

Living conditions and the mental health and well-being of refugees:

Evidence from a large-scale German survey

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Abstract

Background: Refugees are at an increased risk of mental health problems and low subjective well-being. Living circumstances in the host country are thought to play a vital role in shaping these health outcomes, which, in turn, are prerequisites for successful integration.

Methods: Using data from a representative survey of 4,325 newly-arrived adult refugees living in Germany, we investigated how different living conditions, especially those subject to integration policies, are associated with psychological distress and life satisfaction using linear regression models.

Results: Our findings show that an uncertain legal status, separation from family and living in communal housing are related to higher levels of distress and decreased life satisfaction. Being employed, contact to members of the host society and better host country language skills by contrast, are related to reduced distress and higher levels of life satisfaction.

Discussion: These associations should inform decision making in a highly contested policy area.

Key words: refugees; mental health; well-being; integration

Introduction

Research has consistently shown that refugees are at a particular risk of facing mental health problems (reviewed in e.g. 1, 2, 3, 4, 5). Despite a substantial between-study heterogeneity in refugees' mental illness prevalence rates, forced migration has persistently been linked to increased rates of mental illnesses, chiefly, post-traumatic stress disorder (PTSD), depression and anxiety disorder (e.g. 5, 6, 7). Refugees are particularly at risk of facing psychological distress as sequelae of traumatic or stressful experiences before or during flight (4, 8, 9).

However, studies also indicate that the refugee mental health burden has roots beyond discrete traumatic experiences or the experience of displacement. A review of studies on refugee mental health and its predictors shows that the psychological burden of the refugee experience is substantially elevated even when refugee mental health is compared to the mental health of other groups exposed to war and violence (10).

Studies based on large-scale survey data have also shown substantially lower levels of overall subjective well-being amongst immigrant populations compared to natives (11, 12). Even when migration leads to economic prosperity, it may remain associated with lower levels of well-being (13, 14).

Importantly, well-being and mental health are not just outcomes of past experiences, but equally of present social, cultural, and economic circumstances (15). While research on the effects of pre-migration stressors on mental health dominates the literature, post-migration stressors seem to have an equally substantial impact. In addition to migration-related acculturative stress (see 16, 17, 18), factors associated with refugees' mental health and well-being include uncertainty related to legal proceedings, detainment in refugee camps, discrimination, social isolation, financial problems, unemployment, separation from family, safety concerns, and uncertainty about the country of origin's future (reviewed in 5, 9, 10, 19). Further studies show that the subjective well-being of migrants in general is associated with host country language proficiency and identification

(20) and that it is linked to the quality of public goods, the climate of immigrant reception, and the extent of economic inequality after migration (21).

Some of these post-migratory stressors are directly affected by integration policies and measures in a hosting country. Since successful integration depends on mental health and well-being as vital personal resources (19, 22), what is at stake is the prevention of a vicious cycle between poor mental health as a consequence of traumatic experiences and post-migratory stress, functional impairments, and the exacerbation of post-migration stressors.

The present study investigates how the mental health, measured using a psychological distress scale, and subjective well-being, specifically life satisfaction, of recently arrived refugees in Germany is associated with different integration measures designed to promote integration and with other general post-flight living conditions. In particular, we examined the relationship between psychological distress and life satisfaction and the following factors: (a) the outcome of the asylum process, (b) seeking family reunification, (c) type of housing, (d) being in education, (e) being employed, (f) attendance of integration and language courses, (g) time spent with persons from country of origin, with German nationals, and with persons from other countries, and (h) German language ability.

Methods

Data and Participants

The data used in this study comes from the first wave (2016) of the IAB-BAMF-SOEP dataset, an annual, representative survey of 4,465 adults (at least 18 years of age), predominantly refugees and asylum seekers who arrived in Germany between January 1, 2013 and January 31 (see 23, 24 for details). Respondents completed the survey in computer-assisted face-to-face interviews by trained interviewers using audio files in five different languages. Participation was voluntary.

