ORIGINAL ARTICLE

Loneliness among refugees in Germany - On the significance of flight, host country conditions and personality traits

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Abstract

Aim Previous studies on loneliness among refugees have focused in particular on refugee and host country conditions. The present study expands the state of research by taking into account selected personality traits and additional indicators relating to refugee and host country conditions. The aim is to analyse loneliness among refugees from a more holistic perspective.

Methods The study is based on a secondary data analysis of the IAB-BAMF-SOEP survey of refugees from 2016. The data set consists on the statements of 4,465 refugees surveyed.

Results The statistical results indicate that almost one in three refugees feels lonely in Germany. Loneliness is statistically linked to certain personality traits, such as fear, control beliefs, and negative reciprocity, as well as to factors related to the flight and living conditions in the host country. Specifically, leaving the country of origin alone, not participating in counseling and language courses, feeling unwelcome, and living in shared accommodation are associated with higher levels of loneliness.

Conclusions Individual and community approaches are necessary to combat the widespread loneliness among refugees. Individual approaches can give refugees prospects by empowering them to seek social contact. Community approaches, such as the expansion of meeting, counselling and language services, could create opportunities for refugees to establish social contacts.

Keywords Refugees · Loneliness · Host country conditions · Flight conditions · Personality traits

Introduction and research question

Loneliness is a negative feeling and results from the desire of those affected to socialise and belong because they feel alone and lost (Nguyen et al. 2024; Park et al. 2020). The concept of loneliness captures the subjective dimension and the concept of social isolation captures the objective dimension of being alone and is based on the quantitative survey of social contacts (Johnson et al. 2019). Wolters et al. (2023) pointed out that people can feel lonely despite social contacts if these are not perceived as fulfilling.

Leaving their country of origin due to (civil) war, armed conflict, persecution or threats is a traumatic experience for refugees and is often associated with the loss of family members, friends and acquaintances (Hajak et al. 2021; Jerusalem et al. 1996). In the host country, refugees face the challenge of orientating themselves in a new social environment, learning the language of the host country and building a new social network (Ryan et al. 2008). It is therefore not surprising that refugees suffer from loneliness much more frequently than the host society. Löbel et al. (2022) found in their empirical study that around 30% of refugees feel lonely in Germany, while the corresponding figure for the German population is 15%.

Experiencing loneliness is associated with serious health consequences. People who feel lonely often suffer from negative moods, depression, reduced social and psychological well-being (Park et al. 2020; Wolters et al. 2023). In addition, studies show that lonely people also often develop an unhealthy lifestyle characterised by smoking, physical inactivity, unhealthy eating and drinking behaviours (Johnson et al. 2019). In addition, the feeling of loneliness is associated with a higher burden of disease and a higher risk of death (Beutel et al. 2017). In connection with their loneliness, refugees often experience post-traumatic stress

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disorder and harbour suicidal thoughts (Leigh-Hunt et al. 2017; Nguyen et al. 2024).

To date, there have been a few studies that examine the question of how the loneliness of refugees can be explained (Johnson et al. 2019; Löbel et al. 2021; Nguyen et al. 2024). Rüdel and Joly (2024) used an explanatory model that takes into account the flight conditions and the host country conditions to investigate perceived loneliness. The present study builds on the study by Rüdel and Joly (2024).

Rüdel and Joly (2024) define escape conditions as the motivation to flee and the traumatic experiences that the refugees have experienced on their way to Germany. For the present study, the question arises as to whether a further differentiated consideration of traumatic experiences enables a deeper understanding of loneliness. Trust in people is likely to be permanently damaged if, for example, one has been the victim of sexual harassment, blackmail or robbery while fleeing. In addition, it certainly plays a role in explaining loneliness whether you fled your country of origin alone or with others.

In addition to social conditions, Rüdel and Joly (2024) also consider the legal regulations of the host country for the integration of refugees. Conditions in the host country determine if the refugees control the access to resources and thus the opportunities to maintain social contacts (Rüdel and Joly 2024). Other host country conditions include the experience of discrimination, labour market participation, the relative size of the migrant group and the unemployment rate in the region (Rüdel and Joly 2024). The final two of the aforementioned regional characteristics analysed by Rüdel and Joly (2024) are not related to loneliness and will therefore not be considered further in this study. Residence status, housing conditions, household composition (with partner and/or children), perceived welcoming culture, use of counselling and language courses are also included in the host country conditions in this study. This is because these contextual characteristics offer a sense of belonging, as well as support and contact opportunities for the refugees that could therefore be related to loneliness.

