Mortality in people experiencing homelessness: a systematic review and meta-analysis

Centre for Homelessness Impact®

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About

This systematic review and meta-analysis, funded by the Centre for Homelessness Impact and published in the *International Journal of Epidemiology* in September 2026, examined the link between homelessness and mortality worldwide. Researchers from Cardiff University and University College London searched four databases to December 2024, supplementing published evidence with unpublished data from two cohort studies. The review included 116 studies covering 2,563,633 people with experience of homelessness and 129,292,553 population controls, the largest evidence base yet assembled on this question.

Findings In Brief

People with a history of experiencing homelessness face around double the risk of death compared with people who have not experienced homelessness, with similar risks for men and women

Risk was highest among people who had slept rough, followed by those staying in low-cost hotels and shelters

Mortality risk was elevated for 33 of the 36 causes of death examined. The largest risk were for psychoactive substance use disorder (over 21 times the risk), accidental injury, and drug overdose

People experiencing homelessness are more likely to die from mental illness than the general population

Just over half of the studies (57%) were assessed as high quality, and there was no strong evidence that the results were skewed by only positive findings getting published

No study from a low-income country was identified, so the effect of homelessness on mortality in these settings remains largely unknown

Homelessness itself, and many of the causes of death identified, are largely avoidable.

Recommendations In Brief

Policy-makers, commissioners and practitioners should ask where existing systems could intervene earlier to prevent premature mortality given that evidence-based treatments and prevention strategies exist for many of these causes, particularly psychoactive substance use disorders, overdose, accidental injury and alcohol related deaths

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Earlier action is required in order to address elevated mortality among people exposed to different experiences of homelessness, not only rough sleeping, so that people affected by less visible forms of homelessness can get the treatment and care they need

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Homelessness-related mortality should be approached as a mainstream health-inequalities issue rather than something seen primarily as the responsibility of homelessness specialists

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Responsibility for identifying and acting on risks earlier should be shared across housing, health, public health, mental-health and substance-use systems, who must work together before individuals reach crisis

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Gaps remain, with very limited evidence on sofa-surfing and no studies from low-income countries, while the observational evidence cannot on its own tell us which interventions reduce mortality. Future research could usefully focus on less visible forms of homelessness, causal pathways and the effectiveness of interventions in reducing mortality inequalities.

Foreword

We have known for years that homelessness is associated with premature death. What this study gives us, for the first time on anything like this scale, is a much clearer measure of how great that risk is, where it is greatest and what is driving it.

This systematic review and meta-analysis brings together 116 studies involving more than 130 million people in total, including very large comparison populations. For the analysis of deaths from all causes alone, it draws on data from more than 1.6 million people who had experienced homelessness and more than 109 million people in comparison populations. Across that evidence, people who had experienced homelessness faced more than twice the risk of death, and more than nine in ten of the individual estimates pointed in the same direction.

The timing could hardly be more relevant. The new Prime Minister Andy Burnham has made ending long-term rough sleeping across the UK at the earliest opportunity one of his first commitments in office. This study strongly supports that ambition: people who have slept rough have the highest mortality risk of any group examined. But it also shows why the response cannot stop there, because the mortality inequality does not begin and end on the street.

Rough sleeping carries a pooled mortality risk more than seven times that of comparison populations, but elevated mortality is also found among people using shelters and low-cost hotels, while the association is similarly severe among men and women. That wider picture matters because the homelessness we see most readily is not the only homelessness carrying profound risks to health and life.

I have seen before how a single statistic can change the way an issue is understood. While I worked at the homelessness charity Crisis, I commissioned the research that became *Homelessness Kills*, led by Bethan Thomas at the University of Sheffield after I had initially approached Danny Dorling because of his work on mortality and inequality.

Published in 2012, the study found that the average age at death among the people experiencing homelessness identified in the research was 47, falling to 43 for women. Those figures became some of the most widely quoted statistics in homelessness, and for good reason: they made the human consequences of homelessness impossible to ignore.

But they are also often asked to do more than they can. They describe the ages at which people in that study died; they are not estimates of life expectancy, and they do not tell us how much greater the risk of death is for someone experiencing homelessness than for someone who is not.

This systematic review and meta-analysis gives us a much stronger basis for answering that question. By bringing together studies with comparison populations and synthesising the most comprehensively adjusted estimates, it allows us to quantify the excess mortality associated with homelessness, compare different experiences of homelessness and examine where the greatest cause-specific inequalities lie.

