



REVIEW

PSYCHOSIS AND MIGRATIONS: A REVIEW OF METHODS AND RESULTS IN EPIDEMIOLOGICAL LITERATURE.

Donato Zupin¹

ISSN: 2283-8961

Abstract

Mainstream psychiatric literature clearly indicates that the relative risk for developing psychotic disorders among migrants in the West is between two and five times higher than among locally born subjects. Particularly Sub-Saharan Africans and Afro-Caribeeans appear to be at grater risk when compared to other migrants subgroups. These results are both striking and puzzling. On one hand they invite us to reconsider migrants' mental health issues, on the other they call into question the different methodologies which have been used in the studies. Both methods and results differ depending on where the studies have been conducted and which categorisations have been used to subgroup migrants: ethnicity, place of birth, skin color or country's development rate. Furthermore statistically significant analyses point out the role of systemic racism in host societies. In this paper I have reviewed migrations and psychosis epidemiological studies, with a focus on methodologies, results and implications for

¹Psychiatrist and Psychotherapist. Italian Institute of Transcultural Mental Health. Mental Health Department - WHO Collaborative Center for Research and Training in Mental Health, Trieste. Mail to: donato.zupin@psiculturale.it

cultural psychiatry.

Key words:

Psychosis, Migrations, Incidence, Ethnicity, Place of birth, Racism

1 - INTRODUCTION

Psychosis in non-Western countries is a particularly important topic for transcultural psychiatry. Kraepelin (1908) himself travelled to Java in order to validate his *dementia praecox* concept. Devereux's theory of schizophrenia as a typically Western "ethnic psychosis" (2007 [1973]) is well renowned. Lambo's (1965) and Bartocci's (2004) descriptions of respectively pseudo-psychotic confusional states and acute psychogenic reactions are still useful to understand the normality-psychosis continuum. The WHO International Pilot Study of Schizophrenia (IPSS) was aimed at testing whether epidemiological research was feasible at a global level (WHO, 1979). IPSS was followed by other WHO-collaborative studies, providing persuasive evidence of a better prognosis for psychosis in developing countries (Jablensky et al., 1992; Hopper et al., 2007). These results sparked a heated debate among mental health professionals, shaking the very foundation of psychiatry (Leff, 1990) and giving transcultural psychiatry a new momentum. These studies and happenings played a role in the history of Italian Institute of Transcultural Psychiatry itself.

While evidence offered by psychosis and migration studies are startling, their relevance seems to be scarcely grasped by today's cultural psychiatrists. As shown in this review, mainstream psychiatric literature clearly indicates that migrants in Western countries have a higher relative risk of developing psychotic disorders than the locally born population. This review was written with the intent of providing solid ground for anthropological and phenomenological reflection. (The studies here reviewed were also helpful in writing the chapter "Dal *Dreamtime* al Razzismo Istituzionale. Uno studio di psichiatria dinamica culturale su etnia, cultura, discriminazione e salute mentale" ("From the *Dreamtime* to Institutional Racism. A cultural psychiatry

perspective on ethnicity, culture, discriminations and mental health”, Zupin and Bartocci), in the volume “Pensieri migranti - tra fratellanza e ostilità” (Longato, in press). Hopefully this review will be useful for those willing to delve into the issue of psychosis and culture.

Many years ago the famous phenomenologist W. Blankenburg stated that psychiatric diagnoses tell us more about the psychiatrist's school of thought than about the patient's suffering. I believe that this statement can be applied to migration and psychosis studies as well. That is why the first part of the review entirely focuses on the methodology the studies have applied, leaving the analysis of the results for the second part.

2 - Search strategy and study selection.

I conducted a systematic literature search in the online databases PubMed, covering March 2015 until March 2020. The search terms were:

- (psychosis [title/abstract] OR schizophrenia [title/abstract])
- AND (epidemiology [title/abstract] OR prevalence [title/abstract] OR incidence [title/abstract])
- AND (migrant [title/abstract] OR immigration [title/abstract])

Titles and abstracts were screened and twenty-three articles were eligible. By analysing the works cited by these studies seventeen more articles of interest were identified, resulting in forty total included studies.

