Migration and Mental Health: a social and medical emergency?

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Department of mental health, Ausl Bologna
Outlines

1. The migration phenomenon: a brief qualitative and quantitative overview
2. Migration History and health through the migration circle
3. Migration and mental health: focus on psychosis
4. From ethnicity to migration history: results from the EU-GEI study
5. Social and clinical implications
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“With one billion people on the move or having moved in 2018, migration is a global reality”

“Although estimates indicate that the majority of global migration occurs within low-income and middle-income countries (LMICs), the most prominent dialogue focuses almost exclusively on migration from LMICs to high-income countries (HICs)”

- 258 million international migrants (2017, IOM)
- 740 million internal migrants (2009, UNDP)

NEARLY ONE –SEVENTH OF THE WORLD’S POPULATION IS NOW LIVING IN A LOCATION DIFFERENT FROM THE ONE IN WHICH THEY WERE BORN
SNAPSHOT OF INTERNATIONAL MIGRANTS

The international migrant population globally has increased in size but remained relatively stable as a proportion of the world’s population.
Migration in EU: 2015 vs 2017

2015-16

✓ 20.7 million people (4.1%) of the 509.8 million people living in the EU on 1 January 2016 were non-EU citizens.

✓ A total of 4.7 million people immigrated to one of the EU-28 Member States during 2015, while at least 2.8 million emigrants were reported to have left an EU Member State.

2017-18

✓ 22.3 million people (4.4%) of the 512.4 million people living in the EU on 1 January 2018 were non-EU citizens.

✓ A total of 4.4 million people immigrated to one of the EU-28 Member States during 2017, while at least 3.1 million emigrants were reported to have left an EU Member State.

1) The international migrants population increased over time in EU but the proportion of the total population remains quite stable over time

2) The net migration in EU decreased during the last 2 years

Source: Eurostat
Population change: the net migration rate

The level of net migration is the difference between the number of immigrants and the number of emigrants during a period of time; a positive value represents more people entering the country than leaving it.

The net migration rate compares the level of net migration with the overall size of the population.

Source: the United Nations Department of Economic and Social Affairs (World Population Prospects: the 2017 Revision)
The case of Italy: from emigration to immigration country

Foreign residents per 100 residents

<table>
<thead>
<tr>
<th>Year</th>
<th>Residents</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>2.4</td>
</tr>
<tr>
<td>2003</td>
<td>2.6</td>
</tr>
<tr>
<td>2004</td>
<td>3.2</td>
</tr>
<tr>
<td>2005</td>
<td>3.8</td>
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<td>2012</td>
<td>6.8</td>
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<tr>
<td>2013</td>
<td>7.4</td>
</tr>
<tr>
<td>2018</td>
<td>8.5</td>
</tr>
</tbody>
</table>
What is migration?

✓ Directed by Anita Pico. Copyright 2016.
✓ "What is migration : A short film" is the illustration of the migration situation that we are living in the world right now. Millions of refugees running away from their homes because of war, thousands of young people moving to different countries to find a job and families torn apart. We are a world full of different people, we need to help each other, because that is the best thing about human beings, our humanity. Thank you to the friends that have helped me with this project! Especially to my dad who was an immigrant himself and tells his story in the video. Share this video with the world to inspire action! #Whatismigration - Anita Pico- Please like my short film in this page :) https://chainy.com/contests/lseiga/su...

https://www.youtube.com/watch?v=Elpc0Mb4OIA
What causes the migration phenomenon?

✓ Pushing factors in individuals - personal biography; pulling factors into the social context of the countries of arrival (first of all the aging structure of western countries’ populations)

• Demographic need
• Climate change
• Economic inequality
• War and political persecution
Age structure of the national and non-national populations, EU-28, 1 January 2018

Source: Eurostat (online data code: migr_pop2ctz)
Climate change and migration

- Environmental emergency migrants, Environmentally forced migrants and Environmentally motivated migrants

2011, United Nations University, Institute for Environment and Human Security

http://www.green.it/cambiamenti-climatici-e-migrazioni/#prettyPhoto
In Nigeria, desertification led to conflict in just a few years and from 2016 to 2018, according to Amnesty International, there were 3,641 deaths, over half last year, 6 times the victims made by Boko Haram.
The fatal unbalance

“If you look at global economy from the point of view of the people, its greatest failure is the incapacity of creating enough job opportunities in their place of living”

Juan Somavia, general manager ILO

«Our current global political economy is driven by HICs that draw on natural and human resources in LIMCs» Abubakar et al., 2018

Distribution of population

Distribution of wealth

LMICs  HICs

LMICs  HICs
War and persecution
Are migrants a burden on services?