So the average age of death figures of 47 for men and 43 for women still matter as part of the history of the evidence, but they should no longer carry the whole argument. This review gives us a broader and more rigorous account of the risk.

The cause-specific findings make that especially clear. Mortality is elevated for 33 of the 36 causes of death examined, with some of the largest inequalities associated with psychoactive-substance-use disorders, drug overdose, accidental injury and alcohol-related causes. For psychoactive-substance-use disorder the pooled risk is more than 21 times higher, for other accidental injury more than 13 times higher and for drug overdose more than 11 times higher. The authors note that some of the associations they found are of a magnitude rarely seen in modern epidemiology.

Those findings should change the questions we ask. Ending long-term rough sleeping is an essential ambition and this study gives us another compelling reason to pursue it, but success cannot mean waiting until homelessness has become prolonged and visible before the risks to health command our attention. We also need to ask whether those risks are being recognised earlier, whether people experiencing less visible forms of homelessness can get the treatment and care they need, and whether housing, health, mental-health and substance-use services are working together before people reach crisis.

The review cannot tell us that one intervention will prevent every premature death, nor should we ask it to. What it does give us is a much stronger foundation from which to act. The paper points to areas where there is already evidence to draw on, including opioid substitution treatment, naloxone and psychosocial interventions, alongside the need for better integration of health, housing and social services and an adequate supply of affordable housing.

When *Homelessness Kills* was commissioned, the aim was to make visible a reality that had received far too little attention. More than a decade later, this study allows us to see that reality with much greater clarity: how large the mortality inequality is, how widely it reaches and where some of the greatest risks lie.

The evidence has moved on. Our response now needs to move with it.

Dr Ligia Teixeira
Chief Executive



Centre for Homelessness Impact

Abstract

Background

The association between homelessness and the type of homeless experience with all-cause and cause-specific mortality is uncertain.

Methods

Published studies were retrieved through a systematic search of MEDLINE, Embase PsycINFO, and Scopus from inception to December 2024. Unpublished data were identified from open access data archives. We used random-effects meta-analysis to combine the effect estimates from published and unpublished data from 116 studies comprising 2563633 homeless people and 129 292553 population controls. This review is registered at PROSPERO (CRD42023430984).

Results

The risk of all-cause mortality was increased in people exposed to homelessness compared with those unexposed [relative risk (RR) 2.21, 95% confidence interval (CI) 1.91–2.57, P < .001, I^2 = 99.7], with risks similar in men (RR 4.04, 95% CI 2.87–5.21) and women (RR 3.58, 95% CI 2.35– 4.82). Risks were higher in people who had slept rough (RR 7.63, 95% CI 3.29–11.97) than in those who had slept in hostels/shelters (RR 3.44, 95% CI 2.10–4.77) and also elevated for people staying in low-cost hotels (RR 5.18, 95% CI 1.14–9.23). Summary RR estimates were elevated for 33 of the 36 (92%) causes of death. The highest risk of death was apparent for psychoactive-substance-use disorder (RR 21.38, 95% CI 14.44–31.67), accidental injuries (RR 13.15, 95% CI 5.46–31.69), and drug overdose (RR 11.65, 95% CI 6.37–19.48). Around half of the studies (57%) were of high quality. No studies were found in low-income countries. There was no evidence of publication bias.

Conclusion

Compared with the general population, people with experience of homelessness have an increased risk of premature mortality. The most extreme inequalities were from deaths through psychoactive substance-use disorder, accidents, and drug overdose. There are evidence-based treatments for psychoactive substance use and drug overdose, suggesting that some of these deaths are avoidable.

Introduction

Worldwide, it is estimated that nearly 1.6 billion people have inadequate shelter, with ~15 million people forcefully evicted every year [1]. In low- and middle-income countries, a combination of increasing urbanisation and forced displacement from conflict and climate change is increasing the number of people without permanent shelter [2–4]. In high-income countries, insufficient social housing and increasingly unaffordable private housing are leading to a surge in homelessness. An estimated 895,000 people in Europe—one in every 600 people—stay in homeless shelters or temporary accommodation every night, which is an increase of 40% since 2023–24 [5]. Corresponding data from the USA suggests that 771,480 people are currently experiencing homelessness, which is an increase of 18% on 2023–24, with the majority living in emergency shelters or temporary accommodation such as single-occupancy low-cost hotels [6].

