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Ethnic disparities in rapid tranquillisation use and justifications in adult mental health inpatient settings: a systematic review and meta-analysis

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ABSTRACT

Question Evidence on the likelihood of receiving rapid tranquillisation (RT) across ethnic groups is mixed, with some studies suggesting that ethnic minorities are more likely to receive RT than others. We aimed to investigate the association between ethnicity and RT use in adult mental health inpatient settings and to explore explanations for RT use in relation to ethnicity.

Study selection and analysis We searched six databases, grey sources, and references from their inception to 15 April 2024. We included studies reporting the association between RT and ethnic groups in adult mental health inpatient settings. A meta-analysis with a random-effects model was performed using odds ratio (OR) to estimate the association. Grading of Recommendations Assessment, Development, and Evaluation (GRADE) was used to assess the overall certainty of the evidence. We reported narratively any explanations for RT use in relation to ethnicity. PROSPERO: CRD42024423831.

Findings Fifteen studies with 38 622 individuals were included, mainly using white or native as the ethnic majority group compared with other ethnic groups. Individuals from ethnic minority backgrounds were significantly more likely to receive RT than those with ethnic majority backgrounds (OR=1.49; 95% confidence interval (CI): 1.25 to 1.78; moderate certainty), corresponding to a relative risk of 1.32 (95% CI: 1.17 to 1.48).

Conclusion Disparities appear to exist in RT use across ethnic groups in adult mental health inpatient settings, disproportionately affecting ethnic minorities. Further research is required to gain a more comprehensive understanding of this issue.

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Institutional racism plays a pivotal role in mental health inpatient settings, where ethnicity is frequently reported to be a risk factor associated with the use of rapid tranquillisation (RT). We found no published systematic reviews and meta-analyses specifically summarising and examining how ethnicity influences RT use in adult mental health inpatient settings.

WHAT THIS STUDY ADDS

⇒ We found that the odds of RT use were 49% higher in individuals from ethnic minority backgrounds than among inpatients from ethnic majority backgrounds – showing there is a significant difference.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ This systematic review and meta-analysis highlights the need for more culturally appropriate care in adult mental health inpatient settings. Further research should focus on establishing valid explanations for ethnic disparities in RT use and addressing the decision-making processes to eliminate these disparities and to avoid biases rooted in cultural assumptions that may lead to discriminatory practices in mental healthcare.

BACKGROUND

Ethnicity is frequently reported as a risk factor associated with rapid tranquillisation (RT) use in mental health inpatient settings.[1 2] Although clinical guidelines do not recommend RT as a first-line approach for managing violence and aggression,[3 4] it remains the most commonly used restrictive practice in these settings.[5] RT involves the forcible administration of sedatives, such as antipsychotics or benzodiazepines, to prevent harm.[3 4] However, polypharmacy and high antipsychotic doses necessitate heightened attention to the risk of adverse events, including ataxia, drowsiness, and hypotension, in RT use.[6] Additionally, restrictive practices, like restraint/seclusion, may be employed alongside RT, which may contribute to its prevalence.[6 7] A systematic review suggests that RT is used worldwide for about 10% of individuals with mental health conditions when behaviour cannot be managed with less restrictive means and for about 48% of those subjected to restraint.[7] In a recent systematic review of adult mental health inpatient settings, the pooled proportion estimated for individuals exposed to RT was 25.6%.[5] Efforts have been made to reduce RT worldwide due to concerns about human rights violations and the potential for harm among those involved in the procedures.[4 6 7]

These concerns are further compounded by institutional racism, where an organisation's collective failure to deliver appropriate service to individuals based on their ethnic background can result in discriminatory processes, attitudes, and behaviours.[8] Institutional racism represents a pervasive issue in mental health, hindering the provision

of appropriate care, particularly for ethnic minorities.[8–11] Extensive evidence demonstrates that ethnic minorities often face unequal access to and lower-quality services than ethnic majority populations.[1 12–14] Consequently, ethnic minority groups experience disproportionately higher rates of forced hospitalisation compared to other groups,[13] along with prolonged admissions.[15 16] Furthermore, ethnic minorities may encounter delays in accessing mental health treatment, causing relapse and more acute presentations on admission.[12 14] These factors influence the likelihood of receiving restrictive practices globally, with individual studies suggesting that ethnic minorities are more likely to receive RT than ethnic majority populations.[1 2] However, other studies have reported no or weak associations between ethnic minority groups and increased RT use.[17 18] Additionally, it has emerged that the risk of RT use may not necessarily be the same in all or specific ethnic groups[18–20] and may vary based on age, diagnosis, place of residence, and staff approaches.[19 21] Therefore, we conducted a systematic review and meta-analysis to investigate the association between ethnicity and RT use in adult mental health inpatient settings and to explore explanations for RT use in relation to ethnicity.

