Housing Status Reporting and Pooled Prevalence of People Experiencing Housing Instability in Opioid Use Disorder Pharmacotherapy Trials: A Systematic Review and Meta-analysis

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Submitter David Wiercigroch

Affiliation Centre for Addiction and Mental Health, University of Toronto

Participant(s) David Wiercigroch (Presenter), David Mekhaiel (Co-Author), Shreya Chatterjee (Co-Author), Yash Shrestha (Co-Author), Aisha Nathoo (Co-Author), Tanya Hauck (Co-Author)

SUBMISSION DETAILS

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Summary People experiencing housing instability bear a disproportionate burden of opioid use disorder (OUD), overdose mortality, and barriers to medications for OUD. Housing status may influence pharmacotherapy access, retention, and continuity of care, and emerging evidence suggests it can modify treatment response. This makes housing status directly relevant to the generalizability of OUD treatment trials. However, randomized clinical trials (RCTs) often incompletely report social determinants of health, including housing status, limiting assessment of who is represented in the evidence base. We examined housing-status reporting in OUD pharmacotherapy RCTs and estimated the pooled proportion of randomized participants reported as experiencing housing instability among trials with extractable data.

We conducted a systematic review and meta-analysis of peer-reviewed, English-language RCTs of maintenance pharmacotherapy for OUD published from January 1, 2000, to October 24, 2025. We searched MEDLINE, Embase, CENTRAL, PsycINFO, CINAHL, and ClinicalTrials.gov with duplicate screening. Eligible trials evaluated methadone, buprenorphine, naltrexone, slow-release oral morphine, diacetylmorphine, or adjunctive pharmacotherapy in a maintenance context. Trials entered quantitative synthesis if housing instability status was explicitly reported or directly derivable among randomized participants. Two reviewers extracted quantitative data and verbatim housing-status wording and classified each measure using an adapted framework capturing temporal frame, definition type, and ascertainment source. This framework allowed appraisal of how housing status was defined and measured. We pooled proportions using random-effects meta-analysis with the Freeman-Tukey double-arcsine transformation and inverse-variance

weighting, with subgroup analyses by region, funding source, clinical setting, trial blinding, trial size, and journal impact factor, and meta-regression on publication year.

We screened 8,444 records, reviewed 353 full texts, and identified 119 eligible trials. Only 24 trials (20.2%) reported housing instability status in an extractable form, and reporting varied widely in temporal frame and definitional breadth. Among these, the pooled proportion experiencing housing instability was 15.6% (95% CI, 7.1% to 26.4%), with substantial heterogeneity (I^2 = 98.7%). Prevalence differed by region (P < .001), with 27.7% (95% CI, 10.7% to 48.6%) in North America, 10.8% (95% CI, 2.9% to 22.3%) in Europe, and 0.6% (95% CI, 0.0% to 1.8%) in other regions, and increased with publication year (P = .019). No significant differences were observed by funding source, setting, blinding, trial size, or journal impact factor.

OUD pharmacotherapy RCTs infrequently reported extractable housing-status data, and the definitions used were inconsistent. Where reported, prevalence was substantial, exceeding general-population estimates, yet varied markedly across studies and regions. Together, these gaps make it difficult to determine whether OUD pharmacotherapy trials adequately represent people experiencing housing instability, for whom the most effective treatment may differ. Adopting standardized, clearly defined housing-status reporting in future trials would address this shortfall, enabling clinicians to judge how applicable trial findings are to patients experiencing housing instability and supporting more equitable, generalizable OUD research and policy.

The questions following the above will ask you to breakdown your summary.

Background People experiencing housing instability have a disproportionate burden of opioid use disorder (OUD), overdose mortality, and barriers to medications for OUD.[1] They face more barriers to pharmacotherapy but may show comparable outcomes once engaged in treatment.[2] Estimates of housing instability among people entering OUD treatment vary widely, from roughly 12% in national U.S. treatment admissions data[1] to nearly a quarter in some methadone maintenance cohorts.[3] Housing status may influence pharmacotherapy access, retention, and continuity, and is therefore relevant to the generalizability of OUD treatment trials. A secondary analysis of the X:BOT trial (N=570) found that housing status moderated treatment response, with relapse rates differing between extended-release naltrexone and buprenorphine-naloxone among housed compared with unhoused participants;[4] a companion mediation analysis identified adherence and opioid use as pathways underlying this differential effect.[5]

Despite this clinical relevance, randomized clinical trials often incompletely report social determinants of health, including housing status, limiting assessment of who is represented in the evidence base.[6] A cross-sectional study of 237 trials published in five high-impact journals found housing status reported in only 3.4% of studies, while age and sex were reported almost universally.[6] Existing guidance has not resolved this shortfall. The CONSORT-Equity 2017 extension recommends reporting of equity-relevant sociodemographic variables, but applies only to trials with an explicit health-equity focus,[7] and even equity-relevant trials rarely report housing or socioeconomic subgroups.[8] When trials do not report whether participants are experiencing housing instability, clinicians and researchers cannot determine whether the evidence base reflects the

patients they treat, or how representative trial samples are of structurally vulnerable groups.

