

The dual burden of loneliness: Linking family separation to life satisfaction among Ukrainian refugee women

Nataliia Levchuk^{1, 2}, Domantas Jasilionis^{1,3}, Lisa Kriechel⁴, Martin Bujard⁴*

¹ Max Planck Institute for Demographic Research (MPIDR), Rostock, Germany

² Ptoukha Institute for Demography and Social Studies (IDSS), Kyiv, Ukraine

³ Max Planck - University of Helsinki Center for Social Inequalities in Population Health (MaxHel Center), Rostock, Germany

⁴ Federal Institute for Population Research (BIB), Wiesbaden, Germany

Extended abstract

Introduction

War-related displacement has profound and far-reaching consequences for various dimensions of individuals' lives. As a life-disrupting experience, forced displacement significantly impacts the psychological well-being and health of refugees, not only due to the traumatic events endured in their home countries but also because of the challenges associated with adapting to new cultural, linguistic, and social environments (Bogic at al. 2015; Joly & Wheaton 2015; Ambrosetti et al. 2021). The Russian invasion of Ukraine in February 2022 and the subsequent prolonged war has caused an unprecedented wave of migration to Europe, with Germany receiving the largest number of Ukrainian refugees— approximately 1.22 million as of May 2025. Compared to other refugee groups in Europe, Ukrainian refugees show quite distinct features. First, this group is predominantly composed of women, with half accompanied by minors (Brücker et al. 2023). Second, a substantial proportion of these women are married but currently residing in Germany while separated from their partners in Ukraine. Due to martial law, nearly all men of conscription age (with a few exceptions) are required to remain in the country and cannot travel abroad. Thus, understanding the determinants of well-being for this distinctive group is crucial for their successful integration into German society.

Prior research shows that among the many challenges refugees face in a host country, family separation and loneliness are particularly common and impactful experiences (Löbel 2020; Ali-Naqvi at al. 2023). While loneliness can have various causes, partner separation is one of its strongest predictors (Dykstra & Fokkema 2007; Barjaková at al. 2023). Women are especially vulnerable to emotional loneliness following the loss or absence of a partner due to separation (Weiss, 1973). In the context of Ukrainian refugee women, the forced and prolonged separation from their partners due to the war likely increases their risk of experiencing loneliness and related distress. In addition to separation-related loneliness, refugees may face a range of various post-arrival challenges that can also adversely affect their well-being. However, most prior studies on refugee wellbeing in Germany have focused on forcibly displaced populations from Syria, Afghanistan, and Iraq, which usually rely on male-dominated samples (Belau et al. 2021; Walther et al. 2022; Löbel et al. 2022). Despite growing interest in the well-being of Ukrainian refugees (Buchcik et al. 2023; Milewski et al. 2023; Van Tubergen et al. 2023), loneliness as a specific

consequence of war-related partner separation remains largely understudied. Moreover, to our knowledge, no study has systematically explored the interplay between separation, loneliness, and integration difficulties and their combined effects on the life satisfaction of Ukrainian refugees.

This study addresses two key research gaps:

1. It focuses on perceived loneliness resulting from war-related family separation as a distinct and underexplored form of distress among forcibly displaced refugee women.
2. It examines how loneliness and integration barriers jointly relate to life satisfaction using structural equation modeling, contributing to understanding of pathways linking separation, loneliness, and well-being.

Our main research question is: How is loneliness, arising from forced family separation due to war-related displacement, associated with integration barriers and life satisfaction among refugee women?

Specifically, we test the following hypotheses:

H1: separation is negatively associated with life satisfaction;

H2: loneliness mediates this relationship;

H3: Loneliness acts as a key intermediary linking forced partner separation to integration barriers.

Using a unified analytical framework and a structural equation model based on a serial-parallel mediation design, we analyze the multidimensional role of loneliness in shaping the life satisfaction of displaced women. By testing these pathways, our study offers new insights on how separation-related loneliness and structural challenges of integration are linked to women's well-being in a displacement context.

Data and Methods. We used the first wave of the IAB-BiB/FReDA-BAMF-SOEP Survey, "Refugees from Ukraine in Germany", which was conducted shortly after the escalation of the war in Ukraine between August 2022 and September 2022. A total of 11,754 Ukrainians aged 18-87 participated in the survey. Our sub-sample includes women in partnership, defined as those who are married or in a stable relationship: 5,311 women aged 18 to 71. Of these, 3087 (58.6%, $M_{age} = 40.1$, $SD_{age} = 10.2$) had partners who remained in Ukraine, while 2197 (41.4%; $M_{age} = 40.1$, $SD_{age} = 13.4$) had partners who stayed in Germany (with 27 cases (0.5%) missing).