While existing studies have provided an important evidence base [7, 8], gaps hamper their usefulness for policy makers, as the types of homeless experience, population subgroups, and causes of death that are the most elevated are unclear. First, in the only previous meta-analysis, the authors combined the results from three studies with people who had been experiencing homelessness with people who had been incarcerated, were sex workers, or had a substance-use disorder, such that no estimate of the association between homelessness and all-cause mortality was reported [7]. Second, little is known about whether the risk varies according to the characteristics of the individuals (e.g. sex at birth), type of homeless experience (e.g. rough sleeping, shelters, low-cost hotels), or country of residence. Third, individual studies have summarised associations for a small number of causes of death [9, 10], presented cause-specific estimates for a single country (which may limit generalisability) [11, 12], or focused on high-income regions [9–12] or one type of homeless experience [12]. Lastly, publication bias—the notion that studies reporting positive results are more likely to be published—has not been explored and can distort the evidence base.

This study aimed to address these gaps by conducting a comprehensive review of the global evidence on homelessness with all-cause and cause-specific mortality. The primary estimates that we chose are those most adjusted and those using socio-economically deprived comparator groups, as these are likely to be the best estimates of the effect of homelessness on mortality.

Methods

The review was prospectively registered with PROSPERO (CRD42023430984) [13] and conducted in accordance with a published protocol [14]. We followed the PRISMA-IPD [15] and MOOSE [16] reporting guidelines in the presentation of our report.

Search strategy and selection criteria

We identified published studies through a systematic search of MEDLINE, Embase, PsycINFO, and Scopus from their inception to December 2024. Full search terms are provided in the Supplementary file (Supplementary Table S1). No limits on language were applied and articles were translated into English if required.

Full texts were then retrieved of papers that appeared to meet the inclusion criteria or, where a decision could not be made, based on titles and abstracts. We also conducted a supplementary search of the reference sections of systematic reviews and websites to identify grey literature.

After the exclusion of duplicate studies, M.K. and A.W. independently reviewed all titles and abstracts to establish their eligibility on the basis of defined inclusion criteria [14]. As definitions of homelessness vary internationally [17, 18], we used an inclusive definition of people who are, or report ever having been, homeless. This included people with different types of homeless experience: (i) rough sleeping (e.g. living directly on the streets, in squats); (ii) staying in an emergency hostel, shelter, or refuge for people experiencing homelessness; (iii) residing in low-cost hotels (e.g. temporary accommodation including single-occupancy rooms, bedsits, boarding houses); or (iv) 'sofa (couch)-surfing' (e.g. staying with friend(s) or relative(s); herein called sofa-surfing). We excluded studies in which a residence was (or had been) threatened due to financial insecurity; if the people resided in poor living standards; or if the authors provided insufficient information to calculate an estimate, such as those studies solely quantifying mortality in a homeless population without a comparator group.

Any disagreements were resolved through discussion, involving a third reviewer where necessary. Where we identified duplicate data presented in separate publications, we selected the study with the largest or most representative sample size and, when these were also similar, we used the most recently published report.

Data extraction

All authors extracted the data, which was then double-checked. Extracted characteristics included: name of the first author, publication year, study location (country), study type, homelessness type, current or historical homelessness, comparator population, degree of socio-economic disadvantage (e.g. occupational social class, income), follow-up period, number of people at risk and number of deaths in exposed and non-exposed groups, the summary statistics reported for age and sex (e.g. either reported as frequency, percentage, or mean or median alongside standard deviation or interquartile range), and the extent of statistical adjustment.

Unpublished individual-participant data

We supplemented data from the published studies with unpublished individual-level data from prospective cohort studies, located by searching two websites on which we had previously found data on homelessness and mortality [32], the UK Data Service (https://ukdataservice.ac.uk), and the Inter-University Consortium for Political and Social Research (http://www.icpsr.umich.edu/icpsr web/ICPSR/). This yielded two studies: the Survey of Health, Ageing and Retirement in Europe [19] and the US Health & Retirement Study [20]. Both had approvals from ethics committees and all participants had given informed consent. The harmonised covariates in our analyses of unpublished studies included age, sex, and socio-economic status.

Outcomes

Outcomes were all-cause and cause-specific mortality defined according to the International Classification of Diseases, tenth revision (ICD-10).

Quality assessment

To assess the quality of the included studies, we used the MethodologicAl STandards for Epidemiological Research (MASTER) scale [21]. Assessments were made of: formal recruitment, equal retention, equal ascertainment, equal implementation, equal prognosis, sufficient analysis, and temporal precedence [minimum score = 0, maximum (high quality) = 36]. The quality of the study was regarded as having a low risk of bias if the total score was above a median of 12.

