

**ANDREA BERLANDA**

University of Padova

**ELISABETTA LODIGIANI**

University of Padova and LdA

**ELISA TOSETTI**

University of Padova

**GIORGIO VITTADINI**

University of Milan Bicocca and LdA

**THE IMPACT OF EU  
ENLARGEMENT ON  
IMMIGRANTS' MENTAL HEALTH**

**December 2023**

**Marco Fanno Working Papers – 309**

**dSEA**

DIPARTIMENTO DI SCIENZE  
ECONOMICHE E AZIENDALI  
'MARCO FANNO'



UNIVERSITÀ  
DEGLI STUDI  
DI PADOVA

# The Impact of EU Enlargement on Immigrants' Mental Health

Andrea Berlanda<sup>1</sup>, Elisabetta Lodigiani<sup>1 3</sup>,

Elisa Tosetti<sup>1</sup>, and Giorgio Vittadini<sup>2\*</sup>

<sup>1</sup>*University of Padua, Department of Economics and Management, Italy*

<sup>2</sup>*University of Milan Bicocca, Department of Statistics, Italy*

<sup>3</sup>*LdA, University of Milan, Italy*

November 2023

## Abstract

In this paper<sup>1</sup> we explore the impact of the 2007 European Union enlargement on the mental health of documented immigrants. Using data from a unique Italian administrative data set and employing a difference-in-differences individual fixed effect estimator, we find that the enlargement causes a significant improvement in the mental health of young male immigrants. To shed light on the mechanisms behind these results, we use data from a unique survey and show that the enlargement mitigates sources of health concerns and increases income and employment stability through permanent job contracts for young male immigrants. Overall, these findings suggest that enhanced labor market conditions due to enlargement may lead to subsequent important decrease in psychological distress among immigrants.

**Keywords:** Mental health, migration, drug prescriptions, EU enlargement

**JEL classification:** I12, F22, J60

---

\*E-mail: andrea.berlanda@unipd.it, elisabetta.lodigiani@unipd.it, elisa.tosetti@unipd.it, giorgio.vittadini@unimib.it.

<sup>1</sup>This paper was supported by the PRIN project n.2022CZKPMY entitled "Health and Wellbeing of the Elderly", funded by the MUR.

# 1 Introduction

Migrants in host countries often face important challenges related to their health and mental well-being. Factors like cultural adjustment, language barriers, labour market instability and social isolation, can contribute or exacerbate mental health problems amongst migrants. Adequate healthcare support and policies that address these unique needs are crucial to ensure the health and welfare of immigrant populations. Despite the large literature on the economic analysis of immigration, little is known about migrants' mental health in the host economy and how it responds to changes in uncertainty. Some recent studies focus on the effects of legalisation policy on labour market conditions (e.g., Devillanova et al., 2018) pointing at its important consequences on migrants' physical and mental health (e.g., Giuntella and Lonsky, 2020). However, little is known about the impact of policies that stimulate a reduction in uncertainty even amongst documented immigrants.

In this paper, we study the effect of the 2007 EU enlargement to Romania and Bulgaria on the mental health of documented migrants from these countries arriving in Italy before 2007. The new legal framework after the EU accession acted in practice as a “permanent” work permit, thus increasing employment stability and reducing the uncertainty about future labour income, for both legal and illegal immigrants.<sup>2</sup> For undocumented migrants, the EU access acted as a pathway to legalisation, offering the possibility of entering the formal economy, and escaping the constant threat of deportation. On the other hand, for legal immigrants, EU access implied the right to work without the requirement of any permit, thus simplifying administrative procedures. Using a large administrative data set that contains information on all individuals resident in the Lombardy region and the health care services they receive, we construct several objective measures of mental health well-being. Employing a difference-in-differences approach, we compare the mental health status of individuals from new Member states (Romania and Bulgaria) with that of individuals from other candidate countries (Albania, Bosnia and Herzegovina, Croatia, Kosovo, Macedonia, Montenegro, Serbia and Turkey), before and after the enlargement. We find that the EU enlargement significantly reduces mental health problems of Romanians and Bulgarians. The reduction in uncertainty for future prospects in the country of destination due to the EU enlargement may have positive effects on the mental health of immigrants from accession countries. One important channel through which we expect that their mental health improves is the so-called “labour market channel”: a gradual increase in employment stability due for example to a higher probability of getting permanent job contracts, will reduce uncertainty about future labour income with positive effects of the mental health of workers. In addition, EU enlargement has the potential to foster social integration and inclusion. The common labour and human rights standards that apply to all Member states may protect workers from accession countries from exploitation

---

<sup>2</sup>Please see Section 2 for further details on this.

and discrimination in the workplace. This in turn may reduce anxiety and stress amongst migrant workers. In our empirical analysis, we focus on males given their typical role as breadwinners. Our results especially hold for young males, who could be particularly exposed to work-related shocks relative to older workers, and thus perceiving more strongly the problem of job insecurity.

In order to test the labour market channel, we complement our analysis using data from a unique survey run by the Institute for Multiethnic Studies (ISMU) on a representative sample of the entire immigrant population of the Lombardy region, which provides detailed information on their labour market outcomes, including the sector of employment (informal/formal), the types of contract and other characteristics. This information allows us to shed light on the labour market mechanisms through which the extension of EU citizenship affects the mental health of immigrants from accession countries. Our results show that EU enlargement increases income and employment stability through permanent job contracts for legal young male immigrants. ISMU data allow us also to investigate, in selected waves, the impact of the enlargement on sources of health concerns. In line with previous results, we find that EU enlargement is associated with an increase in no sources for concerns and a decrease in self-reported causes related, among others, to working conditions and poverty. Our results also point at a reduction in homesickness of migrants, potentially associated with the increased ease of travel to their home country.

Italy provides an ideal context to study the effects of the 2007 enlargement as it has long been one of the main destinations for both Romanians and Bulgarians, even before 2007. Further, although the EU accession of Romania and Bulgaria was an expected event, its labour market consequences in Italy were not, and the EU accession unexpectedly implied for Romanians and Bulgarians full rights to work. The labour market channel highlighted in our analysis is in line with results from a number of recent studies. Adamopoulou and Kaya (2020) study the effect of the 2007 European Union (EU) enlargement on the consumption behaviour of immigrant households using ISMU data. The authors find that the enlargement induced a significant increase in consumption behaviour due to increased employment opportunities for both undocumented and documented immigrants: previously undocumented immigrants experienced an increase in the labour income by moving from the informal to the formal economy, whereas documented immigrants benefited from the increased probability of getting a permanent contract. Mastrobuoni and Pinotti (2015) exploit the same natural experiment in Italy and find that immigrant crime decreases due to increased employment opportunities, especially for undocumented immigrants. Adda et al. (2020) exploiting the enlargements of the EU occurred between the 2004 and 2007 analyse the effects of enlargements on the marriage market in Italy via the legalization effect. Our study adds to this literature by analyzing the effects of EU enlargement on the mental health of (legal) immigrants in Italy. These effects may be in part explained by the labour market channel.