A total of 27 respondents were excluded from our analysis on the basis that they were mandated to leave Germany within the coming month because in these cases, self-reported

measures of mental health and well-being at the time of completing the survey is a priori unlikely to reflect the integration measures and living conditions we are interested in evaluating. We excluded 92 further respondents from our analysis on the basis that they were members of the sampled asylum seekers' household who were not themselves refugees who had arrived in Germany between 2013 and 2016, resulting in an analysis sample size of 4,325 respondents.

Measures

Dependent Variables

To measure mental health, we used a well-validated indicator of psychological distress, the PHQ-4 (25, 26, 27). This 4-item battery uses a 4-point Likert-type scale (scores 0-3) to screen for depression and anxiety with two separate scores or to yield a single overall measure of the degree of psychological distress ranging from 0 (no distress) to 12 (severe distress) (25). Here, we used the PHQ-4 as a measure of psychological distress, in accordance its most widely used definition of as a state of emotional suffering characterized by symptoms of depression (depressed mood and anhedonia) and anxiety (uncontrollable worrying and feeling nervous) (28). The internal consistency of the scale was acceptable in our sample (Cronbach's alphas = 0.77). Life satisfaction, understood as the cognitive-evaluative dimension of subjective well-being, was measured using a well-validated standard single-item measure (e.g. 29, 30).

Independent Variables

Control variables: Levels of education were aggregated according to ISCED standards as follows: low level of education (early childhood education, primary education, lower secondary education), medium level of education (upper secondary, post-secondary non-tertiary education, short-cycle tertiary education), high level of education (bachelor's or master's degree or equivalent, doctoral or equivalent degree). Nationality was reduced to categories with at least 100 observations: Syrian, Afghan, Iraqi, Eritrean, Other. Time in Germany was measured in months passed between arrival in Germany and the time of the interview. Negative flight experiences were coded as 'yes' if

any of a list of seven possible negative experiences (financial scams or exploitation, sexual assault, physical assault, shipwreck, robbery, extortion, imprisonment), as ‘no’ if none of these experiences were reported and ‘wished not to report’ if the respondent chose not to answer the section on flight experiences.

Integration measures and post-migratory living conditions: The legal status variable was created by combining the report of a received refugee or asylum status into one category, and counting both reports of awaiting the outcome of the initial asylum procedure and reports of awaiting the outcome of a repeal of the initial asylum procedure as ‘awaiting outcome’. The family reunification variable was conceived as a binary variable assigning a ‘yes’-value to reports of having either a spouse or any number of children born prior to 1998 and planning to bring these family members to Germany. Currently in education includes any kind of education (school, university or doctoral studies, vocational training, professional development course). Our employment status variable comprises a ‘yes’ category for any form of employment reported (full or part time, marginally employed, internships or traineeships), a ‘no’ category for a report of no current employment but seeking employment and a ‘not seeking employment’ category. Course participation was measured as the total number of courses attended out of five integration courses or general language courses. Social contacts are measured as amount of time spent with members of different communities, ranging from ‘never’ to ‘daily’. German language ability was measured as the averaged self-reported speaking, reading, and writing ability. See the SI Appendix for details.

Analysis

All statistical analyses were conducted using R version 3.5.0 (31).

We imputed missing data in all of the variables used for analysis through multivariate imputation using chained equations using the mice R package (32) (ten imputed datasets created, ten iterations, seed = 41) (see SI Appendix for missings per analysis variable). To improve the accuracy of the imputation, we used auxiliary variables selected for their theoretical relatedness to

the to-be-imputed variables (see SI Appendix). Only auxiliary variables with a minimum correlation of $r = 0.1$ with to-be-imputed variables were used in the imputation (33). We also specified the relationship between variables in our imputation predictor matrix as necessary to avoid circularity and improve accuracy.