In the present study, selected personality traits complement the explanatory approach of Rüdel and Joly (2024). These include the anxiety, control beliefs and reciprocity attitudes of the refugees, which are also taken into account to explain the loneliness of refugees.

Anxiety is an emotional state that arises in connection with threats and uncertainty. As part of a meta-analysis Henkelmann et al. (2020) came to the conclusion that the prevalence of anxiety is between 21% and 35% for refugees. The authors attributed the high proportion to traumatic migration and flight experiences as well as the uncertainty they experienced regarding their application for a right to residence and their future prospects in the host country (Henkelmann et al. 2020). Peconga and Høgh Thøgersen (2020) pointed out that the prevalence of anxiety among refugees is statistically significantly higher than that of the general population. Wolters et al. (2023) found in their study that anxiety and loneliness mutually influence each other. They assume that anxiety contributes to shyness, to negative perceptions of others, to social withdrawal and thus to loneliness (Wolters et al. 2023). However, this association has not yet been investigated for refugees.

Control beliefs are beliefs about how one's life can be influenced and are one of the most studied characteristics in psychology (Rotter 1990). Rotter (1966) distinguished between internal and external control beliefs. According to Rotter (1966), people with internal control beliefs think that they themselves exert influence on the events in their lives. In contrast, people with external control beliefs maintain that external events, such as fate, chance and influential forces, have an impact on their own lives (Rotter 1966). Peplau and Perlman (1979) assumed that those affected attribute causes to loneliness. For example, from the refugees' point of view, loneliness can be caused by war and flight and thus by external events or by a lack of language skills and opportunities and thus have internal causes. Peplau and Perlman (1979) pointed out that those with internal control beliefs are more likely to see themselves as responsible and more likely to be able to fulfil their desire for social relationships. While those with external control beliefs, according to Peplau and Perlman (1979) blame others and are therefore more likely to be unable to build social relationships. However, this thesis has not yet been empirically proven for refugees.

Perugini et al. (2003) pointed out that reciprocity can be understood as a mutual exchange in social relationships and that reciprocal behaviour is widespread in all cultures. They illustrated this with the fact that people tend to reward helpful behaviour exhibited towards them and punish hurtful behaviour (Perugini et al. 2003). Perugini et al. (2003) differentiated between positive and negative reciprocators that are differently sensitised to interpersonal experiences, reciprocal exchange behaviour and fairness in social relationships. They state that positive reciprocators tend to prioritise and reward positive experiences more in social relationships in order to establish fairness (Perugini et al. 2003). Negative reciprocators, on the other hand, attach greater importance to hurtful experiences in social relationships and tend to sanction them in order to establish fairness (Perugini et al. 2003). Buunk and Schaufeli (1999) showed that pronounced reciprocal behaviour is associated with a low level of loneliness, while a low level of reciprocal behaviour is associated with a higher level of loneliness. There is a lack of studies that differentiate between positive and negative reciprocal behaviour among refugees and examine said behaviour in relation to loneliness.

In light of these research gaps, the research question for this study can be defined as follows:

1. How is a refugee's experience of loneliness associated by personality traits (outlined above) and by the flight conditions and host country conditions?

Methodical approach

Data basis

To analyse the research question, a secondary data analysis was carried out using the IAB-BAMF-SOEP survey from 2016 (Kroh et al. 2016). This panel study drew upon a sample from the Central Register of Foreigners of refugees who came to Germany between 2013 and 2016, regardless of their residence status. (Babka von Gostomski et al. 2016). The survey was conducted in the form of face-to-face interviews in English, Arabic, Farsi and Pashto, among other languages. The response rate was 48.7% (Babka von Gostomski et al. 2016; Brücker et al. 2018). Data from a total of 4,465 respondents is available.