Statistical analysis

The statistical analysis plan was completed before analysis (Supplementary file, page 6). The data and code for all the statistical analyses can be found at GitHub (**https://github.com/jameswhite1979/Homelessness-systematic-review**). The data describe the causes of death investigated by each study. We first analysed unpublished individual-participant data by using Cox proportional hazards regression to generate hazard ratios (HRs) with accompanying 95% confidence intervals (CIs) for the associations between homelessness and all-cause and cause-specific mortality [22].

Next, we used meta-analysis to combine the results from the analyses of the unpublished data with estimates from published studies. Where published studies provided HRs and odds ratios (ORs), these were used as a common estimate of relative risk (RR). In studies in which the incidence of mortality was <10%, we regarded the ORs as close approximations of RR [23]. If the mortality incidence was ≥10% and count data were available, then ORs and HRs were converted into RRs [24, 25]. If CIs were missing, then they were calculated by using standard formulae.

We analysed the associations of homelessness with all-cause and cause-specific mortality separately. For the unpublished data, effect estimates were adjusted for age and sex, and socio-economic status. For published studies, we used the most comprehensively adjusted estimates. Some publications reported multiple effect sizes, creating a unit-of-analysis issue. To account for this, when multiple comparator population groups were reported, we used estimates where the comparison group was a socially deprived population or where measures were adjusted for area, household, or individual-level deprivation. If studies reported multiple comparisons (e.g. short and longer follow-ups), we chose the comparison with the greatest number of deaths. Where multiple exposures were compared with the same comparator group (e.g. different types of homelessness to the same unexposed population), they were combined. Where the exposed group was compared with more than one comparator group (e.g. other cohort participants or an external population), we ran a multilevel meta-regression to model the effects nested within studies to account for the association between the common groups [26].

We used random-effects models reflecting the anticipated heterogeneity in the included studies. We used the I2 statistic to summarise the proportion of total variation in study estimates due to heterogeneity, with higher values denoting greater heterogeneity [27]. Planned exploratory subgroup analyses were conducted according to participant sex, country, homelessness status (current vs. historical), type of homelessness (rough sleeping vs. shelter vs. temporary accommodation), and according to the income of the country from which the study sample was drawn based on the World Bank 2023 classification [28]. We also examined differences according to the study characteristics, including exposure ascertainment (self-report vs. administrative record), comparator population (socio-economically deprived vs. general; internal vs. external cohort), effect sizes adjustment (minimal vs. multivariable), publication status (unpublished vs. published), study design (retrospective vs. prospective), total sample size (<1000, 1000 to <10 000, 10 000 to <100,000, 100,000 to <500,000, 500,000 to <1 million, 1 million to <5 million, 5 million to <10 million, ≥10 million), and study quality (categorised as low, high). Subgroup differences were estimated by using meta-regression.

