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## The effect of health on refugees' labor market integration: evidence from a natural experiment in Germany

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# The effect of health on refugees' labor market integration: evidence from a natural experiment in Germany

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Mit der Reihe „IAB-Discussion Paper“ will das Forschungsinstitut der Bundesagentur für Arbeit den Dialog mit der externen Wissenschaft intensivieren. Durch die rasche Verbreitung von Forschungsergebnissen über das Internet soll noch vor Drucklegung Kritik angeregt und Qualität gesichert werden.

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# Contents

# Abstract

This paper analyzes the role of health for refugees' integration into host societies' labor markets. We exploit the quasi-random dispersal policies of refugees across regions in Germany to analyze the causal effect of health on employment. Based on regional and temporal heterogeneity in a policy adoption that provided earlier access to health care services through electronic health cards (eHCs), combined with the regional availability of health care services and pre-migration health status, we construct instrumental variables (IVs) providing plausibly exogenous variation in refugees' post-arrival health status. Our results reveal that favorable physical health (PCS) improves males' employment probability. Concurrently, favorable mental health (MCS) increases females' employment rates, although this effect must be scrutinized due to weak instruments. Regarding potential mechanisms, we provide evidence that better health increases language course participation and German language proficiency for female refugees.



# Zusammenfassung

Dieses Papier analysiert die Rolle der Gesundheit für die Arbeitsmarktintegration von Geflüchteten in ihrem Zielland. Wir nutzen die quasi-zufällige anfängliche regionale Verteilung von Geflüchteten über Stadt- und Landkreise in Deutschland, um den kausalen Effekt der Gesundheit auf die Beschäftigung zu analysieren. Basierend auf regionaler und zeitlicher Heterogenität bei der Einführung einer Reform, die einen früheren Zugang zu Gesundheitsleistungen durch elektronische Gesundheitskarten (eGKs) ermöglichte, in Kombination mit der regionalen Verfügbarkeit von Gesundheitsdienstleistungen und dem Gesundheitszustand vor der Migration, konstruieren wir Instrumentalvariablen (IVs), die plausibel exogene Variationen im Gesundheitszustand der Geflüchteten nach ihrer Ankunft liefern. Unsere Ergebnisse zeigen, dass ein guter körperlicher Gesundheitszustand (PCS) die Erwerbstätigkeitswahrscheinlichkeit von Männern verbessert. Gleichzeitig erhöht ein guter psychischer Gesundheitszustand (MCS) die Erwerbstätigenquote von Frauen, wobei dieser Effekt aufgrund schwacher Instrumente mit Vorsicht zu betrachten ist. Hinsichtlich möglicher Mechanismen zeigen wir, dass eine bessere Gesundheit die Teilnahme an Sprachkursen und die deutschen Sprachkenntnisse von weiblichen Geflüchteten erhöht.



# JEL classification

C26, I10, I18, J64,

# Keywords

electronic health card, employment, health, IAB-BAMF-SOEP survey of refugees, MCS, PCS, refugees



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# 1 Introduction

With rising numbers of individuals seeking safety across borders (UNHCR 2023), refugee's integration into the host societies' labor markets has become of increasing interest to policy makers, the public and the scientific community. An extensive body of literature is examining factors that either contribute to or hinder labor market integration (see Kosyakova and Kogan (2022) for an overview). At the individual level, human capital (such as language competencies, educational attainment, labor market experience) and social capital have been found to facilitate refugees' successful labor market integration (e.g Hartmann/Steinmann 2021; Kosyakova/Kristen/Spörlein 2022; Will/Homuth 2020). However, refugees' health status – albeit being a focus of previous research across various disciplines on itself (Ambrosetti et al. 2021; Norredam/Mygind/Krasnik 2006; Walther et al. 2020)– is less well understood regarding its effect on integration outcomes.

For the general population, the relationship between health and employment emphasizes the bi-directional causality. While the causation hypothesis argues that employment can influence health outcomes, the selection hypothesis stresses that health itself can impact one's ability to obtain and maintain employment (Kröger/Pakpahan/Hoffmann 2015; Stauder 2019). In line with the causation hypothesis, previous research revealed protective effects of employment on depression or general mental health and negative effects of unemployment on health (Paul/Moser 2009; van der Noordt et al. 2014). Likewise, evidence for the selection hypothesis has also been established: individuals with health impairments face greater risks of job loss and lower chances of finding employment (García-Gómez/Jones/Rice 2010; Mastekaasa 1996). Few studies trying to disentangle both effects, concluded that both mechanisms work simultaneously (Kröger/Pakpahan/Hoffmann 2015; Schuring/Robroek/Burdorf 2017; Stauder 2019). However, reverse causality makes it methodologically challenging to empirically identify effects in both directions. We contribute to these strands of the literature by providing evidence on the causal effect of health on employment, for the specific subgroup of refugees, a group whose health is highly at risk.

Focusing on the refugee population is crucial, since this group faces various pre- and post-migration stressors shaping their health. Fleeing countries affected by conflict, violence, or human rights violations (UNHCR 2023), many refugees experience traumatic events like natural disasters, physical or sexual assault, captivity, torture, severe human suffering or shipwrecks on their way to safer countries (Nesterko et al., 2020; Schlaudt et al., 2020). In the host country, stressors like discrimination, acculturative stress, inadequate housing, restricted economic opportunity or legal status further impact refugees' health status (Ambrosetti et al. 2021; Porter/Haslam 2005; Sangalang et al. 2019). Conforming to that, the prevalence rate of PTSD among recently arrived refugees in Germany has been estimated at 28 percent (Nesterko et al. 2020) and the prevalence rate of those in psychological distress at 41 percent (Walther et al. 2020). Beyond mental health issues, refugees face serious physical health disparities such as infectious diseases and a wide array of acute and chronic medical conditions (see Hadgkiss and Renzaho (2014) for an overview). A study from the Netherlands revealed 60 percent of asylum

seekers to report poor health, and approximately a half of them reporting one or more chronic conditions (Gerritsen et al. 2006).

Despite the clear evidence on refugees' disadvantaged mental health status, research about the consequences for labor market integration is still scarce (Lai/Due/Ziersch 2022). For instance, a study by De Vroome and Van Tubergen (2010) implies a negative association between refugees' mental health and employment in the Netherlands, a result also confirmed for Canada (Beiser et al. 2015), Australia (Bryant et al. 2020), Germany (Walther et al. 2020), Switzerland (Schick et al. 2016), and the UK (Ruiz/Vargas-Silva 2018), though few studies find no such associations (Hunkler/Khourshed, 2020, for Germany; Niederkrotenthaler et al., 2020, for Sweden). Nevertheless, a review by Lai, Due and Ziersch (2022) concludes that there is still a general gap in the literature on how mental health determines refugees' labor market participation stressing that due to the descriptive nature of previous studies, empirical evidence on the causal effect of mental health on refugees' employment is lacking. Similarly, although few studies documented a positive relationship between physical health and refugees' employment (Ruiz/Vargas-Silva 2018; Schuring et al. 2009), on this strand of literature, causal evidence is yet missing (Lai/Due/Ziersch 2022). In this context, our study adds causal evidence by analyzing the effect of mental and physical health outcomes on refugees' labor market participation in Germany.

To study the causal effect of health on refugees' labor market integration, we leverage data from the longitudinal and representative IAB-BAMF-SOEP survey of refugees in Germany (Brücker/Rother/Schupp 2017) and a natural experiment, allowing us to instrument refugees' health status with plausibly exogenous regional and temporal variation in their eligibility to medical care, regional availability of medical services and individual pre-migration health status. Throughout our analysis, we provide results differentiated by gender to account for possible effect heterogeneity. Among others, refugee women face increased risks of sexual violence (Kurth et al. 2010; Rogstad/Dale 2004), distinct health risks regarding sexual and reproductive health (Fontanelli Sulekova et al. 2021; Kurth et al. 2010) and more often show mental health problems, such as depression or anxiety (Guruge/Roche/Catallo 2012; Hollander et al. 2011; Shishehgar et al. 2017). Our instrumental variable (IV) results reveal that favorable physical health improves the employment probability of male but not female refugees. In turn, good mental health only increases female employment rates, although this effect must be scrutinized due to weak instruments. Additionally, and regarding underlying mechanisms, we provide evidence that better health increases language course participation and German language proficiency, though only for female refugees.

The remainder of the paper is structured as follows: Section 2 provides details about the natural experiment, i.e., the policy context regarding health care availability for refugees in Germany. In section 3, we present the data, variables and our analytical strategy. Section 4 presents the results. In sections 5 and 6, we discuss our findings and conclude.

# 2 Policy Context

In Germany – similarly to many other refugee destination countries (Norredam/Mygind/Krasnik 2006) – refugees encounter significant hurdles in accessing healthcare services. After arrival, healthcare access for refugees is governed by the German Asylum-Seekers Benefits Act (*Asylbewerberleistungsgesetz*, AsylbLG). This legal framework was established in 1993 and since then regulates social benefits for asylum seekers whose application is still being processed and individuals whose asylum application got rejected, either with an obligation to leave the country or with a tolerated status (*Geduldete*). The AsylbLG specifies healthcare coverage parameters, primarily focusing on the treatment of acute illnesses, conditions of pain, care for pregnant women, vaccinations, and medically necessary preventive examinations (para.4), with further treatments to be granted based on the individual cases (para.6). Comprehensive healthcare coverage is granted either after receiving a positive asylum decision or after having reached a certain duration of stay in Germany (para. 2). This duration has been subject to change in previous reforms: The maximum period for which healthcare access was restricted through the AsylbLG was set to 12 months in 1993; increased to 36 and 48 months in 1997 and 2007, respectively; reduced to 15 months in 2015; and increased again to 18 months in 2019. Most recently, since the end of February 2024, the period was again increased to 36 months (Deutscher Bundestag 2024). Focusing on refugees who arrived in Germany between 2013 and 2019, Biddle (2024) showed that refugees faced restricted healthcare access for slightly over a year before attaining full healthcare coverage. Most of them has achieved the full coverage only upon reaching the necessary duration of stay, while around one third have gained it through a positive asylum decision.