The data set is made up as follows: 62.1% (n=2773) of the respondents are male and 37.9% (n=1692) are female. The average age of the refugees in the sample is 33.4 (SD=±10.38). 51.4% (n=2297) of the respondents have a school-leaving qualification; 17.0% (n=759) have a university degree and 26.7% (n=1193) have no school-leaving qualification. Of the respondents, 69% (n=3082) are Muslim; 14.6% (n=650) are Christian; 7.6% (n=340) have a different religious affiliation; and 6.3% (n=282) are not religious. 32% (n=1459) of respondents live in shared accommodations. 89% (n=3982) of respondents are unemployed, 7.9% (n=352) are at least marginally employed. 54.1% (n=2414) of respondents have a residence or permanent residence permit; 39.1% (n=1744) have a temporary residence permit or tolerated stay; and 4.5% (n=202) have another residence title. Of the refugees surveyed, 49% (n=2189) come from Syria, 12.9% (n=578) from Iraq and 12.8% (n=573) from Afghanistan, to name the three most common countries of origin.

Weighting factors are available in the data set to compensate for deviations between the realised sample and the population. The results are weighted and presented below. It should be noted that 905 cases (20.3%) were excluded from the following analyses because they had at least one missing value in the variables relevant to the present study.

Operationalisation

The questions and items for operationalising the constructs can be found in Table 1. For measurement instruments, the reliability coefficient Cronbach's alpha is given, which can assume a value between 0 and 1. The closer the Cronbach's alpha value is to 1, the more reliably the items measure the construct (Cronbach 1951). In addition, the mean value and the standard deviation for the measurement instrument are shown on the basis of the calculated mean value scale.

The motivational questions on leaving the country of origin and fleeing to Germany are analysed using a categorical principal component analysis (Linting and van Kooij 2012). They were reduced to four dimensions and summarised because the response categories were partly redundant. The dimensions represent the following motives for fleeing: Germany's attractiveness, family/friends in Germany, fear of war and fear of forced recruitment, persecution and discrimination.

Data analysis

SPSS 29 was used for the statistical analyses. In the first step, univariate analyses were carried out to map the distribution of loneliness amongst refugees. In the second step, bivariate analyses were specified in order to relate the selected personality traits, the flight conditions and the host country conditions to the refugees' perception of loneliness. The multivariate results are based on the results of the linear regression analysis in order to determine the relationship between loneliness and the personality traits, flight conditions and host country conditions, taking control variables into account.

Results

Univariate and bivariate results

The univariate results (see Table 2) show that loneliness in the present study is 27% of the refugees surveyed and is thus comparable with the results of Löbel et al. (2022).

The bivariate results (see Table 2) indicate that all personality traits are statistically significantly related to loneliness. Refugees who tend to be lonely have a higher level of anxiety ($p<0.001$; CV=0.11), a lower level of internal locus of control ($p<0.001$; eta^2=0.018) and positive reciprocal attitudes ($p<0.01$; eta^2=0.002) and a higher level of external control beliefs ($p<0.001$; eta^2=0.028) and negative reciprocal attitudes ($p<0.001$; eta^2=0.018).

The perceived reception conditions of the refugees are also statistically significantly (at least $p<0.001$, see Table 2) related to loneliness. Refugees who (very) often feel lonely stated that 58% of them live in shared accommodation ($p<0.001$; Cramer's V = 0.16). Refugees who almost (never) feel lonely are relatively more likely to live with their partner or with their child/children in a household than refugees who (often) feel lonely ($p<0.001$; Cramer's V = 0.15 and 0.13 respectively). Refugees who feel very (often) lonely only have a residence and permanent residence permit in 40% of cases and only 9% are employed ($p<0.001$; CV =

Table 1 Operationalisation

Concept	Questions / Items	Response categories	Source	Cron-bachs Alpha	Mean value	Standard deviation
Escape conditions						
Fled alone	"Did you arrive in Germany alone or together with family members or friends/acquaintances?"	"Alone", "With family members", "With friends/acquaintances", "With other people"	TNS Infratest Social Research (2016b)	-	-	-
Escape experiences	"Did one or more of the following events happen to you while travelling or fleeing?"	"Economic fraud/exploitation", "Sexual harassment", "Physical assault", "Shipwreck", "Robbery", "Extortion", "Prison sentence", "No, none of the above"	TNS Infratest Social Research (2016b)	-	-	-
Escape motivation	"What were the main reasons for you to leave your country of origin?"	"Fear of violent conflict / war", "fear of forced recruitment into the military or armed groups", "persecution", "discrimination", "poor personal living conditions", "general economic situation in the country", "I wanted to move in with family members", "my family sent me", "because family members left this country", "because friends / acquaintances left this country", "other reasons"	TNS Infratest Social Research (2016b)	-	-	-
Escape motivation	"What were the reasons for you to move to Germany and not to another country?"	"Because family members already live here", "Because friends or acquaintances already live here", "Because many other people from my country of origin already live here", "Because of the economic situation in Germany", "Because of respect for human rights in Germany", "Because of the German education system", "Because of state and social welfare", "Because of the feeling of being welcome in Germany", "Because of the German asylum procedure", "It just so happened", "Other reasons"	TNS Infratest Social Research (2016b)	-	-	-