3 – REVIEW OF METHODS.

3.1 – Journals in which the studies were published.

The first striking aspect is that none of the studies were published in cultural psychiatry journals. Most papers were published by Schizophrenia Bulletin, Schizophrenia Research, Psychological Medicine, some by British Journal of Psychiatry; none by Transcultural Psychiatry, Culture Medicine and Psychiatry or by the International Journal of Culture and Mental Health. The fact that our review focuses on epidemiological data while cultural psychiatry is more familiar with

qualitative research is a partial, if true, explanation. Given the relevance of psychosis and migrations studies in cultural psychiatry, further causes must be detected. One could wonder whether cultural psychiatry has engaged enough in this research area or even if it has been somehow excluded from mainstream literature. At the same time these first findings clearly indicate the relevance of psychosis and migrations studies in mainstream psychiatry.

3.1 – Countries in which the studies have been conducted.

Out of forty contributions, only two have been published in non-European countries (one in Australia and one in Canada). The same applies to the review by Selten et al. (2019), which presents 6 articles from non-Western countries and 43 from Europe, mostly from UK, Holland and Sweden².

3.3 – Incidence or prevalence?

Thirty-nine of the included studies consider psychosis incidence among migrants, one considers prevalence.

3.4 – Grouping of disorders.

All of the included studies consider non affective psychotic disorder (NAPD), thus including delusional disorder, brief psychotic disorder, *bouffée délirante*, etc. None of

²In the mentioned review, Italy is the only country representing Southern Europe, accounting for two articles one from a Bologna-based transcultural psychiatry unit (Tarricone et al., 2016a), the other from a group of epidemiology scholars (Lasalvia et al., 2014), while some papers are from Israel (3), Canada (2) and Australia (1). Both in this and in my review one may notice the great absentee: the USA. The lack of USA-based data has been already pointed out. Selten e Termorshuizen (2017) wrote: “Since research into the role of social factors in the aetiology of psychosis seems to have vanished from mainstream research in North America, we sometimes wonder what American colleagues might think about such findings from Europe. Things were markedly different in the 20th century, when there was a rich American literature on the social background of psychosis (...)”. It could be that USA research teams are not to be blamed for this as while they tend to approach the same topic through the lens of “ethnic minorities”, this review is focused on “migrations”. American scholars published (few) papers confirming the higher risk ratio for psychosis among Afro-American when compared with White American (Bresnahan et al. 2007).

the analysed studies distinguish between schizophrenia and brief psychotic disorder (as it was the case for IPSS), making it impossible to assess whether a higher psychosis incidence among migrants is determined by proper chronic schizophrenia or rather cases of reactive disorders.

3.4 – Data sources

General population data usually come from public institutions such as the Italian ISTAT, the Italian National Institute of Statistics (e.g. Australian Bureau of Statistics, Netherland's Bureau of Statistics). The methods for assessing cases of psychosis onset mostly rely on public mental health services data. Therefore undiagnosed psychosis onsets, people not seeking for help or psychotic patients on GP or private therapies are generally not taken into account. Only one out of the forty included studies (Hogerzeil et al., 2017) widens the scope including data from Accident and Emergency Departments, GPs, Police. None of the studies mention private hospitals.

This raises some questions. Finding methods for other psychiatric disorders are usually considered to be ineffective, if relying solely on data from public mental health services.

If we are to consider panic attacks, for instance, studies indicating low prevalence among migrants in public mental health setting generally conclude by claiming that the data are biased because accessibility to NHS differs in the two groups (migrants and locally born). Why is this principle ignored when it comes down to psychosis and migration issues?

If each and every study on psychosis and migration clearly indicates a higher relative risk for developing psychotic disorders among migrants in the West when compared to locally born, then why are we not assuming that psychotic migrants might have *higher* accessibility to public mental health services? That could be the case if social control plays a role in their negative pathways to care (Anderson, Flora, Archie, 2014).

