age group		
Age 18–29	196	14.8
Age 30–39	259	19.6
Age 40–49	218	16.5
Age 50–59	223	16.9
Age 60+	427	32.3
Marital status		
Married	698	52.8
Has partner	162	12.2
No partner/Other	463	35.0
Has children under 18		
Doesn't have children under 18	964	72.9
Has children under 18	359	27.1
Settlement type		
Urban	1,066	82.6
Rural	224	17.4
Region before the war		
West	279	21.1
Center	394	29.8
South	365	27.6
East	158	11.9
Kyiv	127	9.6
Employment status		

Variable	N	%
Have job	695	52.5
No job	383	28.9
Retired	245	18.5
Financial status		
Insufficient for food	150	11.3
Daily needs only	503	38.0
Generally sufficient	436	33.0
Relatively comfortable	234	17.7

Measures

The online survey consisted of a structured, self-administered questionnaire (median completion time 9 min 47 s; mean 9 min 52 s).

Measures covered domains:

1) Sociodemographic characteristics. Participants reported age, gender, partnership/marital status, settlement type (urban/rural), macroregion, employment status, self-rated financial situation, and whether they had children under 18 years.

2) War-related events were assessed using a checklist of experiences (e.g., shelling/bombardment; witnessing deaths due to shelling; separation from close ones; displacement within Ukraine or abroad; loss of housing; prolonged cold indoor conditions; hunger/lack of water; physical/sexual violence; own or family military service). Each event was coded as a binary indicator (yes/no).

3) War-exposure intensity quartiles (Q1–Q4) for dose–response analyses and as a multivariable specification (cut points reported in Supplementary Information, Table S1B; the highest quartile corresponded to the greatest cumulative burden, ≥ 6 events in this dataset).

4) Perceived stress (PSS-10). Perceived stress over the past month was measured using the 10-item Perceived Stress Scale (PSS-10) (Cohen et al., 1983). To allow more nuanced responding in an online context, items were administered on a 7-point frequency scale (1 = “never” to 7 = “very frequently/constantly”). For comparability with the standard PSS-10 metric, responses were linearly transformed to the conventional 0–4 scale using a rescaling of the [1, 7] interval to [0,4] [34]. Positively worded items were reverse-scored, and transformed items were summed to create a total PSS-10 score (range 0–40), with higher scores indicating higher perceived stress. For descriptive analyses, PSS-10

scores were categorized as low (0–13), moderate (14–26), and high (27–40) using commonly applied guideline ranges [35].

5) Self-rated mental state. Current mental state was assessed using a single self-rating item and reported in three categories: good, satisfactory, and poor.

6) Psychological help-seeking, perceived need, and unmet need. Lifetime help-seeking was assessed using a categorical item capturing prior use and intentions regarding professional psychological support (never and do not intend; never but intend; used once/few times; completed a course of therapy). Perceived need was assessed as self-reported need for psychological help in the past 6 months. Among respondents reporting need, past-6-month professional help-seeking was recorded (yes/no). Unmet need was defined as reporting need in the past 6 months but reporting no professional help-seeking in that period.

7) Coping strategies. Coping strategies were assessed using a checklist of non-mutually exclusive behaviours used to support mental health (e.g., talking to friends/close ones; sport/physical activity; work/study; household chores; alcohol use).

8) Perceived barriers to help-seeking. Barriers to professional help-seeking were assessed using Likert-type items covering barriers. Items were summarized as the percentage endorsing the barrier (agree/strongly agree) among respondents with unmet need, and separately within the high-stress unmet-need subgroup.

Statistical analysis

All analyses were conducted among respondents with non-missing PSS-10.

1) Descriptive stress distribution. The prevalence of low, moderate, and high stress was summarized using n (%), mean, and SD.

2) War-exposure intensity quartiles. PSS-10 was compared across war-exposure intensity quartiles (Q1–Q4) using omnibus tests with Tukey HSD post-hoc comparisons (reported in Supplementary Information, Table S1C).

3) Multivariable correlates of perceived stress. Two alternative multivariable linear regression specifications were estimated with continuous PSS-10 as the outcome (complete-case). Model 1: sociodemographic covariates. Model 2: the same sociodemographic covariates + binary indicators for individual war events (Yes vs No) to estimate event-specific associations net of co-occurring exposures. Model 3: the same sociodemographic covariates + war-exposure intensity quartiles (Q2–Q4 vs Q1) to estimate associations with cumulative burden. Results were reported as unstandardized coefficients (b) with standard errors; model fit was summarized using adjusted R^2.