Table 1 (continued)

Concept	Questions / Items	Response categories	Source	Cron- bachs Alpha	Mean value	Standard deviation
Host country conditions						
Shared accommodation	"What type of accommodation does the interviewee live in?"	"In shared accommodation", "In a private flat, a private house"	TNS Infratest Social Research (2016a)	-	-	-
Partner / children in the household	"Where does your spouse / partner / children live today?"	"Here in the household / in the institution", "Here at the location, but in another household / institution", "Elsewhere in Germany", "In the country of origin", "Elsewhere abroad"	TNS Infratest Social Research (2016b)	-	-	-
Residence. status	"What residence permit do you currently have?"	"A residence permit pursuant to Section 55 of the Asylum Act (asylum seeker)", "A residence permit pursuant to Section 25 (1) of the Residence Act (asylum seeker)", "A residence permit pursuant to Section 25 (2) of the Residence Act (refugee status)", "A settlement permit pursuant to Section 26 (3) of the Residence Act", "A tolerated stay pursuant to Section 60a of the Residence Act", "A residence permit pursuant to Section 22 or Section 23 of the Residence Act (humanitarian admission)", "Other reasons"	TNS Infratest Social Research (2016b)	-	-	-
Employment status	"Are you currently employed?"	"Yes, fully employed", "Yes, in part-time employment", "Yes, marginally or irregularly employed", "Yes, in company training / apprenticeship or company retraining", "Yes, in company internship", "No, I am not employed"	TNS Infratest Social Research (2016b)	-	-	-
Utilisation of language courses	"Have you taken part in an integration course / ESF-BAMF course / German language support from the Federal Employment Agency / Perspectives for (young) refugees / other German language course?"	"yes", "no"	TNS Infratest Social Research (2016b)			

Table 1 (continued)

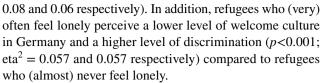| Concept	Questions / Items	Response categories	Source	Cron-bachs Alpha	Mean value	Standard deviation
Host country conditions						
Utilisation of consultations	"The following questions are about whether you know certain advice centres and information services here in Germany and whether you have already made use of them: Refugee and asylum counselling, migration counselling, youth migration service, general labour market counselling, career counselling"	"Yes, I have already made use of it", "Yes, but I haven't made use of it yet", "No, I don't know"	TNS Infratest Social Research (2016b)			
Welcoming culture	"Do you feel welcome in Germany today?"	"Completely (1)" to "Not at all (5)"	TNS Infratest Social Research (2016b)	-	-	-
Experience of discrimination	"How often have you personally experienced being disadvantaged here in Germany because of your origin?"	"Frequently", "Rarely", "Never"	TNS Infratest Social Research (2016b)	-	-	-
Personality traits						
Loneliness (UCLA)	Example item: "How often do you feel that you lack the company of others?"	"Very often (1)" to "Never (5)"	Russell (1996); Jacobsen et al. (2017)	0.68	2.96	±0.94
Anxiety (Generalised anxiety disorder - GAD 2)	Example item: "How often have you felt affected by the following complaints in the last two weeks? Nervousness, anxiety or tension?"	"Not at all (0)", "On individual days (1)", "On more than half of the days (2)", "(Almost) every day (4)"	Russell (1996); Jacobsen et al. (2017)	0.72	0.86	± 0.84
Personality traits						
Internal control convictions	Example item: "How my life turns out depends on me."	"Do not agree at all (1)" to "Fully agree (7)"	Jacobsen et al. (2017)	0.18	5.41	±0.84
External control convictions	Example item: "The opportunities I have in life are determined by my social circumstances."	"Do not agree at all (1)" to "Fully agree (7)"	Jacobsen et al. (2017)	0.49	4.06	±1.16
Negative reciprocal settings	Example item: "If I am severely wronged, I will avenge myself at any cost at the next opportunity."	"Does not apply at all (1)" to "Fully applies (7)"	Perugini et al. (2003); Jacobsen et al. (2017)	0.75	1.84	±1.30
Positive reciprocal attitudes	Example item: "If someone does me a favour, I am prepared to reciprocate."	"Does not apply at all (1)" to "Fully applies (7)"	Perugini et al. (2003); Jacobsen et al. (2017)	0.56	6.64	±0.66