Following these suggestions, one might assume that psychosis tends to be considered as a biological fact rather than as a matter of social construction when affecting migrants. This hypothesis could explain why mainstream literature considers the amount of new psychotic onsets in public mental health services to be an acceptable proxy for general population incidence.

3.5 – First generation and second generation.

Thirty-seven of the included studies consider first generation migrants only, three were carried out including second generation migrants.

3.6 – Migrants and locally born grouping: ethnicity, place of birth, skin color or country's development rate?

One of the most interesting issue is the criteria to assess whether a study participant belongs to the migrant or the locally born group (Kirkbride et al., 2017). UK-based studies use self-ascription of ethnicity according to the categories of: white British, non-British white ethnicities, black African, Arabic ethnicity, etc. (see below). Although no USA-based paper is included in the analysed studies, it is worthy of notice that the same methodology is applied in American research on ethnicity and psychosis. Self-ascription of ethnicity is a common method in Anglo-Saxons literature. British studies, therefore, use ethnicity as a proxy for migration status. In addition to this, ethnicity is generally regarded as a proxy for minority status and not for culture, resulting in the overlapping of three different concept: migration, ethnicity and minority status.

A further method applied in other countries is to group migrants by place of birth. According to a Swedish study in my sample, anyone born outside Sweden national borders has to be considered as migrant (Dykhhoorn et al., 2019a), no matter how early she or he came to live in Sweden. The same method is used by Italians (Tarricone et al., 2016), Canadians (O'Donoghue et al., 2020) and Dutch (Hogerzeil et al., 2017).

3.6 – Further subgrouping for migrants: geographical area, ethnicity, skin color or Westernization level...

An equally interesting matter is the subgrouping of migrants. With respect to the above mentioned British method (Kirkbride et al., 2017), self-ascription of ethnicity was assessed by using the following categories:

- *white British*
- *non-British white ethnicities (white Irish, white traveller or gypsy, other white ethnicities – thus including Russian, Greek, Italian, Finnish)*

- *black African*
- *black Caribbean*
- *mixed ethnicities (mixed white and black Caribbean, mixed white and black African, mixed white and Asian, other mixed ethnicity)*
- *Indian, Pakistani, Bangladeshi, Arabic ethnicity and all other ethnicities (Chinese, other Asian, other black ethnicities, other).*

It is to be noted that the last category is extremely heterogeneous since it encompasses Chinese, Arabic ethnicity, other black ethnicities.

Swedish (Dyckhoorn et al., 2019a) and Canadian (Anderson et al., 2015) studies subgroup migrants according to the geographical area of birth: Africa, South America, Asia, Middle East, Europe, Oceania. Different countries are grouped into geographical areas according to the U.N. classification known as M49 (U.N., 1998).

Italian studies do not subgroup migrants, comparisons being carried out only between migrants and locally born (Tarricone et al., 2016a; Lasalvia et al., 2014, cit. in: Selten, van der Ven e Termorshuizen, 2019)

An Australian study (Saha et al., 2015) subgroups migrants according to the Gross Domestic Product: low-income countries, low middle-income countries, upper-middle income countries and high-income countries (as it has been previously done in IPSS).

Selten, van der Ven e Termorshuizen's review (2019) is remarkable in its methodology. Here two different subgrouping approaches are applied, the first is based on the development rate of the native country, the second on the skin color. The results are then compared and the more noteworthy is highlighted (see below for results). The U.N. Handbook Of Statistics (U.N., 2002) is used in order to assess the development rate of the native countries.

Dutch scholars (Hogerzeil et al., 2017) arbitrarily use the categories of:

- *Morocco*
- *Caribbean (Surinam + Netherlands Antilles)*
- *Turkey*
- *Other: Western or Westernized countries (northern, southern or western Europe, the former Yugoslavia, the USA, Canada, Australia, New Zealand, Japan or former Netherlands East Indies) + all other (non-Western) countries.*

Hogerzeil and colleagues introduce the Western Vs Non-Western concept, but they do not specify which criteria they rely on when considering one country to be Western or Non-Western.