Descriptives, as shown in Table 1, were calculated as means and standard errors or percentages. The weighted values shown in the final two columns of Table 1 were produced using the survey weights supplied by the Socioeconomic Panel of the DIW Berlin (23).

In our central analysis, we calculated and pooled ten multiple, multivariate, hierarchical linear regressions to estimate associations between psychological distress and life satisfaction and variables reflecting integration measures and refugees' post-migratory living conditions. The baseline models (1a, 1b in Figure 1) predict psychological distress and life satisfaction from control variables age, sex, level of education, nationality and time since arrival in Germany. Subsequent models (2a, 2b in Figure 1) include a variable representing negative experiences during flight. For the full models (3a, 3b in Figure 1), we added all key predictors (a-h) mentioned above. We did not weight our regression, but included the factors that went into the sampling design as independent variables (e.g. 23, 34 pg 57).

We assessed the statistical significance of the difference between Models 1 and 2 and Models 2 and 3, respectively, using Wald Tests implemented using a function for the comparison of nested models fitted to imputed data (32, 35).

Our SI Appendix includes our models using unimputed data as robustness checks.

Informed consent and ethical approval

All participants provided informed consent; the Institutional Review Board of the German Institute for Economic Research approved the study.

Results

Table 1. Analysis Variable Descriptives

Variable Name	Unweighted Mean (SE) or Prop.	Weighted Mean (SE) or Prop.	Weighted, Imputed Mean (SE) or Prop.	Range
Distress	3.1 (0.04)	3.34 (0.07)	3.38 (0.07)	0-12
Life satisfaction	7.26 (0.04)	6.89 (0.06)	6.9 (0.06)	0-10
Male	62.13%	73.5%	73.5%	
Female	37.87%	26.5%	26.5%	
Age	33.57 (0.16)	30.94 (0.25)	30.94 (0.25)	18-76 yrs
Low level of education	60%	57.1%	58.7%	
Medium level of education	21.4%	24.4%	24.1%	
High level of education	18.6%	18.5%	17.3%	
Syria	49.9%	41.2%	41.2%	
Afghanistan	13.9%	17.3%	17.3%	
Iraq	12.4%	8.8 %	8.8 %	
Eritrea	5.5%	4.8%	4.8%	
Other	19.3%	31.2%	31.2%	
Time since arrival	1.58 (0.01)	1.34 (0.02)	1.35 (0.02)	0 - 3.92 yrs
No Negative experiences	33.5%	29.8%	30.1%	
Negative experiences	33.9%	36.4%	36.4%	
No answer on flight experiences	32.6%	33.8%	33.5%	
Refugee or asylum status	55.2%	45.4%	45.2 %	
Subsidiary protection	3.2%	2.4%	2.4%	
Suspension of deportation	2%	1.8%	1.8%	
Awaiting outcome	39.6%	50.4%	50.5%	
Family reunification plans	9%	12.4%	12.5%	
Collective accommodation	34%	48%	47.6%	
Private accommodation w/ other refugees	32.3%	27.3%	27.4%	
Private accommodation w/o other refugees	33.6%	24.7%	24.9%	
Currently in education	5.5%	6.1%	6.1%	
Currently working	10.4%	11.9%	11.9%	
Currently not working	82%	82.3%	82.3%	
Not seeking work	7.6%	5.8%	5.8%	
Number of courses attended	0.85 (0.01)	0.85 (0.02)	0.85(0.02)	0-5
Time with people from country o. origin	3.87 (0.03)	4.17 (0.04)	4.17 (0.04)	1-6
Time with Germans	3.68 (0.03)	3.7 (0.05)	3.7 (0.05)	1-6
Time with others	2.88 (0.03)	3.23 (0.05)	3.23 (0.05)	1-6
German language ability	2.58 (0.01)	2.59 (0.02)	2.59 (0.02)	1-5