A number of studies have analysed the impact of labour market conditions on mental health status. Carrieri et al. (2014) investigate the effect of non-

permanent jobs on a set of physical and mental health and happiness measures in Italy. Using a propensity score matching approach, the authors find a negative effect of temporary contracts on psychological well-being, that is particularly strong for male workers. Kuhn et al. (2009) study the consequences of job loss on a number of health costs measures in Austria, over the period from 1998 to 2002. Results indicate that while overall expenditure on medical treatments is not strongly affected by job displacement, job loss significantly rises expenditure for antidepressants and related drugs, as well as for hospitalizations due to mental health problems for men. Similar results are found by Rocco et al. (2018), who investigate the effect of job loss on the probability that (long-tenured) workers are prescribed anti-hypertensive and psychotropic drugs in Italy, using administrative data on pharmaceutical prescriptions for the years between 2007 and 2012. Results show that the probability of drug prescription increases among under-40 males but not amongst older males or female workers. One possible reason for this result is the higher vulnerability of young male workers to work-related shocks relative to women. Moscone et al. (2016) explore the impact of precarious employment on psychotropic medication prescription in Italy in the years from 2007 to 2011. Results show that the probability of psychotropic medication prescription is higher for workers under temporary job contracts, and that more days of work under temporary contract as well as more changes in temporary contracts significantly increase psychotropic medication prescription. Reichert and Tauchmann (2017) investigate the relationship between workforce reduction and mental health using German data. The authors find that workforce reduction has a negative impact on the mental health of employees, and point at subjective job insecurity as an important channel for this effect.

In line with this literature, our study shows that a reduction in uncertainty due to the EU enlargement could lead to a decrease in psychological distress, which would translate in a decrease in psychotropic medication.

Our study is also linked to the recent literature on the relationship between legalisation policy and the physical and mental health of immigrants. Giuntella and Lonsky (2020) look at the effects of the 2012 Deferred Action for Childhood Arrivals (DACA) on several health related outcomes, such as health insurance coverage, access to care, health care use, and health outcomes in the U.S. Their estimates suggest that DACA eligibility improved self-reported health, reduced depression symptoms, anxiety, distress, and hypertension among those below the poverty level. They claim that their results may be in part explained by the positive effects on labour market outcomes due to the temporary work authorization. In a related paper, Giuntella et al. (2021) also find evidence that DACA significantly improves the duration and quality of immigrants' sleep at least in the short run. While these studies focus on (temporary) legalization process, our analysis, given the administrative nature of our data, refers mainly to documented immigrants. This implies, first, that our results could be seen as a lower bound, as we would expect stronger effects for undocumented immigrants who benefit of a legalisation process, thus experiencing the greatest reduction of uncertainty. Second, they imply that, even for already documented

immigrants, permanent residency may lead to better labour market outcomes with important effects on mental health.

The remainder of the paper is structured as follows. In Section 2 we briefly discuss the Italian legal framework and the EU enlargement process. In Section 3 we introduce the data while in Section 4 we describe our empirical approach. Finally, in Section 5 we comment on the empirical results. Section 6 concludes.

## 2 Institutional framework

Legal framework conditions to work and live in Italy differ for non-EU and EU citizens, as only the first are subject to the provisions of the Consolidated Law on Immigration ("testo unico sull'Immigrazione").

The admission of immigrants from extra EU countries is regulated by a rigid quota system. Each year, the so-called Decreto Flussi ("Flows Decree") sets stringent limits to the number of work permits available by type of contract and province, requiring applicants to provide job offers from prospective employers. Successful work permit applicants can legally reside in Italy, and their spouse and children are eligible to obtain a residence permit for the purpose of 'family reunion'. The temporary residence permit for work reasons has a validity of two years for immigrants working under a permanent contract, one year for those with fixed-term (temporary) contracts, and a maximum of 9 months for seasonal workers.<sup>3</sup> Permits can be generally renewed, although this is usually subject to fulfilling certain conditions such as earning high-enough income and not engaging in criminal activity.

Until 2012, foreign workers who had their job contracts terminated had a period of 6 months to secure new employment. Failure to do so meant they had to leave the country, rendering them undocumented.<sup>4</sup> After five years of legal residence in Italy (with no more than 10 months of absence during the five years of legal residence, a minimum earning income, and the successful completion of an Italian language test), immigrants become eligible for a permanent permit of unlimited duration.<sup>5</sup> Finally, applying for Italian citizenship requires 10 years of continuous (legal) residence.

In contrast, EU citizens may live and work in the EU without the need of a work permit, thanks to the free movement of persons and right of establishment principles at the core of the single European market, and are guaranteed equitable treatment in terms of employment, wages, and working condition.

Since its start in 1951, the EU has expanded a number of times by admitting new Member states to the Union. Central to this expansion process was the inclusion of Bulgaria and Romania. Both countries applied for EU membership in

---

<sup>3</sup>See <https://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:decreto.legislativo:1998-07-25;286>

<sup>4</sup>The legislation has slightly changed and became less restrictive in 2012 with the so-called Fornero reform.

<sup>5</sup>Note that the Italian language test has been introduced in December 2010.

1995, started their accession negotiations in 2000 that successfully concluded in December 2004. In September 2006, the European Commission concluded that both countries were ready to carry the obligations of EU membership and on the 1st January 2007 they finally joined the EU. However, acquiring EU status did not automatically grant unrestricted rights for Bulgarians and Romanians to work across the EU. The Accession Treaties, in fact, allowed existing Member states to impose transitional labour market restrictions for a maximum of seven years following their accession. The majority of Member states, including Italy, announced that they would impose temporary restrictions to protect their labour markets from an expected large inflow of Romanians and Bulgarians. However, merely three days prior the EU accession, on December 28, 2006, the newly elected centre-left government in Italy lifted restrictions for workers employed in the following sectors<sup>6</sup>: agriculture, hotel and tourism, managerial and highly skilled work, domestic work, care services, construction, engineering, and seasonal work. Migration quotas were kept in the manufacturing sector, but they were eased in order to accommodate a larger number of workers from new Member countries. As a result, in 2007, Italy stood as the sole major economy in Europe to lift restrictions on workers from Romania and Bulgaria, granting them in practice full rights to work in Italy.<sup>7</sup> In essence, the new legal framework after the EU accession acted as a “permanent” work permit, for both documented (who did not have to renew their permits anymore) and undocumented (who became documented) immigrants. Although the EU accession of Romania and Bulgaria was an expected event, the sudden, unforeseen decision by the Italian government to remove labour market barriers turns this case into an interesting example of a quasi-natural experiment.

## 3 Data

### 3.1 Health care data

The primary source of data is the administrative data set from the Italian region Lombardy obtained under the ministerial project NETWORK.<sup>8</sup> This data set contains information on all individuals legally resident in the Lombardy region and the health care services they received from the region over the years from 2004 up to 2021. For each individual in the data set, we know their gender, the year and place of birth, the date of arrival in the region, and the eventual date of death or departure from the region. Further, we have information on their pharmaceutical prescriptions dispensed by General Practitioners (GP) or specialists. The data set includes, for each prescription, the patient identifier, the date of prescription, the quantity prescribed, and the Anatomical Therapeutic Chemical (ATC) code of the active ingredient in the drug. Finally, we have information on hospital admissions, specialist visits and visits to the Department

<sup>6</sup>see the law emitted on Dec 28, 2006, Prot.n.4468 Min. Interno Prot. n.23/II/2175/06

<sup>7</sup>see also Mastrobuoni and Pinotti (2015) and Adamopoulou and Kaya (2020) for a similar discussion.

<sup>8</sup>Code of the project NET-2016 02363853

of Mental Health and Addiction.