METHODS

This study was guided by the Cochrane recommendations[22] and reported according to the Guideline for Reporting Systematic Reviews (PRISMA) (online supplemental appendix 1).[23] The study protocol was reported in accordance with the Reporting Guideline for Systematic Review Protocols (PRISMA-P),[24] PROSPERO: CRD42024423831.

Search strategy and selection criteria

We included studies reporting the association between RT and ethnic groups in adult (≥18 years old) mental health inpatient settings. We included only studies that provided quantitative evidence, those that were available in full text, and were reported in English or Scandinavian languages. We excluded studies that included adult mental health inpatients alongside others, like minors, without providing separate findings for each group and studies that examined various restrictive practices (eg, restraint/seclusion) beyond just RT without reporting their findings separately.

Six databases were searched from inception to 15 April 2024: APA PsycINFO (Ovid), CINAHL with Full Text (EBSCO), Cochrane Library (Wiley), Embase Classic+Embase (Ovid), PubMed (NCBI), and Scopus (Elsevier). We searched for grey literature using general and grey search engines and relevant websites.[22] These searches involved the use of Google, Google Scholar, OpenGrey (Inist-CNRS via DANS), GreyGuide (ISTI-CNR), and five websites: Danish Health Authority (sst.dk), Mind (mind.org.uk), the National Institute for Health and Care Excellence (nice.org.uk), Race Equality Foundation (raceequalityfoundation.org.uk), and Substance Abuse and Mental Health Services Administration (samhsa.gov). We screened references of included studies and reviews of those assessing RT use, restrictive practice use, and management of violence in different settings.[22]

The search strategy was developed with a librarian.[22] We identified relevant keywords and subject headings for each database and combined them with Boolean operators into blocks focused on 'ethnicity', 'rapid tranquillisation', and 'mental health inpatient settings' (online supplemental table 1). The grey sources were targeted in accordance with the database search limitations.[22]

Search results were imported into Endnote[25] and de-duplicated by one of the authors of this article (MLP). The results were then uploaded to Covidence[26] and independently screened by title/abstract and full-text by the authors MLP and FAG. Disagreements were resolved through discussion. Among the included studies, those that reported summary estimate data (odds ratio (OR)) or sufficient data to estimate one for the association between ethnicity and RT use were included in the meta-analysis, in line with the Cochrane recommendations.[22] We used OR because of the cross-sectional nature of the included studies. We contacted study authors to obtain missing data to estimate an OR, which provided additional information for one study.[18] Initially, we emailed the corresponding author, and if no response was received, we contacted co-authors. If they did not reply within 14 days, we sent a reminder. If there was still no response, we classified the data as missing.

Data extraction and analysis

MLP performed the data extraction, which AB, another author, checked for accuracy. Disagreements were resolved through discussion. Data were recorded using an Excel spreadsheet. None of the included studies used the same dataset.

The primary outcome was the association between ethnicity and receiving RT; the secondary outcome was the association between ethnicity and receiving RT more than once. We performed a meta-analysis with a random-effects model with maximum likelihood using the OR (95% confidence interval (CI)) as a measure to assess the pooled association between ethnicity and RT use via the Meta command in STATA BE 18.0 (StataCorp, College Station, TX, USA). Considering the known prevalence of individuals receiving RT (ie, 25.6%) in adult mental health inpatient settings, we also present the relative risk (RR) by converting the OR in accordance with the Cochrane guidance.[22] Similar to comparable reviews,[5 13] unadjusted estimates were used in the main analysis. A significance level was set at $p \leq 0.05$.

Subgroup, sensitivity, and meta-regression analyses for the above outcomes were pre-specified in our protocol. Subgroup analyses were conducted on ethnicity, sample type (eg, restrained individuals), and number of hospitals included. Sensitivity analyses were conducted on unadjusted and adjusted estimates and excluding studies at high risk of bias. Meta-regression analyses were performed to examine the influence of study characteristics (ie, admission status, age, gender, and diagnosis) and risk of bias score on the pooled association. Variables of RT doses, drug classifications, and concurrent use of other restrictive practices or medications were also of clinical interest for the above analyses; however, due to a lack of reporting, they could not be included.