For those whose healthcare access is regulated through AsylbLG, there are – depending on the individual's residential location – two distinct administrative systems that are applied in practice to grant access to healthcare services (Wenner et al. 2020). Initially implemented and to date still valid in seven of the sixteen federal states, treatment vouchers are used to serve as billing instruments. Under this system, refugees requiring a doctor visit (except for emergency cases), must first contact the local foreigners' authority or social assistance office. If the treatment can be granted within the scope of benefits specified in AsylbLG, a treatment voucher is issued and a doctor can be consulted subsequently (Wenner et al. 2020). This process has been critiqued for its bureaucratic complexity and delays in medical treatment. Moreover, the determination of treatment necessity rests with non-medical personnel, leading to inadequate healthcare provision (Razum/Wenner/Bozorgmehr 2016; Wenner et al. 2020) and, ultimately, worse health outcomes (Jaschke/Kosyakova 2021).

In recent years, some federal states have broadened the healthcare access for refugees, by applying an alternative administrative system through electronic health cards (eHC). Under this system, federal states sign agreements with health insurance providers and specify beforehand treatments to be covered within the scope of AsylbLG. With the eHC, refugees can directly access healthcare services without prior authorization from non-medical personnel. While initially mirroring AsylbLG provisions, the eHC often provides a scope of services closely aligned with those available to regularly insured individuals (Wächter-Raquet 2016). The adoption of eHC

commenced in 2005 in Bremen and expanded to Hamburg in 2012. To date, seven federal states have comprehensive eHC coverage (Berlin, Brandenburg, Bremen, Hamburg, Thuringia and Schleswig-Holstein; Mecklenburg-Hither Pomerania since August 2024 after our field period) and three have implemented it to some extent, on the district/municipality level (Rhineland-Palatinate, North Rhine-Westphalia, and Lower Saxony) (Biddle 2024). Following (Jaschke/Kosyakova 2021), the implementation of eHCs has improved the mental well-being as well as the subjective health assessment of refugees who were eligible for the use of such.

Upon their arrival, refugees in Germany are regionally dispersed quasi-randomly (following the annually updated *Königsteiner Schlüssel*, which is based on tax-revenue and population numbers) and are subsequently restricted in their choice of residence for up to three years (Jaschke/Kosyakova 2021). This allocation procedures ensures that who gets facilitated healthcare access is decided by chance. In our paper, we use this setting as a natural experiment by exploiting – among other factors – the exogenous variation in the use of eHCs as a predictive factor of health outcomes. Looking at refugees in Germany, we differentiate between three different subgroups depending on their waiting time until being eligible for eHC:

1. Individuals who gain eHC eligibility right upon their arrival due to being assigned to a district that has introduced eHC before arrival;
2. Individuals who are not eHC eligible right upon arrival but before reaching the maximum waiting time as stated in the AsybLG (15 months for asylum seekers in our sample), either due to approval of the asylum application or living in a region that adopted the eHC policy during that period;
3. Individuals who are eligible for the use of eHC only after having reached the maximum waiting time of 15 months.

# 3 Data and Method

## 3.1 Data and sample

For our empirical analysis we rely on data from the IAB-BAMF-SOEP survey of refugees (2021), a longitudinal survey of refugees and their household members in Germany that is conducted since 2016 (Brücker/Rother/Schupp 2017). The sample is drawn from the Central Register of Foreigners (AZR) and covers individuals who arrived in Germany between 1st of January 2013 and 30th of June 2019 to seek protection for humanitarian reasons – irrespective of their legal status at the time of being drawn into the gross sample or being surveyed (Kroh et al. 2017). Interviews are conducted face-to-face with computer assistance (CAPI) and supported by interpreters if needed. Questionnaires are provided in seven languages (Arabic, English, Farsi/Dari, German, Krumanji, Pashto, and Urdu). We use the data version 36 covering survey years 2016–2019 (doi: 10.5684/soep.iab-bamf-soep-mig.2019), which includes more than 8,000 adults who were interviewed at least once. We restrict our data to survey years until 2019 to rule out potential distortions due to the coronavirus pandemic. We further exclude refugees in non-employable age (younger than 18 or older than 64 years), those arrived earlier than 2013 or have missing values in the most relevant variables (health outcomes, assigned district of residence, date of arrival,

outcome and date of asylum decision). Finally, we keep individual observations with approved asylum application, ensuring that all individuals in our sample are generally eligible for an eHC at the times of being surveyed, but have different preceding waiting periods. Following these restrictions, our main sample contains 3,454 persons (1,376 women and 2,078 men) contributing 5,041 person-year observations (1,935 women and 3,106 men).

## 3.2 Outcome variables

The labor market integration of refugees is assessed using the self-reported employment status at the time of the interview. Following the definition of the International Labour Organization, employment is defined as work performed in return for pay or profit (International Labour Organization 2023). We construct the outcome variable *employed* as a dummy variable, with one for respondents in full- or part-time employment, vocational education, internships, apprenticeships or marginal employment if they indicate gross monthly earnings above zero and coded '0' otherwise. The mean employment rate in our sample is 0.17 (see Table 1).

Additionally, we use German language proficiency and language course participation as outcome variables in section 4.3 to study potential mechanisms. Language proficiency is operationalized as additive score of self-assessed speaking, writing and reading skills (each scaled from 0 'very poor' to 4 'very good'). The mean score in our sample is 5.8. For language course participation we code a dummy indicating whether refugees have been participating in a language course. These include integration courses provided by the Federal Office for Migration and Refugees (BAMF), ESF-BAMF vocational language courses that teach more specific German skills relevant to the intended occupation, courses provided in collaboration with the Federal Employment Agency or any other language courses. 81 percent of refugees in our sample have attended or are currently attending one of the above courses.

**Table 1: Summary statistics of main variables**

| Variable | Mean | SD | Min | Max | Median | N |
|---|---|---|---|---|---|---|
| **Outcome variables** | | | | | | |
| Employed | 0.17 | | 0 | 1 | | 5,041 |
| German language proficiency (0 low - 12 high) | 5.8 | 3.0 | 0 | 12 | 6.0 | 5,038 |
| Language course (currently or previously) | 0.81 | | 0 | 1 | | 4,992 |
| **Measures of health** | | | | | | |
| Mental Component Summary Scale (MCS) | 48.8 | 11.3 | 4.6 | 77.9 | 49.7 | 5,041 |
| Physical Component Summary Scale (PCS) | 53.5 | 9.9 | 12.3 | 77.7 | 56.5 | 5,041 |
| **Instruments** | | | | | | |
| Satisfaction with health before migration (0 low - 10 high) | 8.3 | 2.4 | 0 | 10 | 9 | 5,041 |
| Months until eHC access: 0 | 0.08 | | 0 | 1 | | 5,041 |
| 1 - 8 | 0.45 | | 0 | 1 | | 5,041 |
| 9 - 14 | 0.26 | | 0 | 1 | | 5,041 |
| 15 | 0.22 | | 0 | 1 | | 5,041 |
| General practitioner availability (distance in km) | 9.5 | 5.5 | 2.8 | 33.6 | 8.2 | 5,041 |

Source: Own calculations based on IAB-BAMF-SOEP Survey of Refugees (2021).

## 3.3 Measures of health

Mental and physical health are measured using the Mental and Physical Component Summary Scales (MCS and PCS) respectively. We compute the MCS and PCS based on the 12-item Short-Form version 2 questionnaire (SF-12v2), which forms a compromised version of the SF-36 short questionnaire on health-related quality of life (Ware, Kosinski, and Keller 1996). In the IAB-BAMF-SOEP survey of refugees, the items were only surveyed for all respondents in even-numbered survey years. In odd-numbered years, only first-time respondents were polled. The included twelve items are condensed into eight distinct variables which capture physical functioning, role limitations due to physical or emotional problems, bodily pain, general health, vitality, social functioning and emotional well-being. We follow the procedure applied to the SOEP-Core survey as described by Andersen et al. (2007) to construct the MCS and PCS scores. Both scales range from 0 to 100 with higher numbers indicating a better health status. The scales are normalized such that a value of 50 corresponds to the mean of the German population in the year 2004 and 10 points correspond to one standard deviation. In the literature, the MCS has been shown to be a valid measure of mental health and suitable as a screening instrument for depression and anxiety disorders (Gill et al. 2007; Vilagut et al. 2013). Similarly, the PCS's validity has been tested in various settings in the context of different physical conditions (Fu, Weatherall, and McNaughton 2021; Lynch et al. 2022). However, SF-12 based measures of health have been shown to be only weakly cross-culturally comparable (Schulz 2012), which makes it important to control for further respondents' characteristics (see the following section). Descriptive statistics of both MCS and PCS are presented in Table 1.

## 3.4 Covariates

All models control for individual- and contextual-level predictors of labor market integration in general and for refugees in particular. These includes (1) *socio-demographics*: age, gender, partnership status, children in household and citizenship; (2) *human-capital characteristics*: premigration education, premigration German language skills, premigration employment status and illiteracy in their mother tongue; (3) *refugee-specific characteristics*: years since arrival, traumatic experience during escape, months of the asylum procedure, and post-migration stressors (Li, Liddell, and Nickerson 2016) such as type of accommodation, experience of origin-based discrimination, worries about prospects of staying in Germany and feeling welcome in Germany at arrival; (4) *survey-year fixed effects* to absorb any unobserved variation that affects all individuals in corresponding survey year (e.g., macroeconomic recessions); and (5) *district-level characteristics* of refugees' assigned residence place by authorities (measured at baseline, i.e., in the year prior to their arrival): unemployment rate (Bundesagentur für Arbeit 2024), population density, share of foreigners, share of refugees among foreigners (BBSR 2024) and the voting share of the right-wing party AfD in the federal elections in 2013 (Bundeswahlleiter 2013). Note that months of the asylum procedure is collinear with months until eHC eligibility for refugees who have not been allocated to a district that implemented the reform providing immediate eHC access.