4) Stress-to-care cascade. Within each PSS-10 group, the proportions reporting poor self-rated mental state and perceived need were calculated (denominator = all respondents in the stress group). Help-seeking and unmet need were also calculated conditional on perceived need (denominator = respondents reporting need). Figure 3 expressed the cascade as mutually exclusive within-group shares: no perceived need, need met (need × sought help), and need unmet (need × did not seek help). Conditional estimates relying on very small denominators (e.g., low stress need subgroup) were interpreted cautiously.

5) Help-seeking profiles (multivariable models). Multinomial logistic regression models examined three profile categories (never and do not intend; never but intend; applied/used professional help) under two war-exposure specifications (events vs intensity quartiles), estimated in the full sample and the subsample reporting perceived need. Results were presented as average marginal effects (AMEs) with standard errors.

6) Coping strategies and barriers. Differences in coping endorsement across stress groups were tested using omnibus chi-square tests per item (strategies not mutually exclusive). Barriers were summarized as endorsement percentages among respondents with unmet need and within the high-stress unmet-need subgroup; interpretation emphasized direction and magnitude given multiple testing.

Two-sided tests were used, with significance thresholds $p < 0.10$, $p < 0.05$, and $p < 0.01$. Analyses were conducted in Stata/BE 19.

Declarations

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Author contributions

Conceptualization: NZ; VV; NT. Methodology: NZ; VV. Formal analysis: NZ; VV. Investigation: NZ; VV. Data curation: NZ; VV. Writing original draft: NT; YS. Writing review & editing: NZ; VV; YS; NT. Visualization: YS. Supervision: VV; YS. Project administration: VV.

Competing interests

The authors declare no competing interests.

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Data availability

The anonymised data that support the findings of this study are not publicly available due to ethical restrictions and the sensitivity of the information collected but are available from the corresponding author upon reasonable request.

Ethics declarations

The study was approved by the Ethics Committee of American University Kyiv (Approval No. 04-24) and was conducted in accordance with the Declaration of Helsinki and relevant guidelines and regulations. All participants provided electronic informed consent prior to participation. The survey was anonymous; no personally identifying information was collected, and results are reported in aggregate. Participation involved minimal risk, with possible transient discomfort when answering questions about mental health and war-related experiences.

Disclosure of Delegation to Generative AI

Authors declare the use of generative AI (GenAI) in the research and writing process. According to the GAIDeT taxonomy [36], the following tasks were delegated to GAI tools under full human supervision: writing the literature review, evaluation of the novelty of the research and identification of gaps, summarizing text, translation, quality assessment, and identification of limitations. The GenAI tool used was Chat-GPT 5.2. Responsibility for the final manuscript lies entirely with the authors. GenAI tools are not listed as authors and do not bear responsibility for the final outcomes.