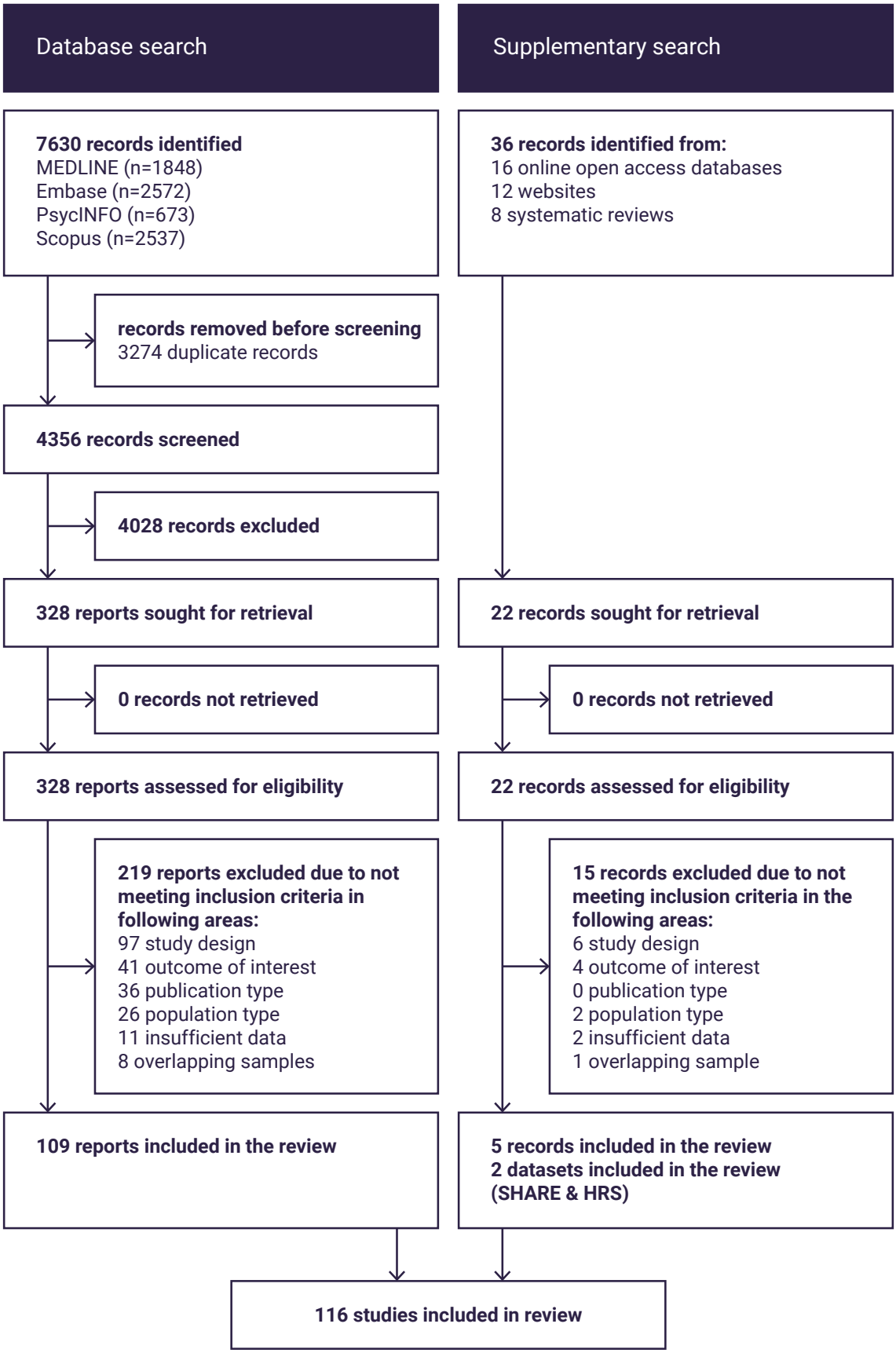
Summary RRs for causes of death were first estimated at the ICD chapter level (e.g. cancer, external) and then at higher specific-cause resolution by using the descriptors provided by the authors (e.g. lung cancer, suicide). Publication bias was explored by using an analysis of asymmetry in funnel plots [29]. Where detected, we used the non-parametric trim-and-fill method to quantify its effect [30]. As we anticipated retrieving a small number of very large studies, we used the 'leave-one-out' method [31] to examine the impact of excluding each on the summary effect size.

We performed statistical analyses by using Stata (MP version 18) to analyse the unpublished data and Stata (MP version 18) and R (version 4.3.3) to compute the meta-analysis.

Results

Figure 1 depicts the process of study selection. We identified 7630 records from four electronic database searches, of which 3274 were duplicated. In a parallel supplementary search for eligible unpublished datasets and grey literature, we scrutinized the reference sections of 8 systematic reviews, 12 websites, and 16 online databases. In doing so, 36 additional records were identified. We reviewed the full texts of 350 studies, of which 116 (114 published plus 2 unpublished datasets, as described in Supplementary Table S2) met our inclusion criteria, comprising ≥131.9 million people. Excluded studies and reasons for exclusion with study counts are listed in Supplementary Table S3.

