



Comparison of Electronic Health Record (EHR) and Expert Chart Review Diagnoses for First-Episode Psychosis



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INTRODUCTION

Early detection of psychotic illnesses is crucial to improving prognoses^{1,2}.

We analyzed data from a parent study aimed to develop an automated early detection tool based on existing data elements from electronic health records (EHR) to identify people at high risk or in the early stages of psychotic illness.

Given that Black individuals in the US are disproportionately diagnosed with psychotic disorders³, and that this is partly due to assessment bias^{4,5}, it is important to evaluate sources of racial bias in the data proposed to be used to create the automated early detection tool.

METHODS: OVERVIEW

500 EHR of MGH patients who met the following criteria were randomly selected :

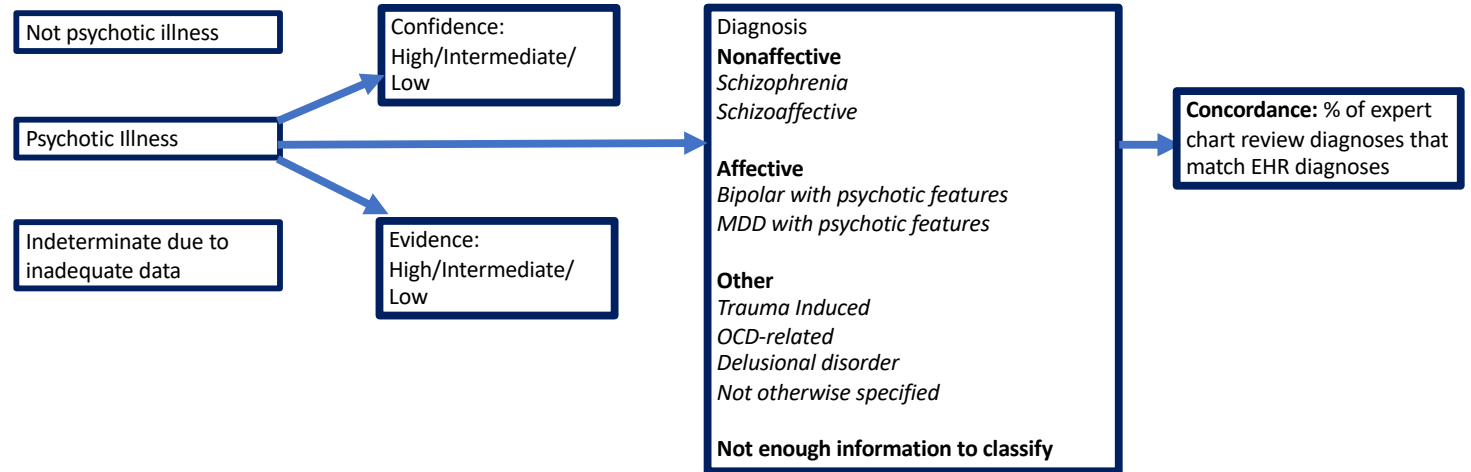
- Index diagnosis of psychosis between the ages of 15-35
- Two years of EHR data prior to index diagnosis
- No psychotic disorder diagnosis prior to the index diagnosis.
- Index diagnosis given after the year 2000

Records were reviewed by two expert clinical psychiatrists with a third reviewer acting as tiebreaker to arrive at a consensus diagnosis, following the chart review process depicted to the right.

This study evaluated a subsample of patients who (a) identified as non-Latinx White (N=317) or non-Latinx Black (N=69) and (b) had reviewer consensus on whether they had a psychotic illness or not. Excluded participants identified as other ethnoracial groups.

Additionally, we evaluated a subset of 132 white individuals who met EHR criteria for an index case and compared the concordance between EHR and expert chart review diagnoses. We are currently working on extracting records to evaluate and compare concordance for non-Latinx Black individuals.

METHODS: EXPERT CHART REVIEW PROCESS



RESULTS

71% (49/69) of Black patients were evaluated by expert reviewers as having a psychotic disorder, in comparison to 62% (196/317) of white participants.

Reviewers reported intermediate-high confidence in their diagnoses for 88% (23/26) of Black patients and 78% (88/113) of white patients.

Reviewers reported similar levels of intermediate-high evidence for their diagnoses of Black and white patients: 72% (21/31) and 74% (69/96) respectively.

Concordance rates between EHR index diagnoses and expert reviewer diagnoses for white patients showed 92% agreement between the EHR and expert chart review for non-affective psychosis, but only 78% agreement for affective psychosis.

CONCLUSIONS

Given that Black participants were determined to have higher rates of psychotic disorders than their white non-Latinx counterparts, **it will be important to evaluate the extent to which this may be due to assessment bias.**

A psychosis detection tool based on currently specified EHR data elements may **be less reliable for affective than non-affective psychosis** for non-Latinx white individuals. Criteria for index cases of affective psychosis may need to be modified to achieve higher positive predictive values.

Next steps will involve calculating concordance rates between EHR and expert chart review diagnoses for Black participants, as well as increasing the sample size for analyses by including EHR records from partner academic medical centers.



Scan to view expert chart review diagnoses in more detail & for references.