Descriptive statistics are presented in supplementary Table A1. Almost two-thirds of the sample are men, 60 percent are younger than 36, and two-third of respondents reside with at least one child. The majority comes from Syria (69 percent), followed by Iraq (12 percent) and Afghanistan

(8 percent), and most of the respondents have been living in Germany for between 1 and 4 years. Premigration education level is polarized, with almost a quarter exhibiting only primary or lower level of premigration education, and 21 percent having tertiary education. Five percent of the refugees are illiterate in their mother tongue (i.e., cannot read or write) and their level of German at the time of arrival was very low. Given lack of German skills at arrival, refugees without an eHC likely face barriers to accessing medical treatment when they must explain their symptoms to non-medically trained staff of social and immigration authorities to obtain treatment vouchers. Figures on communal accommodation, discrimination experiences and worries about prospects of staying in Germany suggest a substantial degree of post-migration stress among refugees.

## 3.5 Analytical approach

**Ordinary least squares**

To estimate the effect of health on employment we begin with ordinary least squares (OLS) regressions with standard errors clustered at the person-level. We regress a dummy variable indicating employment of individual i having arrived in year y in district d in survey year t separately on MCS and PCS:

$$100[Employed]_{i,y,d,t} = \beta_1 \times health_{i,t} + \boldsymbol{\beta_2} \times \boldsymbol{X_{1}}_{i,t} + \boldsymbol{\beta_3} \times \boldsymbol{X_{2}}_{i} + \boldsymbol{\beta_4 X_{3}}_{y-1,d} + \boldsymbol{\gamma_t},$$

where *health* denotes either MCS or PCS, $\boldsymbol{X_1}$ and $\boldsymbol{X_2}$ time-varying and time-constant confounding variables, respectively, $\boldsymbol{X_3}$ district- and arrival year-specific variables, and $\gamma_t$ survey year fixed-effects. We run separate analyses for the whole sample, females, and males. In all regression tables, coefficients and standard errors are multiplied by 100 for readability and express the results in percentage points.

**Instrumental variable (IV) approach**

Due to its bidirectional nature, OLS estimates of the association between health and employment are biased. As a way out, we rely on instrumental variable strategy that provides exogenous variation in refugees' health status. Instrumental variables have previously been used in other settings to overcome endogeneity of individuals' health status, e.g. mental health in Lebenbaum et al. (2021) and disability in Trani et al. (2018). Specifically, we instrument refugees' MCS and PCS with (1) individual-level *months until eHC eligibility*, (2) regional *availability of medical services* and (3) individual-level *pre-migration health status* (as well as interaction terms between the three).

First, months until eHC eligibility, is coded into four categories: (i) 0 months, (ii) 1-8 months, (iii) 9-14 months and (iv) 15 months. Following Table 1, 8 percent of refugees were eligible to the eHC immediately after arrival, whereas 45 percent had to wait up to 8 months, 26 between 9–14 months and the remaining 22 percent 15 months. Second, regional availability of medical services is measured with a variable indicating the mean distance to the nearest general practitioner (GP) among district residents (BBSR 2024). The average distance lies at 9.5 kilometers and is, hence, difficult to overcome without sufficient public or private transport availability. Third, premigration health is measured using satisfaction with health before migration, measured on a scale from 0 (low) to 10 (high). With 8.3, respondents score, on average, high on pre-migration health satisfaction.

We perform two stages-least squares (2SLS) estimation. For 2SLS analysis to provide consistent estimates, instruments are required to be 'relevant', i.e. be correlated with the endogenous variable and to be 'exogenous', i.e. have no direct effect on the outcome conditional on the endogenous and exogenous variables, which is referred to as the exclusion restriction (Angrist/Krueger 2001; Cunningham 2021). We argue that the instruments' *relevance* is satisfied: For the same setting of refugees in Germany, Jaschke and Kosyakova (2021) provided evidence that earlier accessibility of medical services through eHCs improves health outcomes of refugees. Moreover, several studies revealed the importance of medical services' regional availability for health outcomes (Haraldsdóttir/Valdimarsdóttir/Guðmundsson 2014; Piérard 2014). Refugees benefit, in particular, since they rarely possess a private car to reach a distant GP (Bose 2014). And lastly, as refugees' health status is shaped by trauma and chronic conditions (Hadgkiss/Renzaho 2014; Nesterko et al. 2020), it is likely to be persistent (Johnston/Schurer/Shields 2013). Consequently, we use pre-migration health status as a predictor for current health outcomes in Germany (similarly, current host country language proficiency has been instrumented with pre-migration language proficiency by Schuss (2018).

While the exclusion restriction of the instruments cannot be tested empirically, we argue that it is plausibly fulfilled: Regarding the first instrument, individual-level *months until eHC eligibility* is exogenously determined by (i) the place of residence to which refugees have been allocated by authorities and (ii) the date of receiving a positive decision about the asylum request. To the best of our knowledge, regional dispersal was virtually at random (BAMF 2022). According to the legal regulations, tax revenue plays a role, too, however, *after* applying a fiscal equalization scheme between the Federal States (German: "Länderfinanzausgleich"). Moreover, given that a few refugee reception centers are 'specialized' in certain countries of origin, citizenship determines the regional distribution to some degree (Syrians make up 70 percent of our sample and are hosted in each center) (Deutscher Bundestag 2016). Beyond citizenship, on which we condition our estimates, refugees could not influence their assigned residence place. Importantly, they could not self-select in regions with earlier eHC access based on health status because health status is not a relevant criterion in the regional distribution key.

Further, a violation of the exclusion restriction would occur if regional characteristics (such as labor market structures) determining refugees' labor market integration are correlated with the probability of regions' earlier eHC access provision. We therefore compare regions with and without eHC access regarding regional characteristics crucial for refugees' labor market integration: unemployment rate (Aksoy/Poutvaara/Schikora 2023), urbanity (Vogiazides/Mondani 2020), immigrant enclaves (Gërxhani/Kosyakova 2022), election results of the far-right AfD party to capture anti-immigrant sentiments among the native population (Aksoy/Poutvaara/Schikora 2023) and welfare state generosity towards immigrants (Chueri 2021). Supplementary Table A2 shows that regions providing eHC access early after arrival are, on average, more densely populated, have a higher unemployment rate and a lower foreigner share but, among foreigners, a higher share of refugees. The voting share of the far-right AfD party is 0.4 percentage points higher in eHC districts. Conditional on these covariates, it is unlikely that eHC access influences employment through other channels than its health-enhancing effect.

Likewise, it is unlikely that refugees can exert strategic impact on the timing of the asylum decision to get earlier eHC access: Asylum seekers typically apply for protection shortly after arrival, partly due to the following social benefits access, and they lack any means of influencing the duration of the asylum process. Even if such an opportunity would exist, it would be a general incentive to shorten the process, because asylum application approval opens access not only to extensive healthcare, but also other privileges (e.g., unrestricted work permit, family reunification right, freer residence choice, more generous social benefits, etc.).

We argue that the second instrument, regional *availability of medical services*, is exogenous because of the allocation to a residence place by authorities at the district-level (there are about 400 districts in Germany) that cannot be influenced by refugees. Even if refugees strategically choose residence close to a doctor within the assigned district – this incentive may exist for all refugees, regardless of the waiting time-reducing reform – this does not create endogeneity issues because our instrument varies at the district level. Finally, we are convinced that the third instrument, *pre-migration satisfaction with health*, is exogenous, only impacting on the probability of being employed through individuals' current health status. After conditioning on the remaining covariates, alternative 'pathways' through which the instruments may affect employment – e.g., via influence on educational biographies (Eide/Showalter/Goldhaber 2010) or previous labor market careers (Jolivet/Postel-Vinay 2024) – can be ruled out.

# 4 Results

## 4.1 OLS Results

Table 2 provides OLS results for equation 1, regressing employment on MCS (columns 1-3) and PCS (columns 4-6). Both MCS (column 1) and PCS (column 4) are positively and statistically significant correlated with the employment probability in the pooled sample. Refugees scoring one standard-deviation higher on MCS (PCS) are, on average, 1.8 (1.9) percentage points more likely to be employed. Given an average employment rate of around 17 percent, this represents an increase of almost 9 percent. In gender subsamples, both effects are only sizable and statistically significant for males. The correlation for males is 3.2 percentage points (7.5 percent) for an increase in MCS or PCS by one standard deviation.

**Table 2: OLS results: employment**

| Outcome: | 1[Employed] | | | | | |
|---|---|---|---|---|---|---|
| Sample: | Pooled | Females | Males | Pooled | Females | Males |
| MCS | 0.16*** | 0.04 | 0.28*** | | | |
| | (0.04) | (0.04) | (0.06) | | | |
| PCS | | | | 0.19*** | 0.07 | 0.33*** |
| | | | | (0.05) | (0.04) | (0.08) |
| Person observations | 3,454 | 1,376 | 2,078 | 3,454 | 1,376 | 2,078 |
| Person-year observations | 5,041 | 1,935 | 3,106 | 5,041 | 1,935 | 3,106 |
| R2 | 0.206 | 0.144 | 0.206 | 0.206 | 0.145 | 0.206 |
| Mean of dependent variable | 0.166 | 0.048 | 0.240 | 0.166 | 0.048 | 0.240 |

Notes: Further included confounding variables described in section 3.4 are not reported. Coefficients and standard errors are multiplied by 100 for readability. Standard errors clustered at person-level in parentheses. * p<0.10, ** p<0.05, *** p<0.01.
Source: Own calculations based on IAB-BAMF-SOEP Survey of Refugees (2021).