None of the forty studies in my sample subgroups migrants according to citizenship.

3.7 - What about East-Europe?

In each of the forty studies East Europeans were included in the migrants group.

3.8 - Diagnostic classification system

In thirty-eight studies ICD-10 is used as diagnostic classification system, while only two studies rely on the DSM.

4 – REVIEW OF RESULTS

The vast majority of the included studies claim that the relative risk for developing psychotic disorders among migrants in the West is between two and five times higher than in the locally born group (Stilo e Murray, 2010; Hogerzeil et al. 2017; Kirkbride et al., 2012; Tarricone et al., 2016a; Kirkbride et al., 2017; Dykxhoorn et al., 2019a; Selten, van der Ven e Termorshuizen, 2019; Stafford et al., 2019; Dykxhoorn e Kirkbride, 2019; Morgan, Knowles e Hutchinson; 2019; Henssler et al., 2019). Statistically this evidence is so robust that migration status has been listed as a main risk factor for psychosis, alongside sex, age and urbanicity.

This appears to be today's acknowledgment of an ancient story. According to the Bhugra and Bhui review (2001), higher relative risk for developing psychotic disorders among migrants was pointed out for the first time at the end of the 19th century, as slavery was abolished in the USA and – as a consequence – many former slaves were immediately sectioned in asylums (Babcock, 1895, cit. in: Bhugra e Bhui; 2001). In more recent times, in the second half of the 20th century, higher incidence of psychosis among migrants has become a widely recognised data from anecdotal evidence and small-size studies. Substantial funding for research was provided in the UK when this became a matter of public concern, and the previously hypothesis were confirmed by large-scale epidemiological studies. Statistically solid results were provided by AESOP study (Aetiology and Ethnicity of Schizophrenia and Other

Psychoses), a milestone in this field (Fearon P. et al., 2006). Fearon and colleagues found that in three vast catchment areas (London, Nottingham and Bristol) Afro-Caribbean and sub-Saharan Africans were, respectively, nine and eight times more likely than White-British to develop psychotic disorders.

4.2 – Conflicting evidence

In my sample there is limited evidence disconfirming the above mentioned results. These studies are few and all of them are located in non-European countries: one in Canada (Anderson et al., 2015), one in Australia (Saha et al., 2015; Ò Donoghue et al., 2020) and two from Israel (Corcoran et al., 2009). It has been underlined that all these researches were conducted in non-European, highly industrialized and Westernized countries. According to some reviews, the reason for such results in Canada and Australia can be identified in these countries' restrictive migration policies allowing permit to stay only to highly qualified workers (Selten e Termorshuizen, 2017; Selten, van der Ven e Termorshuizen, 2019). This is usually called “positive selection effect”. Moreover, results from Canada are only valid when considering the whole migrant group, while higher risk is confirmed for Afro-Caribbean (Anderson et al., 2015). The same applies to African migrants in Australia (Ò Donoghue et al., 2020). As far as Israel is concerned, the review by Henssler et al. (2019) stresses that these first results (Corcoran et al., 2009) were drawn from small-size samples and that more recent papers confirm the higher risk for migrants (Werbelof et al., 2012).

4.3 - Data interpretation. First hypotheses and their disconfirmation

Back in 1932, the first proposed hypothesis trying to explain why migrants resulted in having higher risk for psychosis was called “negative selection” (Ødegaard, 1932, cit. in: Selten e Termorshuizen, 2017). According to Ødegaard there had to be a sort of selection effect making psychosis-prone people more likely to migrate. This hypothesis has been largely disproved. Hutchinson et al. (1996) (cit. in: Stilo e Murray, 2010) detected migrant patients from Jamaica that had been diagnosed with psychosis in London and had a non-migrant twin who had remained in their native country. Subsequently they went to Jamaica to find and screen the non-migrant twins. If the negative selection hypothesis had been correct, Hutchinson and colleagues would have found a relevant number of psychotic Jamaica-based twins. That was not the case. In

addition to disproving the negative selection hypothesis, this founding was also an interesting evidence of environmental effect on psychosis. A further evidence disconfirming the negative selection hypothesis has been offered by van der Ven et al. (2015). Consequently, the negative selection hypothesis is nowadays referred to as a new “Seligman’s error”.