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Figures

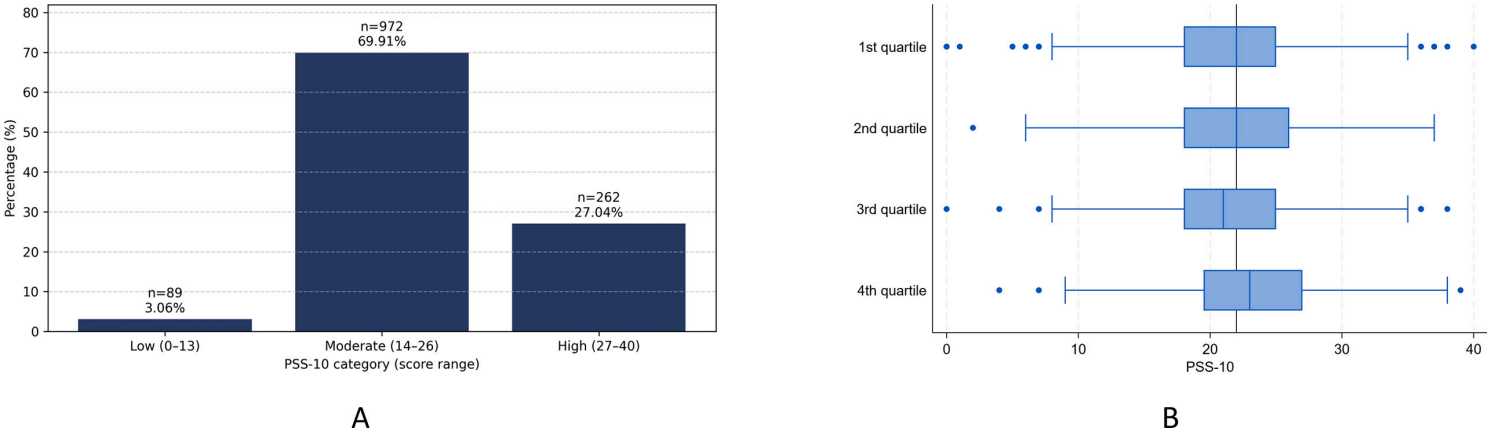


Figure 1

Perceived stress distribution and war-exposure intensity quartiles.

(A) Distribution of perceived stress categories (PSS-10; N = 1,323).

(B) Distribution of PSS-10 scores by war-exposure intensity quartiles derived from the cumulative count of war-related events (analytic N as in Supplementary Information, Table S1B). Tukey HSD pairwise comparisons are reported in Supplementary Information, Table S1C.