We build a proxy for the mental well-being of individuals in our sample by exploiting information on their pharmaceutical prescriptions. Specifically, we take all prescriptions of Psycholeptics and Psychoanaleptics drugs administered by a GP or specialist over time.<sup>9</sup> We observe that the selection of prescriptions of pharmaceutical products with similar ATC codes has been carried by Rocco et al. (2018) when analysing the effect of job loss on the probability that workers are prescribed psychotropic drugs. Exploiting information on pharmaceutical prescriptions, we build a measure of mental health that is equal to 1 if the individual has been issued at least one of the selected prescription during the reference year and 0 otherwise.

In our analysis we also consider two additional proxies of mental well-being, alternative to our main pharmaceutical prescription indicator. First, we identify all the individuals in our sample who have been hospitalised during the year with a diagnosis (principal or secondary) that falls in the category of mental disorders according to the ICD-9 classification.<sup>10</sup> Using this information, we build a measure of mental health, that we call *hospitalisation*, equal to 1 if the individual has been hospitalised for mental disorders at least once during the reference year and 0 otherwise. We build a second, alternative indicator of mental health by gathering information on services provided by the Department of Mental Health and Addiction (DMHA) to individuals in our sample. Such department provides services in area of psychiatry, psychology, and substances addiction. Accordingly, this measure, that we call *DMHA visits*, is equal to 1 if an individual has received any services from this department and zero otherwise in a given year. This variable can be considered as a proxy for the social vulnerability that originates from mental well-being problems. We expect both hospitalisation and DMHA visits to capture most extreme events concerning the mental health of individuals, leading to hospitalisation or follow-up and treatment in a DMHA center.

### 3.2 ISMU data

The second source of data for our analysis is an annual survey carried by the Foundation for Initiatives and Studies on Multi-Ethnicity (ISMU) since 2001. The aim of this survey is to document the living and working conditions of the migrant population in the Lombardy region, which is one of largest, most populated, wealthiest Italian regions, and accounts for 23% of the entire migrant population legally residing in Italy in 2005.<sup>11</sup> The data is a random sample

---

<sup>9</sup>More specifically, using the ATC classification, we have considered the prescription of Antipsychotics (N05A), Anxiolytics (N05B), and Hypnotics and Sedatives (N05C), Antidepressants (N06A), Psychostimulants (N06B), and Psycholeptics and psychoanaleptics in combination (N06C).

<sup>10</sup>We have considered all ICD codes between 290 and 319.

<sup>11</sup>See Dustmann et al. (2017).

of roughly 8,000 random individuals interviewed every year containing information on regular and irregular migrants resident in the region. Each wave collects data on migrants' demographic characteristics, such as age, country of origin, legal status, type of residence permit, year of arrival in Italy and in Lombardy, working and education status and some additional, wave-specific questions. We use these data for two main reasons. First, since our health care data set has very little information on individual characteristics, we will use ISMU data to produce to better understanding of the composition of the treatment and control groups in the health care data set. Second, we rely on these data to analyse the impact of the enlargement on main sources of distress and labour market outcomes.

In the waves for the year 2004 and 2009, ISMU collects information on factors that negatively affect respondent's health status, with 8 possible answers namely: no reason, working conditions, housing, homesickness, poverty, unemployment, communication (language problems) and information issues.<sup>12</sup> While this is a general question that does not refer only to mental health, it provides us with interesting information about the main sources of concern for the respondents' well-being. To explore the impact of EU enlargement on individual well-being and sources of distress, we have created 6 dummy variables for selected answers to this question.<sup>13</sup>

Additionally, we use yearly waves from 2004 to 2009, to perform our analysis on the labour market channel. In particular, ISMU data provide us information on respondents' occupational status, including the occupational sector (formal or informal), and the type of employment contract (temporary or permanent).<sup>14</sup> Finally, a self-reported measure of personal net monthly labour income is provided for employed respondents.<sup>15</sup>

### 3.3 Sample selection

In our analysis we want to evaluate the impact of EU enlargement on migrants' mental well-being over the period going from 2004 to 2009 exploiting the quasi-natural experiment discussed in Section 2. In our health care data set we define as the treatment group the sample of migrants born in Romania and Bulgaria, and as the control group all individuals born in Croatia, Bosnia and Herze-

---

<sup>12</sup>More precisely, respondents were asked to answer the question "Which factors currently have a negative impact on your health status?". We note that in 2004 respondents were allowed to choose up to two answers to this question, while in 2009 they could select up to 3 answers.

<sup>13</sup>We disregard communication and information issues as not related to our research question.

<sup>14</sup>We construct these three variables using the question on migrants' working status. Respondents can answer if they are unemployed, students, housepersons, or if they are employed. If employed individuals can reply if the type of occupation is with a regular contract or not, if the job is subordinate or not, and finally if the contract is permanent or not.

<sup>15</sup>ISMU surveys directly ask the respondents their average monthly income.

govina, Serbia, Montenegro, Kosovo, Albania, North Macedonia, and Turkey. Migrants from those countries provide the natural counterpart to our treatment group as all these countries were EU candidate Members at the time, so they are comparable in terms of economic and political criteria required for admission. In addition, with the exception of Turkey, all these countries belong to the same geographical macro area, and share similar linguistic, and cultural characteristics. We finally observe that the same country for treatment and control group have been considered by Adamopoulou and Kaya (2020) and Mastrobuoni and Pinotti (2015).

As a first step, we select all individuals aged between 18 and 59 in treatment and control registered to the Health Lombardy System in 2004. By doing this, we are able to focus on working age adults, plausibly not in education.<sup>16</sup> We limit our analysis to migrants who have been continuously resident in the region from 2004 to 2009 in order to obtain a panel data set that is balanced both in terms of the number of individuals and time horizon in the pre- and post-treatment periods. To avoid anticipation effects in our sample, we restrict the analysis only to individuals who arrived in the region at most in 2004, before the conclusion of the access negotiations.<sup>17</sup> Further, we drop from our sample all migrants who arrived before 2000. The reason for this choice is the fact that (EU and Extra-EU) immigrants are eligible for citizenship after 10 years of legal staying in Italy. Since we do not have information on the year of arrival in Italy we assume that it corresponds to the year migrants are first registered to the Health Lombardy System.<sup>18</sup>

In our analysis, we need comparability between the treatment and control groups before the policy was implemented. Unfortunately, our baseline analysis data do not contain information on migrants' demographic characteristics. To solve this issue we rely on ISMU data. We split the sample by sex and compare the two subgroups on selected outcome variables. Table 1 provides summary statistics for demographic characteristics of migrants in the pre-treatment period. Results show that while the male sub samples from treatment and control groups are comparable in all their characteristics, women present sharp differ-

---

<sup>16</sup>While the Health Lombardy System does not have information on education, ISMU data confirm that few immigrants in the selected sample have post-secondary education or are students. However, we perform some robustness checks on this aspect in Section 5.

<sup>17</sup>Accession negotiations to EU have been concluded on the 16th December 2004. We assume then that all migrants who migrated in 2004 made their migration choice before this date.

<sup>18</sup>We use ISMU data to validate this choice. Our concern is that the year of arrival in Italy of migrants differs greatly from the year of arrival in the region. ISMU data allows us to control for that since it reports both the timer of arrival in the country and the one in Lombardy. First, we restrict the sample to immigrants who entered Italy between 2000 and 2004 and were residents in the region in our estimation period. We observe that over 90% of those migrants moved into the region within one year since their arrival in Italy. As a further check, we did the opposite operation, and we restricted the sample to migrants who arrived in Lombardy between 2000 and 2004. Around 85% of them entered the region within one year since their arrival in Italy.

ences in the two groups, in terms of labour market outcomes, residence permit typology, and education. For this reason, in the rest of the paper we restrict our analysis only to men. After these cleaning operations, for our health care data set we obtain a balanced panel made of 15,734 male migrants aged between 18 and 59 in 2004 over a 6 years period, with a total of 94,404 observations. Table A1 for the health care data set. One important aspect we can notice is how DMHA Visits and Hospitalizations are events much rarer than drug prescriptions. Hence, we are going to use this last variable as the main outcome of the analysis.