Another hypothesis – that we might consider akin to the negative selection one – speculated about a possible higher psychosis incidence in the migrants' countries of origin. This was proved to be false not only by large WHO-collaborative studies (WHO, 1979; Jablensky, 1992), but also by more ad-hoc researches. Since London-based Afro-Caribbeans, compared to people of other ethnicities, were the ones found to be at higher risk in UK-based AESOP (2006), specific inquiries were conducted in the Caribbean. Psychosis incidence was found to be not higher than in Europe (Mahy et al., 1999; Bhugra et al., 1996; Hickling e Rodgers-Johnson, 1995; Hanoeman, Selten e Kahn, 2002).

Results have been adjusted for age, sex and socio-economic status in all included studies, except for one (Hogerzeil et al., 2017), in which results have been adjusted for age and sex but not SES. This has an important implication: beside income, other elements of social disadvantage can be risk factors for psychosis in migrants. In simple terms: migrants in Europe, even if they can afford good housing conditions or they are highly qualified workers, can experience racial discrimination and social exclusion, thus resulting in higher relative risk for psychosis. However, SES plays an important role: when not adjusted for socio-economic status, the relative risk for migrants increases even more.

Results were adjusted for urbanicity as well. Since urbanicity is considered to be an independent risk factor for psychosis and the vast majority of the included studies were carried out in urban settings, one might speculate that migrants and psychosis studies are biased. Kirkbride et al., (2017) disconfirmed this hypothesis by proving that migration is an independent risk factor.

Finally it was hypothesized that misdiagnosis, infections, obstetric complications and substance use could be mediating factors for migrations and psychosis. However, evidence supporting this hypothesis has been classified as “indirect”, “limited” and “untested” and the scientific community (or the “dominant narrative”, as Dykxhoorn e Kirkbride put it) refutes them (Dykxhoorn e Kirkbride, 2019). Of the forty included

studies, only one mentions the misdiagnosis hypothesis as a possible explanation (Dykhhoorn et al., 2019a). However, it is not clear why scholars do not deem acceptable this hypothesis. I believe that, being of particular interest to cultural psychiatry, the misdiagnosis hypothesis deserves a stand-alone review.

4.4 – Confirmed mediating factors

Social environmental stress is currently the most accepted mediating factor in the relationship between migration and psychosis. This has been traditionally divided in: pre-migration stress (e.g.: Syria's war), migration stress (e.g.: illegally crossing the Mediterranean Sea) and post-migration stress (e.g.: racism in host societies). Post-migration stress is usually pointed out as the most important one. This is because if pre-migration and migration stress could account for first generation migrants, this is not the case for second and third-generation migrants (see below). Moreover post-migration stress factors have been well-documented in evidence-based psychiatry. Let's see it in detail.

4.4.1 – Racism and discrimination

The most common terms used in this research fields are: “social disadvantage” (Stafford et al., 2019), “minority status” Dykhhoorn et al. (2019a), “ethnic minority status” (Selten, van der Ven e Termorshuizen, 2019), “social adversities, experiences of discrimination (...) social defeat. Aculturative stress (...) systemic racism” (Dykhhoorn e Kirkbride, 2019). Dykhhoorn and Kirkbride also propose “visible minority status” (Dykhhoorn e Kirkbride, 2019; Bourque et al., 2011, cit. in: Dykhhoorn e Kirkbride, 2019), which is a politically correct term to indicate racism and discrimination relating to darker skin tone or physical traits. This result has been confirmed in all selected studies – however one looks at it, black people are at greater risk than other immigrants (Dykhhoorn e Kirkbride, 2019; Selten, van der Ven e Termorshuizen, 2019). The case of Israel is particularly interesting in this regard: immigrants are a vast part of the country general population, yet only immigrants who differ in appearance from the host population (in this case, people from Ethiopia) are at increased risk for schizophrenia (Weiser, 2009). There's another consideration lending credibility to the visible minority status hypothesis. If we are to take the term “migrations” literally, we will notice that in Australia, New Zealand, USA and Canada