An additional outcome of the analysis was identifying explanations for RT use in relation to ethnicity, which were drawn from all included studies. Quantitative studies alone often fail to capture the broader context of complex issues. Therefore, like others,[13 27] we extracted both such explanations and any supporting primary evidence (data provided within the study) and secondary evidence (citations from other studies). Subsequently, the extracted data were analysed using content analysis.[28] We coded the identified explanations, compared their differences and similarities, and categorised them on this basis into five domains: patient-related, illness-related, service-related, culture-related, and service-patient interface.[13 27]

The authors (MLP and OS) independently conducted critical appraisals of the included studies. First, the methodological quality of each study was assessed using the Mixed Methods

Appraisal Tool,[29] which evaluates studies of various designs by focusing on core criteria.[30] This process consists of two screening questions, five design-targeting questions, and a final categorisation into low, medium, or high, based on a discussion of the ratings for each question.[29] Second, the study quality was assessed for ethnic specificity using a methodological quality scoring system adapted from Bhui *et al*,[31] previously used in comparable reviews.[13 27] This assessment involves rating five domains, with total scores ranging from zero to 14, categorised as low- (0–3), medium- (4–7), or high- (8–14) quality.[13] Disagreements were resolved through consultation with the author FAG.

The following data were extracted from the included studies: author and year; study design and methods; mental health inpatient setting and region/country; sample size and population type; age, gender, diagnosis, and ethnic information; use of RT (including details regarding the variables of clinical interest), and associated statistical data. As described above, we also extracted explanations for RT use in relation to ethnicity.

Statistical heterogeneity was assessed with the I^2 statistic, ranging from 0% (no heterogeneity) to 100% (high heterogeneity)[32] and examined through subgroup, sensitivity, and meta-regression analyses. Publication bias was assessed by visual inspection of the funnel plot and the trim and fill test.[22 33 34] To further assess publication bias, we performed a sensitivity analysis without small studies with extreme results to determine their impact on association estimates.

Grading of Recommendations Assessment, Development, and Evaluation (GRADE) for prognostic studies was used to evaluate the overall certainty of the findings.[35] GRADE is a systematic approach to assessing the evidence certainty, examining five domains: methodological flaws in studies (eg, risk of bias), heterogeneity in results across studies (eg, inconsistency), generalisability of findings (eg, indirectness), precision of estimates, and risk of publication bias.[35] Certainty in the overall estimate can be categorised into four levels, from high to very low, where 'high' means that additional studies assessing the same research question will not change the conclusions.

FINDINGS

As shown in figure 1, we identified 6097 studies, from which 149 potentially relevant studies were read fully for eligibility. Ultimately, 15 studies were included in our review.[17–21 36–45]

Study characteristics

Table 1 and online supplemental table 2 summarise the study characteristics. Of the 15 included studies, 14 provided information about the association of receiving RT between at least two ethnic groups (primary outcome),[17–21 37–45] while three studies reported the risk of repeated RT use (secondary outcome).[36 38 39] One study was divided into three sub-studies to compare different countries.[19] Data from seven studies were pooled and included in a meta-analysis for the primary outcome.[19–21 42–45] The remaining studies were summarised narratively due to insufficient reporting to estimate an OR between ethnicity and RT use,[17 19 36–41] and one study, which reported only adjusted data[18] was included in the sensitivity analysis as pre-specified. The included studies were from European countries, published between 2004 and 2019. Definitions of RT and its use varied across studies (online supplemental table 3). Furthermore, most studies (n=6) used white (UK-based studies) or native (origin, background, citizenship or nationality) (n=9) as the ethnic majority group compared with minority counterparts and were conducted across multiple hospitals (n=8). Altogether, the studies we reviewed included information on 38 622 individuals (range: 60–17 359), commonly representing females