- «Nowadays, rather than burdening systems, migrants in HICs are more likely to bolster services by providing medical care, teaching children, caring for older people, and supporting understaffed services.»
  - Abubakar et al., The UCL –Lancet commission on migration and health, 2018
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The transcultural (vs ethnic) characteristics of migrants: the migration history

1. Migration project
2. Culture
3. Migration process
4. Adaptation to new society
Migration process
The boat people: a worldwide phenomenon
The boat people
Lampedusa, Italy
Alberge, Mexico City

Ciudad de Mexico, 2010
Women and children

“Women and children are especially at risk when they migrate without the protection of family or social networks. Unaccompanied girls and boys who move in ways that are not readily detected by potential support mechanisms are particularly vulnerable to neglect, trafficking, abuse, and sexual exploitation. Examples include unaccompanied and separated children who resort to sex work to survive and shelter in parks and makeshift camps in Greece.” (Abubakar et al., 2018)
Health throughout the migration process

«Migration trajectories involve various phases including pre-departure circumstances at places of origin, short-term or long term transit, which might involve interception by authorities, non-governmental groups, or criminal gangs; destination situation of long term or short term stay; and return to places of origin for resettlement or for temporary visits before remigration.» (Abubakar et al, 2018)
Migrants’ health problems: a study in Italy

HEALTH OPERATORS’ BELIEFS

✓ Tuberculosis, AIDS, malaria
✓ Diseases spread in the country of origin

EVIDENCE

✓ Accidents at work, interruptions of pregnancy, common infectious diseases
✓ Social fragility in post migration countries
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Migration and Mental Health

3 main evidences

1. Difficult and peculiar pathway to care (Bhui et al., 2003; Morgan et al., 2004)

2. Differences / difficulties in recognition and treatment of mental disorders (The Study of Ethnic Minority Psychiatric Illness Rates in the Community – EMPIRIC, 2002; Morgan et al., 2005)

3. Increased risk of severe mental disorders (Shen et al, 1998; Fossion et al, 2002; Carta et al, 2002; Dembling et al, 2002; Cantor-Graae et al, 2003; Cantor-Graae & Selten, 2005)
Negative pathways to care and ethnicity: the bridge between social science and psychiatry (Morgan et al., 2004)

✓ The widely varying pathways taken in various societies may reflect many factors:

- Cultural variation in ways people experience and express mental illness,
- The attractiveness and cultural appropriateness of services;
- Attitudes towards services; previous experiences; stigma;
- Culturally defined lay referral systems; stigma (Goldberg, 1999; Bhui & Bhugra, 2002).
Factors associated with non-medical referral

- Socio-demographic:
  - Older Age
  - Not married
  - No residence permit
- Urbanicity - Metropolitan
  - Bologna
- Clinical:
  - Drug related disorders
The low hospitalisation rates for foreigners may suggest that they are a population with good health status.

However, critical areas, related to poor living and working conditions and to social vulnerability, have been identified.

Under-utilisation of services and low day care rates may be partially due to administrative, linguistic, and cultural barriers.
Equity in mental health care provision to immigrants with severe mental illness in Italy

P. Rucci¹, A. Piazza², E. Perrone¹, I. Tarricone³, R. Maisto², I. Donegani², V. Spigonardo², D. Berardi³, M. P. Fantini¹ and A. Fioritti²

✓ Prevalent cases on 31/12/2010 with severe mental illness and at least one contact with community mental health centers in 2011 were extracted from the local mental health information system.
✓ The study population included: 8602 Italian citizens and 388 migrants.
✓ The percentages of patients receiving psychosocial rehabilitation, admitted to hospital wards or to residential facilities, were similar between Italians and immigrants.
✓ The total number of interventions was higher for Italians.
✓ Admissions to acute wards or residential facilities were significantly longer for Italians.
Migration and psychosis: a meta-analysis of incidence studies

Jean-Paul Selten1,2, Els van der Ven1,2 and Fabian Termorshuizen2

1School for Mental Health and Neuroscience, University of Maastricht, Maastricht, The Netherlands
2GGZ Rivierduinen, Institute for Mental Health, Leiden, The Netherlands

Abstract

Background. The aims of this meta-analysis are (i) to estimate the pooled relative risk (RR) of developing non-affective psychotic disorder (NAPD) and affective psychotic disorder (APD) among migrants and their children; (ii) to adjust these results for socioeconomic status (SES); (iii) to examine the sources of heterogeneity that underlie the risk of NAPD.