Table 1 (continued)

Concept	Questions / Items	Response categories	Source	Cron-bachs Alpha	Mean value	Standard deviation
Control variables						
Sample	Sample characteristic	M3 = Adult refugees M4 = Minors and families	Brücker et al. (2018)	-	-	-
Gender	"What is your gender?"	"Male", "Female"	TNS Infratest Social Research research (2016b)	-	-	-
Length of stay	"When did you arrive in Germany?"	Year, month	TNS Infratest Social Research research (2016b)		-	-
Children	"How many children do you have?"	Open number	TNS Infratest Social Research research (2016b)	-	-	-
Control variables						
Age	"When were you born?"	"Day, month, year"	TNS Infratest Social Research research (2016b)	-	-	-
Marital status	"What is your marital status?"	"Single, never married", "Married", "Registered partnership", "Divorced", "Registered partnership cancelled", "Widowed", "Life partner from registered partnership deceased"	TNS Infratest Social Research research (2016b)	-	-	-
School-leaving certificate	"What is your highest school-leaving qualification?"	"No school-leaving qualification", "Hauptschulabschluss", "Realschulabschluss", "Abitur", "Other qualification"	TNS Infratest Social Research research (2016b)	-	-	-
Nationality	"What nationality are you?"	Afghanistan etc...	TNS Infratest Social Research research (2016b)	-	-	-
Religious affiliation	"Do you belong to a church, religious community or denomination?"	"Yes, a Christian", "Yes, an Islamic", "other religious community", "No, non-denominational"	TNS Infratest Social Research research (2016b)	-	-	-
Health restriction	"Do you have a health problem that restricts you from carrying out normal everyday activities?"	"Yes, severely restricted", "Yes, somewhat restricted", "No, not restricted"	TNS Infratest Social Research research (2016b)			
Control variables						
German language skills	Example item: "How well do you speak German?"	"Very good", "Good", "It works", "Rather bad", "Not at all"	TNS Infratest Social Research research (2016b)	0.928	2.68	±0.97

Table 1 (continued)

Concept	Questions / Items	Response categories	Source	Cron-bachs Alpha	Mean value	Standard deviation
Contacts in Germany	"How many Germans / people from your country of origin / from other countries with whom you have regular contact have you met since you arrived in Germany?"	Open number	TNS Infratest Social Research research (2016b)	-	-	-
Contact time	"How much time do you spend with friends or acquaintances?"	"Daily", "Several times a week", "Weekly", "Monthly", "Less often", "Never"	TNS Infratest Social Research research (2016b)			
Transnational contacts	"How often do you have contact with family members abroad?"	"Daily", "Weekly", "Monthly", "Less often", "Never"	TNS Infratest Social Research research (2016b)	-	-	-

0.08 and 0.06 respectively). In addition, refugees who (very) often feel lonely perceive a lower level of welcome culture in Germany and a higher level of discrimination ($p<0.001$; $eta^2 = 0.057$ and 0.057 respectively) compared to refugees who (almost) never feel lonely.

An examination of the conditions of flight reveals that a higher proportion of refugees who (very) often feel lonely have travelled to Germany alone than refugees who (almost) never feel lonely (50% vs. 33%; $p<0.001$; Cramer's V=0.12). The refugee experiences differ significantly with regard to the connection with loneliness. Refugees who feel very (often) lonely have more frequently experienced sexual harassment, physical assault, blackmail and imprisonment (min. $p<0.05$). The personal experience of fraud, shipwreck on the way to Germany or robbery did not vary significantly between the different levels of loneliness. The motives for fleeing differ in terms of their connection to loneliness. Refugees who (very) often feel lonely experienced a higher level of fear of persecution and forced recruitment in their country of origin ($p<0.01$; $eta^2=0.004$). Refugees who (almost) never feel lonely came to Germany primarily because of family/friends ($p<0.01$; $eta^2 = 0.003$).

Multivariate results

The results of the multivariate linear regression analysis make it possible to investigate whether statistically significant correlations can be observed between flight, host country conditions, selected personality traits and loneliness, taking control variables into account.