Descriptives

As shown in Table 1, the mean psychological distress score (sample mean = 3.1, se = 0.04) is slightly above the cutoff for the PHQ-4's cutoff for mild distress (3). Mean life satisfaction is at 7.26/10 points in the sample. Fewer women (37.87%) than men were included in the sample; however, women were still overrepresented compared to the proportion in the general population of refugees who arrived in Germany between 2013 and 2016 (26.5%), as shown in the weighted columns. The mean age in the sample was 33.57 years (se = 0.16, range: 18-76), compared to 30.94 years (se = 0.25) in the population. Syrians (49.9%; 41.2% in population) and Afghans were overrepresented in the sample (13.9%; 17.3% in population), whereas 'Other' nationalities (13.9%;

17.3% in population) were underrepresented. Beyond these sociodemographic features, Table 1 also shows mean score or percentages for all further analysis variables.

Control variables

Figure 1 shows that females refugees are worse off than males in terms of psychological distress, but report higher levels of current life satisfaction across Models 1a-3a and 1b-3b. Older respondents reported greater distress than younger respondents across Models 1a-3a. Higher levels of education are associated with lower life satisfaction in Models 1b-3b, but have no effect on psychological distress. Afghans exhibit greater levels of distress than Syrians in Models 1a-3a and higher levels of life satisfaction in models 2b and 3b (see SI Appendix Table S2 for nationalities beyond Afghan and Iraqi, which were omitted from Figure 1 for clarity). Finally, time since arrival in Germany is related to reduced distress and increased life satisfaction when the factors included in models 3a and 3b, which are also related to the duration of stay in Germany, are not considered. Negative experiences during flight, as well as explicitly not wanting to answer questions on the details of the flight experiences, are related to lower life satisfaction in Models 2b-3b. Negative experiences are also related to higher levels of distress in Models 2a-3a. The addition of negative flight experiences constitutes a significant, albeit small improvement in model fit.

Integration measures and post-migratory living conditions

The addition of post-migratory contextual factors again constitutes a significant improvement in model fit, with a greater increase in R^2 in the life satisfaction model than in the distress model. The legal outcomes protection and suspension of deportation, both of which grant a mere one-year right to stay, are linked to elevated levels of psychological distress compared to the positive outcome of being granted the legal status of refugee or asylee. However, neither is linked to life satisfaction. Crucially, awaiting a response on the legal outcome of the asylum application, either for the initial outcome or for a decision after an appeal to the initial outcome has been submitted, is associated with higher levels of psychological distress and lower life satisfaction.