Methods. We included population-based incidence studies that reported an age-adjusted RR with 95% confidence interval (CI) published 1 January 1977–12 October 2017 and used a random-effects model.

Results. We retrieved studies performed in Europe (n = 43), Israel (n = 3), Canada (n = 2) and Australia (n = 1). The meta-analysis yielded a RR, adjusted for age and sex, of 2.13 (95% CI 1.99–2.27) for NAPD and 2.94 (95% CI 2.26–3.79) for APD. The RRs diminished, but persisted after adjustment for SES. With reference to NAPD; a personal or parental history of migration to Europe from countries outside Europe was associated with a higher RR (RR = 2.94, 95% CI 2.63–3.29) than migration within Europe (RR = 1.88, 95% CI 1.62–2.18). The corresponding RR was lower in Israel (RR = 1.22; 99% CI 0.99–1.50) and Canada (RR = 1.21; 0.85–1.74). The RR was highest among individuals with a black skin colour (RR = 4.19, 95% CI 3.42–5.14). The evidence of a difference in risk between first and second generation was insufficient.

Conclusions. Positive selection may explain the low risk in Canada, while the change from exclusion to inclusion may do the same in Israel. Given the high risks among migrants from developing countries in Europe, social exclusion may have a pathogenic role.

-Most studies in EU
-RR NAPD2.13 , RR APD  2.94
-The RRs diminished but persist after adjustment for SES
-Extra EU, Black at higher risk (no first vs second generations )
First-episode psychosis at the West Bologna Community Mental Health Centre: results of an 8-year prospective study


Median annual incidence rate of various psychoses x 100,000

<table>
<thead>
<tr>
<th>Psychoses</th>
<th>Non affective psychoses (F20 – F29)</th>
<th>Affective Psychoses (F30 – F33)</th>
<th>Substances Related Psychoses (F10-19)</th>
<th>Schizophrenia (F20 &amp; F25)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate (IQR)</td>
<td>Rate (IQR)</td>
<td>Rate (IQR)</td>
<td>Rate (IQR)</td>
<td>Rate (IQR)</td>
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<tr>
<td>IRR (95% C.I.)</td>
<td>IRR (95% C.I.)</td>
<td>IRR (95% C.I.)</td>
<td>IRR (95% C.I.)</td>
<td>IRR (95% C.I.)</td>
</tr>
<tr>
<td>EM Group vs Native</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EM Group</td>
<td>38.8</td>
<td>33.9</td>
<td>0.0</td>
<td>26.3</td>
</tr>
<tr>
<td>(31 - 48.7)</td>
<td>(25.5 - 41.8)</td>
<td>(0.0 - 1.6)</td>
<td>(18.3 - 28.5)</td>
<td></td>
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<tr>
<td>(2.170 - 2.890)</td>
<td>(2.985 - 3.794)</td>
<td></td>
<td>(3.558 - 4.534)</td>
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</tr>
<tr>
<td>Native</td>
<td>15.3</td>
<td>10.0</td>
<td>1.4</td>
<td>6.5</td>
</tr>
<tr>
<td>(12.8 - 15.9)</td>
<td>(8.6 - 12.8)</td>
<td>(1.0 - 2.8)</td>
<td>(3.9 - 8.1)</td>
<td></td>
</tr>
</tbody>
</table>

Very similar to Bourque et al., (2011) median IRR

Note: IRR stands for Incidence Rate Ratio, and 95% C.I. stands for 95% Confidence Interval.
The psychosis incidence rate shows huge variations among places but the IRR (migrants IR vs natives IR) is quite similar.
My position is that the higher risk of psychosis in migrants compared to natives is not due to genetic/ethnic characteristics. I also postulate that migrants have more “exogenous” causation of psychosis, related to the difficult process of migration itself, than natives.

This could imply higher IR in internal migrants too, due to stress related to migration and the adaptation process.
Risk of psychosis and internal migration: Results from the Bologna First Episode Psychosis study

Migration vs Ethnicity!