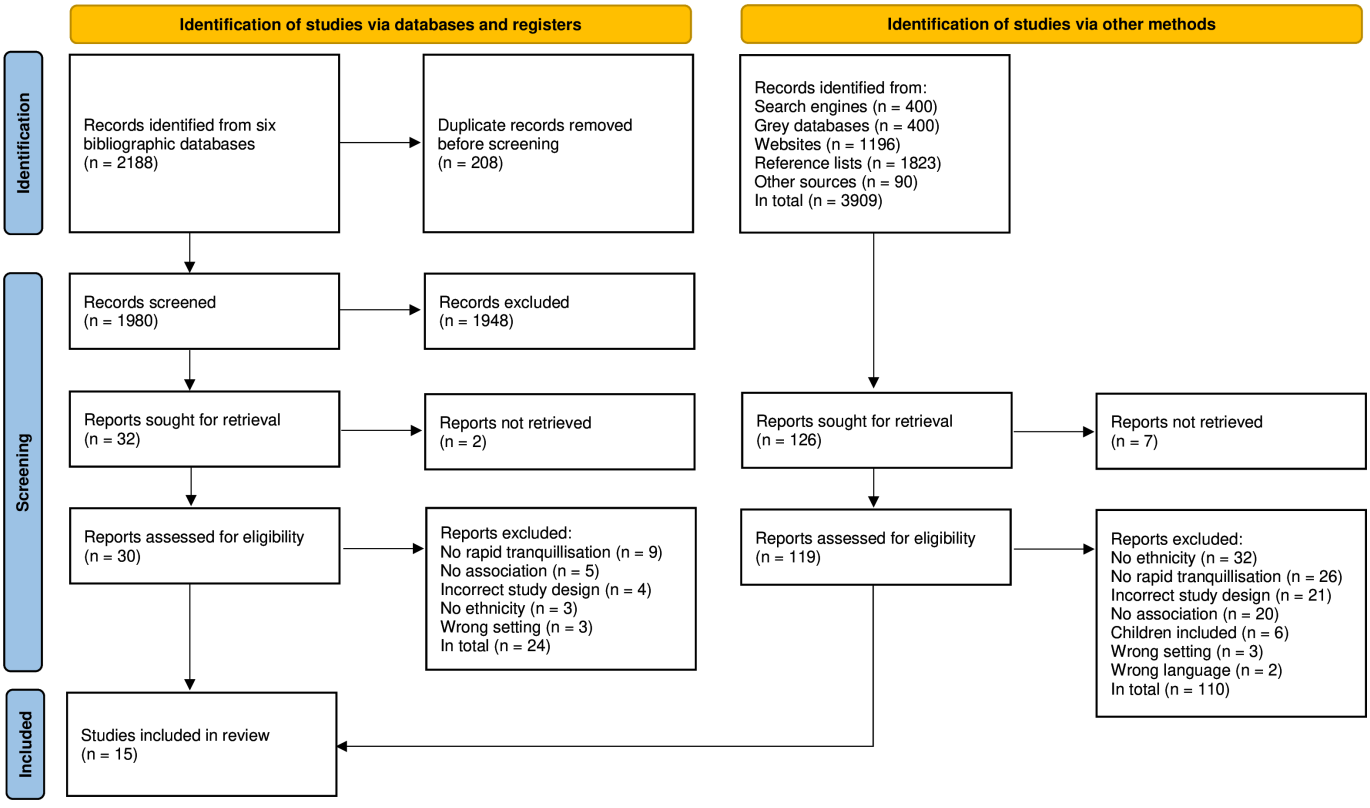

Figure 1 PRISMA Flow Diagram.