the white population is immigrated, while respectively Aborigines, Maori, Native American and Inuit are native: in these cases visible minority status, and not migration, is a risk factor for psychosis (Selten, van der Ven e Termorshuizen; 2019).

4.4.2 - Age at migration

Age at migration has been confirmed as mediating factor in the relationship between migration and psychosis. Early life migration increases psychosis risk (Kirkbride et al., 2017) and – according to the already mentioned review by Dykxhoorn and Kirkbride (2019) – this evidence can be classified as “strong”.

4.4.3 - Ethnic density

Ethnic density is considered to be a protective factor, in as much as it provides the social support immigrants are thought to be lacking in host societies.

4.4.4 – Different ethnicities, different risks

A part of the included studies claim that migrants are at great risk for psychosis regardless of their ethnic group or country of origin (Dykxhoorn et al., 2019a; Hogerzeil et al., 2017), while others state that different ethnic groups – or nationalities – have different incidence rates. In the latter case, sub-Saharan African and Afro-Caribbean appear to be at greater risk than other migrants (Stafford et al., 2019; Dykxhoorn et al. 2019b; Dykxhoorn et al. 2019a; Kirkbride et al., 2012; Selten, van der Ven e Termorshuizen, 2019), while conflicting evidence was found with regards to migrants from Asia, Middle-East, some subregions of Africa and first-generation migrants from Europe. A summary of such conflicting evidence is reported in tab. 1.

Tab. 1

Increased risk of psychosis?	Yes	No
First generation european 4 . 4	Stafford et al., 2019 Eastern-European (Selten et al., 2019)	Kirkbride et al., 2017 ÒDonoghue et al., 2020 North and South-Europe (Anderson et al., 2015)
Second generation european A	Kirkbride et al., 2017	
Asian S p r	Pakistan and Bangladesh (Kirkbride et al., 2017) South-Asia (Anderson et al., 2015)	ÒDonoghue et al., 2020 Stafford et al., 2019 East-Asia (Anderson et al., 2015)
Arabs e v	Kirkbride et al., 2017 ÒDonoghue et al., 2020	
Middle-Easterns I	ÒDonoghue et al., 2020	Stafford et al., 2019
South America S		Stafford et al., 2019
Africans s	East Africa (Anderson et al., 2015)	

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As previously mentioned, Selten, van der Ven e Termorshuizen (2019) carried out separate analysis based on skin color and place of birth. By confronting the two different outcomes, they pointed out that black skin is a stronger negative predictive factor than being born in devoping countries.

5 – Second-generation immigrants

Conflicting evidence was found with respect to first and second-generation immigrants. According to Selten, van der Ven e Termorshuizen (2019), first and second-generation immigrants do not differ in risk for psychosis. Henssler et al. (2019) found that only second-generation immigrants are at greater risk for psychosis. Kirkbride et al. (2017) and Bourque et al. (2011, cit. in: Dykxhoorn e Kirkbride, 2019)

seem to convalidate Henssler's results, although only as far as European are concerned.

6 – Economic migrants, asylum seekers and refugees

Specific analyses have been conducted to discern whether the “asylum seeker and refugees” subgroup had more weight than the one of economic migrants in determining a higher psychosis risk. Although a number of studies seem to state this (Brandt et al., 2019; Hollander et al., 2016; Anderson et al., 2015), Selten, van der Ven and Termorshuizen (2019) classified them as weak evidence suggesting that further research is needed.

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