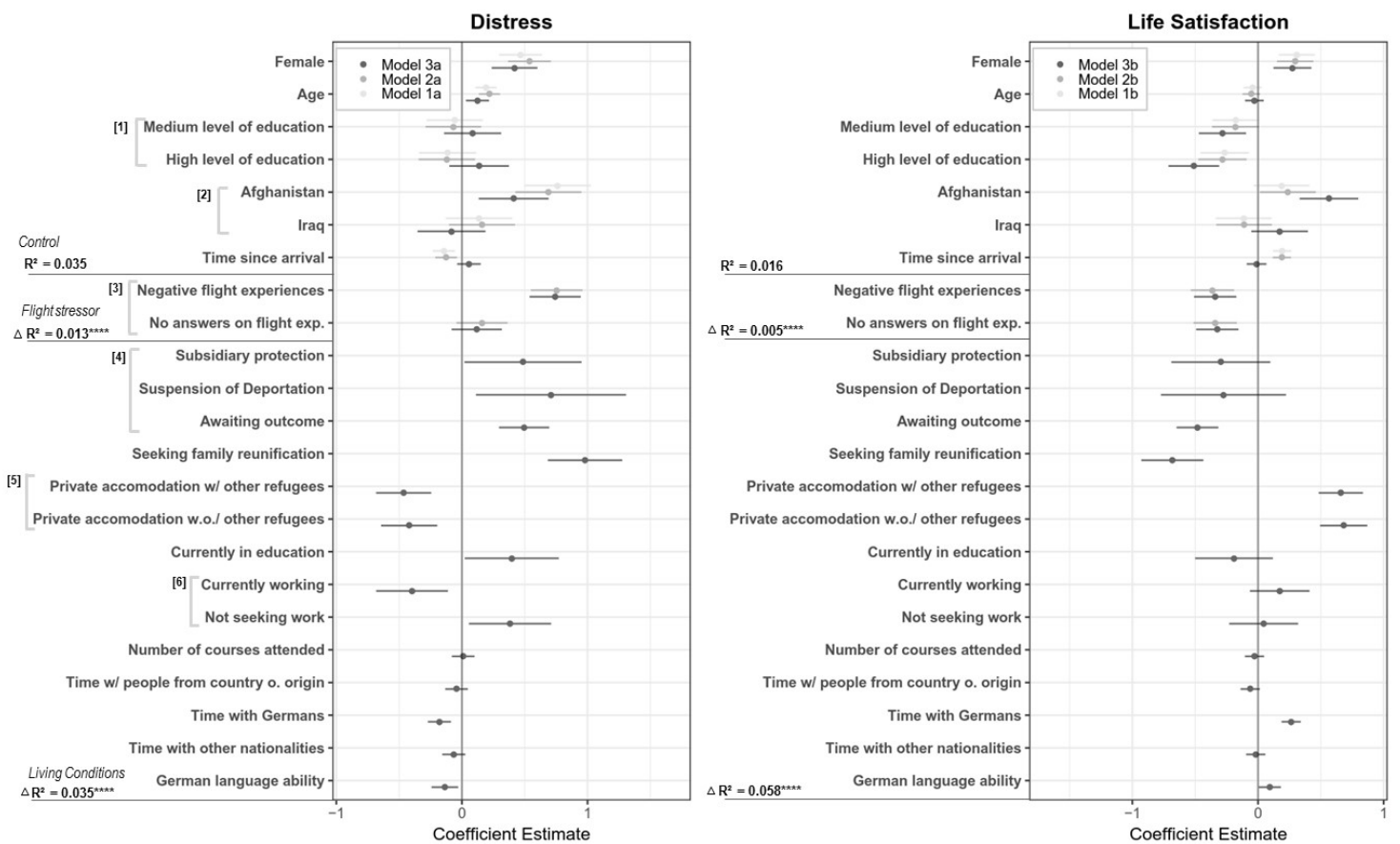


Figure 1. Plotted estimated regression coefficients with error bars (95% CI). Hierarchical regressions comprising three models each. Regression coefficient estimates pooled across 10 imputed datasets. Predictor variables are standardized for comparison purposes. [1] Reference category is low level of education, [2] reference category is Syria, [3] is no negative experiences during flight, [4] reference category is status refugee or asylum, [5] reference category is collective refugee accommodation, [6] reference category is currently not working. Reference categories for the categorical predictors: sex: male; family reunification: not seeking reunification with a spouse or an underaged child; currently in education: currently not in education; * $p < .05$, ** $p < .01$, *** $p < .001$, **** $p < .0001$ for model comparisons.

Those seeking to reunite with underage children or with a spouse living outside Germany are more distressed and less satisfied with life than those not seeking family reunification.

Housing conditions are significantly associated with our outcome measures. Private housing with or without other refugees sharing the accommodation is related to lower levels of psychological distress and higher levels of life satisfaction compared to communal housing.

Currently being in education is related to elevated levels of distress. Furthermore, being in the workforce is associated with reduced levels of distress. Interestingly, however, employment does

relate to life satisfaction according to our analysis. Finally, more time spent with the native German population and better German language skills are associated with lower levels of distress and increased life satisfaction.