Table 1 Study characteristics of the included studies

First author (year)	Design	Descriptors of rapid tranquillisation	Mental health inpatient settings and country	Sample, n	Demographics		Quality appraisal	
					A: mean age (SD), years; F: gender, % female; S: diagnosis, % schizophrenia spectrum disorder	Ethnicity (%)	Study quality	Ethnicity checklist
Bowers[19] (2005)	Cross-sectional	Compulsory intramuscular medication	Acute psychiatric wards, UK	238	A: 38 (13), F: 41.2, S: 71	Majority (41.2); minority, that is, Bangladeshi, Black African, Black British, and others (58.8)	Medium	Low
			Acute psychiatric wards, Italy	400	A: 46 (16), F: 46.8, S: 40.5	Majority (94), minority, that is, North African, Black African, Eastern European, and others (6)		
			Acute psychiatric wards, Greece	200	A: 41 (11), F: 43.5, S: 65.5	Majority (88), minority, that is, Albanian, Albano–Greek, Russian–Slavic, and others (12)		
Bowers[38] (2012)	Cross-sectional	Forced intramuscular medication	Acute psychiatric wards and psychiatric intensive care units, UK	522	A: 41.1 (13), F: 46, S: NR	White British (68), other ethnicity (32)	Medium	Medium
Brown[37] (2004)	Case-control	Rapid tranquillisation	Acute psychiatric ward and psychiatric intensive care unit, UK	330	A: 35.8 (NR), F: 34.6, S: 38.8	Caucasian (87.9), Afro-Caribbean (6.7), Indian (4.6), other (0.9)	High	Medium
Flammer[42] (2013)	Cohort	Involuntary medication	Inpatient psychiatric care, Germany	3389	A: 52 (19.9), F: 56.7, S: 29.8	German (89.9), Turkish (3.5), others outside the European Community (3.4), others from the European Community (3.2)	Medium	Low
Flammer[17] (2016)	Experimental	Emergency medication	Psychiatric hospitals, Germany	2071	A: 47.3 (15.8), F: 48.5, S: 92.7	German background (82.7), migration background (17.3)	High	Low
Georgieva[45] (2012)	Cohort	Involuntary medication	Acute psychiatric ward, the Netherlands	125	A: 37 (13.3), F: 35.2, S: 36.8	Dutch origin (76.7), first & second generation immigrants (23.3)	Medium	Medium
Guzmán-Parra[44] (2019)	Experimental	Involuntary medication	Psychiatric units, Spain	111	A: 37.8 (NR), F: 31.5, S: 59.5	Spanish (88.3), others (11.7)	Medium	Medium
Hochstrasser[18] (2018)	Cohort	Forced medication	Psychiatric wards, Switzerland	17 359	A: 46 (17.1), F: 52.2, S: 19	Switzerland (70.2), other (29.9)	High	High
Hui[39] (2015)	Mixed method	Rapid tranquillisation	High secure hospital, UK	316	A: 39.5 (10.5), F: 13.3, S: NR	White (82.2), non-white (17.8)	Medium	Low
Knutzen[41] (2013)	Cohort	Pharmacological restraint	Acute psychiatric wards, Norway	371	A: NR, F: 44.5, S: 37.3	Native Norwegians (77.1), Asian (9.4), Africa (7.3), Southern Europe (3.5), Northern Europe outside Scandinavia (1.6), Scandinavia (0.8), Canada (0.3)	High	Medium
Lay[20] (2011)	Cohort	Coerced psychopharmacological medication	Psychiatric units, Switzerland	9698	A: 40.4 (12.8), F: 51, S: 22	Swiss national (78.3), foreign national (21.7)	High	High
Opitz-Welke[43] (2012)	Cohort	Compulsory medication	Psychiatric prison hospital department, Germany	107	A: 37.7 (NR), F: 0, S: 55.1	Native Germans (58), Turkey (8.4), Poland (6.5), rest of Europa (8.4), Lebanon (6.4), Iran (1.9), Tunisia (1.9), other non-European countries (8.4)	Medium	Low
Pilowsky[36] (1992)	Cohort	Rapid tranquillisation	General psychiatric hospital, UK	60	A: NR, F: 33.3, S: 46.5	White (75), Afro-Caribbean (25)	Medium	Medium
Shahpesandy[21] (2015)	Cohort	Rapid tranquillisation	Psychiatric intensive care unit, UK	97	A: 38.2 (NR), F: 29.2, S: 46.8	White British origin (95.9), ethnic minority background (4.1)	Medium	Low
Verlinde[40] (2017)	Cohort	Enforced medication	Mental health hospitals, the Netherlands	3228	A: NR, F: 51.1, S: 27.9	Non-western descent (6.8), others (93.2)	High	Medium

The percentages do not always sum to 100% due to rounding accuracy. Rounding is done to the first decimal place. Some variables were calculated based on only a part of the sample due to missing data, please see online supplemental table 2.
NR, not reported; SD, standard deviation.