The results of the multivariate linear regression analysis (see Table 3) show that the correlations between loneliness and the selected personality traits are statistically significant (at least $p < 0.01$) with the exception of positive reciprocal attitudes. Accordingly, the higher the level of anxiety, external control beliefs or negative reciprocal attitudes of the refugees, the higher their level of loneliness tends to be ($p<0.001$). In contrast, a low level of internal control beliefs is associated with a higher level of loneliness among refugees ($p<0.01$).

The statistically significant association between loneliness and the indicators for host country conditions include living in shared accommodation ($p<0.001$), living with a partner in the household ($p<0.01$), taking advantage of counselling/language courses ($p<0.05$), perceived welcome culture ($p<0.001$) and experience of discrimination ($p<0.001$). Refugees who do not live in shared accommodation, who live in a household with their partner, who have taken advantage of counselling/language courses, who feel welcome in Germany or do not feel discriminated against tend to have a low level of loneliness.

There is also a statistical correlation between the conditions of flight and loneliness. Refugees who fled alone have a higher level of loneliness than those who fled to Germany with others

Table 2 Univariate and bivariate statistics

		Loneliness (almost)				Test statistics	Strength of association
		never	occasional	(very) often	Total	F- / Chi^2-test	eta^2/ Cramers V
In total	Frequency	985	1627	943	3555		
	Row%	28%	46%	27%	100%		
Personality traits							
Anxiety (mean scale: 0–3)	Mean value	0.46	0.89	1.25	0.87	$p < 0.001$	0.117
Internal locus of control (mean scale: 1–7)	Mean value	5.61	5.43	5.30	5.45	$p < 0.001$	0.018
External locus of control (mean scale: 1–7)	Mean value	3.73	4.07	4.30	4.04	$p < 0.001$	0.028
Positive reciprocity (mean scale: 1–7)	Mean value	6.68	6.62	6.62	6.64	$p < 0.01$	0.002
Negative reciprocity (mean scale: 1–7)	Mean value	1.64	1.90	2.15	1.89	$p < 0.001$	0.018
Host country conditions							
Shared accommodation	Columns%	36%	44%	58%	45%	$p < 0.001$	0.165
Partner in the household	Columns%	50%	40%	30%	40%	$p < 0.001$	0.152
Children in the household	Columns%	47%	37%	29%	38%	$p < 0.001$	0.138
Residence / settlement permit	Columns%	50%	47%	40%	46%	$p < 0.001$	0.080
Employed, in training, etc.	Columns%	14%	10%	9%	11%	$p < 0.001$	0.069
Utilisation of counselling and language courses	Columns%	68%	64%	52%	62%	$p < 0.001$	0.13
Feeling of "being welcome" (1=No - 5=Yes)	Mean value	4.61	4.36	4.01	4.33	$p < 0.001$	0.057
Experiences of discrimination (1=never - 3=frequently)	Mean value	1.34	1.53	1.77	1.54	$p < 0.001$	0.057
Escape conditions							
fled alone	Columns%	33%	40%	50%	40%	$p < 0.001$	0.127
Experience of flight: Fraud	Columns%	18%	19%	22%	19%	n.s.	0.040
Experience of flight: sexual harassment	Columns%	1%	1%	4%	2%	$p < 0.001$	0.083
Experience of flight: Physical assault	Columns%	10%	13%	21%	14%	$p < 0.001$	0.120
Experience of flight: Shipwreck	Columns%	8%	10%	11%	10%	n.s.	0.037
Experience of flight: Robbery	Columns%	10%	12%	13%	12%	n.s.	0.032
Experience of flight: Blackmail	Columns%	9%	8%	18%	11%	$p < 0.001$	0.131
Experience of flight: Prison stay	Columns%	12%	17%	18%	16%	$p < 0.001$	0.065
Motives for flight: Germany's attractiveness	Mean value	−0.02	0.02	−0.02	0.00	n.s.	0.001
Motives for fleeing: Family/friends in Germany	Mean value	0.04	0.04	−0.10	0.00	$p < 0.001$	0.004
Motives for flight: fear of war	Mean value	−0.03	−0.01	0.05	0.00	n.s.	0.001
Motives for flight: fear of persecution, forced recruitment	Mean value	−0.07	0.01	0.06	0.00	$p < 0.01$	0.003

($p<0.001$). In addition, the experience of sexual harassment ($p<0.05$), physical assault ($p<0.001$) and blackmail ($p<0.001$) during flight is associated with a higher average level of loneliness compared to refugees who have not had such experiences. Refugees who came to Germany due to war or persecution have a statistically significantly higher level of loneliness ($p>0.01$). In contrast, refugees who fled to Germany because of family/friends have a low level of loneliness ($p<0.05$).