Measures. **DV:** *life satisfaction*, measured using a single-item global life satisfaction Likert scale based on the question: "How satisfied are you with your life in general?", with responses ranging from 0 ("Totally dissatisfied") and 10 ("Totally satisfied").

Mediators: *Loneliness*, assessed using a direct, single-item measure in which participants were asked to what extent the statement "I feel lonely" applied to them. Responses were recorded on a 5-point scale ranging from 1 ("Does not apply at all") to 5 ("Fully applies"). Although this single-item measure does not explicitly differentiate between social and emotional loneliness, its timing and context are critical. The survey was conducted shortly after participants' displacement and arrival in Germany, when many Ukrainian women had been recently and forcibly separated from their partners due to the war and martial law. Building on this context and prior research identifying separation as a significant factor of loneliness, we conceptualized loneliness in our study as the emotional toll of separation, reflecting the distress women experience being apart from their partners who remain in a war-torn country. This interpretation aligns with Weiss' (1973) theoretical distinction between emotional and social loneliness when emotional loneliness arises from the absence of a close attachment figure.

Integration barriers: represent subjective challenges that refugees may encounter when adapting to a host country. Instead of relying on objective indicators such as employment status, we assessed perceived barriers in three key areas: language proficiency, social integration, and economic/health concerns. They are identified through exploratory and confirmatory factor analyses.

IV: Family separation was determined based on a question about the current place of residence of respondent's partner: "In what country does your partner live now?". Women were categorized as separated if their partners lived in Ukraine and non-separated if their partners lived in Germany. This definition focuses exclusively on separation from a partner and does not account for other forms of separation that may occur due to war-related displacement, such as separation from children or other close family members.

Methods: we employed structural equation modeling (SEM) with mediation analysis to assess the role of loneliness arising from forced family separation due to war-related displacement in the associations between separation, integration barriers, and life satisfaction among refugee women. The analysis proceeded as follows.

First, we estimated a direct association model (Model 1) to assess the relationship between family separation and life satisfaction: Family separation → Loneliness. Given the context of forced displacement, we expect that the absence of a partner is linked to lower life satisfaction among women.

In Model 2, we introduce loneliness as a single mediator to examine its indirect association with life satisfaction: Family separation → Loneliness → Life Satisfaction. As a subjective emotional response to separation from a partner, loneliness is expected to mediate the relationship by capturing the emotional costs of separation.

Models 3 examined more complex pathways involving both loneliness and integration barriers as potential mediators. We hypothesized that forced partner separation is associated with increased emotional loneliness, which may be linked to greater integration difficulties and, in turn, lower life satisfaction. Drawing on stress and emotional-cognitive processing theories (Lazarus, 1999), we propose that emotional distress from separation may reduce the cognitive and emotional resources needed for successful integration in the host society.

Specifically, Model 3 tested a serial-parallel mediation model, in which loneliness functions as a serial mediator and three integration barrier factors operate as parallel mediators. Accordingly, our model assumes the following directional pathways:

Family Separation → Loneliness → Integration barrier factors → Life Satisfaction

Loneliness → Life Satisfaction (direct parallel path)

Family Separation → Life Satisfaction (direct path)

Integration barriers. To identify which integration barriers have the strongest mediating effects – whether exacerbating or mitigating – we conducted an exploratory factor analysis to uncover the underlying dimensions of integration difficulties and determine the optimal number of factors. This was followed by a confirmatory factor analysis to validate the factor structure and estimate factor loadings. We specified structural equation models using the lavaan package in R and estimated them using Maximum Likelihood (ML) with Full Information Maximum Likelihood (FIML) to handle missing data.

Results.

Factor structure of integration barriers. Through exploratory factor analysis we identified a three-factor structure, namely language proficiency (F1), social integration (F2) and economic/health concerns (F3). The first factor, language proficiency, includes writing, reading, and speaking abilities in German, with strong standardized factor loadings (>0.7). This factor demonstrates high reliability and validity, with composite reliability (CR)=0.79, and average variance extracted (AVE)=0.47, supporting its internal consistency and construct validity. The second factor, social integration, encompasses contacts with Germans, contacts with non-relative Ukrainians and feeling welcome. Factor loadings vary, with contacts with Germans showing the strongest association (0.62), while contact with Ukrainians (0.32) and feeling being welcome (0.27). This factor exhibits low reliability and validity (CR=0.55, AVE=0.32), falling below conventional thresholds. The third factor, concerns, captures economic and health worries, and perceived financial difficulties, has moderate standardized factor loadings (ranging from 0.31 to 0.69). This factor shows marginally moderate reliability (CR=0.68; AVE=0.38), suggesting that while it does not fully meet strict reliability criteria, the construct remains meaningful within the model. Although factors 2 and 3 had low to moderate reliability, we retained them due to their theoretical importance and significant indirect effects in the SEM model.

