Pre- and post-arrival effects on state and development of Refugees' mental health status in Germany.

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BACKGROUND

The European Union countries have recently experienced many refugee arrivals, especially between 2014 and 2016 (EUROSTAT, 2023). Germany, in particular, has received the highest number of asylum applications in Europe since 2012, with a severe peak in 2016 (EUROSTAT, 2024). More than 3 million people were registered as seeking protection in Germany at the end of 2023 (Statistisches Bundesamt, 2024). Previous research has shown that the mental health of refugees is worse than that of natives and other immigrants (Bjärtå et al., 2018; Grochtdreis et al., 2022; Jesuthasan et al., 2018). The refugee's mental health and well-being are affected by traumatic experiences in the country of origin, but also during travel (Georgiadou et al., 2017; Silove et al., 2017). The effects of these experiences affected their health for a long time; refugees are reported to suffer from PTSD and other psychiatric disorders after the migration (Blackmore et al., 2020; Giacco et al., 2018; Kaltenbach et al., 2018). Moreover, refugees also suffer stress factors in the country of arrival, facing discrimination and difficulties in adaptation and obtaining refugee status (Hajak et al., 2021; James et al., 2019).
This study aims to investigate pre-arrival and post-arrival characteristics that could affect the mental health of refugees in the long term in the same sample. This analysis is possible because we will use the IAB-BAMF-SOEP Survey of Refugees, allowing us to explore both the pre-arrival and longitudinal post-arrival information from 2016 to 2020.
We address two research questions:
1) Which pre-arrival characteristics influence the initial mental health of the refugees at the first interview?
2) Which changes in everyday life affect the mental health of the refugees over the first five years in Germany?

DATA

We use data from the German IAB-BAMF-SOEP Survey of Refugees, a specific sample of the German Socio-Economic Panel (G-SOEP), a yearly representative survey organised by the German Institute for Economic Research. The survey included people who arrived in Germany for humanitarian reasons from 2013 to 2016 and included people who were granted and not still granted a refugee permit (D.I.W., 2023). The first sample was interviewed in 2016, and it included 5,047 people. Another additional sample of 3,073 individuals was added in 2017 to make the Refugees' sample more representative. The participants were extracted randomly from the Central Register of Foreigners held by the German Federal Office for Migration and Refugees (BAMF) (Goebel et al., 2019; Kühne et al., 2019). We only considered participants

older than 17 because the questionnaire differs for under-18-year-olds. We also limited the participants to those younger than 61 at the first interview because we aimed to consider the labour market opportunities and, thus, economic independence. The analysis of this paper focuses also on a longitudinal perspective. Thus, we considered only 1,882 individuals who completed the 2016/2017 questionnaire and participated in the 2018 and 2020 follow-up survey rounds.

RESPONSE VARIABLE

We assess the mental health status through the Mental Component Score (MCS) derived from the SF-12 questionnaire (Ware et al., 1995). The MCS is calculated from mental-health-related items of the SF-12. The SF-12 is the short and valid version of the SF-36 questionnaire that was developed to assess health status in the mental and physical fields (Ware et al., 1995). In the case of the refugee sample, the SF-12 questionnaire is administered during the first interview (in 2016 and 2017 for this study) and then every second year of the surveys (2018 and 2020). The MCS varies from 0 to 100 (0 is the worst mental health, and 100 is the best mental health). In Table 1, the MCS means and confidence intervals are reported at a 95% level, broken down by sex and the three survey years.

Table 1. MCS means and 95% confidence intervals for sex and the survey years.

	Survey year	Mean	[95% confidence interval]
Male	2016/2017	49.5	[48.8, 50.1]
	2018	50.2	[49.6, 50.8]
	2020	50.7	[50.1, 51.2]
Female	2016/2017	46.4	[45.5, 47.3]
	2018	47.8	[46.9, 48.7]
	2020	50.0	[49.2, 50.8]

METHODS

Our analysis is organised in two steps: an analysis of the mental health (MCS) and the impact of the pre-arrival information collected in 2016/2017 and a longitudinal analysis of the mental health for the information collected in 2016/2017, 2018 and 2020.

We constructed the pre-arrival analysis using a stepwise regression approach, using ordinary least-squared linear regressions since MCS is a continuous variable. Due to the limited space, we have only presented the final model.

For the longitudinal analysis, we used a fixed-effect regression. The purpose of this technique is to compare the differences within individuals over time and then average the differences across the individuals (Allison, 2005). Our analysis allowed us to observe the change within the participants between 2016 and 2020.