Due to the administrative nature of the previous data set, our sample refers only to documented immigrants. In order to have a comparable sample, in the ISMU data set we select immigrants who report having a valid residence permit (permanent or temporary) at the time of the interview. We drop individuals with Italian citizenship and retain only individuals with less than ten years of residence in Italy to exclude immigrants who can be eligible to apply for Italian citizenship.<sup>19</sup> Therefore, we restrict the sample to migrants who arrived in Italy after January 1, 2000, and retain only migrants who entered in Italy at the end of 2004 at the latest, again to avoid anticipation effects. Finally, as our results on mental health especially hold for young males, we restrict our sample only to male migrants who belong to cohorts 1964-1986 (i.e., aged between 18 and 40 in 2004 and aged between 23-45 in 2009). The final sample is a repeated cross-section consisting of 1,169 individual observations over the sample period. Table A2 reports summary statistics for ISMU data.

---

<sup>19</sup>Another possible concern is the fact that migrants who meet certain requirements can qualify for a permanent residence permit after five years of residence. We have checked this potential issue using ISMU data. Looking at Table 1, less than 3% of male migrants hold a permanent residence permit before 2007. When we restrict the sample to male migrants aged between 18-40 in 2004 who have resided in Italy for at least five years, the phenomenon still appears to be quite rare. Only 13.7% of eligible individuals in our sample (847 obs.) hold a permanent permit, and this share reduces to 11.6% if we restrict the analysis only to individuals in the control group (567 obs.).

Table 1: Summary statistics: socio-demographic characteristics by gender of regular migrants in the Lombardy region born between 1945 and 1986 in our selected sample of countries (ISMU 2004-2006)

PANEL A		Balance Tables - Regular migrants pre 2007: Men						
	Treated			Control			Difference	
<b>Outcome Variable</b>	N	Mean	SD	N	Mean	SD	Diff.	p (2-tailed)
Age	207	30.271	5.153	418	27.943	6.032	2.328	0
Years Since Arrival	207	3.952	1.284	418	3.866	1.338	.086	.439
Permanent Permit	207	0.029	0.168	418	0.026	0.160	.003	.85
Residence Permit: Family	207	0.039	0.193	418	0.053	0.224	-.014	.42
Residence Permit: Work	207	0.928	0.260	418	0.840	0.367	.088	.001
Residence Permit: Study	207	0.010	0.098	418	0.074	0.262	-.065	0
Personal Income	184	1180.54	436.54	355	1175.91	417.98	4.634	.906
Employed	204	0.966	0.182	399	0.930	0.256	.036	.048
Houseperson	204	0.005	0.070	399	0.003	0.050	.002	.664
Student	204	0.005	0.070	399	0.038	0.190	-.033	.002
Unemployed	204	0.025	0.155	399	0.023	0.149	.002	.882
Tertiary Education	207	0.092	0.289	418	0.084	0.277	.008	.74
Muslim	207	0.010	0.098	418	0.519	0.500	-.509	0

PANEL B		Balance Tables - Regular migrants pre 2007: Women						
	Treated			Control			Difference	
<b>Outcome Variable</b>	N	Mean	SD	N	Mean	SD	Diff.	p (2-tailed)
Age	296	30.432	4.957	311	29.508	5.479	.924	.03
Years Since Arrival	296	3.622	1.472	311	3.691	1.352	-.07	.544
Permanent Permit	296	0.037	0.189	311	0.090	0.287	-.053	.007
Residence Permit: Family	296	0.280	0.450	311	0.572	0.496	-.292	0
Residence Permit: Work	296	0.669	0.471	311	0.305	0.461	.363	0
Residence Permit: Study	296	0.017	0.129	311	0.106	0.308	-.089	0
Personal Income	218	868.67	273.01	169	763.67	259.55	105.00	0
Employed	293	0.799	0.402	305	0.574	0.495	.225	0
Houseperson	293	0.116	0.321	305	0.275	0.447	-.159	0
Student	293	0.017	0.130	305	0.085	0.280	-.068	0
Unemployed	293	0.065	0.247	305	0.066	0.248	-.001	.971
Tertiary Education	296	0.209	0.408	311	0.125	0.332	.084	.006
Muslim	296	0.027	0.162	311	0.415	0.493	-.388	0

## 4 Methods

### 4.1 Panel data analysis

In this paper we adopt a difference-in-differences (diff-in-diff) approach to study the effect of EU enlargement on migrants' mental well-being. Our baseline equation takes the following form:

$$h_{it} = \beta \cdot post_{2007} \cdot treatment_i + \zeta' \cdot \mathbf{x}_{it} + \delta_i + \eta_t + \epsilon_{it} \quad (1)$$

where  $h_{it}$  represents our mental health outcome measure. The coefficient  $\beta$  is our key parameter capturing the causal effect of EU enlargement on the dependent variable.  $\mathbf{x}_{it}$  is a vector of individual-specific characteristics where we

include age and age squared, and fixed effects for the number of years since arrival in the region. We include time since arrival dummies to account for the beneficial effect of a relatively longer stay in the country in terms of higher integration, better knowledge of administrative procedures and increased access to long-term residence permits. In order to account for individual, time invariant, heterogeneity we include individual fixed-effects,  $\delta_i$ , while with time-fixed effects  $\eta_t$  we aim at capturing the effect of shocks common to all individuals. Finally,  $\epsilon_{it}$  represents an error term with standard errors clustered at the individual level. We first estimate equation (1) using all individuals in the sample. To explore heterogeneity in the effect of the policy on young versus older migrants, we then carry the analysis by splitting the sample in age groups, a younger group made of individuals between individuals that are 18 to 40 years old in 2004 (11,571 individuals) and an older group with individuals that are 41 to 59 years old in 2004 (4,163 individuals).

## 4.2 Repeated cross section analysis

As discussed in Section 3 we construct some additional outcomes using ISMU survey data. First, we analyze subjective measures of well-being using information available from the 2004 and 2009 surveys. These measures allow us to shed light on the factors that affect negatively their well-being, helping us to better identify the mechanism behind our results. Hence, we exploit ISMU data to explore the labour market channel by studying the impact of EU enlargement on a set of labour market outcomes. A number of studies have documented a strong relationship between migrants’ legal status and their labour market outcomes (see, among others, Giuntella and Lonsky (2020); Adamopoulou and Kaya (2020)). These outcomes are relevant since they directly affect individuals’ mental well-being and this effect is particularly strong among young male adults (Kuhn et al. (2009); Rocco et al. (2018); Moscone et al. (2016)). To test this hypothesis, we take the following empirical specification:

$$y_{ict} = \beta \cdot post_{2007} \cdot treatment_{ic} + \gamma' \cdot \mathbf{x}_{ict} + \delta_{ic} + \eta_t + \epsilon_{ict} \quad (2)$$

where  $y_{ict}$  is our subjective well-being measure or the labour market outcome for individual  $i$  from country of origin  $c$ , observed in year  $t$ . Also in this equation, the coefficient  $\beta$  is our key parameter capturing the causal effect of EU enlargement on the dependent variable  $y_{ict}$ .  $\mathbf{x}_{ict}$  is a vector of individual controls including age, age squared, years of residence fixed effects, religion, number of children, gender, the purposes of the residence permit,<sup>20</sup> education, province of residence, and marital status. We incorporate country of origin-fixed effects,  $\delta_c$ , to capture time-invariant characteristics common to all individuals from a specific country, such as cultural or historical factors, and time-fixed effects  $\eta_t$

---

<sup>20</sup>ISMU data contain information on the purposes of residence permit, whether it is for family reasons, subordinate work, autonomous work, study, asylum, other, or not declared. In our analysis, we exclude individuals who don’t declare the type of their residence permit.