Model 1: Direct association between family separation and life satisfaction

To test H1, we examined the direct link between family separation and life satisfaction. Family separation had a small but significant negative effect ($b = -0.17$, 95% CI [-0.26, -0.06], $SE = 0.06$, $\beta = -0.04$, $p = 0.001$), suggesting that displaced Ukrainian women with partners remaining in Ukraine report lower life satisfaction than those whose partners are in Germany. The explained variance was low ($R^2 = 5.0\%$).

Model 2: Mediation through loneliness

To test H2, we introduced loneliness as a mediator. The direct effect of separation on life satisfaction became non-significant ($b = 0.09$, 95% CI [-0.02, 0.20], $p = 0.115$). Separation was strongly linked to increased loneliness ($b = 0.63$, 95% CI [0.56, 0.70], $p < 0.001$), which in turn was negatively associated with life satisfaction ($b = -0.41$, 95% CI [-0.46, -0.37], $p < 0.001$). The indirect effect ($b = -0.26$, 95% CI [-0.30, -0.22], $p < 0.001$) supports full mediation by loneliness. Including loneliness increased the explained variance to 11.7%.

Model 3: Serial-parallel mediation through loneliness and integration barriers

In Model 3, we added three mediators reflecting integration barriers: language proficiency (F1), social integration (F2), and economic/health concerns (F3) (Table 1). The direct association between family separation and life satisfaction remained non-significant ($b = -0.03$, 95% CI [-0.12, 0.09], $p = 0.642$), confirming Model 2's results. Instead, the association is fully mediated by loneliness and subsequent integration challenges. Separation strongly predicted loneliness ($b = 0.63$, 95% CI [0.56, 0.70], $p < 0.001$), which remained a significant negative predictor of life satisfaction ($b = -0.24$, 95% CI [-0.30, -0.19], $p < 0.001$).

Among the three integration barriers, economic and health concerns (F3) had the strongest negative effect on life satisfaction ($b = -0.76$, 95% CI [-0.83, -0.69], $p < 0.001$), followed by social integration (F2), which was positively associated ($b = 0.33$, 95% CI [0.22, 0.44], $p < 0.001$). Language proficiency (F1) was not significantly related ($b = -0.05$, 95% CI [-0.12, 0.01], $p = 0.055$). Additionally, loneliness was negatively linked to social integration ($b = -0.12$, 95% CI [-0.16, -0.08], $p < 0.001$) and positively linked to economic and health

concerns ($b = 0.16$, 95% CI [0.13, 0.19], $p < 0.001$). This pattern suggests its important role in observed associations where social connectedness appears weaker and economic and health vulnerabilities are higher when loneliness is present.

Table 1. Results of serial-parallel mediation SEM model examining the association between family separation and life satisfaction through loneliness and integration barriers: Model 3

Pathway	Estimate (b)	SE	p-value	Bootstrap 95% CI	Standardized (β)
Direct effects:					
Separation \rightarrow Life satisfaction: c' path	-0.03	0.06	0.642	[-0.12; 0.09]	-0.01
Loneliness \rightarrow Life satisfaction: e path	-0.24	0.03	<0.001	[-0.30; -0.19]	-0.17
Separation \rightarrow Loneliness: d path	0.63	0.04	<0.001	[0.56; 0.70]	0.24
Loneliness \rightarrow F1 (Language proficiency): a_1 path	-0.01	0.01	0.231	[-0.04; 0.01]	-0.02
Loneliness \rightarrow F2 (Social integration): a_2 path	-0.12	0.02	<0.001	[-0.16; -0.08]	-0.15
Loneliness \rightarrow F3 (Economic and health concerns): a_3 path	0.16	0.02	<0.001	[0.13; 0.19]	0.20
F1 (Language proficiency): \rightarrow Life satisfaction: b_1 path	-0.05	0.03	0.055	[-0.12; 0.01]	-0.03
F2 (Social integration): \rightarrow Life satisfaction: b_2 path	0.33	0.05	<0.001	[0.22; 0.44]	0.17
F3 (Economic and health concerns) \rightarrow Life satisfaction: b_3 path	-0.76	0.04	<0.001	[-0.83; -0.69]	-0.42
Indirect effects:					
Separation \rightarrow Loneliness \rightarrow Life satisfaction	-0.15	0.02	<0.001	[-0.19; -0.12]	-0.04
Separation \rightarrow Loneliness \rightarrow F1 (Language proficiency) \rightarrow Life satisfaction	0.001	0.001	0.399	[-0.0; 0.002]	0.00
Separation \rightarrow Loneliness \rightarrow F2 (Social integration) \rightarrow Life satisfaction	-0.03	0.01	0.001	[-0.05; -0.02]	-0.01
Separation \rightarrow Loneliness \rightarrow F3 (Economic and health concerns) \rightarrow Life satisfaction	-0.07	0.01	<0.001	[-0.10; -0.06]	-0.02
Total indirect effect	-0.25	0.02	<0.001	[-0.29; -0.25]	-0.06
Total effect: direct (c' path) + total indirect	-0.28	0.05	0.001	[-0.38; -0.17]	-0.07

