Ethnic Differences in Pathways to Care and Duration of Untreated Psychosis:
An Example of the use of Meta-Analysis in Psychosocial Epidemiology

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Presentation Outline

1. Overview of systematic review methods and findings
2. Discussion of “lessons learned” from the project
Meta-analysis
A meta-analysis of ethnic differences in pathways to care at the first episode of psychosis


Objective: We sought to systematically review the literature on ethnic differences in the likelihood of general practitioner (GP) involvement, police involvement, and involuntary admission on the pathway to care of patients with first-episode psychosis (FEP).

Methods: We searched electronic databases and conducted forward and backward tracking to identify relevant studies. We calculated pooled odds ratios (OR) to examine the variation between aggregated ethnic groups in the indicators of the pathway to care.

Results: We identified seven studies from Canada and England that looked at ethnic differences in GP involvement (n = 7), police involvement (n = 7), or involuntary admission (n = 5). Aggregated ethnic groups were most often compared. The pooled ORs suggest that Black patients have a decreased likelihood of GP involvement (OR = 0.70, 0.57-0.86) and an increased likelihood of police involvement (OR = 2.11, 1.67-2.66), relative to White patients. The pooled ORs were not statistically significant for patients with Asian backgrounds (GP involvement: OR = 1.23, 0.87-1.75; police involvement OR = 0.86, 0.57-1.30). There is also evidence to suggest that there may be ethnic differences in the likelihood of involuntary admission; however, effect modification by several sociodemographic factors precluded pooling of these data.

Conclusions: Ethnic differences in pathways to care are present at the first episode of psychosis.

Keywords: First-episode psychosis - Duration of untreated psychosis - Ethnicity - Race - Treatment delay - Early intervention
First-Episode Psychosis

• Delays between onset and the initiation of treatment are associated with poor clinical and functional outcomes

• Examining pathways to care is important for understanding where these delays might be occurring
Background: Ethnicity and Pathways to Care

- Ethnic differences in pathways to care are well documented for chronic psychiatric disorders
  - Greater complexity
  - Increased likelihood of involuntary admission
  - More involvement of police and criminal justice agencies
  
  *(Bhui et al, 2003; Van Os et al, 1997)*

- Less research has been done on first-episode psychosis specifically
Objectives

To systematically review the literature on racial and ethnic differences in:

- pathways to care in first-episode psychosis
- duration of untreated psychosis (DUP)
Definition of Terms

Race

- Typically refers to the categorization of people because of their physical features
- Example: May impact perception of behaviour by service providers

Ethnicity

- Describes the social group a person belongs to based on factors such as language, religion, and place of origin
- Example: May influence beliefs about the causes of and most appropriate response to symptoms of mental illness
Outcomes

Pathways to Care

- a. General Practitioner (GP) Involvement
- b. Police and Criminal Justice Involvement
- c. Involuntary Admission

Duration of Untreated Psychosis
Methods

Search Strategy

- Electronic Database Search:
  - MEDLINE (1950-2012)
  - HealthStar (1966-2012)
  - EMBASE (1980-2012)
  - PsychINFO (1967-2012)
  - Web of Knowledge

- Forward and backward citation searching
Methods

Studies were included if they met the following criteria:

A. Measured pathways to care or DUP in patients with first-episode psychosis
B. Race or ethnicity is examined as a determinant or covariate
C. The study was conducted in a high-income country
D. Published in a peer-reviewed journal
Methods

- Quality assessment completed using a modified version of the Newcastle-Ottawa Scale
- Data from specific ethnic groups aggregated for comparability across the studies
- All data analyzed using random effects modelling
- For duration of untreated psychosis, we requested log-transformed estimates of the mean and standard deviation from authors
Findings

- Seven studies compared the pathways to care of ethnic minority groups to the majority population:
  - General Practitioner Involvement (n=7)
  - Police Involvement (n=7)
  - Involuntary Admission (n=5)

A meta-analysis of ethnic differences in pathways to care at the first episode of psychosis

GP Involvement

Pooled Sample:
White  n = 1004
Black  n = 682
Asian  n = 175
A meta-analysis of ethnic differences in pathways to care at the first episode of psychosis

**Police Involvement**

**Pooled Sample:**
- White, \(n = 1019\)
- Black, \(n = 684\)
- Asian, \(n = 180\)

<table>
<thead>
<tr>
<th>Study</th>
<th>Year</th>
<th>Country</th>
<th>OR (95% CI)</th>
<th>Weight</th>
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<td>0.84 (0.55, 1.20)</td>
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*NOTE: Weights are from random effects analysis.*
Findings

Involuntary Admissions (n=5)

• Evidence of effect modification by age, gender, and SES precluded a meta-analysis (n=3)

• Asian clients less likely to have an involuntary admission (n=1)

• Black-Caribbean (n=2) and Black-African (n=1) clients significantly more likely to have an involuntary admission

Findings

Duration of Untreated Psychosis (n=10)

- Only three studies reported differences between groups
  - Black patients generally (n=1), and Black-African patients specifically (n=2), had a shorter DUP
  - Results for Asian patients (n=2) conflicting
- The authors of six studies provided log-transformed estimates of the mean DUP to allow for a meta-analysis