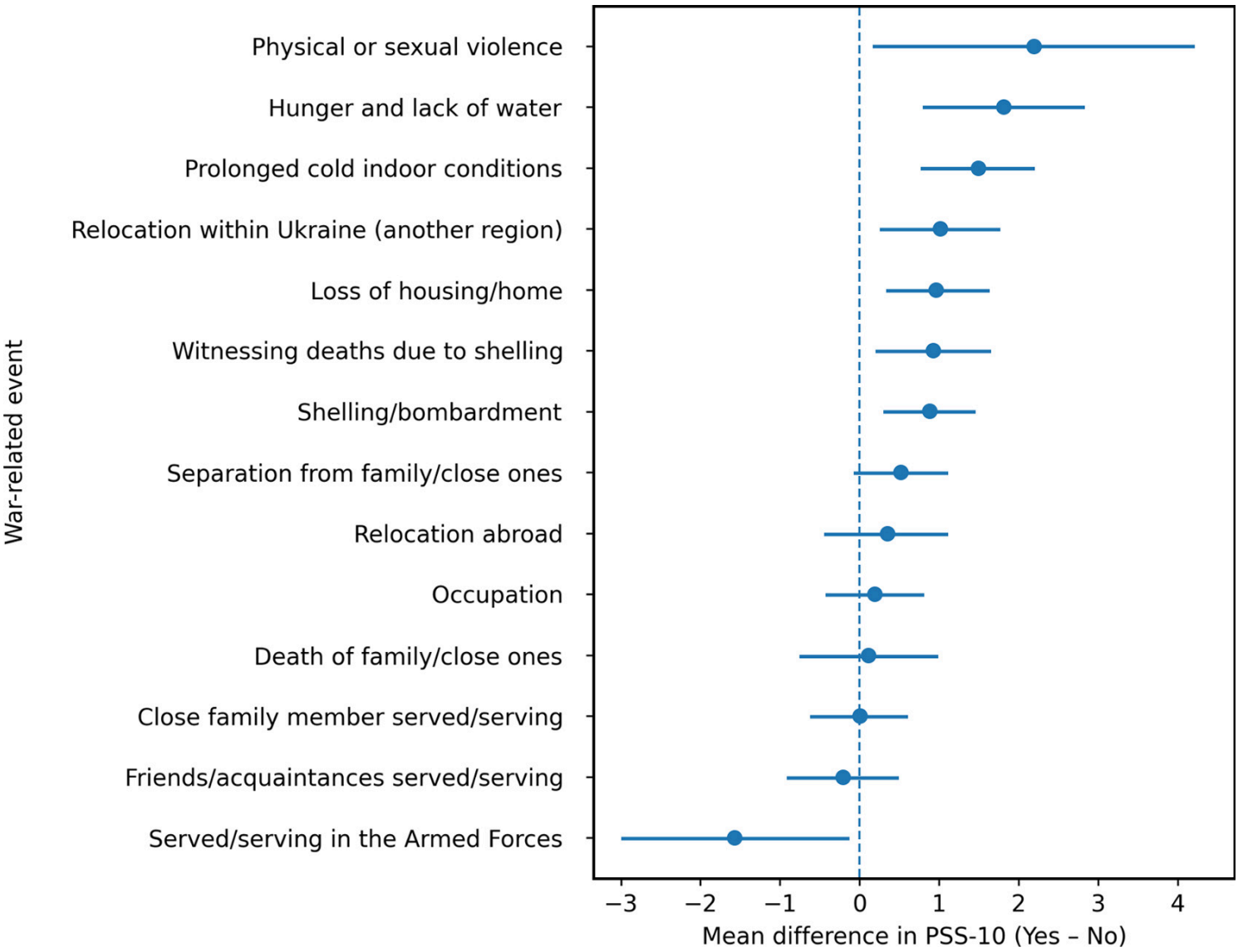


Figure 2

Mean differences in perceived stress by war-related events.

These event-level contrasts are descriptive and do not account for multiple comparisons or co-occurrence of events. Points show unadjusted mean differences in PSS-10 (Yes minus No) for each event, with 95% confidence intervals; positive values indicate higher perceived stress among respondents reporting the event. Numerical estimates and high-stress percentage-point differences are provided in Supplementary Information, Table S2.