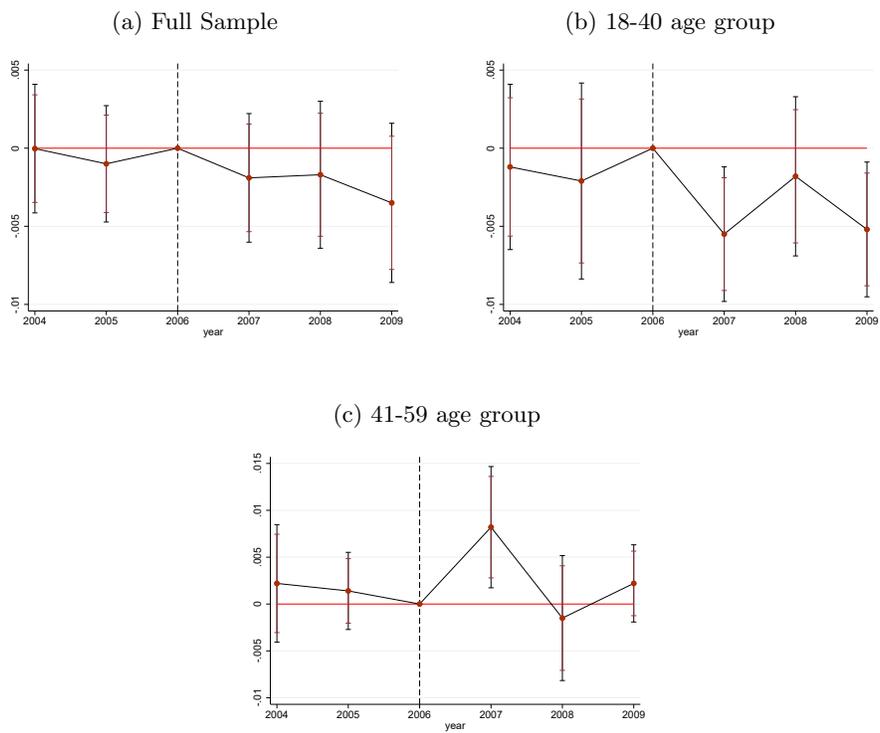
as proxies for shocks common to all individuals. Finally,  $\epsilon_{ict}$  is the error term with standard errors clustered at the nationality $\times$ year level.

## 5 Results

### 5.1 Identification

As already explained in Section 2, to ensure the exogeneity of the treatment, we select individuals who arrive in Italy before 2004, date in which the EU concluded the admission procedures for Romania and Bulgaria (Council of the European Union, 2004). The diff-in-diff approach also relies on the assumption that treatment and control groups are comparable in the pre-treatment period, to ensure that the  $\beta$  coefficient in equation (1) does not capture dynamics that were in place before the new policy was introduced. A first piece of evidence supporting this hypothesis on our data comes from Panel A in Table 1, which compares exogenous characteristics in treatment and control groups in the years 2004 to 2006. From this table we can observe how, in the pre-treatment period, men in the treatment and control group are balanced on most demographic characteristics contained in ISMU data. We now further validate such assumption by carrying an event-study analysis for our baseline equation. Accordingly, in equation 1 we replace the treatment variable  $post_{2007} \cdot treatment_{ic}$  with a set of year dummies interacted with the treatment group, using the year 2006 as reference year. Figure 1 displays the estimated coefficients attached to the year dummies interacted with the treatment group and associated confidence intervals. We perform this analysis on the full sample (subgraph (a)) and by age group (subgraph(b) and (c)). Results show statistically insignificant pre-treatment coefficients for the three samples analysed. Therefore, in the years before the EU enlargement, migrants from our treatment group do not exhibit significant differences in terms of drug prescription probabilities compared to the treatment group.

Figure 1: Event study for drug prescription using the health care data set



Notes: Each sub-figure shows the dynamic effect of being in the treatment group on drug prescriptions keeping 2006 as the reference year. All the regressions include as controls: year fixed effects, individual fixed effects, time since arrival fixed effects, age and age square. Standard errors are clustered at the individual level.

## 5.2 Baseline results

Table 2 presents results from the estimation of the baseline model (1), using health care data. As before, we carry estimation using three different samples, the full sample (Columns (1) and (4)), the 18-40 age group (Columns (2) and (5)), and the 41-59 age group (Columns (3) and (6)). While columns (1) to (3) present the effect of EU enlargement including only individuals and time fixed effects, columns (4) to (6) include a full set of controls adding time since arrival in Italy individual fixed effects and individual-specific control variables. Our analysis points at heterogeneity in the effect of EU enlargement on the fraction of individuals being prescribed Psycholeptics and Psychoanaleptics drugs in the treatment group. While we do not observe any effect on older individuals, we note a negative and statistically significant effect on younger adults. This is a sizeable effect: EU enlargement induces a 0.31 percentage points reduction in drug prescriptions (column 5), corresponding to a 20% reduction in the unconditional mean (see Table A1).

Table 2: The impact of EU enlargement on migrants' mental health

OBSERVED MEASURE HEALTH: DRUG PRESCRIPTIONS						
Age group in 2004	Full sample	18-40	41-59	Full sample	18-40	41-59
	(1)	(2)	(3)	(4)	(5)	(6)
Post $\times$ Treatment Group	-0.0016 (0.0016)	-0.0032* (0.0013)	0.0031 (0.0026)	-0.0020 (0.0016)	-0.0031** (0.0012)	0.0019 (0.0033)
<i>Controls</i>	$\times$	$\times$	$\times$	$\checkmark$	$\checkmark$	$\checkmark$
<i>Individual f.e.</i>	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
<i>Year f.e.</i>	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
<i>Time since arrival f.e.</i>	$\times$	$\times$	$\times$	$\checkmark$	$\checkmark$	$\checkmark$
Observations	94,404	69,426	24,978	94,404	69,426	24,978
R <sup>2</sup>	0.44885	0.45300	0.43900	0.44892	0.45308	0.43923

*Notes:* We identify as treated individuals born in Romania or Bulgaria. The dependent variable is the likelihood a migrant has been prescribed Psycholeptics and Psychoanaleptics drugs. The sample is split according to the age of individuals in 2004: the full sample (Columns (1) and (4)), the 18-40 age group (Columns (2) and (5)), and the 41-59 age group (Columns (3) and (6)). All the specifications include individual and year fixed effects. Columns (4) to (6) include also time since arrival in Italy fixed effects and individual-specific control variables (*age* and *age*<sup>2</sup>). More details on the outcomes variables are provided in Section 3. \*/\*\*/\*\* indicate significance at 10%/5%/1%, respectively; standard errors in parentheses clustered at the individual level.