## 4.2 IV Results

Supplementary Table A3 reports coefficient estimates from the first-stage and supplementary Figure A1 plots the corresponding predicted MCS and PCS values. It suggests that refugees' health status with potential treatment needs, i.e. those already dissatisfied with their health status before migration, deteriorates with long waiting times. However, this only applies if potential treatment options are available, as measured by a low mean distance to a general practitioner (left panel). If there is a low availability of treatment options (right panel), the waiting time until eHC eligibility is less relevant for refugees in treatment needs. The IV results for MCS should be interpreted with caution because our instruments are too weak to meet the common criterion of an F-value of at least 10 in the first stage (Staiger/Stock 1994). Instead, for PCS, this criterion is fulfilled (bottom of Table 3).

Results for the second-stage of our 2SLS estimates are reported in Table 3. Both for MCS and PCS, coefficients are larger compared to their OLS counterparts. While in the OLS model, the correlation between employment and MCS was statistically significant only for males, it becomes significant only for females and is much larger in magnitude in the 2SLS model. However, this result should not be over-interpreted due to the weak instrument mentioned before. For PCS as with OLS, the effects are stronger for males – though, do not reach conventional levels of statistical significance (p=0.116).

**Table 3: IV 2SLS results**

| Outcome: | 1[Employed] | | | | | |
|---|---|---|---|---|---|---|
| Sample: | Pooled | Females | Males | Pooled | Females | Males |
| MCS | 0.62 | 0.50** | 0.79 | | | |
| | (0.4) | (0.21) | (0.73) | | | |
| PCS | | | | 0.43* | 0.23 | 0.61 |
| | | | | (0.23) | (0.18) | (0.39) |
| Person observations | 3,454 | 1,376 | 2,078 | 3,454 | 1,376 | 2,078 |
| Person-year Observations | 5,041 | 1,935 | 3,106 | 5,041 | 1,935 | 3,106 |
| Mean of dependent variable | 16.6 | 4.8 | 24.0 | 16.6 | 4.8 | 24.0 |
| Underidentification: Kleibergen-Paap rk LM statistic | 38.2 | 35.7 | 17.4 | 147.3 | 88.1 | 65.8 |
| p-value Kleibergen-Paap rk LM | 0.001 | 0.002 | 0.293 | 0.000 | 0.000 | 0.000 |
| Weak identification: Kleibergen-Paap rk Wald F stat. | 2.9 | 3.0 | 1.3 | 10.8 | 7.3 | 5.0 |
| Overidentification: Hansen J statistic | 13.2 | 27.0 | 12.2 | 12.8 | 28.8 | 10.0 |
| p-value of Hansen J | 0.508 | 0.019 | 0.590 | 0.542 | 0.011 | 0.761 |

Notes: Further included confounding variables described in section 3.4 are not reported. Coefficients and standard errors are multiplied by 100 for readability. Standard errors clustered at person-level in parentheses. * p<0.10, ** p<0.05, *** p<0.01.
Source: Own calculations based on IAB-BAMF-SOEP Survey of Refugees (2021).

## 4.3 Mechanisms

In this section, we analyze the effect of refugees' health status on German language proficiency and language course participation. Within the multi-dimensional integration concept of Ager and Strang (2008), language acts as a `facilitator', e.g., by improving the transferability of pre-migration human capital (Berman/Lang/Siniver 2003) or efficiency of post-migration educational investments (Schnepf 2007). If better health increases refugees' language course participation and German language skills, this would indicate a possible mechanism through which health impacts on employment. In the OLS estimation (Table 4, columns 1-6), German language proficiency is, although statistically significant, weakly correlated with both MCS and PCS. However, as in the case of employment, endogeneity through reverse causality arises, e.g., because refugees with little language proficiency have on average lower health literacy (Wångdahl et al. 2014) challenging them to approach doctors and describe their symptoms (Murray/Skull 2005).

Therefore, we apply the same instrumental variables as before. The corresponding 2SLS estimates for German language proficiency in Columns 7-12 of Table 4 reveal substantially larger coefficient magnitudes than with OLS and only the effects for the pooled and female samples remain statistically significant. Hence, we observe a positive causal effect of both MCS and PCS on German language proficiency of female but not male refugees. The results in Table 5 suggest female refugees' better German language skills are likely to be primarily driven through language course participation, while males frequently learn the language on the job: The 2SLS estimates on the effect of MCS and PCS on the probability of participation in language courses are only sizable and statistically significant for females.

**Table 4: OLS & IV results: Language proficiency**

| Method: | OLS | | | | | | IV 2SLS | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample: | Pooled | Females | Males | Pooled | Females | Males | Pooled | Females | Males | Pooled | Females | Males |
| MCS | 1.21*** | 1.12** | 1.31*** | | | | 11.62*** | 13.37*** | -0.34 | | | |
| | (0.32) | (0.53) | (0.38) | | | | (3.69) | (3.86) | (5.06) | | | |
| PCS | | | | 2.00*** | 1.99*** | 1.93*** | | | | 5.01*** | 8.43*** | 2.58 |
| | | | | (0.40) | (0.61) | (0.52) | | | | (1.78) | (2.61) | (2.35) |
| Person observations | 3,453 | 1,375 | 2,078 | 3,453 | 1,375 | 2,078 | 3,453 | 1,375 | 2,078 | 3,453 | 1,375 | 2,078 |
| Person-year Observations | 5,038 | 1,933 | 3,105 | 5,038 | 1,933 | 3,105 | 5,038 | 1,933 | 3,105 | 5,038 | 1,933 | 3,105 |
| R2 | 0.393 | 0.354 | 0.400 | 0.395 | 0.356 | 0.401 | | | | | | |
| Mean of dependent variable | 5.870 | 5.074 | 6.366 | 5.870 | 5.074 | 6.366 | 5.870 | 5.074 | 6.366 | 5.870 | 5.074 | 6.366 |
| Underidentification: Kleibergen-Paap rk LM statistic | | | | | | | 38.2 | 35.6 | 17.4 | 148.1 | 88.4 | 65.9 |
| p-value Kleibergen-Paap rk LM | | | | | | | 0.001 | 0.002 | 0.293 | 0.000 | 0.000 | 0.000 |
| Weak identification: Kleibergen-Paap rk Wald F statistic | | | | | | | 2.9 | 3.0 | 1.3 | 10.9 | 7.3 | 5.0 |
| Overidentification: Hansen J statistic | | | | | | | 16.4 | 17.0 | 21.0 | 25.3 | 25.8 | 19.7 |
| p-value of Hansen J | | | | | | | 0.291 | 0.257 | 0.102 | 0.032 | 0.027 | 0.138 |

Notes: Further included confounding variables described in section 3.4 are not reported. Coefficients and standard errors are multiplied by 100 for readability. Standard errors clustered at person-level in parentheses. * p<0.10, ** p<0.05, *** p<0.01.

Source: Own calculations based on IAB-BAMF-SOEP Survey of Refugees (2021).

**Table 5: OLS & IV results: Language course participation**

| Method: | OLS | | | | | | IV 2SLS | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sample:** | **Pooled** | **Females** | **Males** | **Pooled** | **Females** | **Males** | **Pooled** | **Females** | **Males** | **Pooled** | **Females** | **Males** |
| MCS | 0.11** | 0.22** | 0.04 | | | | 0.79 | 1.96*** | -0.64 | | | |
| | (0.05) | (0.09) | (0.05) | | | | (0.60) | (0.70) | (0.71) | | | |
| PCS | | | | -0.00 | -0.03 | 0.03 | | | | 0.50* | 1.17** | 0.02 |
| | | | | (0.06) | (0.11) | (0.07) | | | | (0.30) | (0.52) | (0.34) |
| Person observations | 3,438 | 1,371 | 2,067 | 3,438 | 1,371 | 2,067 | 3,438 | 1,371 | 2,067 | 3,438 | 1,371 | 2,067 |
| Person-year Observations | 4,992 | 1,920 | 3,072 | 4,992 | 1,920 | 3,072 | 4,992 | 1,920 | 3,072 | 4,992 | 1,920 | 3,072 |
| R2 | 0.157 | 0.156 | 0.110 | 0.156 | 0.153 | 0.110 | | | | | | |
| Mean of dependent variable | 0.811 | 0.696 | 0.883 | 0.811 | 0.696 | 0.883 | 0.811 | 0.696 | 0.883 | 0.811 | 0.696 | 0.883 |
| Underidentification: Kleibergen-Paap rk LM statistic | | | | | | | 38.4 | 36.2 | 17.0 | 148.9 | 89.5 | 66.9 |
| p-value Kleibergen-Paap rk LM | | | | | | | 0.001 | 0.002 | 0.319 | 0.000 | 0.000 | 0.000 |
| Weak identification: Kleibergen-Paap rk Wald F statistic | | | | | | | 2.9 | 3.0 | 1.3 | 10.9 | 7.4 | 5.2 |
| Overidentification: Hansen J statistic | | | | | | | 15.7 | 17.5 | 6.0 | 14.7 | 23.6 | 7.3 |
| p-value of Hansen J | | | | | | | 0.331 | 0.231 | 0.967 | 0.397 | 0.052 | 0.922 |

Notes: Further included confounding variables described in section 3.4 are not reported. Coefficients and standard errors are multiplied by 100 for readability. Standard errors clustered at person-level in parentheses. * p<0.10, ** p<0.05, *** p<0.01.

Source: Own calculations based on IAB-BAMF-SOEP Survey of Refugees (2021).

# 5 Discussion

Our OLS specification reveals a positive correlation between both mental and physical health with employment for male refugees. Applying 2SLS estimation to overcome endogeneity concerns – specifically, reverse causality – suggests a positive causal effect of physical health on employment for males that is large in magnitude but not statistically significant. Conversely, the 2SLS effect of mental health on employment is statistically significant only for females but should be scrutinized due to weak instruments. Taken together, our results partly support the selection hypothesis. The gendered findings could be the result of gender-specific occupational sorting. Compared to men, female refugees used to be more concentrated in sectors such as healthcare (4 vs. 11 percent) and education (4 vs. 31 percent) and much less in the primary or secondary sectors (9 vs. 4 percent and 30 vs. 9 percent, respectively) before arrival in Germany (Kosyakova et al. (2023), Table 1). Assuming refugees' preferences to work in a similar occupation after migration, male refugees' employment is contingent on physical health to perform manual work, whereas women benefit more from favorable mental health to perform tasks in more social, interactive and service-oriented occupations.