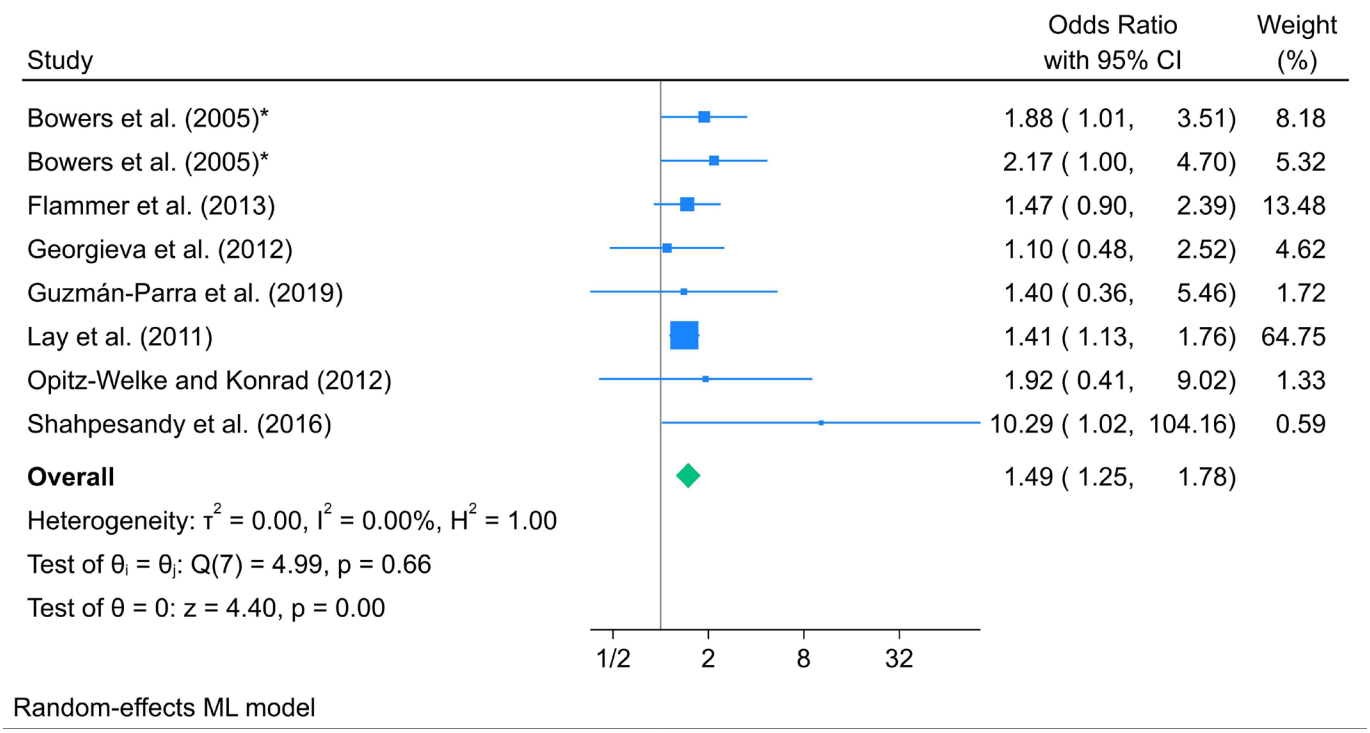

Figure 2 Main analysis of the association between ethnicity and receiving rapid tranquillisation. *The study was divided into sub-studies as they compared different countries.

(50.9%), voluntarily admitted (82.2%), and diagnosed with a schizophrenia spectrum disorder (27%) (specified in online supplemental table 2).

Ethnicity and RT use

The main analysis showed that individuals from ethnic minority backgrounds were significantly more likely to receive RT than those with ethnic majority backgrounds (OR=1.49; 95% CI: 1.25 to 1.78; I^2=0.00%), corresponding to a RR of 1.32 (95% CI: 1.17 to 1.48), assuming a 25.6% prevalence of RT use in the general population in adult mental health inpatient settings.[5] Figure 2 provides the forest plot for the meta-analysis.

Overall, the results of the subgroup, sensitivity, and meta-regression analyses aligned with the main findings. Thus, subgroup analyses by ethnicity (online supplemental figure 1), sample type (online supplemental figure 2), and one vs several included hospitals (online supplemental figure 3) did not alter the findings. In sensitivity analyses, we included adjusted data from two studies,[18 20] which overall did not differ significantly from the main findings (online supplemental figures 4 and 5), where ethnic minority background was still significantly associated with receiving RT compared with counterparts. Similarly, sensitivity analysis excluding studies at high risk of bias (online supplemental figure 6) and meta-regression analyses testing characteristics of admission status (online supplemental figure 7), age (online supplemental figure 8), gender (online supplemental figure 9), diagnosis (online supplemental figure 10), and risk of bias score (online supplemental figure 11) did not influence the main findings.

None of the included studies reported information on RT doses, drug classifications, and concurrent use of other restrictive practices or medications, preventing inclusion in the subgroup, sensitivity, and meta-regression analyses. Only the concurrent use of other restrictive practices was explored in three studies, comparing RT use only, seclusion/mechanical restraint use only, and simultaneous use of RT with seclusion/mechanical restraint.[41 44 45] None of the studies reported ethnicity as significantly associated with the type of practice (online supplemental table 4).

Explanations

Explanations for RT use in relation to ethnicity were extracted from all included studies. While some addressed the issue of ethnicity more broadly, only two studies[19 21] provided explanations specifically regarding RT use (online supplemental table 5). These explanations were related to patient characteristics, unequal treatment by staff, institutional racism, the catchment area of the service, and the level of cultural understanding among staff. However, none of these explanations were supported by primary evidence, that is, data provided by the studies themselves.

Risk of bias

We observed variability in study quality across all included studies when focusing on core criteria (online supplemental table 6) and scores assessed based on ethnic specificity, where scores ranged from 3 (low quality) to 10 (high quality) (online supplemental table 7). The main areas of bias revolved around inadequate consideration of confounding variables.