Trials also vary in how they define housing instability, from a single baseline assessment to a recent or lifetime window, and from the narrow absence of a fixed address to any broader form of unstable housing.[9] A figure reported without a clear definition limits meaningful comparison across trials.

We therefore examined housing status in OUD pharmacotherapy randomized clinical trials, determining the proportion of trials that report it, estimating the pooled prevalence of housing instability among randomized participants in trials reporting extractable data, and characterizing how rigorously housing status was defined.

Educational Learning Objectives

Learning Objective 1 Appraise the extent and quality of housing-status reporting in opioid use disorder pharmacotherapy randomized clinical trials, including how often housing instability is reported in an extractable form.

Learning Objective 2 Describe the pooled prevalence of housing instability among participants in opioid use disorder pharmacotherapy trials reporting extractable data, including how reported prevalence varied across geographic regions.

Learning Objective 3 Evaluate how gaps and inconsistencies in housing-status reporting limit the generalizability of opioid use disorder treatment evidence to patients experiencing housing instability, and identify why standardized housing-status reporting would strengthen clinical decision-making, research design, and policy.

Methods We performed a systematic review and meta-analysis of peer-reviewed, English-language randomized clinical trials of maintenance pharmacotherapy for OUD, published January 1, 2000, to October 24, 2025. We searched MEDLINE, Embase, CENTRAL, PsycINFO, CINAHL, and ClinicalTrials.gov. Two reviewers screened records and extracted data, with disagreements resolved by consensus. Trials were eligible if housing instability status was explicitly reported or directly derivable among randomized participants. For each trial, the verbatim housing-status wording was classified for risk of bias using an adapted framework capturing temporal frame, definition type, distinguishability from broader housing instability, and ascertainment source.[10] We pooled proportions using random-effects meta-analysis with the Freeman-Tukey double-arcsine transformation and inverse-variance weighting, with subgroup analyses by region, funding, setting, blinding, trial size, and impact factor, and meta-regression on publication year.

Results We screened 8,444 records, reviewed 353 full texts, and identified 119 eligible OUD pharmacotherapy randomized clinical trials. Of these, 24 (20.2%) reported housing instability status in an extractable form. Reporting varied in temporal frame and definitional breadth. Among these trials, the pooled proportion experiencing housing instability was 15.6% (95% CI, 7.1% to 26.4%), with substantial heterogeneity (I^2 = 98.7%). Pooled prevalence differed by region, with 27.7% (95% CI, 10.7% to 48.6%) in North America, 10.8% (95% CI, 2.9% to 22.3%) in Europe, and 0.6% (95% CI,

0.0% to 1.8%) in other regions (P < .001). Prevalence increased with publication year (P = .019). No differences were observed by funding source, setting, blinding, trial size, or journal impact factor.

Conclusion OUD pharmacotherapy randomized clinical trials infrequently reported extractable housing-status data, with only one in five trials reporting housing instability in a form that could be quantified. Where reported, prevalence was substantial but variably defined and highly heterogeneous across studies and regions. This reporting gap limits assessment of trial generalizability to people experiencing housing instability, a population disproportionately affected by OUD. Standardized, clearly defined housing-status reporting in future OUD trials would strengthen the evidence base, support equitable research design, and help clinicians and policymakers apply trial findings to structurally vulnerable patients.

Scientific Significance To our knowledge, this is the first systematic evaluation of housing-status reporting and pooled housing instability prevalence across OUD pharmacotherapy randomized clinical trials. The findings quantify a critical and previously uncharacterized gap. Most OUD trials do not report housing instability in an extractable form, and the definitions used are inconsistent. The substantial heterogeneity and marked regional variation in reported prevalence demonstrate that current data cannot reliably characterize representation of people experiencing housing instability in the OUD treatment evidence base. These results provide a rationale and benchmark for standardized housing-status reporting, which would improve the interpretability and generalizability of OUD pharmacotherapy evidence for people experiencing housing instability.

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