Regarding potential mechanisms, our results evidence that, for females, better health improves German language proficiency. In contrast to men, who on average take up employment much earlier after arrival and learn German on the job (Kosyakova/Salikutluk/Hartmann 2023), an improvement in females' health has a positive effect on their language course participation. Given the importance of language as a facilitator not only for labor market but also societal integration (Ager/Strang 2008), our results underline the necessity to consider health when designing systemic and sustainable integration policies. In most high-income host countries, refugees face major hurdles in accessing health care, suggesting that extending medical treatment offers would also promote labor market integration in other countries.

The weakness of our main instrument – waiting time until being eligible to more extensive treatment – in explaining mental health must be stressed as the main limitation of our paper. It could be explained with the insufficient availability of psychotherapeutic care in Germany (Albani et al. 2010), which may affect refugees in particular, e.g., due to language barriers (Razum/Bozorgmehr 2016). Further empirical research is needed both to shed light on additional integration dimensions regarding the quality of employment and to identify further potential mechanisms going beyond language investments.

# 6 Conclusion

Methodological challenges have made it difficult to assess the causal effect of health on employment outcomes. Studies on populations with specific health risks – such as refugees – are scarce. Our paper expands the existing descriptive literature and presents causal evidence using an instrumental variable approach. Based on the quasi-exogenous dispersal of refugees across German districts, we exploit a natural experiment providing exogenous variation in waiting times

until refugees' eligibility to comprehensive healthcare, together with exogenous variation in regional GP availability and baseline (pre-migration) individual health.

Our findings reveal a positive effect of physical health on males' employment probability and a positive effect of mental health on females' employment probability, although the latter must be scrutinized due to weak instruments. Furthermore, our results reveal the importance of health for female language acquisition. In conclusion, our findings stress the importance of health for integration outcomes overall. In this regard, earlier access to comprehensive healthcare is essential to improve their health outcomes and to facilitate labor market integration. Positive (indirect) effects of health on employment also argue in favor of the cost-effectiveness of providing substantial and early health care access.

# References


Ager, Alistair; Strang, Alison (2008). Understanding Integration: A Conceptual Framework. In: Journal of Refugee Studies, 21 (2), p. 166–91.

Aksoy, Cevat Giray; Poutvaara, Panu; Schikora, Felicitas (2023): First Time around: Local Conditions and Multi-Dimensional Integration of Refugees. In: Journal of Urban Economics, 137, 103588.

Albani, Cornelia; Blaser, Gerd; Geyer, Michael; Schmutzer, Gabriele; Brähler, Elmar (2010). Ambulante Psychotherapie in Deutschland aus Sicht der Patienten: Teil 1: Versorgungssituationh. In: Psychotherapeut, 55 (6), p. 503–14.

Ambrosetti, Elena; Dietrich, Hans; Kosyakova, Yuliya; Patzina, Alexander (2021). The Impact of Pre- and Postarrival Mechanisms on Self-Rated Health and Life Satisfaction Among Refugees in Germany. In: Frontiers in Sociology, 6, 693518.

Andersen, Hanfried H.; Mühlbacher, Axel; Nübling, Matthias; Schupp, Jürgen; Wagner, Gert G. (2007). Computation of Standard Values for Physical and Mental Health Scale Scores Using the SOEP Version of SF-12v2. In: Journal of Contextual Economics – Schmollers Jahrbuch, 127 (1), p. 171–82.

Angrist, Joshua D.; Krueger, Alan B. (2001). Instrumental Variables and the Search for Identification: From Supply and Demand to Natural Experiments. In: Journal of Economic Perspectives, 15 (4), p. 69–85.

BAMF – Bundesamt für Migration und Flüchtlinge (2022). Erstverteilung der Asylsuchenden (EASY). Asyl und Flüchtlingsschutz.

BBSR – Bundesinstitut für Bau-, Stadt- du Raumforschung (2024). INKAR - Indikatoren Und Karten Zur Raum- Und Stadtentwicklung. Laufende Raumbeobachtung des BBSR. Bonn: Bundesinstitut für Bau-, Stadt und Raumforschung.

Beiser, Morton; Goodwill, Alasdair M.; Albanese, Patrizia; McShane, Kelly; Kanthasamy, Parvathy (2015). Predictors of the Integration of Sri Lankan Tamil Refugees in Canada: Pre-Migration Adversity, Mental Health, Personal Attributes, and Post-Migration Experience. In: International Journal of Migration, Health and Social Care ,11 (1), p. 29–44.

Berman, Eli; Lang, Kevin; Siniver, Erez (2003). Language-Skill Complementarity: Returns to Immigrant Language Acquisition. In: Labour Economics, 10 (3), p. 265–90.

Biddle, Louise (2024). Verlängerte Leistungseinschränkungen Für Geflüchtete: Negative Konsequenzen Für Gesundheit – Erhoffte Einsparungen Dürften Ausbleiben. In: DIW Wochenbericht, 2024(12), p. 199–207.

Bose, Pablo S. (2014). Refugees in Vermont: Mobility and Acculturation in a New Immigrant Destination. In: Journal of Transport Geography, 36 (April), p. 151–59.

Brücker, Herbert; Rother, Nina; Schupp, Jürgen (2017). IAB-BAMF-SOEP-Befragung von Geflüchteten (2016: Studiendesign, Feldergebnisse Sowie Analysen Zu Schulischer Wie Beruflicher Qualifikation, Sprachkenntnissen Sowie Kognitiven Potenzialen. In: IAB-Forschungsbericht, 13/2017, Nürnberg: Institut für Arbeitsmarkt- und Berufsforschung (IAB).

Bryant, R. A.; Edwards, B.; Creamer, M.; O'Donnell, M.; Forbes, D.; Felmingham, K. L.; Silove, D. et al. (2020). A Population Study of Prolonged Grief in Refugees. In: Epidemiology and Psychiatric Sciences, 29, e44.

Bundesagentur für Arbeit (2024). Arbeitslosenquote & Arbeitslosenzahlen. Nürnberg: Bundeagentur für Arbeit.

Bundeswahlleiter (2013). Wahl Zum 18. Deutschen Bundestag Am 22. September 2013. Endültige Ergebnisse nach Wahlkreisen Heft 3. Informationen des Bundeswahlleiters. Wiesbaden.

Chueri, Juliana (2021). Social Policy Outcomes of Government Participation by Radical Right Parties. In: Party Politics, 27 (6), p. 1092–1104.

Cunningham, Scott (2021). Causal Inference: The Mixtape. Yale University Press.

Deutscher Bundestag (2016). Antwort Der Bundesregierung Auf Die Kleine Anfrage Der Abgeordneten Ulla Jelpke, Frank Tempel, Wolfgang Gehrcke, Weiterer Abgeordneter Und Der Fraktion DIE LINKE. Drucksache 18/9608. Berlin: Deutscher Bundestag - 18. Wahlperiode.

Deutscher Bundestag (2024). Wartefristen für Leistungen nach § 2 Abs. 1 AsylbLG im Lichte der Rechtsprechung des Bundesverfassungsgerichts. Wissenschaftliche Dienste WD 3-3000-138/23. Ausarbeitung. Berlin.

Eide, Eric R.; Showalter, Mark H.; Goldhaber, Dan D. (2010). The Relation between Children's Health and Academic Achievement. In: Children and Youth Services Review, 32 (2), p. 231–38.

Fontanelli Sulekova, Lucia; Spaziante, Martina; Vita, Serena; Zuccalà, Paola; Mazzocato, Valentina; Spagnolello, Ornella; Lopalco, Maurizio et al. (2021). The Pregnancy Outcomes Among Newly Arrived Asylum-Seekers in Italy: Implications of Public Health. In: Journal of Immigrant and Minority Health, 23 (2), p. 232–39.

Fu, Vivian; Weatherall, Mark; McNaughton, Harry (2021). Estimating the Minimal Clinically Important Difference for the Physical Component Summary of the Short Form 36 for Patients with Stroke. In: Journal of International Medical Research, 49 (12), 030006052110679.

García-Gómez, Pilar; Jones, Andrew M.; Rice, Nigel (2010). Health Effects on Labour Market Exits and Entries. In: Labour Economics, 17 (1), p. 62–76.

Gerritsen, Annette A. M.; Bramsen, Inge; Devillé, Walter; van Willigen, Loes H. M.; Hovens, Johannes E.; van der Ploeg, Henk M. (2006). Physical and Mental Health of Afghan, Iranian and Somali Asylum Seekers and Refugees Living in the Netherlands. In: Social Psychiatry and Psychiatric Epidemiology, 41 (1), p. 18–26.

Gërxhani, Klarita; Kosyakova, Yuliya (2022). The Effect of Co-Ethnic Social Capital on Immigrants' Labor Market Integration: A Natural Experiment. In: Comparative Migration Studies, 10, p. 15.

Gill, Sarah C.; Butterworth, Peter; Rodgers, Bryan; Mackinnon, Andrew (2007). Validity of the Mental Health Component Scale of the 12-Item Short-Form Health Survey (MCS-12) as Measure of Common Mental Disorders in the General Population. In: Psychiatry Research, 152 (1), 63–71.

Guruge, Sepali; Roche, Brenda; Catallo, Cristina (2012). Violence against Women: An Exploration of the Physical and Mental Health Trends among Immigrant and Refugee Women in Canada. In: Nursing Research and Practice, 2012(1), 434592.