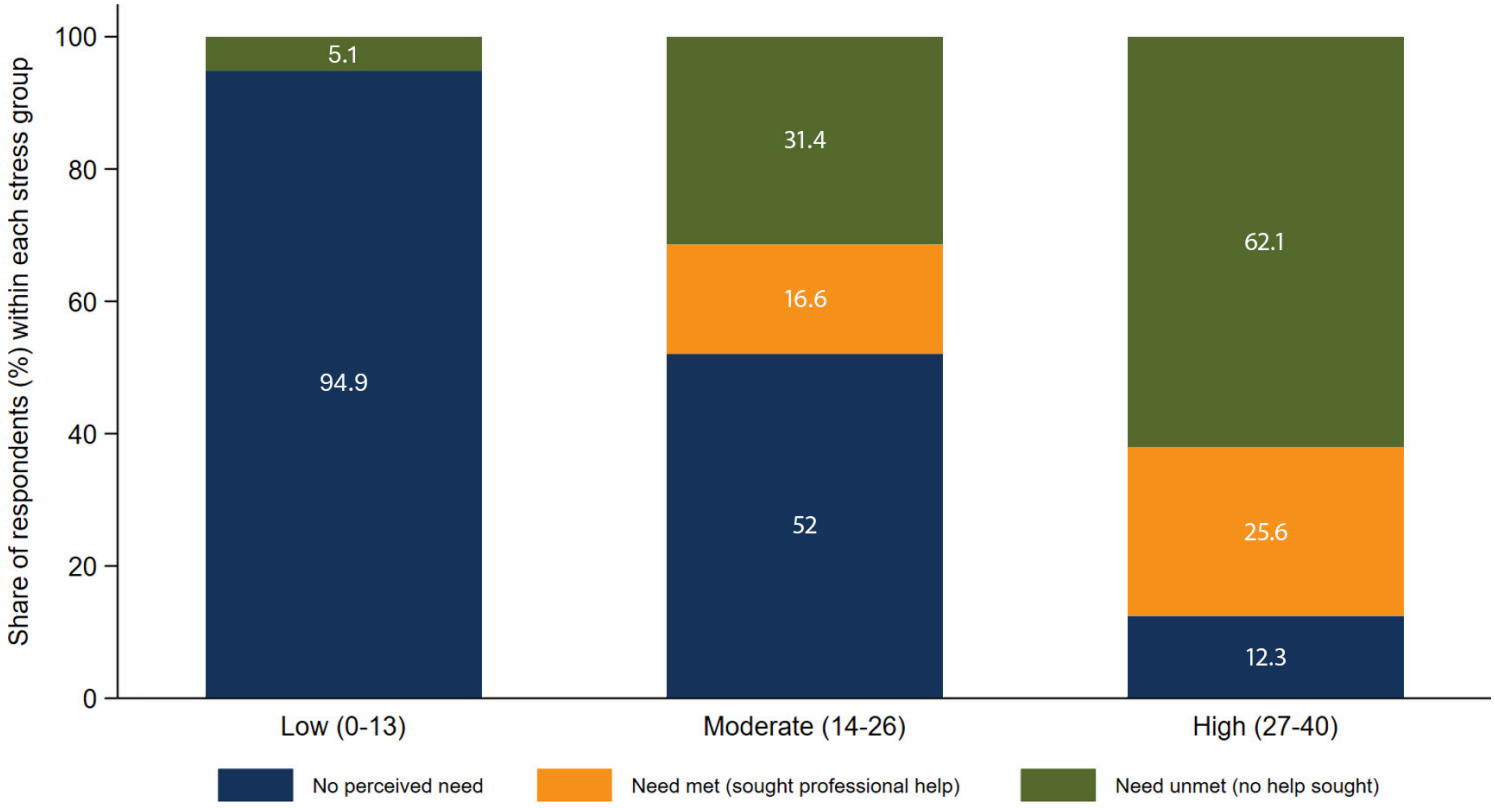


Figure 3

Stress-to-care cascade by perceived stress group.

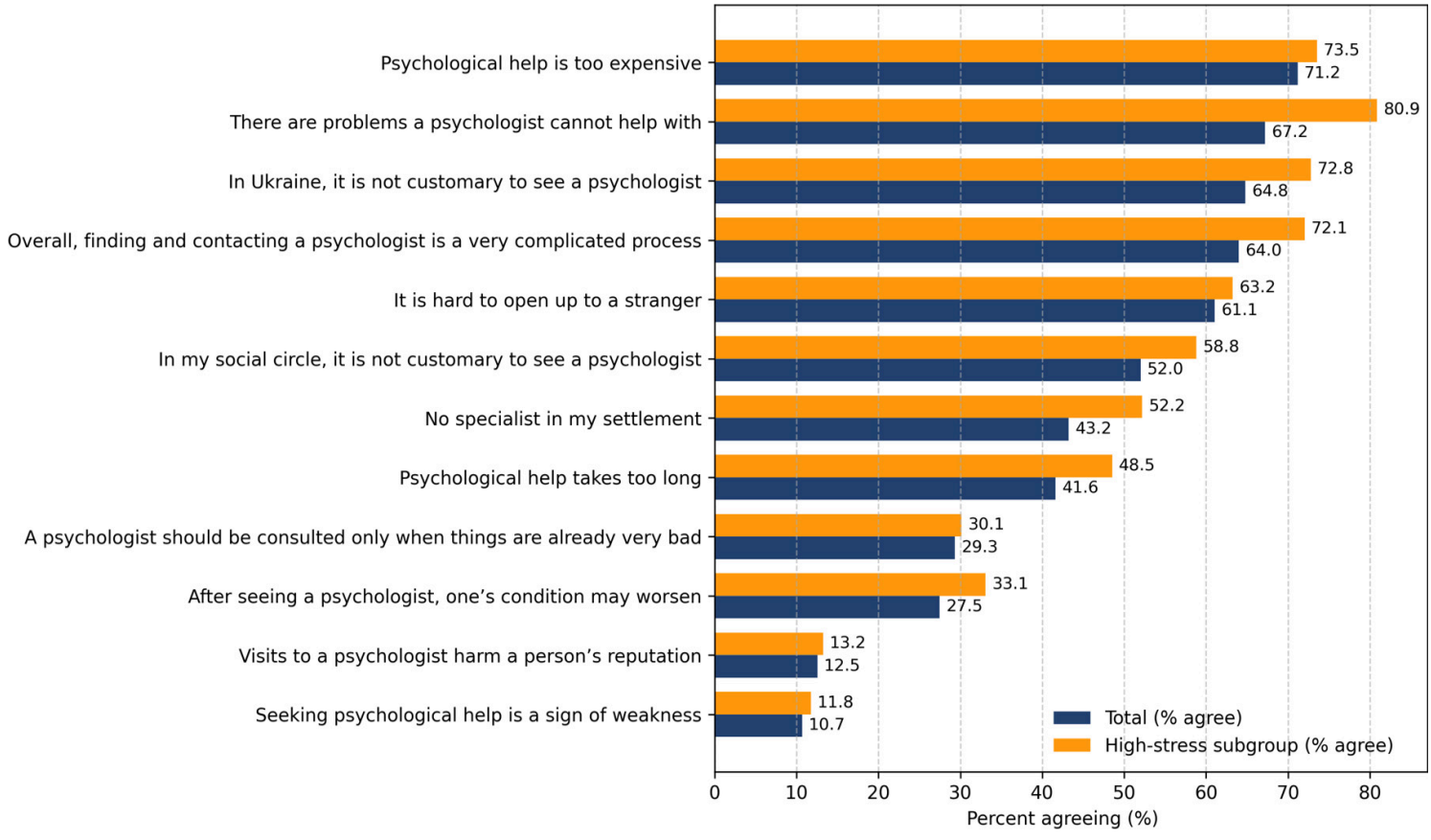


Figure 4

Barriers to seeking professional psychological help among all respondents with unmet need (n=375) and those with high stress (n=136).