Discussion

This study complements the previously published results by providing a more comprehensive perspective on the study of loneliness among refugees. Almost one in three refugees feels lonely. This result indicates that feelings of loneliness are widespread among refugees. Personality traits, host country and flight conditions are linked to loneliness.

Anxiety, control beliefs and negative reciprocal attitudes are associated with loneliness. This shows that the relationship remains significant even when controlling for flight and host country conditions. The extent to which these selected personality traits can be interpreted as stable over time or as (in)stable character traits due to flight cannot be answered with the present study. Future longitudinal and comparative analyses could provide more insight.

Fleeing alone to escape war, persecution or forced recruitment is associated with loneliness. Traumatic experiences suffered during flight, such as sexual harassment, physical assault and blackmail, are also associated with a higher level

Table 3 Multivariate linear regression analysis

Dependent variable: Loneliness

	Reg. cof.	Std. error	T	Sig.
Personality traits				
Anxiety (mean scale: 0–3)	0.31	0.02	17.62	$p < 0.001$
Internal locus of control (mean scale: 1–7)	−0.05	0.02	−3.13	$p < 0.01$
External locus of control (mean scale: 1–7)	0.07	0.01	6.18	$p < 0.001$
Positive reciprocity (mean scale: 1–7)	0.01	0.02	0.60	n.s.
Negative reciprocity (mean scale: 1–7)	0.04	0.01	3.79	$p < 0.001$
Host country conditions				
Shared accommodation (0=No; 1= Yes)	0.14	0.03	4.26	$p < 0.001$
Partner in the household (0=No; 1= Yes)	−0.10	0.04	−2.72	$p < 0.01$
Children in the household (0=No; 1= Yes)	−0.02	0.04	−0.57	n.s.
Residence permit/tolerated stay/other (0=No; 1= Yes)	Reference category			
Residence/residence permit (0=No; 1= Yes)	0.01	0.04	0.18	n.s.
Unemployed (0=No; 1= Yes)	Reference category			
Employed, in training, etc. (0=No; 1= Yes)	−0.01	0.06	−0.17	n.s.
Utilisation of counselling and language courses	−0.08	0.03	−2.52	$p < 0.05$
Feeling of "being welcome" (1=No - 5=Yes)	−0.09	0.02	−5.96	$p < 0.001$
Experiences of discrimination (1=never - 3=frequently)	0.22	0.02	10.04	$p < 0.001$
Escape conditions				
Fled alone (0=No - 1= Yes)	0.19	0.03	5.83	$p < 0.001$
Experience of flight: Fraud (0=No - 1= Yes)	−0.06	0.04	−1.51	n.s.
Experience of flight: sexual harassment	0.25	0.11	2.33	$p < 0.05$
Experience of flight: Physical assault	0.20	0.05	4.36	$p < 0.001$
Experience of flight: Shipwreck	−0.03	0.05	−0.59	n.s.
Experience of flight: Robbery	−0.07	0.05	−1.46	n.s.
Experience of flight: Blackmail	0.17	0.05	3.39	$p < 0.001$
Experience of flight: Prison stay	−0.03	0.04	−0.64	n.s.
Motives for flight: Germany's attractiveness	0.01	0.02	0.88	n.s.
Motives for flight: Family/friends in Germany	−0.05	0.02	−3.21	$p < 0.01$
Motives for flight: fear of war	0.00	0.02	−0.21	n.s.
Motives for flight: fear of persecution, forced recruitment	0.03	0.02	1.98	$p < 0.05$
Control variable				
(constant)	2.26	0.21	10.62	$p < 0.001$
Sample M4	Reference category			
Sample M3	0.03	0.03	0.94	n.s.
Gender: female	Reference category			
Gender: male	−0.01	0.04	−0.18	n.s.
Duration of stay in Germany	0.02	0.02	1.25	n.s.
Number of children	0.00	0.01	−0.29	n.s.
Age in years	0.00	0.00	1.54	n.s.
Marital status: single	Reference category			
Marital status: married	0.03	0.04	0.63	n.s.
Marital status: divorced	0.18	0.09	1.94	n.s.
Marital status: widowed	−0.09	0.13	−0.66	n.s.
Monthly net income	6.149E-06	0	0.05	n.s.
School-leaving certificate: none	Reference category			
School-leaving certificate: Secondary level I	−0.07	0.04	−2.00	$p < 0.05$
School-leaving certificate: Secondary level II	−0.01	0.04	−0.32	n.s.
School-leaving qualifications: Other qualifications	−0.13	0.07	−1.76	n.s.
School-leaving qualification: Bachelor's, Master's or doctorate	−0.01	0.04	−0.13	n.s.