Hadgkiss, Emily J.; Renzaho, Andre M. N. (2014). The Physical Health Status, Service Utilisation and Barriers to Accessing Care for Asylum Seekers Residing in the Community: A Systematic Review of the Literature. In: Australian Health Review, 38 (2), p. 142.

Haraldsdóttir, Sigríður; Valdimarsdóttir, Unnur A.; Guðmundsson, Sigurður (2014). Poorer Self-Rated Health in Residential Areas with Limited Healthcare Supply. In: Scandinavian Journal of Public Health, 42 (3), p. 310–18.

Hartmann, Jörg; Steinmann, Jan-Philip (2021). Do Gender-Role Values Matter? Explaining New Refugee Women's Social Contact in Germany. In: International Migration Review, 55 (3), p. 688–717.

Hollander, Anna-Clara; Bruce, Daniel; Burström, Bo; Ekblad, Solvig (2011). Gender-Related Mental Health Differences between Refugees and Non-Refugee Immigrants - a Cross-Sectional Register-Based Study. In: BMC Public Health, 11 (1), p. 180.

Hunkler, Christian; Khourshed, May (2020). The Role of Trauma for Integration. The Case of Syrian Refugees. In: Soziale Welt, 71 (1–2), 90–122.

IAB-BAMF-SOEP Survey of Refugees (2021). Data 2016-2019, v36. DOI: 10.5684/soep.iab-bamf-soep-mig.2019.

International Labour Organization (2023). Resolution to Amend the 19th ICLS Resolution Concerning Statistics of Work, Employment and Labour Underutilization. ICLS/21/2023/RES. II. Geneva.

Jaschke, Philipp; Kosyakova, Yuliya (2021). Does Facilitated and Early Access to the Healthcare System Improve Refugees' Health Outcomes? Evidence from a Natural Experiment in Germany. In: International Migration Review, 55 (3), p. 812–42.

Johnston, David W.; Schurer, Stefanie; Shields, Michael A. (2013). Exploring the Intergenerational Persistence of Mental Health: Evidence from Three Generations. In: Journal of Health Economics, 32 (6), p. 1077–89.

Jolivet, Grégory; Postel-Vinay, Fabien (2024). A Structural Analysis of Mental Health and Labour Market Trajectories. In: Review of Economic Studies, June, rdae071.

Kosyakova, Yuliya; Kogan, Irena (2022). Labor Market Situation of Refugees in Europe: The Role of Individual and Contextual Factors. In: Frontiers in Political Science, 4 (September), 977764.

Kosyakova, Yuliya; Kristen, Cornelia; Spörlein, Christoph (2022). The Dynamics of Recent Refugees' Language Acquisition: How Do Their Pathways Compare to Those of Other New Immigrants? In: Journal of Ethnic and Migration Studies, 48 (5), p. 989–1012.

Kosyakova, Yuliya; Salikutluk, Zerrin; Hartmann, Jörg (2023). Gender Employment Gap at Arrival and Its Dynamics: The Case of Refugees in Germany. In: Research in Social Stratification and Mobility, 87 (October), 100842.

Kröger, Hannes; Pakpahan, Eduwin; Hoffmann, Rasmus (2015). What Causes Health Inequality? A Systematic Review on the Relative Importance of Social Causation and Health Selection. In: The European Journal of Public Health, 25 (6), p. 951–60.

Kroh, Martin, Kühne, Simon; Jacobsen, Jannes; Siegert, Manuel; Siegers, Rainer (2017). Sampling, Nonresponse, and Integrated Weighting of the 2016 IAB-BAMF-SOEP Survey of Refugees (M3/M4).

SOEP Survey Papers 477. Series C - Data Documentation. Berlin: Deutsches Institut für Wirtschaftsforschung (DIW).

Kurth, Elisabeth; Jaeger, Fabienne N; Zemp, Elisabeth; Tschudin, Sibil; Bischoff, Alexander (2010). Reproductive Health Care for Asylum-Seeking Women - a Challenge for Health Professionals. In: BMC Public Health, 10 (1), p. 659.

Lai, Huyen; Due, Clemence; Ziersch, Anna (2022). The Relationship between Employment and Health for People from Refugee and Asylum-Seeking Backgrounds: A Systematic Review of Quantitative Studies. In: SSM - Population Health, 18 (June), 101075.

Lebenbaum, Michael; Laporte, Audrey; de Oliveira, Claire (2021). The Effect of Mental Health on Social Capital: An Instrumental Variable Analysis. In: Social Science & Medicine, 272 (March), 113693.

Li, Susan S. Y.; Liddell, Belinda J.; Nickerson, Angela (2016). The Relationship Between Post-Migration Stress and Psychological Disorders in Refugees and Asylum Seekers. In: Current Psychiatry Reports, 18 (9), p. 82.

Lynch, Conor P.; Cha, Elliot D. K.; Mohan, Shruthi; Geoghegan, Cara E.; Jadczak, Caroline N.; Singh, Kern (2022). Two-Year Validation and Minimal Clinically Important Difference of the Veterans RAND 12 Item Health Survey Physical Component Score in Patients Undergoing Minimally Invasive Transforaminal Lumbar Interbody Fusion. In: Journal of Neurosurgery: Spine, 36 (5), p. 731–40.

Mastekaasa, Arne. (1996). Unemployment and Health: Selection Effects. In: Journal of Community & Applied Social Psychology, 6 (3), p. 189–205.

Murray, Sally B.; Skull, Sue A. (2005). Hurdles to Health: Immigrant and Refugee Health Care in Australia. In: Australian Health Review, 29(1), p. 25.

Nesterko, Y.; Jäckle, D.; Friedrich, M.; Holzapfel, L.; Glaesmer, H. (2020). Prevalence of Post-Traumatic Stress Disorder, Depression and Somatisation in Recently Arrived Refugees in Germany: An Epidemiological Study. In: Epidemiology and Psychiatric Sciences, 29: e40.

Niederkrotenthaler, Thomas; Mittendorfer-Rutz, Ellenor; Saboonchi, Fredrik; Helgesson, Magnus (2020). The Role of Refugee Status and Mental Disorders Regarding Subsequent Labour Market Marginalisation: A Register Study from Sweden. In: Social Psychiatry and Psychiatric Epidemiology, 55 (6), p. 697–704.

Noordt, Maaike van der; IJzelenberg, Helma; Droomers, Mariël; Proper, Karin I. (2014). Health Effects of Employment: A Systematic Review of Prospective Studies. In: Occupational and Environmental Medicine, 71 (10), p. 730–36.

Norredam, Marie; Mygind, Anna; Krasnik, Allan (2006). Access to Health Care for Asylum Seekers in the European Union—a Comparative Study of Country Policies. In: European Journal of Public Health, 16 (3), p. 285–89.

Paul, Karsten I.; Moser, Klaus (2009). Unemployment Impairs Mental Health: Meta-Analyses. In: Journal of Vocational Behavior, 74 (3), p. 264–82.

Piérard, Emmanuelle (2014). The Effect of Physician Supply on Health Status: Canadian Evidence. In: Health Policy, 118 (1), p. 56–65.

Porter, Matthew; Haslam, Nick (2005). Predisplacement and Postdisplacement Factors Associated With Mental Health of Refugees and Internally Displaced Persons: A Meta-Analysis. In: JAMA, 294 (5), p. 602.

Razum, Oliver; Wenner, Judith; Bozorgmehr, Kayvan (2016). Wenn Zufall über den Zugang zur Gesundheitsversorgung bestimmt: Geflüchtete in Deutschland. In: Das Gesundheitswesen, 78 (11), 711–14.

Razum, Oliver; Bozorgmehr, Kayvan (2016). Restricted Entitlements and Access to Health Care for Refugees and Immigrants: The Example of Germany. In: Global Social Policy, 16 (3), p. 321–24.

Rogstad, Ke; Dale, Helen (2004). What Are the Needs of Asylum Seekers Attending an STI Clinic and Are They Significantly Different from Those of British Patients? In: International Journal of STD & AIDS, 15 (8), p. 515–18.

Ruiz, Isabel; Vargas-Silva, Carlos (2018). Differences in Labour Market Outcomes between Natives, Refugees and Other Migrants in the UK. In: Journal of Economic Geography, 18 (4), p. 855–85.

Sangalang, Cindy C.; Becerra, David; Mitchell, Felicia M.; Lechuga-Peña, Stephanie; Lopez, Kristina; Kim, Isok (2019). Trauma, Post-Migration Stress, and Mental Health: A Comparative Analysis of Refugees and Immigrants in the United States. In: Journal of Immigrant and Minority Health, 21 (5), p. 909–19.

Schick, Matthis; Zumwald, Andre; Knöpfli, Bina; Nickerson, Angela; Bryant, Richard A.; Schnyder, Ulrich; Müller, Julia; Morina, Naser (2016). Challenging Future, Challenging Past: The Relationship of Social Integration and Psychological Impairment in Traumatized Refugees. In: European Journal of Psychotraumatology, 7 (1), 28057.

Schlaudt, Victoria A.; Bosson, Rahel; Williams, Monnica T.; German, Benjamin; Hooper, Lisa M.; Frazier, Virginia; Carrico, Ruth; Ramirez, Julio (2020). Traumatic Experiences and Mental Health Risk for Refugees. In: International Journal of Environmental Research and Public Health, 17(6), p. 1943.

Schnepf, Sylke Viola (2007). Immigrants' Educational Disadvantage: An Examination across Ten Countries and Three Surveys. In: Journal of Population Economics, 20(3), p. 527–45.

Schulz, Maike (2012). Messartefakte Bei Der Erfassung Der Gesundheit von Migranten in Deutschland: Zur Interkulturellen Äquivalenz Des SF-12-Fragebogen Im Sozio-Oekonomischen Panel (SOEP). SOEPpapers on Multidisciplinary Panel Data Research 447. Berlin: Deutsches Institut für Wirtschaftsforschung (DIW).