<table>
<thead>
<tr>
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<th>Crude</th>
<th>Adjusted</th>
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<td><strong>natives</strong></td>
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<td><img src="image2.png" alt="bar chart" /></td>
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<tr>
<td><strong>internal migrants</strong></td>
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<td><img src="image4.png" alt="bar chart" /></td>
</tr>
<tr>
<td><strong>external migrants</strong></td>
<td><img src="image5.png" alt="bar chart" /></td>
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<table>
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<th>IRR*</th>
<th>95% CI</th>
<th>p</th>
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</thead>
<tbody>
<tr>
<td>NA</td>
<td>Ref.</td>
<td>Ref.</td>
<td>Ref</td>
</tr>
<tr>
<td>IM</td>
<td>1.93</td>
<td>[1.19 - 3.13]</td>
<td>0.007</td>
</tr>
<tr>
<td>EM</td>
<td>1.79</td>
<td>[1.06 - 3.02]</td>
<td>0.03</td>
</tr>
</tbody>
</table>

*Age and sex adjusted
Striatal stress-induced dopamine release elevated in migrants

Migration is a major risk factor for schizophrenia but the neurochemical processes involved are unknown. One candidate mechanism is through elevations in striatal dopamine synthesis and release. The objective of this research was to determine whether striatal dopamine function is elevated in immigrants compared to nonimmigrants and the relationship with psychosis. Two complementary case-control studies of in vivo dopamine function (stress-induced dopamine release and dopamine synthesis capacity) in immigrants compared to nonimmigrants were performed in Canada and the United Kingdom. The Canadian dopamine release study included 25 immigrant and 31 nonmigrant Canadians. These groups included 23 clinical high risk (CHR) subjects, 9 antipsychotic naïve patients with schizophrenia, and 24 healthy volunteers. The UK dopamine synthesis study included 32 immigrants and 44 nonimmigrant British. These groups included 50 CHR subjects and 26 healthy volunteers. Both striatal stress-induced dopamine release and dopamine synthesis capacity were significantly elevated in immigrants compared to nonimmigrants, independent of clinical status. These data provide the first evidence that the effect of migration on the risk of developing psychosis may be mediated by an elevation in brain dopamine function.
Migration and Psychosis: what the evidence tells us

✓ High rates of first episode psychosis (FEP) in migrants and ethnic minorities (Shen et al, 1998; Fossion et al, 2002; Carta et al, 2002; Dembling et al, 2002; Cantor-Graae et al, 2003; Cantor-Graae & Selten, 2005; Selten et al., 2019)
  • Studies had mostly been conducted in the UK and northern Europe.

✓ High risk Minorities change over time and place (Bourque et al., 2011)
  • Despite huge variations of psychosis IR, IRR (migrants IR/natives IR) is quite similar among places

✓ Risk persists in second generations migrants (Selten et al. 2019) and higher risk found also in internal migrants (Tarricone et al., 2016)

✓ Evidence of an elevated stress induced dopamine release in migrants (Egerton et al., 2017)

Is it time to think about history of migration (vs “ethnicity”)?
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Which stress/ characteristics of migration history are related to psychosis vulnerability?
Most studies conducted on post migration phase risk factors for psychosis.
Psychotic symptoms and migration

International Journal of Social Psychiatry

http://isp.sagepub.com

Psychotic Symptoms and General Health in a Socially Disadvantaged Migrant Community in Bologna
Ilaria Terricone, Anna Rita Atti, Federica Salvatori, Mauro Braca, Silvia Ferrari, Davide Mal musi and Domenico Berardi

- 57% (39) were above the 4 point GHQ-12 threshold
- 19% (13) PSQ positive
- Factors associated with positive PSQ score:
  - GENERAL HEALTH
    - Chronic disease (OR 6.1, CI= 1.4–26.0),
    - Health problems arising after migration to Italy (OR 10.3, CI= 2.3– 45.8)
  - MIGRATION HISTORY VARIABLES:
    - Living with relatives (OR 8.4, CI= 1.0-69.6 ),
    - Less than 6 months in Italy (OR 4.1, CI=1.1-15.5 )
    - Passive migration (following others) (OR 9.6, CI= 1.1– 80.9)
EUropean network of national schizophrenia networks studying Gene-Environment Interactions

http://www.eu-gei.eu/

The project is funded by the European Community's Seventh Framework Programme under grant agreement No. HEALTH-F2-2010-241909 (Project EU-GEI).
Design

Directly comparable population based incidence and case-sibling-control studies of psychosis in 12 centres across 5 countries over a three-year period.
15 in 5 countries

- UK
- Spain
- France
- Netherlands
- Italy

- Population at risk ...