Publication bias

Visual expectation of the funnel plot revealed the possibility of small study bias (figure 3). However, sensitivity analysis without small studies with extreme results[21] did not change the overall estimates (online supplemental figures 12 and 13). Furthermore, when imputing studies potentially missing from the meta-analysis because of publication bias in the trim and fill test, the overall estimates did not change, suggesting no strong indication

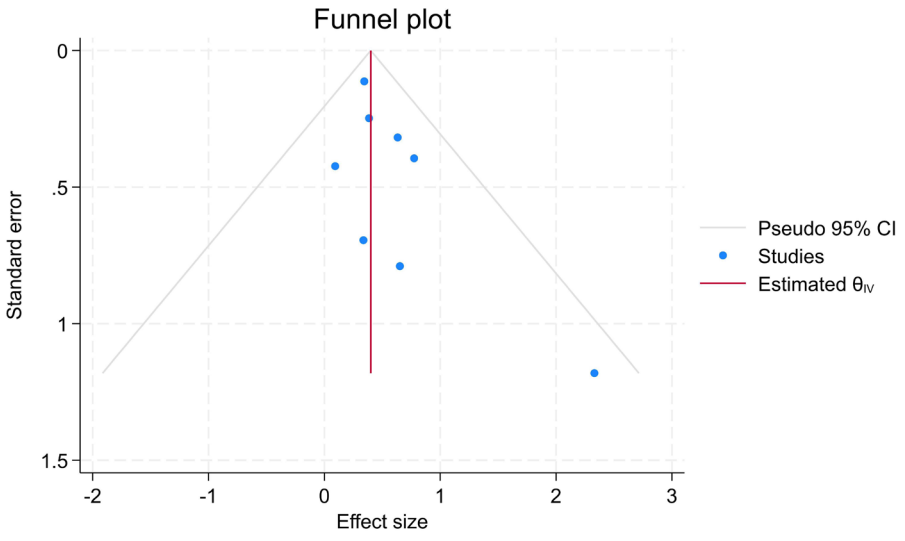

Figure 3 Funnel plot.

of publication bias. A funnel plot with imputed and observed estimates is provided in online supplemental figure 14).

Quality of the evidence

According to GRADE, the overall certainty of the evidence for the association between ethnicity and receiving RT in adult mental health inpatient settings was deemed moderate (online supplemental table 8). We downgraded the overall certainty of the evidence because of the limited number of studies and ethnic information.

DISCUSSION

This study explored the association between ethnicity and RT use in adult mental health inpatient settings. We found that individuals from ethnic minority backgrounds were more likely to receive RT than ethnic majority populations. These findings highlight significant ethnic disparities in RT use, disproportionately affecting ethnic minorities who are at a greater risk of receiving RT, as suggested by individual studies.[1 2] Consequently, our observed association between ethnicity and RT underscores the presence of institutional racism in mental health, as reported by others.[9 10] Our study also expands our understanding of this issue to support improved practices and efforts to reduce RT use. However, many included studies summarised findings about ethnicity and RT narratively, and the limited number of reported estimates available for meta-analysis and the variation in study quality may have influenced and obscured the independence of their relationship.[46]

We included 15 studies from European countries, a surprising one-sided geographical dominance, given the extensive work on RT use worldwide.[5 7] Furthermore, the association between ethnicity and RT use has been explored in adult mental health emergency settings both in Europe and abroad.[47 48] This geographical concentration in our results may reflect differences in mental health resources, influencing research focus and output. Globally, proper access to mental health treatment is a challenge for many,[10] and without addressing basic needs, prioritising issues like institutional racism in RT use may not be feasible. One of our included studies spanned three countries, suggesting that cross-country collaboration could enhance global knowledge, particularly by including underrepresented regions. However, in some countries, the capture of ethnic data is illegal,[11] which can also explain some of the geographical distribution and limit our understanding, thereby hindering the effective targeting of resources.

Subgroup analysis of ethnicity did not alter our main findings, suggesting that individuals from all ethnic minority groups may be more likely to receive RT in adult mental health inpatient settings than their ethnic majority counterparts. However, the included studies did not examine indigenous compared with non-indigenous individuals. Therefore, it remains uncertain whether ethnic minorities, like indigenous populations, who are known to face an increased risk of other restrictive practices,[1 2] are similarly at greater risk of receiving RT than other ethnic minority groups. Additionally, our findings show that definitions and understanding of ethnicity may vary over time and across contexts.[11 49] The included studies lacked sensitivity to the diversity of ethnicity, which is essential according to leading guidelines.[11 31 49] For instance, the use of multiple descriptors of ethnicity, as in other studies,[1] may offer a more accurate and nuanced understanding. Further attention is required to determine whether all ethnic minority groups in the countries studied are subjected to increased RT use.

We examined whether adjusted data could have significantly affected the results, but only two studies reported such estimates. We found that ethnic minorities were still considerably more liable to receive RT than ethnic majority populations. Although no significant differences in interpretation were observed compared with the main findings, more consistent reporting of all summary estimates may enhance our understanding of the association between ethnicity and RT use.[46] Additionally, our review's findings underscore the importance of focussing on intersectionality, social determinants of mental health, and other (cultural) factors[11 13 49] potentially affecting RT use, like living and employment situation.[2 18 20] Thus, other sources of disadvantage may also influence the ethnic disparities in our findings. This issue warrants further attention.