**Alternative outcomes.** We now use the two alternative measures for mental health introduced in Section 3. Results are reported in Table 3, where columns (1) and (2) refer to DMHA visits while columns (3) and (4) refer to hospitalisations. Results show that the EU enlargement has reduced the incidence of the most severe events, as evidenced by reduced HDMA visits and hospitalisations, only for individuals belonging to the younger age group. As before, we observe no statistically significant effect on the elderly group for DMHA visits, while a positive effect is found for hospitalizations.

Table 3: The impact of EU enlargement on migrants' mental health: the use of alternative outcomes

Age group in 2004	OBSERVED MEASURE HEALTH			
	DMHA VISITS		HOSPITALIZATIONS	
	18-40	41-59	18-40	41-59
	(1)	(2)	(3)	(4)
Post $\times$ Treatment Group	-0.0004* (0.0002)	-0.0002 (0.0003)	-0.0007** (0.0003)	0.0018* (0.0010)
<i>Controls</i>	✓	✓	✓	✓
<i>Individual f.e.</i>	✓	✓	✓	✓
<i>Year f.e.</i>	✓	✓	✓	✓
<i>Time since arrival f.e.</i>	✓	✓	✓	✓
Observations	69,426	24,978	69,426	24,978
R <sup>2</sup>	0.52684	0.36763	0.24323	0.23247

*Notes:* We identify as treated individuals born in Romania or Bulgaria. The dependent variables are: the likelihood an individual has used services from the Department of Mental Health and Addiction (Columns (1) and (2)), the likelihood an individual has been hospitalized at least once in a year for a diagnosis that falls in the category of mental disorders (Columns (3) and (4)). The sample is split according to the age of individuals in 2004: the 18-40 age group (odd Columns), and the 41-59 age group (even Columns). All the specifications include individual and year fixed effects, time since arrival in Italy fixed effects, and individual-specific control variables (*age* and *age*<sup>2</sup>). \*/\*\*/\*\* indicate significance at 10%/5%/1%, respectively; standard errors in parentheses clustered at the individual level.

### 5.3 Robustness checks

The definition of the age groups in our analysis, particularly in the choice of the lower and upper limits of the younger age group is arbitrary. Hence, in this section, we perform some robustness checks on the definition of the age groups adopted in our analysis. First, we increase the minimum age of the younger subsample to 21 years old. This exercise allows us to exclude migrants who were still completing their education process. Table A3 shows that our results are unaffected. Hence, we increase the maximum age of the younger subsample to 45 years old. Results of this analysis are reported in table A4. While estimates of our baseline equation are unaffected, when focusing on alternative outcomes results for DMHA visits are confirmed. Results for hospitalizations lose in terms of precision and magnitude of the estimated negative coefficients for young males, while they become negatives and not statistically significant for the old ones. These results suggest estimates exhibit the same pattern as the baseline ones for both the main outcome variable and the alternative outcomes, at least for younger adults.

## 5.4 Repeated cross-section analysis

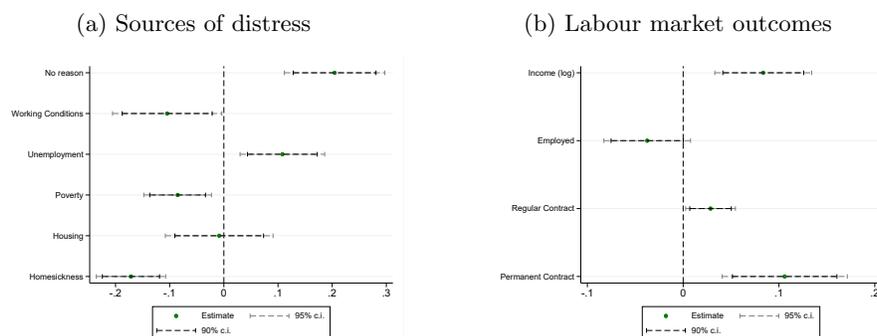
In this Section, we report results of the analysis using ISMU data on self-reported well-being and labor market outcomes for young males. All the equations follow the specification described in Equation 2. The aim of this analysis is to shed some lights on the mechanisms through which the extension of EU citizenship affects the mental health of immigrants from accession countries.

**Sources of distress.** Figure 2a and Table A5 summarise the results from the self-reported well-being analysis. Specifically, we estimate equation (2) where the dependent variable is given by an indicator variable for one of the 6 possible answers to the question "Which factors currently have a negative impact on your health status?". We note an overall positive causal impact of EU enlargement on treated migrants, as documented by the positive coefficient attached to the  $Post \times Treatment$  variable when the dependent variable is an indicator variable for the answer "no reason". When looking at the specific sources of distress, we observe that EU enlargement is accompanied by a statistically significant reduction in worrying about working conditions (-10.5%) and poverty (-8.5%), while not significant effect can be found for worrying about housing conditions. Further, we note an increase in the share of people for which distress is caused by unemployment (+10.8%). This finding, despite puzzling, is in line with our empirical evidence of EU enlargement creating the conditions for a "less demanding" environment for migrants, that will be discussed more in detail in the next paragraph. Finally, Figure 2a shows that EU accession significantly reduces by 17.2 percentage points the likelihood of migrants' being homesick. This result could be explained by the fact that access to the EU is likely to have produced a reduction in the necessary documentation for travelling within Europe. This in turn could have compressed costs for migrants who wish to visit their home country or want to receive visits from someone in their host country. Such result may be at the root of the improvement in migrants' mental health status documented by our baseline results. Overall, these results suggest that the labour market plays a crucial role in the mechanism driving our findings, prompting further investigation into this channel.

**Labour market outcomes.** Figure 2b and Table A6 report a summary of results from estimation of equation (2) where the dependent variable is given by an indicator variable for one of the 4 possible labour outcomes, namely income (in logs), whether the respondent is employment, if he has a regular contract and if he holds a permanent contract. Results show that being beneficiaries of EU enlargement is associated with a general improvement in labour market conditions. After 2007 workers in the treatment group exhibit higher wages and, when employed, are more likely to hold a regular contract. If we focus on subordinate workers we can analyze also the type of contract, and we observe an increase in the likelihood of holding a permanent contract. More specifically, accession to the EU is associated with 8.4% rise in salary, an increase by 2.9% in the likelihood of holding a regular contract among employed workers, and an

increase by 10.9% in the likelihood of holding a permanent one among subordinate workers. This improvement in labour market conditions is also reflected into a 10.5% reduction of treated migrants reporting working conditions as a source of distress reported in Figure 2a. However, we note the marginally significant negative coefficient attached to  $Post \times Treatment$  when the dependent variable is employment. Although this result may seem puzzling at first glance, it can be explained by the fact that in the absence of the risk of deportation, migrants have more time to look for better working conditions, which in turn may increase the length of their unemployment spells. This last result may also explain the positive effect observed on unemployment as a source of distress in Figure 2a. Our findings provide an example of how migration policies can affect workers' labour market outcomes, as previously documented also by Giuntella and Lonsky (2020); Adamopoulou and Kaya (2020). Accession to the EU has improved working conditions in our treatment group, granting them better salaries and working conditions. This improvement in living conditions has been translated into a reduction of distress for migrants in our treatment group, as previously documented by Kuhn et al. (2009); Rocco et al. (2018); Moscone et al. (2016).

Figure 2: The impact of EU enlargement on migrants' well-being and labour market outcomes



Notes: OLS estimation of Equation 2 using ISMU data. Subfigure (a) reports results for migrants' sources of stress and bad health: no source of stress, working conditions, unemployment, poverty, housing, and homesickness. Subfigure (b) reports the results for migrants' labour market outcomes: personal income (log), employment status, the share of workers employed with regular contracts, and the share of subordinate workers with permanent contracts. All the analysis includes male migrants aged between 18-40 in 2004, holding a resident permit (if not differently stated). Standard errors are clustered at the nationality  $\times$  year level.