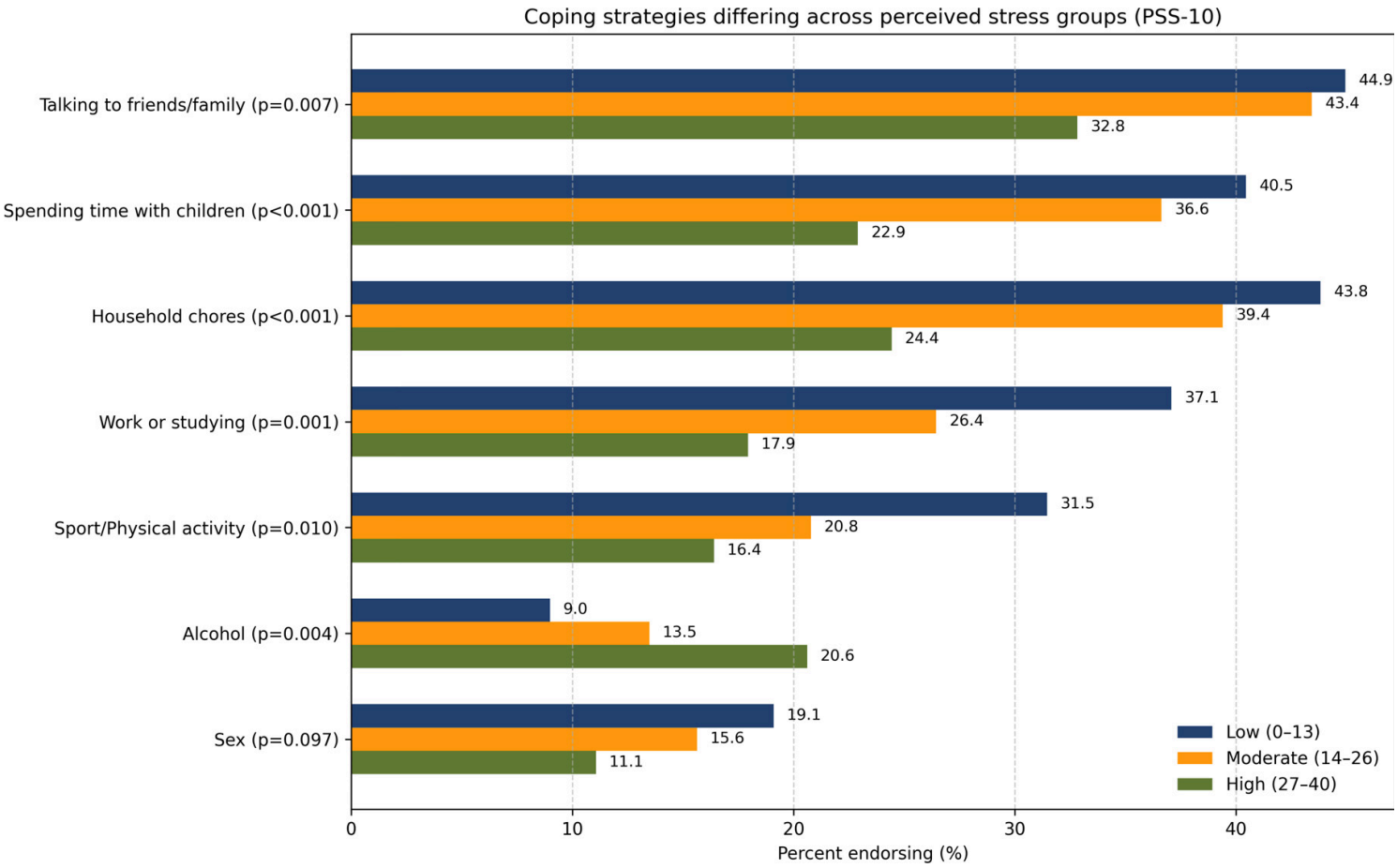


Figure 5

Coping strategies by perceived stress level.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- Table1.docx
- SupplementaryInformation.docx