Discussion

Overall, our results support and specify previous claims linking refugees' mental health and well-being in the first years after arrival to post-migratory living conditions, many of which are subject to integration policies. In particular, our study shows that the legal hurdles refugees face while securing their future life in the host country are related to higher levels of distress. Policy makers should thus consider the potentially negative impact of an uncertain legal status, acknowledging that a large proportion of refugees who are granted a less secure status (mostly cases of subsidiary protection) end up having this status renewed and remain in their host country for several years (36). This is further corroborated by our finding that refugees who are awaiting the outcome of the asylum process exhibit both lower levels of mental health and well-being compared to those with a relatively secure legal status. This is consistent with previous studies indicating the detrimental consequences of lengthy asylum procedures for mental health (e.g., 37). Our results suggest that policies facilitating family reunification could enhance well-being and reduce psychological distress among refugees. While the UN Refugee Convention states that family unity is among the essential rights of refugees, and Article 8 of the European Convention on Human Rights calls for flexible and prompt decision making, many European countries have restricted the options for reunification since 2015 (38).

Looking beyond these legal aspects, we find that, in line with the existing literature (39), staying in collective rather than in private accommodation is associated with poorer mental health and well-being. Although self-selection might play an important role here, it seems plausible that collective accommodation, which often means living in crowded quarters with limited privacy, restricted autonomy, and isolation from the local community, in fact causes or exacerbates health

issues. Residing in collective accommodation may also come with safety concerns, for example in light of the frequency of attacks on refugee accommodation in many host countries (40). This is especially so for women (e.g., 41, 42), who in our sample exhibit notably higher levels of distress (but also higher levels of life satisfaction). Since collective accommodation is also designed to be temporary, this additional dimension of uncertainty could also play into the association we found.

Whilst being employed is associated with reduced psychological distress in our study, as well as in other studies (e.g., 43), it is not linked to higher levels of satisfaction as in most studies using general population samples (44). These instances where mental health and well-being come apart demonstrate how measures classically used in research on integrations miss the emotional toll of certain circumstances (45). This instance might be due to the expectations of refugees regarding the norm of being employed. In contrast to the native population, where being part of the workforce is socially expected, refugees might have and face different expectations and legal hurdles to employment. Surprisingly, being in education is linked to greater distress. This calls for research on the mental health and well-being of refugees in host country education programs.

Finally, our study shows that contacts to the native population and host country language ability are associated with mental health and well-being, in keeping with existing research (46). The causal direction of this relationship is just as likely one or the other, however. Theoretically, it is equally plausible that refugees suffering from low levels of well-being struggle to engage in language learning and seeking out social contacts and that the absence of both is detrimental to well-being. Accounting for these possibilities, our results speak in favor of efforts to ease access to integration measures that facilitate language learning and contact between refugees and members of the host society, for example by connecting these to psychosocial services. This conjecture is also supported by the finding that time spent with Germans is positively associated with both mental health and well-being, while time spent with non-relatives from the country of origin and time spent

with people from other countries is related to neither. This suggests that it is not social connections per se that are most important to refugees, but connections to the host society specifically.

Limitations

The primary limitation of our study is the correlative nature of the evidence. Our study design did not allow for conclusions about a causal relationship between living conditions and mental health and well-being. Furthermore, whilst the cross-cultural validity of the PHQ-4 has been tested in Arabic-speaking refugees in Germany (27), the validity of mental health scales across cultural backgrounds is contentious (47, 48). A selection bias favoring those with higher levels of mental health and well-being is also likely to underlie sampling for this survey (49). Finally, the applicability of our findings to other host societies is questionable, considering the vast differences in policies and other contingencies even between Western European countries. Nonetheless, Germany is a highly relevant case because it has adopted the largest number of refugees in the European Union. By the end of 2016, the population of refugees reached 1.3 million people, with 441.900 new asylum applications submitted in 2015 and 722.400 claims made in 2016 (50).

New Contributions to the Literature

In summary, our study finds that greater certainty and stability, in the form of a secure legal status, non-temporary housing, family reunification, and social anchoring in the host society through language abilities and contacts are linked to better mental health and well-being in the early years after arrival. To our knowledge, these associations have not been shown in a similarly large, rigorously collected survey dataset on newly arrived refugees.

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