Table 3 (continued)

Control variable				
Nationality: Syria	Reference category			
Nationality: Afghanistan	0.00	0.06	0.01	n.s.
Nationality: Albania	−0.07	0.09	−0.76	n.s.
Nationality: Algeria	0.20	0.37	0.55	n.s.
Nationality: Armenia	0.32	0.20	1.61	n.s.
Nationality: Bosnia and Herzegovina	−1.08	0.23	−4.70	p < 0.001
Nationality: Eritrea	0.01	0.08	0.16	n.s.
Nationality: Gambia	0.01	0.17	0.08	n.s.
Nationality: Georgia	0.03	0.20	0.14	n.s.
Nationality: India	−0.09	0.19	−0.46	n.s.
Nationality: Iraq	−0.18	0.06	−3.16	p < 0.01
Nationality: Iran	−0.11	0.09	−1.28	n.s.
Nationality: Kosovo	−0.22	0.11	−2.00	p < 0.05
Nationality: North Macedonia	−0.17	0.13	−1.31	n.s.
Nationality: Nigeria	−0.33	0.15	−2.16	p < 0.05
Nationality: Pakistan	−0.06	0.09	−0.73	n.s.
Nationality: Russian Federation	−0.05	0.15	−0.32	n.s.
Nationality: Serbia	−0.37	0.11	−3.26	p < 0.01
Nationality: Somalia	−0.06	0.12	−0.53	n.s.
Nationality: Ukraine	0.03	0.14	0.21	n.s.
Nationality: Other	−0.11	0.06	−1.82	n.s.
Nationality: Stateless	−0.18	0.09	−2.07	p < 0.05

$r^2 = 0.315$; n = 3555

of loneliness. This result remains statistically significant even when controlling for the host country conditions and the selected personality traits, such as anxiety. The extent to which traumatic experiences are associated with a loss of trust in people and consequently with a higher level of loneliness would have to be clarified with new data collection and analysis.

Refugees who live in a flat with their partner, attend a counselling/language course, feel welcome in Germany or have no experience of discrimination show a statistically significantly low level of loneliness. Unlike the results of the study of Rüdel and Joly (2024), employment status is not significant in the present analysis. This could be related to the fact that only refugees were considered in this study, while Rüdel and Joly (2024) analysed immigrants and refugees with different rights and employment rates.

Limits of the investigation

The present study is based on an analysis of correlative relationships at one point in time. It is therefore not possible to draw any conclusions about cause-and-effect relationships. The present study could be supplemented to include other personality traits such as trust in strangers in order to take additional relevant personality traits into account. The host country conditions could also be expanded to include other small-scale features—such as population density—on the local level. The conditions of flight could be supplemented to include the experiences that the refugees had in their country of origin. Consequently, there are further possibilities to analyse the loneliness of refugees.

Conclusions

From the perspective of health promotion, the outcome of this study offers a starting point for reducing the widespread loneliness of refugees and subsequently strengthening their social and psychological well-being.

(Individual) approaches that aim to reduce refugees' fears and strengthen internal control convictions can be beneficial. Reducing discrimination against refugees and strengthening the culture of welcome is an issue that can be addressed at both local and state levels in order to help reduce loneliness among refugees. Establishing integration policy measures such as advice centers, language courses and opportunities to meet in the neighbourhood should reduce the loneliness of local refugees. Park et al. (2020) mention, for example, the organisation of intercultural workshops to empower refugees. The conditions of flight

cannot be changed afterwards, but may be easier to cope with if it is known how the refugees came to Germany and what their experiences have been. Traumatic experiences in particular certainly require special psychotherapeutic treatment so that refugees can regain their trust in people and build up social contacts in order to reduce their loneliness.

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