Pooled Sample:
- White: n = 1243
- Black: n = 782
- Asian: n = 105
Lessons Learned #1: Keyword Searching

• Lack of MeSH terms for many of the exposures in psychosocial epidemiology

Example:

Population Groups [MeSH]

- Individuals classified according to their sex, racial origin, religion, common place of living, financial or social status, or some other cultural or behavioral attribute
Lessons Learned #1: Keyword Searching

- Lack of MeSH terms for many of the exposures in psychosocial epidemiology

**Example:**

**Keywords**

- ethnic$, visible minorit$, ethno$, immigra$, racia$, migration, afro$, africa$, caribbean, black, europ$, white, asia$
Lessons Learned #2: Manual/Hand Searching

- Forward and backward citation searching
- Hand searching table of contents (n = 10 journals)
- Review of personal files
- Contacting experts in the field
A meta-analysis of ethnic differences in pathways to care at the first episode of psychosis

Articles identified by hand searching

- Medline and HealthStar Search (n = 154)
- Embase Search (n = 184)
- PsycInfo Search (n = 144)
- Web of Knowledge Search (n = 99)

Unique citations screened for relevancy (n = 466)

Studies excluded (n = 421)

- Full-text version retrieved for more detailed evaluation (n = 64)

Studies excluded from analysis, with reasons (n = 55)
- Not a first-episode sample (n = 16)
- Review article/qualitative study (n = 6)
- Pathways to care not reported (n = 10)
- Ethnicity not reported (n = 7)
- No comparison group (n = 9)
- Country of origin (n = 12)
- Duplicate data (n = 4)

Post-hoc exclusion from the analysis (n = 1)
- Ethnic group not comparable

Studies meeting the inclusion criteria (7 studies reported in 8 papers)
Race, ethnicity, and the duration of untreated psychosis: a systematic review

Articles identified by hand searching

- Medline and HealthStar Search (n = 205)
- EMBASE Search (n = 225)
- PsycINFO Search (n = 86)
- Web of Knowledge Search (n = 233)

Unique citations screened for relevancy (n = 527)

- Forward and backward citation searching (n = 8)

Studies excluded (n = 489)

Full-text version retrieved for more detailed evaluation (n = 50)

- Review of personal files (n = 4)

Studies meeting the inclusion criteria (n = 10)

- Studies excluded from review, with reasons (n = 40)*
  - Not a first-episode population (n = 5)
  - Review article/letter report (n = 5)
  - DUP not measured (n = 9)
  - No ethnicity (n = 6)
  - No comparison group (n = 10)
  - Low-income country (n = 4)
  - Clinical trial (n = 1)
  - Duplicate data (n = 7)

Studies excluded from meta-analysis (n = 3)

- Required data not available from authors (n = 3)

Data available for meta-analysis (n = 7)
Lessons Learned #3: Wide Variability in Exposure

- Variation across studies on whether race or ethnicity was assessed
- Forced to reclassify ethnic groupings as racial groupings
- May result in a loss of important information
Race, ethnicity, and the duration of untreated psychosis: a systematic review

Pooled Sample:
- White: n = 1243
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Race, ethnicity, and the duration of untreated psychosis: a systematic review

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<td>-0.22 (-0.50, 0.05)</td>
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Lessons Learned #4: Push for Meta-Analysis

• Strong push from journal reviewers and editors to meta-analyze findings

• Example: Evidence of effect modification for involuntary admissions by age, gender, and SES precluded a meta-analysis (n=3)
Evidence of moderate to high heterogeneity
Lessons Learned #5: Difficulties with Quality Assessment

- Many tools and checklists less relevant for psychosocial epidemiology and unable to discriminate between studies
- Modified the Newcastle-Ottawa Scale to better reflect the review topic
Lessons Learned #5: Difficulties with Quality Assessment

Example: Modification of Quality Assessment Tool

Original item from Newcastle-Ottawa Scale:

3) **Ascertainment of exposure**
   a) secure record (eg surgical records) ✗
   b) structured interview ✗
   c) written self report
   d) no description

http://www.ohri.ca/programs/clinical_epidemiology/oxford.asp
Lessons Learned #5:
Difficulties with Quality Assessment

Example: Modification of Quality Assessment Tool

Modified items from Newcastle-Ottawa Scale:

- Quality of race or ethnicity measurement
  - Not reported
  - Third party report (e.g., staff categorization, name-based method)
  + Self-reported race or ethnicity

- Use of race or ethnicity in the analysis
  - Ethnic groups dichotomized (e.g., white vs. others)
  + Reasonable groupings by race
  + All analyses done on specific ethnic groups without amalgamation
Conclusions

• Need flexible methodology while still maintaining the rigour of systematic review process

• Quality assessment should focus on limitations of prior studies and areas for future improvement

• Present detailed summary and discussion of contextual details to address other sources of heterogeneity
Project Collaborators

Dr. Kwame McKenzie (CAMH)
Nina Flora (CAMH)
Dr. Suzanne Archie (McMaster)
Dr. Craig Morgan (Institute of Psychiatry, London)
Thank You!

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