Schuring, Merel; Burdorf, Alex; Kunst, Anton; Voorham, Toon; Mackenbach, Johan (2009). Ethnic Differences in Unemployment and Ill Health. In: International Archives of Occupational and Environmental Health, 82 (8), p. 1023–30.

Schuring, Merel; Robroek, Suzan JW; Burdorf, Alex (2017). The Benefits of Paid Employment among Persons with Common Mental Health Problems: Evidence for the Selection and Causation Mechanism. In: Scandinavian Journal of Work, Environment & Health, October.

Schuss, Eric (2018). The Impact of Language Skills on Immigrants' Labor Market Integration: A Brief Revision With a New Approach. In: The B.E. Journal of Economic Analysis & Policy, 18 (4), 20170280.

Shishehgar, Sara; Gholizadeh, Leila; DiGiacomo, Michelle; Green, Anna; Davidson, Patricia M. (2017). Health and Socio-Cultural Experiences of Refugee Women: An Integrative Review. In: Journal of Immigrant and Minority Health, 19 (4), 959–73.

Staiger, Douglas; Stock, James (1994). Instrumental Variables Regression with Weak Instruments. t0151. Cambridge, MA: National Bureau of Economic Research.

Stauder, Johannes (2019). Unemployment, Unemployment Duration, and Health: Selection or Causation? In: The European Journal of Health Economics, 20(1), p. 59–73.

Trani, Jean-Francois; Bakhshi, Parul; Brown, Derek; Lopez, Dominique; Gall, Fiona (2018). Disability as Deprivation of Capabilities: Estimation Using a Large-Scale Survey in Morocco and Tunisia and an Instrumental Variable Approach. In: Social Science & Medicine, 211 (August), 48–60.

UNHCR – United Nations High Commissioner for Refugees (2023). Global Trends - Forced Displacement in 2022. Copenhagen: United Nations High Commissioner for Refugees.

Vilagut, Gemma; Forero, Carlos G.; Pinto-Meza, Alejandra; Haro, Josep M.; de Graaf, Ron; Bruffaerts, Ronny; Kovess, Viviane et al. (2013): The Mental Component of the Short-Form 12 Health Survey (SF-12) as a Measure of Depressive Disorders in the General Population: Results with Three Alternative Scoring Methods. In: Value in Health, 16 (4), p. 564–73.

Vogiazides, Louisa; Mondani, Hernan (2020). A Geographical Path to Integration? Exploring the Interplay between Regional Context and Labour Market Integration among Refugees in Sweden. In: Journal of Ethnic and Migration Studies, 46 (1), p. 23–45.

Vroome, Thomas de; van Tubergen, Frank (2010). The Employment Experience of Refugees in the Netherlands. In: International Migration Review, 44 (2), p. 376–403.

Wächter-Raquet, Marcus (2016). Einführung Der Gesundheitskarte Für Asylsuchende Und Flüchtlinge Der Umsetzungsstand Im Überblick Der Bundesländer. Gütersloh: Bertelsmann Stiftung.

Walther, Lena; Kröger, Hannes; Tibubos, Ana Nanette; Ta, Thi Minh Tam; von Scheve, Christian; Schupp, Jürgen; Hahn, Eric; Bajbouj, Malek (2020). Psychological Distress among Refugees in Germany: A Cross-Sectional Analysis of Individual and Contextual Risk Factors and Potential Consequences for Integration Using a Nationally Representative Survey. In: BMJ Open, 10 (8), e033658.

Wångdahl, Josefin; Lytsy, Per; Mårtensson, Lena; Westerling, Ragnar (2014). Health Literacy among Refugees in Sweden – a Cross-Sectional Study. In: BMC Public Health, 14 (1), p. 1030.

Ware, John; Kosinski, Mark; Keller, Susan (1996). A 12-Item Short-Form Health Survey Construction of Scales and Preliminary Tests of Reliability and Validity. In: Medical Care, 34 (3), p. 220–33.

Wenner, Judith; Bozorgmehr, Kayvan; Duwendag, Stella; Rolke, Kristin; Razum, Oliver (2020). Differences in Realized Access to Healthcare among Newly Arrived Refugees in Germany: Results from a Natural Quasi-Experiment. In: BMC Public Health, 20 (1), p. 846.

Will, Gisela; Homuth, Christoph (2020). Education of Refugee Adolescents at the End of Secondary School: The Role of Educational Policies, Individual and Family Resources. In: Soziale Welt, 71 (1–2), p. 160–200.

# Appendix

**Table A1: Detailed summary statistics**

| Variable | Mean | SD | Min | Max | Median | N |
|---|---|---|---|---|---|---|
| Female | 0.38 | | 0 | 1 | | 5,041 |
| At least 1 child lives in household | 0.67 | | 0 | 1 | | 5,041 |
| Age: 18 - 25 | 0.27 | | 0 | 1 | | 5,041 |
| 26-35 | 0.34 | | 0 | 1 | | 5,041 |
| 36-45 | 0.24 | | 0 | 1 | | 5,041 |
| > 45 | 0.15 | | 0 | 1 | | 5,041 |
| Partnership status: Single | 0.28 | | 0 | 1 | | 5,021 |
| Partner lives in Germany | 0.64 | | 0 | 1 | | 5,021 |
| Partner lives abroad | 0.09 | | 0 | 1 | | 5,021 |
| Education before immigration (ISCED-A): 0 | 0.09 | | 0 | 1 | | 4,872 |
| ISCED-A: 1 (primary education) | 0.15 | | 0 | 1 | | 4,872 |
| ISCED-A: 2 (Lower secondary) | 0.29 | | 0 | 1 | | 4,872 |
| ISCED-A: 3/4 (Upper secondary, non-tertiary) | 0.26 | | 0 | 1 | | 4,872 |
| ISCED-A: 5/6/7/8 (Tertiary education) | 0.21 | | 0 | 1 | | 4,872 |
| Country of origin illiterate | 0.05 | | 0 | 1 | | 5,038 |
| Was employed before migration | 0.66 | | 0 | 1 | | 4,979 |
| Citizenship: Syria | 0.69 | | 0 | 1 | | 5,041 |
| Afghanistan | 0.08 | | 0 | 1 | | 5,041 |
| Iraq | 0.12 | | 0 | 1 | | 5,041 |
| Eritrea | 0.05 | | 0 | 1 | | 5,041 |
| MENA | 0.03 | | 0 | 1 | | 5,041 |
| Western Balkans | 0.01 | | 0 | 1 | | 5,041 |
| Former USSR | 0.00 | | 0 | 1 | | 5,041 |
| Rest Africa | 0.02 | | 0 | 1 | | 5,041 |
| Other or stateless | 0.00 | | 0 | 1 | | 5,041 |
| No too severe traumatic experience during migration | 0.40 | | 0 | 1 | | 5,041 |
| Severe traumatic exp. during migration (sexual harassment, physical assault, shipwreck, robbery, prison) | 0.24 | | 0 | 1 | | 5,041 |
| Refuses to report | 0.36 | | 0 | 1 | | 5,041 |
| German score before immigration (1 bad - 5 good) | 1.1 | 0.4 | 1 | 5 | 1.0 | 5,033 |
| <= 1 year since arrival | 0.08 | | 0 | 1 | | 5,041 |
| 1 < years since arrival <= 2 | 0.34 | | 0 | 1 | | 5,041 |
| 2 < years since arrival <= 3 | 0.23 | | 0 | 1 | | 5,041 |
| 3 < years since arrival <= 4 | 0.25 | | 0 | 1 | | 5,041 |
| > 4 years since arrival | 0.09 | | 0 | 1 | | 5,041 |
| Months between arrival and asylum approval | 10.7 | 7.6 | 0 | 69 | 9 | 5,041 |
| Lives in private rather than communal accommodation | 0.79 | | 0 | 1 | | 5,018 |
| Never been discriminated based on origin | 0.65 | | 0 | 1 | | 4,982 |
| Seldom | 0.29 | | 0 | 1 | | 4,982 |
| Often | 0.05 | | 0 | 1 | | 4,982 |

| Variable | Mean | SD | Min | Max | Median | N |
|---|---|---|---|---|---|---|
| No worries about prospects of staying in Germany | 0.46 | | 0 | 1 | | 5,001 |
| Some worries | 0.26 | | 0 | 1 | | 5,001 |
| High worries | 0.28 | | 0 | 1 | | 5,001 |
| Felt welcome in Germany at arrival (1 not at all - 5 strongly) | 4.6 | 0.8 | 1 | 5 | 5 | 5,010 |
| Unemployment rate [%] (January of arrival year) | 7.2 | 2.9 | 1.5 | 16.9 | 6.8 | 5,041 |
| Population density [per sqkm] (December of arrival year - 1) | 924 | 1077 | 38 | 4682 | 366 | 5,041 |
| Foreigner share in population [%] (December of arrival year - 1) | 9.3 | 5.0 | 0.9 | 28.0 | 8.5 | 5,041 |
| Refugee share in foreigners [%] (December of arrival year - 1) | 14.8 | 12.2 | 2.0 | 103.4 | 12.0 | 5,041 |
| AfD voting share [%] (federal election 2013) | 4.6 | 1.0 | 2.2 | 7.9 | 4.6 | 5,011 |

Source: Own calculations based on IAB-BAMF-SOEP Survey of Refugees (2021).

**Table A2: Balance table between districts with and without eHC**

| Variable | No eHC | eHC | Difference |
|---|---|---|---|
| Unemployment rate [%] | 6.048 | 8.261 | 2.213*** |
| | (2.734) | (2.580) | (0.376) |
| Population density (per sqkm) | 496.561 | 719.355 | 222.794** |
| | (651.564) | (871.121) | (97.564) |
| Foreigner share [%] | 7.559 | 5.610 | -1.949*** |
| | (4.484) | (4.101) | (0.613) |
| Refugee in foreigners share [%] | 12.042 | 15.395 | 3.353*** |
| | (9.300) | (6.359) | (1.222) |
| AfD voting share | 4.561 | 4.943 | 0.382** |
| | (1.034) | (1.170) | (0.148) |
| Observations | 253 | 65 | 318 |

Notes: Standard deviation in parentheses. Analysis at the district level. Sample includes 318 of the 401 total districts in Germany to which at least one refugee in our sample has been dispersed. * p<0.10, ** p<0.05, *** p<0.01.