C. 4,800,000
15 in 5 countries

- UK
- Spain
- France
- Netherlands
- Italy

- Brazil
  (Ribeirao Preto)
<table>
<thead>
<tr>
<th>Clinical</th>
<th>Social</th>
<th>Other</th>
</tr>
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<tbody>
<tr>
<td>OPCRIT</td>
<td>Schedules for Assessment of Social Experiences</td>
<td>Neuro- and social cognition</td>
</tr>
<tr>
<td>Premorbid Adjustment</td>
<td>(sociodemographics; childhood trauma; list of threatening events; discrimination; neighbourhood)</td>
<td>Substance use</td>
</tr>
<tr>
<td>Cannabis Experiences Questionnaire</td>
<td></td>
<td>Family history</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DNA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Migration history</td>
</tr>
</tbody>
</table>

c. 3 hours to complete

http://www.eu-gei.eu/
Bologna Migration History and social integration questionnaire
BoMH interview: Structure and contents

- **2 parts**: core interview (5 minutes) and in depth interview (15 minutes)
  - Firstly use core section; secondly, carry out in depth section (NB the 2 parts contain different items!)

- **3 sections**:
  - **before migration**
    - Socio-economic status, satisfaction with life, preparation of migration
  - **migration process**
    - Reason for migration, debt, migration travel, intention to stay in the new country, detention
  - **post migration**
    - Socio-economic status, legal status, social integration, social network, expectation achieved

Fig. 2 Factors in migration and psychological distress
Crude Age- and Sex-Standardized and Age-, Sex-, and Race/Ethnicity-Standardized Incidence Rates per Catchment Area

Crude incidence rates vary 10-fold between catchment areas, and age-, sex-, and race/ethnicity-adjusted rates vary 8-fold.

Error bars indicate 95% CIs.
First generation migrants: distribution of the case-control sample in the countries involved
Place of Birth: world bank classification

P = 0.025

CASES: 252
CONTROLS: 219
### Gender, age, and ethnicity

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Cases</th>
<th>Controls</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>Male</td>
<td>257 (54.1%)</td>
<td>163 (63.7%)</td>
<td>94 (42.9%)</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>218 (45.9%)</td>
<td>93 (36.3%)</td>
<td>125 (57.1%)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>475 (100%)</td>
<td>256 (100%)</td>
<td>219 (100%)</td>
<td></td>
</tr>
<tr>
<td><strong>Age</strong>*</td>
<td></td>
<td></td>
<td></td>
<td>&lt;0.001**</td>
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<tr>
<td>34.0±10.8</td>
<td>31.5±9.0</td>
<td>37.5±12.0</td>
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<tr>
<td><strong>Ethnicity</strong></td>
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<td>&lt;0.001*</td>
</tr>
<tr>
<td>Caucasian</td>
<td>166 (34.9%)</td>
<td>70 (27.3%)</td>
<td>96 (43.8%)</td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>147 (30.9%)</td>
<td>92 (35.9%)</td>
<td>55 (25.1%)</td>
<td></td>
</tr>
<tr>
<td>Mixed</td>
<td>27 (5.7%)</td>
<td>12 (4.7%)</td>
<td>15 (6.8%)</td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>40 (8.4%)</td>
<td>21 (8.2%)</td>
<td>19 (8.7%)</td>
<td></td>
</tr>
<tr>
<td>North African</td>
<td>44 (9.3%)</td>
<td>31 (12.1%)</td>
<td>13 (5.9%)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>51 (10.7%)</td>
<td>30 (11.7%)</td>
<td>21 (9.6%)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>475 (100%)</td>
<td>256 (100%)</td>
<td>219 (100%)</td>
<td></td>
</tr>
</tbody>
</table>

*Chi-square test  
** Student’s t-test  
***Mean and standard deviation
### Family History

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Cases</th>
<th>Controls</th>
<th>P-value</th>
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<tbody>
<tr>
<td><strong>History of psychosis in first-degree relatives</strong></td>
<td></td>
<td></td>
<td></td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Yes</td>
<td>43 (10.9%)</td>
<td>33 (17%)</td>
<td>10 (5%)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>352 (89.9%)</td>
<td>161 (83.0%)</td>
<td>191 (95.0%)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>395 (100%)</td>
<td>194 (100%)</td>
<td>201 (100%)</td>
<td></td>
</tr>
<tr>
<td><strong>History of psychiatric diseases in first-degree relatives</strong></td>
<td></td>
<td></td>
<td></td>
<td>&lt;0.003</td>
</tr>
<tr>
<td>Yes</td>
<td>152 (37.4%)</td>
<td>91 (44.6%)</td>
<td>61 (30.2%)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>254 (62.6%)</td>
<td>113 (55.4%)</td>
<td>141 (69.8%)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>406 (100%)</td>
<td>204 (100%)</td>
<td>202 (100%)</td>
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## Cannabis use