Similarly, of the 15 included studies, 13 offered no explanations on RT use in relation to ethnicity, while the remaining two provided explanations that were not substantiated by their own data. The explanations identified in our review aligned with those from other fields of restrictive practice use.[2 13 20] However,

as suggested by others,[13] such explanations can be problematic when untested and applied to ethnic groupings with significant internal variation. They overlook intersectionality and other factors,[11 13 49] related to RT risk in ethnic groups, thereby preventing further inquiry into the full range of risk factors faced and may predict further harm.

Addressing disproportionate ethnic disparities in RT use and their potential implications for decision-making and care is crucial to ensuring equity in mental health, regardless of ethnicity. Furthermore, recognising these disparities can inform practice and policy changes to enhance quality and reduce RT, benefiting everyone. For instance, staff could receive training on cultural competence and safety to better understand the implications of institutional racism in practice. This understanding can help mitigate biases influencing clinical decisions. Additionally, developing targeted care tools may ensure that all individuals receive equitable mental healthcare. However, when advocating for implementing more culturally appropriate care to address these health inequalities effectively, knowledge of additional relevant factors, for example, other demographic characteristics, is essential to ensure comprehensive and equitable solutions. Mental health practices should prioritise collecting data and knowledge to better understand individuals of all ethnic groups and tailor efforts accordingly.

The following limitations should be considered. First, additional keywords or subject headings could have expanded the search. To counter this, we used grey searches recommended to address gaps in published literature and mitigate issues such as publication bias.[22] Furthermore, the search strategy was developed with a librarian, ensuring its effectiveness and comprehensive coverage. Second, we only included studies reported in English or Scandinavian languages, which may have influenced the amount of literature included. Relevant literature in other languages might have broadened our results. Third, a possibility exists of residual confounding from variables like age and gender that could influence the results. Lastly, when researching restrictive practices across settings, it should be acknowledged that regulation, treatment approaches, and care cultures related to using these practices may vary significantly.[1 13]

To our knowledge, this study is the only one to date on ethnicity and RT use in adult mental health inpatient settings. Our findings provide directions for future research, which must ensure adequate quality and include both unadjusted and adjusted estimates to support valid conclusions that inform practice and policy decisions.[46] Furthermore, as suggested by others,[1 49] standardised, precise use of terminology within concepts like ethnicity and RT is vital as present use may challenge the relevance and understanding of the issue by researchers and staff. The included studies provided limited information on the risk of repeated RT use, dosages, drug classifications, and concurrent use of other restrictive practices or medications in relation to ethnicity. These areas require further research to target efforts where ethnic differences may be particularly pronounced. This is important as health inequalities, such as polypharmacy and adverse events,[6] may lead to harm and worse outcomes for those experiencing RT. Another direction is to examine the decision-making processes in RT use and the role ethnicity plays in this. For instance, staff often portray ethnic minorities as more dangerously disturbed than others.[1 13] Thus, explanations are essential to reveal not just the existence of ethnic differences but also the reasons behind them to avoid cultural assumptions and discrimination and to address potential racism at both systemic and clinical levels.

CONCLUSION

In conclusion, this study revealed that individuals from ethnic minority backgrounds were more frequently subjected to RT use in adult mental health inpatient settings than those from majority backgrounds. Even though the field has received some scholarly attention, valid explanations remain lacking, hindering our understanding of these ethnic disparities. Further research is essential to explore the association between ethnicity and RT use, aiming to promote equity in mental health and reduce reliance on RT.

Contributors All authors contributed to the conception, design, and data interpretation. MLP reviewed the search strings and terms, conducted data collection, curation, appraisal, analysis, and visualisation, and drafted the initial manuscript. AB performed data curation, analysis, and visualisation. OS conducted data appraisal. FAG contributed to the data collection and assessment. The manuscript underwent multiple rounds of critical revision for important intellectual content by all authors, and the final version was read and approved by everyone. All authors had full access to all the study data and accepted responsibility for submitting it for publication. MLP and AB directly accessed and verified the underlying data reported in the manuscript. MLP and FAG are guarantors.

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Patient consent for publication Not applicable.

Ethics approval Not applicable.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement All data relevant to the study are included in the article or uploaded as supplementary information. All data and material generated and analysed are available in the publication or the supplementary material. No additional data, e.g., individual participant data, are available. The study protocol was registered on PROSPERO (CRD42024423831), available at: https://www.crd.york.ac.uk/prospero/display_record.php?RecordID=423831.

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