RESULTS

PRE-ARRIVAL RESULTS

Table 2. Linear regression for the MCS in 2016/2017 for the pre-arrival information (Obs. 1880)

	coefficient	**Confidence interval (95%)**
Age at survey year	-0.03	[-0.09,0.02]
Female (Ref. Male)	**-3.6*** **	**[-4.7,-2.5]**
Origin area (Ref. Syria)		
Iraq	0.6	[-1.1,2.3]
Afghanistan	**-3.2*** **	**[-5.1,-1.3]**
Eritrea	**5.1*** **	**[2.5,7.8]**
Iran	**-5.8*** **	**[-9.1,-2.4]**
Other	**-2.0***	**[-3.9,-0.08]**
SES in origin country (Ref. Well below average)		
Well above average	2.3	[-0.4,5.0]
Above average	**3.4** **	**[1.1,5.6]**
Average	**2.3***	**[0.2,4.3]**
Below average	2.1	[-0.2,4.4]
Missing	**3.6***	**[0.09,7.1]**
Number of reasons for leaving the country	**-0.5*** **	**[-0.9,-0.2]**
Education in origin country (Ref. Well below average)		
Lower secondary education	-0.2	[-1.6,1.2]
Upper secondary	0.3	[-1.1,1.7]
University education	-1.2	[-2.7,0.3]
Number of traumatic events during the journey	**-0.9*** **	**[-1.4,-0.5]**
Having Debt for the Journey	-1.1	[-3.2,1.1]
Migrating first to another country	0.4	[-0.7,1.5]
Survey Year 2017 (Ref. 2016)	0.9	[-0.1,2.0]
Days to travel to DE	-0.001	[-0.005,0.002]
Score reasons to move to DE	-0.06	[-0.4,0.3]
AIC	14432.1	
BIC	14559.5	

*95% confidence intervals in brackets; * p<0.05; ** p<0.01; *** p<0.001

POST-ARRIVAL RESULTS

Table 3. Fixed effect regression for MCS in 2016/2017, 2018, and 2020 for the post-arrival information (Obs. 1880)

	coefficient	**Confidence interval (95%)**
Employment (Ref. Inactive)		
Fully employed	0.7	[-0.6,2.0]
Partially employment	1.1	[-0.02,2.2]
Training	0.1	[-1.3,1.5]
Actively searching for a job	0.5	[-0.3,1.4]

Legal status (Ref. In Proceedings)		
Protection status granted	-0.04	[-1.3,1.2]
Protection not granted	0.5	[-1.4,2.5]
Other	-0.07	[-2.4,2.3]
Missing	0.3	[-6.7,7.3]
Worried not to stay in DE (Ref. No worry)		
Major concerns	-0.9	[-1.7,0.0007]
Some worries	**-1.2****	**[-2.1,-0.4]**
Missing	1.4	[-2.9,5.7]
Worried about finances (Ref. No worry)		
Major concerns	**-3.6*****	**[-4.5,-2.6]**
Some worries	**-1.0***	**[-1.8,-0.2]**
Missing	-1.7	[-7.7,4.2]
Worried About Hostility to Foreigners (Ref. No worry)		
Major concerns	**-2.1****	**[-3.5,-0.6]**
Some worries	**-1.6*****	**[-2.4,-0.8]**
Missing	-0.7	[-5.4,4.1]
Worried of not being able to return to Origin Country (Ref. No worry)		
Major concerns	**-2.6*****	**[-3.5, -1.6]**
Some worries	**-1.2****	**[-2.0, -0.5]**
Missing	-2.4	[-4.9, 0.2]
Satisfaction with Living Situation General	**0.3*****	**[0.2, 0.5]**
Other refugees in the building (Ref. No)		
Yes, some	0.07	[-0.9,1.1]
Yes, a lot	-0.9	[-1.8,0.02]
Missing	-0.8	[-2.0,0.3]
Taking part in a BAMF integration course	0.3	[-0.3,1.0]
German Proficiency	-0.02	[-0.1,0.08]

*95% confidence intervals in brackets; * p<0.05; ** p<0.01; *** p<0.001

PRELIMINARY CONCLUSIONS

The MCS of the refugees in the years considered improved (which means a positive change in the mental health status), even if the last measurement was assessed during the first year of the COVID-19 pandemic, which was a challenging time. In the pre-arrival regression model, the refugees's mental health is highly affected by the origin country and their socio-economic status in the origin country. The variables that negatively affect the mental health status are the ones commonly found in literature: the number of reasons for leaving the country, the number of traumatic events during the journey and being a woman.

For the fixed-effects regression, we considered several types of worries that concerned various aspects of the refugees' lives. The MSC is negatively affected for those who passed from "no worries" to "some worries". Having an increase in life satisfaction also improves mental health status. Interestingly, neither a change in employment status nor legal status seems to affect the mental health status of the refugees.

Additional results will be ready for IPC 2025.

REFERENCES

Allison, P. D. (2005). *Fixed Effects Regression Methods for Longitudinal Data Using SAS®*. SAS Institute Inc.