<table>
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<th>Total</th>
<th>Cases</th>
<th>Controls</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cannabis lifetime use</strong></td>
<td></td>
<td></td>
<td></td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Yes</td>
<td>251 (54.4%)</td>
<td>159 (64.9%)</td>
<td>92 (42.6%)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>210 (45.6%)</td>
<td>86 (35.1%)</td>
<td>124 (57.4%)</td>
<td></td>
</tr>
<tr>
<td><strong>Totale</strong></td>
<td>461 (100%)</td>
<td>245 (100%)</td>
<td>216 (100%)</td>
<td></td>
</tr>
<tr>
<td><strong>Cannabis current use</strong></td>
<td></td>
<td></td>
<td></td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Yes</td>
<td>85 (18.5%)</td>
<td>62 (25.5%)</td>
<td>23 (10.6%)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>374 (81.5%)</td>
<td>181 (74.5%)</td>
<td>193 (89.4%)</td>
<td></td>
</tr>
<tr>
<td><strong>Totale</strong></td>
<td>459 (100%)</td>
<td>243 (100%)</td>
<td>216 (100%)</td>
<td></td>
</tr>
</tbody>
</table>
Education

YEARS OF EDUCATION

- 13.0±4.4 (Cases)
- 14.5±4.7 (Controls)

P<0.001
Childhood Trauma

Childhood trauma: yes %

P< 0.001
Model 1. ethnicity adjusted for a priori “common” Confounders *

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Odds Ratio (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnicity (not Caucasian)</td>
<td>2.44 (1.42-4.17) * *</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>0.97 (0.94-0.99) *</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1.77 (1.07-2.92) *</td>
<td></td>
</tr>
<tr>
<td>Education level</td>
<td>1.78 (1.31-2.42) * *</td>
<td></td>
</tr>
<tr>
<td>Life time cannabis use</td>
<td>2.02 (1.21-3.39) * *</td>
<td></td>
</tr>
<tr>
<td>Family history of psychosis</td>
<td>4.07 (1.74-9.50) * *</td>
<td></td>
</tr>
<tr>
<td>Childhood trauma</td>
<td>2.46 (1.51-3.99) * *</td>
<td></td>
</tr>
</tbody>
</table>

* p ≤ 0.05 * * p ≤ 0.001
Language fluency

![Bar graph showing language fluency levels for cases and controls](image)

- P < 0.001*

*Mann-Whitney U Test
Discrimination

Ever discriminated for any reason: yes  %

P = 0.437
Model 2.
model 1 + discrimination and language fluency

**dependent variable : FEP**

<table>
<thead>
<tr>
<th><strong>Ethnicity (not Caucasian)</strong></th>
<th>3.06 (1.66-5.65) <strong>p ≤ 0.001</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>0.98 (0.95-1.00)</td>
</tr>
<tr>
<td>Male</td>
<td>1.23 (0.77-2.22)</td>
</tr>
<tr>
<td><strong>Education level</strong></td>
<td>1.78 (1.27-2.49) <strong>p ≤ 0.001</strong></td>
</tr>
<tr>
<td><strong>Life time cannabis use</strong></td>
<td>2.78 (1.55-4.99) <strong>p ≤ 0.001</strong></td>
</tr>
<tr>
<td>Family history of psychosis</td>
<td>3.88 (1.54-9.78) <strong>p ≤ 0.001</strong></td>
</tr>
<tr>
<td>Childhood trauma</td>
<td>2.71 (1.58-4.64) <strong>p ≤ 0.001</strong></td>
</tr>
<tr>
<td>Discrimination</td>
<td>0.79 (0.45-1.37)</td>
</tr>
<tr>
<td>Language Fluency</td>
<td>1.75 (1.02-2.98) <strong>p ≤ 0.05</strong></td>
</tr>
</tbody>
</table>

* p ≤ 0.05  **p ≤ 0.001**
Pre-migration phase

Are there any specific migration history characteristics which predict FEP?
Never employed before migration

9%  
P=0.001

2%

CASES

CONTROLS
Before migration: living conditions and marital status

- P<0.001
- P=0.044
Before migration: satisfaction with life

48 % (n 45) cases vs 71 % (n 61) controls where satisfied in all domains of life before migration (p= 0.02)
Pre-migration phase