Source: Own calculations based on IAB-BAMF-SOEP Survey of Refugees (2021).

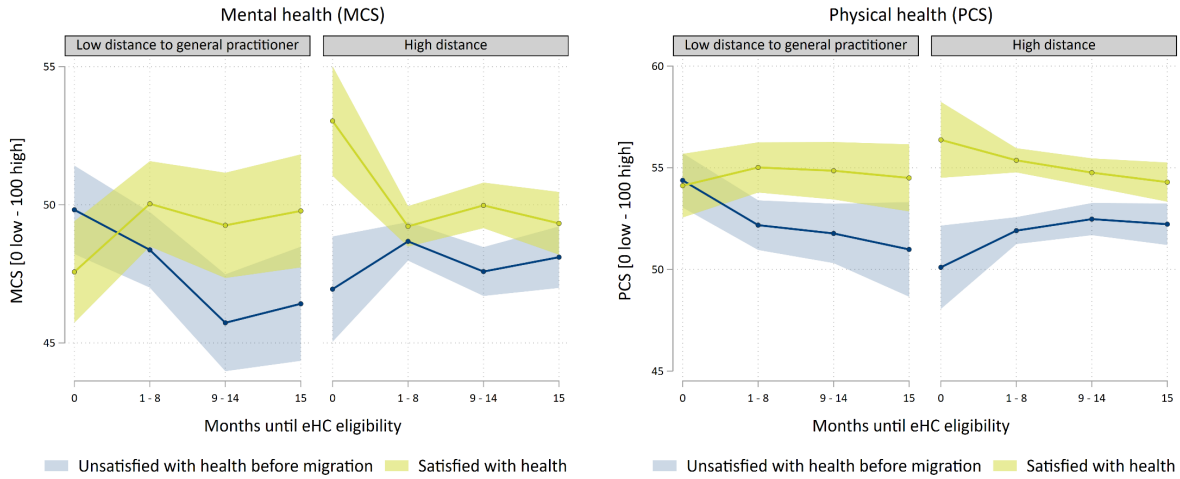
**Table A3: IV first-stage results**

| Outcome: | MCS | | | PCS | | |
|---|---|---|---|---|---|---|
| Sample: | Both | Females | Males | Both | Females | Males |
| Emty cell | (1) | (2) | (3) | (4) | (5) | (6) |
| Months until eHC eligibility: 1 - 8 (ref: 0) | 108.6 | 195.1 | -336.4 | -184.5 | 3.0 | -719.3 |
| | (352.2) | (612.5) | (467.4) | (372.5) | (439.4) | (947.7) |
| 9 - 14 | -328.3 | 393.7 | -1034.6* | -259.6 | 264.9 | -707.9 |
| | (406.5) | (653.7) | (551.0) | (394.1) | (446.4) | (962.4) |
| 15 | -544.0 | -508.7 | -822.4 | -474.5 | 536.6 | -1390.2 |
| | (389.7) | (643.9) | (509.0) | (410.7) | (446.8) | (990.8) |
| Satisfaction with health before migration | 1.6 | 53.0 | -65.7 | 68.1* | 140.6*** | -5.0 |
| | (36.9) | (62.4) | (47.1) | (38.5) | (39.6) | (100.8) |
| Months until eHC eligibility: 1 - 8 (ref: 0) # Satisfaction with health before migration | -7.1 | -11.6 | 42.0 | 15.1 | -16.3 | 79.1 |
| | (41.2) | (71.4) | (52.1) | (43.0) | (52.4) | (103.3) |
| 9 - 14 # Satisfaction with health before migration | 33.7 | -65.4 | 123.2** | 25.2 | -43.1 | 79.9 |
| | (46.8) | (76.1) | (61.1) | (45.3) | (52.7) | (104.9) |
| 15 # Satisfaction with health before migration | 67.1 | 43.4 | 113.2* | 49.0 | -70.8 | 151.8 |
| | (45.6) | (75.2) | (58.1) | (47.5) | (54.4) | (108.1) |
| GP distance | -26.5 | 14.4 | -119.6 | -56.6 | -12.1 | -139.0 |
| | (40.4) | (46.1) | (78.7) | (42.2) | (35.3) | (193.2) |
| Months until eHC eligibility: 1 - 8 (ref: 0) # GP distance | -3.4 | -14.1 | 76.5 | 67.5 | 47.8 | 148.0 |
| | (42.1) | (49.9) | (80.0) | (44.3) | (41.2) | (193.8) |
| 9 - 14 # GP distance | 10.3 | -87.9 | 132.3 | 73.1 | 13.0 | 159.1 |
| | (47.4) | (60.8) | (83.1) | (47.9) | (45.0) | (194.7) |
| 15 # GP distance | 52.1 | 5.4 | 149.6* | 89.4* | 23.5 | 190.1 |
| | (45.7) | (58.4) | (82.3) | (47.5) | (45.9) | (195.5) |
| Satisfaction with health before migration # GP distance | 4.4 | -0.3 | 14.5* | 6.6 | 1.2 | 15.9 |
| | (4.6) | (5.7) | (8.1) | (4.9) | (4.5) | (20.7) |
| Months until eHC eligibility: 1 - 8 (ref: 0) # Satisfaction with health before migration # GP distance | -0.9 | 0.2 | -9.5 | -7.1 | -3.6 | -16.7 |
| | (4.9) | (6.2) | (8.4) | (5.1) | (5.1) | (20.8) |
| 9 - 14 # Satisfaction with health before migration # GP distance | -2.0 | 10.5 | -16.1* | -8.1 | -0.2 | -18.1 |
| | (5.4) | (7.3) | (8.7) | (5.5) | (5.5) | (20.9) |
| 15 # Satisfaction with health before migration # GP distance | -7.6 | -0.2 | -19.7** | -10.2* | -1.4 | -21.9 |
| | (5.4) | (7.2) | (8.9) | (5.5) | (5.8) | (21.0) |
| Person observations | 3,454 | 1,376 | 2,078 | 3,454 | 1,376 | 2,078 |
| Person-year Observations | 5,041 | 1,935 | 3,106 | 5,041 | 1,935 | 3,106 |
| R2 | 0.112 | 0.152 | 0.092 | 0.238 | 0.262 | 0.202 |
| Mean of dependent variable | 48.8 | 47.1 | 49.9 | 53.5 | 51.1 | 55.0 |

Notes: Further included confounding variables (not reported): Months between arrival and asylum approval; Age: (i) 18-25, (ii) 26-35; (iii) 36-45; (iv) > 45; Female; At least 1 child in household; Female X Child; Partnership: (i) single, (ii) lives in Germany, (iii) lives abroad); Education before immigration: (i) ISCED1, (ii) ISCED2, (iii) ISCED 3, 4, (iv) ISCED 5, 6, 7, 8; Employed before migration; Citizenship: (i) Syria, (ii) Afghanistan, (iii) Iraq, (iv) Eritrea, (v) MENA, (vi) Western Balkans, (vii) Former USSR, (viii) Rest Africa, (ix) Other or stateless; Years since arrival (5 cat.); Traumatic experience during escape: (i) no, (ii) yes, (iii) refuses to report; Survey year dummies; German score before immigration; Country of origin illiterate; Private vs. communal accommodation; Discrimination experience based on origin: (i) never, (ii) seldom, (iii) often; Worries about prospects of staying in Germany: (i) no, (ii) some, (iii) big; Degree person felt welcome in Germany at arrival; District-level variables, assigned district in arrival year – 1: (i) Unemployment rate, (ii) Population density, (iii) Foreigner share, (iv) Refugee share among foreigners, AfD federal election 2013 voting share. Supplementary Figure A1 shows predicted margins based on models (1) and (4). Coefficients and standard errors are multiplied by 100 for readability. Standard errors clustered at person-level in parentheses. * p<0.10, ** p<0.05, *** p<0.01.

Source: Own calculations based on IAB-BAMF-SOEP Survey of Refugees (2021).

**Figure A1: Predicted MCS & PCS**




Notes: Figure shows predictive margins based on models 1 and 4 of supplementary Table A3. Included control variables: Months between arrival and asylum approval; Age: (i) 18-25, (ii) 26-35; (iii) 36-45; (iv) > 45; Female; At least 1 child in household; Female X Child; Partnership: (i) single, (ii) lives in Germany, (iii) lives abroad); Education before immigration: (i) ISCED1, (ii) ISCED2, (iii) ISCED 3, 4, (iv) ISCED 5, 6, 7, 8; Employed before migration; Citizenship: (i) Syria, (ii) Afghanistan, (iii) Iraq, (iv) Eritrea, (v) MENA, (vi) Western Balkans, (vii) Former USSR, (viii) Rest Africa, (ix) Other or stateless; Years since arrival (5 cat.); Traumatic experience during escape: (i) no, (ii) yes, (iii) refuses to report; Survey year dummies; German score before immigration; Country of origin illiterate; Private vs. communal accommodation; Discrimination experience based on origin: (i) never, (ii) seldom, (iii) often; Worries about prospects of staying in Germany: (i) no, (ii) some, (iii) big; Degree person felt welcome in Germany at arrival; District-level variables, assigned district in arrival year – 1: (i) Unemployment rate, (ii) Population density, (iii) Foreigner share, (iv) Refugee share among foreigners, AfD federal election 2013 voting share. Standard errors clustered at person-level. Shared areas denote 90 confidence intervals

Source: Own calculations based on IAB-BAMF-SOEP Survey of Refugees (2021).

# Figures



# Tables

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