$n=5,311$. $R^2=29.0\%$. Fit statistics: $\chi^2(83)=1124.47$, $p<0.001$, CFI=0.932, TLI=0.901, RMSEA=0.049, SRMR=0.035. Controlled for age, education, employment, accommodation, having kids, intention to stay in Germany. F1, F2, F3 – integration barriers: F1 - Language proficiency; F2 - Social integration; F3 - Economic and health concerns. Bootstrapping with 500 resamples was used to generate standard errors and 95% confidence intervals.

While Model 2 showed that loneliness mediates the link between separation and life satisfaction, Model 3 further clarifies the pathways through which loneliness is connected to life satisfaction. Loneliness is directly associated with lower life satisfaction and indirectly linked through increased economic and health concerns and reduced social integration. The total indirect effect of separation on life satisfaction via loneliness and integration barriers is significant ($b = -0.25$, 95% CI [-0.29, -0.21], $p < 0.001$), accounting for most of the total effect ($b = -0.28$, 95% CI [-0.38, -0.17], $p < 0.001$).

These results, while based on cross-sectional data, support Hypothesis 3 and emphasize the central role of loneliness in the relationship between family separation and life satisfaction. As shown in Table 2,

the largest share of the indirect effect comes from the direct path from loneliness to life satisfaction (59.4%), followed by paths through economic and health concerns (29.7%) and social integration (10.9%). Language proficiency does not significantly contribute. The explained variance in life satisfaction increased notably in Model 3 ($R^2 = 29\%$).

Table 2. Contribution of indirect pathways to the total indirect effect of family separation on life satisfaction

Pathway	Standardized (β)	% contribution to total standardized indirect effect
Separation → Loneliness → Life satisfaction	-0.04	59.4
Separation → Loneliness → F1 (Language proficiency) → Life satisfaction	0.00	0.0
Separation → Loneliness → F2 (Social integration) → Life satisfaction	-0.01	10.9
Separation → Loneliness → F3 (Economic and health concerns) → Life satisfaction	-0.02	29.7
Total indirect effect	-0.06	100.0

Percentage contributions represent the proportion of the total indirect effect explained by each pathway. $n=5,311$. Fit statistics: $\chi^2(83)=1124.47$, $p<0.001$, CFI=0.932, TLI=0.901, RMSEA=0.049, SRMR=0.035. Controlled for age, education, employment, accommodation, having kids, intention to stay in Germany. F1, F, F3 – integration barriers, F1 - Language proficiency; F2 - Social integration; F3 - Economic and health concerns.

This study examined how war-related forced family separation, particularly the involuntary separation of Ukrainian refugee women from their partners due to wartime mobility restrictions, is associated with loneliness, integration challenges, and life satisfaction during early resettlement in Germany. Our study contributes to the literature in three key ways. *First*, we conceptualize loneliness as an immediate emotional response to forced separation, particularly acute during the initial stage of displacement. In our model, partner separation is treated as the primary source of this distress, which is consistent with Weiss's theoretical framework on emotional loneliness (Weiss 1973). The involuntary nature of these separations introduces unique psychological burdens and may result in deep loneliness during the early resettlement. *Second*, while previous research has established an association between family separation and lower life satisfaction and mental health problems in the refugee context (Walther et al. 2020; Georgiadou et al. 2020; Löbel & Jacobsen 2021), we extend this work by showing that this relationship is fully mediated by loneliness and integration barriers rather than being direct. *Third*, by modeling integration barriers as parallel mediators following loneliness, we explore the distinct pathways through which separation and loneliness are associated with well-being. Specifically, we analyze three dimensions of integration: language proficiency, social integration, and economic and health concerns. Whereas many studies found that integration difficulties can worsen loneliness, we argue that reciprocal relationship may be also at play, when emotional loneliness rooted in separation trauma can undermine integration of newly arrived female refugees. Overall, our study underscores the dual burden of loneliness in forced displacement— as an emotional strain and a structural barrier to integration. This perspective is particularly relevant for understanding the experiences of newly arrived refugees when loneliness might be not just a psychological state but also a challenge to integration and well-being.

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