<table>
<thead>
<tr>
<th></th>
<th>FEP Migrants</th>
<th>Control Migrants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployment</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Living with family of origin</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Poor life satisfaction (work, family)*</td>
<td>+</td>
<td></td>
</tr>
</tbody>
</table>

None of these variables remained significantly associated with FEP after adjusting in the logistic regression analyses for a priori confounders.
Are there any specific migration history characteristic related to FEP?
Migration project: age of migration and length of stay

**Age <18 when migrated**

- CASES: 110/240 (45.8%)
- CONTROLS: 72/212 (34.0%)
- \[ P = 0.01^{**} \]

**Length of stay**

- CASES: 13.3±9.4 years
- CONTROLS: 17.1±14.0 years
- \[ P = 0.001^{*} \]

*Student’s t-test
**Pearson’s chi-squared test

No differences in reasons for migration and preparation of migration
## Migration project: detention

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Cases</th>
<th>Controls</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Been detained for not holding a resident permit</td>
<td>19/391 (5%)</td>
<td>14/200 (7%)</td>
<td>5/191 (3%)</td>
<td>0.044</td>
</tr>
</tbody>
</table>

Photo by Spencer Platt/Getty Images
Migration project: the past and the future

How often do you go back to your country of origin?

- **76% of cases**
- **55% of controls**

<table>
<thead>
<tr>
<th>HOW OFTEN DO YOU GO BACK TO YOUR COUNTRY OF ORIGIN?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Twice a year or more</td>
</tr>
<tr>
<td>----------------------</td>
</tr>
<tr>
<td>Cases</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Consider this country the LAST step of the migration project</th>
<th>Total</th>
<th>Cases</th>
<th>Controls</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>229/373 (61%)</td>
<td>131/190 (69%)</td>
<td>98/183 (54%)</td>
<td><strong>0.002</strong></td>
</tr>
</tbody>
</table>

**P<0.001**
Migration project: why wouldn’t you go back to your country?

AVersion for the Country of Origin

Affection for the Country of Destination or Reasons Not Linked to the Country of Origin

P=0.004
## Migration phase

<table>
<thead>
<tr>
<th></th>
<th>FEP Migrants</th>
<th>Control Migrants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at migration</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td><strong>Length of stay</strong></td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Detention during migration</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Preparation/reasons of migration</td>
<td></td>
<td>=</td>
</tr>
<tr>
<td>Last step no return</td>
<td></td>
<td>+</td>
</tr>
</tbody>
</table>

None of these variables remained significantly associated with FEP after adjusting in the logistic regression analyses for a priori confounders.
Post migration phase

Are there any specific migration history characteristics related to FEP?
After migration: job and relationships

**CASES**

- Unemployed
- Other

**P<0.001**

**CONTROLS**

- Single
- Other

**P<0.001**
After migration: who do you have in this country?*

*Only individuals who have somebody in the country of destination responded
After migration: mismatch expectations-accomplishment

CASES

CONTROLS

Perfectly Partially Poorly Not at all
Post-Migration phase

- FEP Migrants vs Control Migrants

- Poor social network +
- Unemployment +
- Single +
- Expectations vs achievement mismatch +

All significantly associated with FEP in the logistic regression analyses (adjusted for a priori confounders, model 3). In model 3, ethnicity loosed significant association with FEP.
Model 3.
model 2 + post migration social integration index
(work, affective relation, social network) and
achievement vs expectation mismatch

**dependent variable : FEP**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnicity (not Caucasian)</td>
<td>2.33 (0.94-5.79)</td>
</tr>
<tr>
<td>Age</td>
<td>0.99 (0.96-1.04)</td>
</tr>
<tr>
<td>Male</td>
<td>1.10 (0.50-2.41)</td>
</tr>
<tr>
<td>Education level</td>
<td>1.17 (0.74-1.85)</td>
</tr>
<tr>
<td>Life time cannabis use</td>
<td>2.72 (1.18-6.25) *</td>
</tr>
<tr>
<td>Family history of psychosis</td>
<td>6.13 (1.62-23.12) *</td>
</tr>
<tr>
<td>Childhood trauma</td>
<td>2.71 (1.27-5.75) *</td>
</tr>
<tr>
<td>Discrimination</td>
<td>1.03 (0.48-2.21)</td>
</tr>
<tr>
<td>Language Fluency</td>
<td>1.58 (0.75-3.34)</td>
</tr>
<tr>
<td><strong>Post mig. social integration</strong></td>
<td>**2.14 (1.45-3.17) ** * *</td>
</tr>
<tr>
<td><strong>Expectations not achieved</strong></td>
<td>**1.32 (1.03-1.69) ** *</td>
</tr>
</tbody>
</table>