## 6 Conclusions

In this paper, we have studied the effect of the 2007 EU enlargement to Romania and Bulgaria on mental well-being. Our results show how policies that reduce uncertainty in the destination country can have sizeable effects on migrants' standard of living with important consequences for their mental health. The

study focused on migrants residing in the Lombardy region in Italy between 2004 and 2009, using a unique administrative dataset on health care services provided in the region. We compared Romanian and Bulgarian migrants with individuals coming from countries that were EU candidate members at the time. We find that the EU citizenship status is associated with a decrease in mental health services used by young male adults. We explored as main outcome variable Psycholeptics and Psychoanaleptics drug prescriptions and find a sizeable and significant effect with a 20% reduction in the use of these drugs among young male adults.

To complement our analysis, we relied on a unique survey on immigrants in the Lombardy region, which provides several labor market information, and in selected waves, information about main sources of distress. We found that EU enlargement is associated with an increase in no sources for distress and a decrease in self-reported causes related, among others, to working conditions, poverty and homesickness. Then, we investigated the effect of the enlargement on labour market outcomes. In line with previous results, we found that the EU accession induces more stable and better-paying jobs. We claim that these effects induce a reduction of stress for treated individuals with a consequent improvement in their mental well-being. From a policy perspective, our results suggest that policies aiming at simplifying bureaucratic procedures and reducing uncertainty in the destination countries can have sizeable effects on health and well-being.

## References

- Adamopoulou, Effrosyni and Ezgi Kaya**, “Not just a work permit: EU citizenship and the consumption behaviour of documented and undocumented immigrants,” *Canadian Journal of Economics/Revue canadienne d’économique*, 2020, 53 (4), 1552–1598.
- Adda, Jerome, Paolo Pinotti, and Giulia Tura**, “There’s More to Marriage than Love: The Effect of Legal Status and Cultural Distance on Inter-marriages and Separations,” CEPR Discussion Papers 14432, C.E.P.R. Discussion Papers February 2020.
- Carrieri, Vincenzo, Cinzia Di Novi, Rowena Jacobs, and Silvana Robone**, “Insecure, sick and unhappy? Well-being consequences of temporary employment contracts,” *Factors affecting worker well-being: the impact of change in the labor market*, 2014, 40, 157–193.
- Council of the European Union**, “Brussels European Council, 16–17 December 2004: Presidency Conclusions,” 2004.
- Devillanova, Carlo, Francesco Fasani, and Tommaso Frattini**, “Employment of Undocumented Immigrants and the Prospect of Legal Status: Evidence from an Amnesty Program,” *ILR Review*, 2018, 71 (4), 853–881.
- Dustmann, Christian, Francesco Fasani, and Biagio Speciale**, “Illegal Migration and Consumption Behavior of Immigrant Households,” *Journal of the European Economic Association*, 2017, 15 (3), 654–691.

- Giuntella, Osea and Jakub Lonsky**, “The effects of DACA on health insurance, access to care, and health outcomes,” *Journal of Health Economics*, 2020, *72*, 102320.
- , – , **Fabrizio Mazzonna, and Luca Stella**, “Immigration policy and immigrants’ sleep. Evidence from DACA,” *Journal of Economic Behavior and Organization*, 2021, *182*, 1–12.
- Kuhn, Andreas, Rafael Lalive, and Josef Zweimüller**, “The public health costs of job loss,” *Journal of Health Economics*, 2009, *28* (6), 1099–1115.
- Mastrobuoni, Giovanni and Paolo Pinotti**, “Legal status and the criminal activity of immigrants,” *American Economic Journal: Applied Economics*, 2015, *7* (2), 175–206.
- Moscone, Francesco, Elisa Tosetti, and Giorgio Vittadini**, “The impact of precarious employment on mental health: The case of Italy,” *Social Science & Medicine*, 2016, *158*, 86–95.
- Reichert, Arndt R. and Harald Tauchmann**, “Workforce reduction, subjective job insecurity, and mental health,” *Journal of Economic Behavior and Organization*, 2017, *133*, 187–212.
- Rocco, Lorenzo, Angela Crema, Lorenzo Simonato, and Laura Cestari**, “The effect of job loss on pharmaceutical prescriptions,” *Social Science & Medicine*, 2018, *217*, 73–83.

# Appendix

## A1 Summary statistics

Table A1: Summary statistics on the health care data set

Panel A	Full Sample				
	N	Mean	SD	Min	Max
Treatment Group	94,404	0.3930	0.4884	0.0000	1.0000
Age	94,404	37.1886	9.2774	18.000	64.000
Years Since Arrival	94,404	4.2391	2.1734	0.000	9.000
Drugs Prescriptions	94,404	0.0158	0.1248	0.000	1.000
DMHA Visits	94,404	0.0004	0.0206	0.000	1.000
Hospitalizations	94,404	0.0015	0.0381	0.000	1.000
Panel B	Age in 2004: 18-40				
Treatment Group	69,426	0.4024	0.4904	0.0000	1.0000
Age	69,426	32.8036	5.9552	18.000	45.000
Years Since Arrival	69,426	4.1953	2.1593	0.000	9.000
Drugs Prescriptions	69,426	0.0153	0.1226	0.000	1.000
DMHA Visits	69,426	0.0004	0.0190	0.000	1.000
Hospitalizations	69,426	0.0012	0.0353	0.000	1.000
Panel B	Age in 2004: 41-59				
Treatment Group	24,978	0.3666	0.4819	0.0000	1.0000
Age	24,978	49.3767	4.9732	41.000	64.000
Years Since Arrival	24,978	4.3609	2.2077	0.000	9.000
Drugs Prescriptions	24,978	0.0175	0.1310	0.000	1.000
DMHA Visits	24,978	0.0006	0.0245	0.000	1.000
Hospitalizations	24,978	0.0022	0.0469	0.000	1.000

*Notes:* Summary Statistics for Health care variables, for the period 2004-2009. Panel A reports the summary statistics for the whole sample. Panel B reports summary statistics for the cohorts aged between 18-40 in 2004. Panel C reports summary statistics for the cohorts aged between 41-59 in 2004.

Table A2: Summary statistics on ISMU data set

PANEL A	ISMU Data				
	N	Mean	SD	Min	Max
Treatment Group	1169	0.328	0.470	0.000	1.000
Age	1169	30.642	5.892	18.000	44.000
Years Since Arrival	1169	5.300	1.879	1.000	9.000
Regular migrant	1169	1.000	0.000	1.000	1.000
Permanent Permit	1169	0.113	0.317	0.000	1.000
Residence Permit: Family	1169	0.044	0.204	0.000	1.000
Residence Permit: Work	1169	0.906	0.292	0.000	1.000
Residence Permit: Study	1169	0.015	0.123	0.000	1.000
Houseperson	1169	0.001	0.029	0.000	1.000
Student	1169	0.017	0.130	0.000	1.000
Unemployed	1169	0.033	0.177	0.000	1.000
Tertiary Education	1169	0.082	0.275	0.000	1.000
Muslim	1169	0.363	0.481	0.000	1.000
Personal Income (log)	1033	7.092	0.347	4.615	8.517
Employed	1169	0.943	0.233	0.000	1.000
Employed (Regular)	1169	0.881	0.324	0.000	1.000
Employed (Permanent)	1169	0.632	0.482	0.000	1.000
		Factors Negatively Affecting Well-being:			
No reason	349	0.501	0.501	0.000	1.000
Working Conditions	349	0.186	0.390	0.000	1.000
Unemployment	349	0.069	0.253	0.000	1.000
Housing	349	0.063	0.243	0.000	1.000
Poverty	349	0.072	0.258	0.000	1.000
Homesickness	349	0.226	0.419	0.000	1.000

*Notes:* Summary Statistics for the ISMU, for the period 2004-2009. The sample is made of male migrants in the cohorts aged between 18-40 in 2004.