Bjärtå, A., Leiler, A., Ekdahl, J., & Wasteson, E. (2018). Assessing Severity of Psychological Distress Among Refugees With the Refugee Health Screener, 13-Item Version. *The Journal of Nervous and Mental Disease*, *206*(11), 834–839. https://doi.org/10.1097/NMD.0000000000000886

Blackmore, R., Boyle, J. A., Fazel, M., Ranasinha, S., Gray, K. M., Fitzgerald, G., Misso, M., & Gibson-Helm, M. (2020). The prevalence of mental illness in refugees and asylum seekers: A systematic review and meta-analysis. *PLOS Medicine*, *17*(9), e1003337. https://doi.org/10.1371/journal.pmed.1003337

D.I.W. (2023). *DIW Berlin: IAB-BAMF-SOEP Survey of Refugees 2021* [Dataset]. DIW Berlin. https://www.diw.de/en/diw_01.c.876180.en/edition/iab-bamf-soep_survey_of_refugees_2021.html

EUROSTAT. (2024). *Asylum applicants by type—Annual aggregated data* [Dataset]. Eurostat. https://doi.org/10.2908/TPS00191

Georgiadou, E., Morawa, E., & Erim, Y. (2017). High Manifestations of Mental Distress in Arabic Asylum Seekers Accommodated in Collective Centers for Refugees in Germany. *International Journal of Environmental Research and Public Health*, *14*(6), Article 6. https://doi.org/10.3390/ijerph14060612

Giacco, D., Laxhman, N., & Priebe, S. (2018). Prevalence of and risk factors for mental disorders in refugees. *Seminars in Cell & Developmental Biology*, *77*, 144–152. https://doi.org/10.1016/j.semcdb.2017.11.030

Goebel, J., Grabka, M. M., Liebig, S., Kroh, M., Richter, D., Schröder, C., & Schupp, J. (2019). The German Socio-Economic Panel (SOEP). *Jahrbücher Für Nationalökonomie Und Statistik*, *239*(2), 345–360. https://doi.org/10.1515/jbnst-2018-0022

Grochtdreis, T., König, H.-H., Riedel-Heller, S. G., & Dams, J. (2022). Health-Related Quality of Life of Asylum Seekers and Refugees in Germany: A Cross-Sectional Study with Data from the German Socio-Economic Panel. *Applied Research in Quality of Life*, *17*(1), 109–127. https://doi.org/10.1007/s11482-020-09877-4

Hajak, V. L., Sardana, S., Verdeli, H., & Grimm, S. (2021). A Systematic Review of Factors Affecting Mental Health and Well-Being of Asylum Seekers and Refugees in Germany. *Frontiers in Psychiatry*, *12*. https://doi.org/10.3389/fpsyt.2021.643704

James, P., Iyer, A., & Webb, T. L. (2019). The impact of post-migration stressors on refugees' emotional distress and health: A longitudinal analysis. *European Journal of Social Psychology*, *49*(7), 1359–1367. https://doi.org/10.1002/ejsp.2589

Jesuthasan, J., Sönmez, E., Abels, I., Kurmeyer, C., Gutermann, J., Kimbel, R., Krüger, A., Niklewski, G., Richter, K., Stangier, U., Wollny, A., Zier, U., Oertelt-Prigione, S., Shouler-Ocak, M., & on behalf of the Female Refugee Study (FRS) Investigators. (2018). Near-death experiences, attacks by family members, and absence of health care in their home countries affect the quality of life of refugee women in Germany: A multi-region, cross-sectional, gender-sensitive study. *BMC Medicine*, *16*(1), 15. https://doi.org/10.1186/s12916-017-1003-5

Kaltenbach, E., Schauer, M., Hermenau, K., Elbert, T., & Schalinski, I. (2018). Course of Mental Health in Refugees—A One Year Panel Survey. *Frontiers in Psychiatry*, *9*. https://www.frontiersin.org/articles/10.3389/fpsyt.2018.00352

Kühne, S., Jacobsen, J., & Kroh, M. (2019). Sampling in Times of High Immigration: The Survey Process of the IAB-BAMF-SOEP Survey of Refugees. *Survey Methods: Insights from the Field*. https://doi.org/10.13094/SMIF-2019-00005

Silove, D., Ventevogel, P., & Rees, S. (2017). The contemporary refugee crisis: An overview of mental health challenges. *World Psychiatry*, *16*(2), 130–139. https://doi.org/10.1002/wps.20438

Statistisches Bundesamt (Destatis). (2024, May 23). *Statistisches Bundesamt—German Federal Statistical Office*. https://www.destatis.de/EN/Themes/Society-Environment/Population/Migration-Integration/Tables/protection-countries-of-origin-status.html?view=main[Print]

Ware, J., Kosinski, M., & Keller, S. (1995). SF-12: How to Score the SF-12 Physical and Mental Health Summary Scales. *Boston: The Health Institute, New England Medical Center.* https://doi.org/10.1097/00005650-199603000-00003