* p ≤ 0.05  ** p ≤ 0.001
Outlines

1. The migration phenomenon: a brief qualitative and quantitative overview
2. Migration History and health through the migration circle
3. Migration and mental health: from ethnicity to migration history
4. Preliminary results from the EU-GEI study
5. Social and clinical implications
Decline of work conditions over time:
% unemployment

CASES

CONTROLS

MIGRANTS

NATIVES
Migrants referring to the Bologna Transcultural Psychiatric Team: Reasons for drop-out
Ilaria Tarricone, Anna Rita Atli, Mauro Braca, Graziano Pompei, Michela Morri, Francesca Poggi, Saverio Melega, Elisa Stivanello, Lorenzo Tonti, Maria Nolet and Domenico Berardi
Int J Soc Psychiatry published online 17 September 2010
DOI: 10.1177/0020764010382368

The online version of this article can be found at:
http://isp.sagepub.com/content/early/2010/09/16/0020764010382368

Table 1. Sociodemographic and clinical variables related to drop out at six-month follow-up

<table>
<thead>
<tr>
<th>Variable</th>
<th>χ²</th>
<th>p</th>
<th>OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sociodemographic variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Younger than 26 years old</td>
<td>4.4</td>
<td>0.04</td>
<td>2.4 (1.0–5.3)</td>
</tr>
<tr>
<td>Asian origin</td>
<td>8.1</td>
<td>0.004</td>
<td>0.1 (0.01–0.7)</td>
</tr>
<tr>
<td>Having lived in Italy for a period shorter than five years</td>
<td>8.6</td>
<td>0.004</td>
<td>3.4 (1.5–7.9)</td>
</tr>
<tr>
<td><strong>Clinical variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Being affected by mood disorders</td>
<td>4.5</td>
<td>0.04</td>
<td>0.3 (0.08–0.97)</td>
</tr>
<tr>
<td>Receiving social intervention</td>
<td>5.2</td>
<td>0.02</td>
<td>0.7 (0.71–0.85)</td>
</tr>
<tr>
<td>Receiving cultural mediator-intervention</td>
<td>2.2</td>
<td>0.1</td>
<td>0.3 (0.07–1.49)</td>
</tr>
</tbody>
</table>
**Functional Outcomes**: First generation migrants vs Italian natives

Brief Report

**Occupation and first episode psychosis in Northern Italy: better outcomes for migrants**

Ilaria Tarricone, Craig Morgan, Jane Boydell, Serena Panigada, Raffaele Morigi, Mauro Braca, Enrico Sutti, Pierluigi Boldri, Marta Di Forti, Robin M Murray and Domenico Berardi

---

**Multivariate logistic regression**

Adjusted for age, sex, diagnosis and any other factor associated in univariate analysis

- Suspension of work at psychosis onset
  - Migrants: 4.4 OR
  - Natives: 0.5 OR

- Return to work at 12 months
  - Migrants: 2.9 OR
  - Natives: 1.0 OR

The better social course of FEP migrants (as the higher rate of work resumption) could possibly imply that their FEP has a larger “psycho-social causation” compared with FEP in native Italians.
Migration and mental health: a social and medical emergency?

✓ Migrants are a huge resource for HICs

✓ Poor social integration in the post migration phase and expectations vs achievement mismatch seem to be responsible for the higher psychosis IR found among them

✓ Listening to migration histories and urgently providing cultural competent – targeted psychosocial interventions (to help social integration into the new countries) are key-elements in preventing psychosis and enabling recovery.

✓ Migration is full of histories and we can help to give them a happy end!
Thanks!

- IoPPN
  - Dr Marta Di Forti
  - Prof Robin Murray
  - Prof Craig Morgan
  - Dr Jane Boydell
  - Dr Lucia Valmaggia

- UNIBO
  - Prof Domenico Berardi
  - Prof Marco Menchetti
  - Dr Federico Suprani
  - Dr Giuseppe D’Andrea

- AUSL – BO
  - Dr Roberto Muratori
  - Dr Angelo Fioritti

- Dr Ralph Nisbet

- Bologna Transcultural Psychosomatic Team and EUGEI Consortium
  - ilaria.tarricone@unibo.it