## A2 Robustness checks

Table A3: Robustness analysis: moving the lower limit of the younger age group to 21 years old

	HEALTH MEASURE					
	PRESCRIPTIONS		DMHA VISITS		HOSPITALIZATIONS	
	21-40	41-59	21-40	41-59	21-40	41-59
Age group (2004)	(1)	(2)	(3)	(4)	(5)	(6)
Post × Treatment Group	-0.0036** (0.0012)	0.0019 (0.0033)	-0.0005* (0.0002)	-0.0002 (0.0003)	-0.0007** (0.0003)	0.0018* (0.0010)
<i>Controls</i>	✓	✓	✓	✓	✓	✓
<i>Individual f.e.</i>	✓	✓	✓	✓	✓	✓
<i>Year f.e.</i>	✓	✓	✓	✓	✓	✓
<i>Time since arrival f.e.</i>	✓	✓	✓	✓	✓	✓
Observations	66,018	24,978	66,018	24,978	66,018	24,978
R <sup>2</sup>	0.45690	0.43923	0.52688	0.36763	0.24720	0.23247

*Notes:* The table reports results from estimation of equation (1) where the younger age group is made of individuals with at least 21 years old and at most 40 years old in 2004. The dependent variables are: the likelihood a migrant has been prescribed Psycholeptics and Psychoanaleptics drugs (Columns (1) and (2)), the likelihood an individual uses DMHA department services (Columns (3) and (4)), the likelihood an individual has been hospitalized at least once in a year for a diagnosis that falls in the category of mental disorders (Columns (5) and (6)). All the specifications include individual and year fixed effects, time since arrival in Italy fixed effects, and individual-specific control variables (*age* and *age*<sup>2</sup>). \*/\*\*/\*\* indicate significance at 10%/5%/1%, respectively; standard errors in parentheses are clustered at the individual level.

Table A4: Robustness analysis: moving the upper limit of the younger age group to 45 years old

	HEALTH MEASURE					
	PRESCRIPTIONS		DMHA VISITS		HOSPITALIZATIONS	
	18-45	46-59	18-45	46-59	18-45	46-59
Age group (2004)	(1)	(2)	(3)	(4)	(5)	(6)
Post × Treatment Group	-0.0023* (0.0012)	-0.0003 (0.0035)	-0.0005*** (9.07 × 10 <sup>-5</sup> )	-0.0001 (0.0011)	-7.82 × 10 <sup>-5</sup> (0.0004)	-0.0007 (0.0009)
<i>Controls</i>	✓	✓	✓	✓	✓	✓
<i>Individual f.e.</i>	✓	✓	✓	✓	✓	✓
<i>Year f.e.</i>	✓	✓	✓	✓	✓	✓
<i>Time since arrival f.e.</i>	✓	✓	✓	✓	✓	✓
Observations	81,312	13,092	81,312	13,092	81,312	13,092
R <sup>2</sup>	0.453398	0.42457	0.50974	0.16909	0.23734	0.24589

*Notes:* The table reports results from estimation of equation (1) where the younger age group is made of individuals least 18 years old and at most 45 years old in 2004. The dependent variables are: the likelihood a migrant has been prescribed Psycholeptics and Psychoanaleptics drugs (Columns (1) and (2)), the likelihood an individual has used services from the DMHA department (Columns (3) and (4)), the likelihood an individual has been hospitalized at least once in a year for a diagnosis that falls in the category of mental disorders (Columns (5) and (6)). All the specifications include individual and year fixed effects, time since arrival in Italy fixed effects, and individual-specific control variables (*age* and *age*<sup>2</sup>). \*/\*\*/\*\* indicate significance at 10%/5%/1%, respectively; standard errors in parentheses are clustered at the individual level.

## A3 Repeated cross-section analysis

Table A5: The impact of EU enlargement on sources of distress

ISMU: REASONS FOR BAD HEALTH						
	NONE	WORKING CONDITIONS	UNEMPLOYMENT	POVERTY	HOUSING	HOMESICKNESS
	(1)	(2)	(3)	(4)	(5)	(6)
Post × Treatment Group	0.204*** (0.044)	-0.105** (0.048)	0.108*** (0.037)	-0.085** (0.029)	-0.009 (0.047)	-0.172*** (0.030)
<i>Demographic Controls</i>	✓	✓	✓	✓	✓	✓
<i>Province f.e.</i>	✓	✓	✓	✓	✓	✓
<i>Year f.e.</i>	✓	✓	✓	✓	✓	✓
<i>Nationality f.e.</i>	✓	✓	✓	✓	✓	✓
Observations	362	362	362	362	362	362
Clusters	17	17	17	17	17	17
R2	0.23	0.22	0.23	0.21	0.13	0.26

*Notes:* The table reports estimation of Equation (2) focusing only on male individuals aged between 18 and 40 years in 2004. The possible sources of distress are: no source of distress (Column (1)), working conditions (Column (2)), unemployment (Column (3)), poverty (Column (4)), housing (Column (5)), and homesickness (Column (6)). All the specifications include country of origin and year fixed effects, time since arrival in Italy fixed effects, and individual-specific controls. Individual specific controls include age, age squared, years of residence fixed effects, religion, number of children, gender, citizenship status, education, province of residence, and marital status. \*/\*\*/\*\* indicate significance at 10%/5%/1%, respectively; standard errors in parentheses are clustered at the nationality×year level.

Table A6: The impact of EU enlargement on migrants' labour market outcomes

ISMU: LABOR MARKET OUTCOMES				
	INCOME (LOG)	EMPLOYED	REGULAR CONTRACT	PERMANENT CONTRACT
	(1)	(2)	(3)	(4)
Post × Treatment Group	0.084*** (0.025)	-0.038 (0.022)	0.029** (0.013)	0.106*** (0.032)
<i>Demographic Controls</i>	✓	✓	✓	✓
<i>Province f.e.</i>	✓	✓	✓	✓
<i>Year f.e.</i>	✓	✓	✓	✓
<i>Nationality f.e.</i>	✓	✓	✓	✓
Observations	1,060	1,169	1,102	1,022
Clusters	45	47	47	46
R2	0.27	0.20	0.16	0.17

*Notes:* The table reports estimation of Equation (2) focusing only on male individuals aged between 18 and 40 years in 2004. The dependent variables are: personal income (log) (Column (1)), employment status (Column (2)), the share of workers employed with regular contracts (Column (3)), the share of subordinate workers with permanent contracts (Column (4)). All the specifications include country of origin and year fixed effects, time since arrival in Italy fixed effects, and individual-specific controls. Individual specific controls include age, age squared, years of residence fixed effects, religion, number of children, gender, citizenship status, education, province of residence, and marital status. More details on the outcomes variables are provided in Section 3. \*/\*\*/\*\* indicate significance at 10%/5%/1%, respectively; standard errors in parentheses are clustered at the nationality×year level.