Figure 1 Study selection



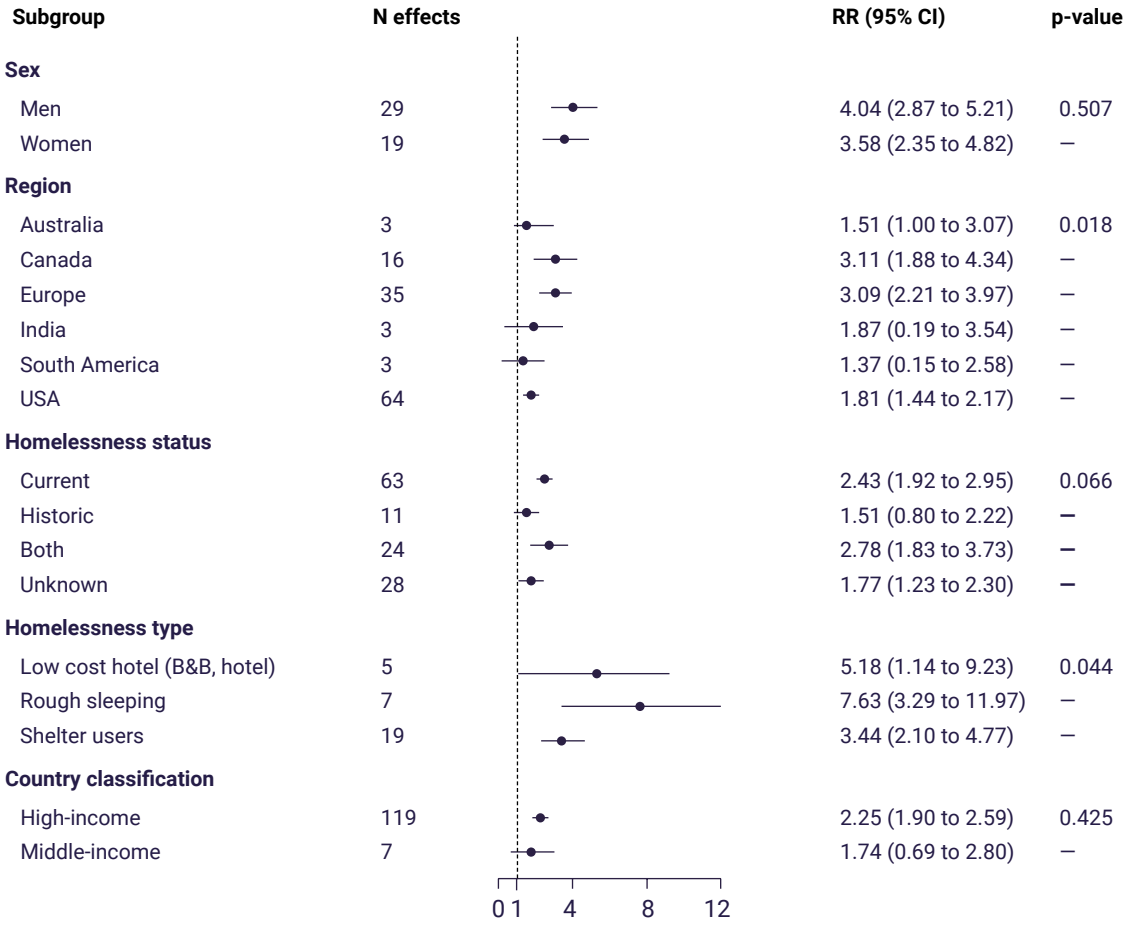
Alternate Text: Flow diagram showing the number of studies identified, screened, excluded, and included.

A total of 1,618,049 people who were exposed to homelessness and an estimated 109,274,222 from comparator populations contributed to the meta-analysis of all-cause mortality. Ninety-five studies yielded 126 unique RRs in the analyses of all-cause mortality, of which the large majority (91.3%, N = 115) had an elevated risk of death in the group affected by homelessness. Homelessness was associated with a doubling in the risk of all-cause mortality (RR 2.21, 95% CI 1.91–2.57, P < .001; I2 = 99.7%; P < .001, Supplementary Figure S1). Just over half of the studies (57.1%) were evaluated as being of high quality.

We found no strong evidence of publication bias (Egger's test value = 1.86, P = .06; Supplementary Figure S2).

There were no marked differences in the homelessness–mortality association between men (RR 4.04, 95% CI 2.87–5.21) and women (RR 3.58, 95% CI 2.35–4.82) or whether their experience was current (RR 2.43, 95% CI 1.92–2.95) compared with historical (RR 1.51, 95% CI 0.80–2.22). A stronger association was apparent in people who had slept rough (RR 7.63, 95% CI 3.29–11.97) compared with in those using a shelter (3.44, 95% CI 2.10–4.77, P for difference = .01) and residence in a low-cost hotel was also associated with an elevated mortality risk (RR 5.18, 95% CI 1.14–9.23) but, as only one study was found to have reported on sofa-surfing [32], we did not report on it here. There were also differences in effect estimates by geographical location, with higher RRs in samples drawn from Europe (including the UK) relative to the USA (P for difference = .02) and Canada compared with the USA (P = .003, Fig. 2).

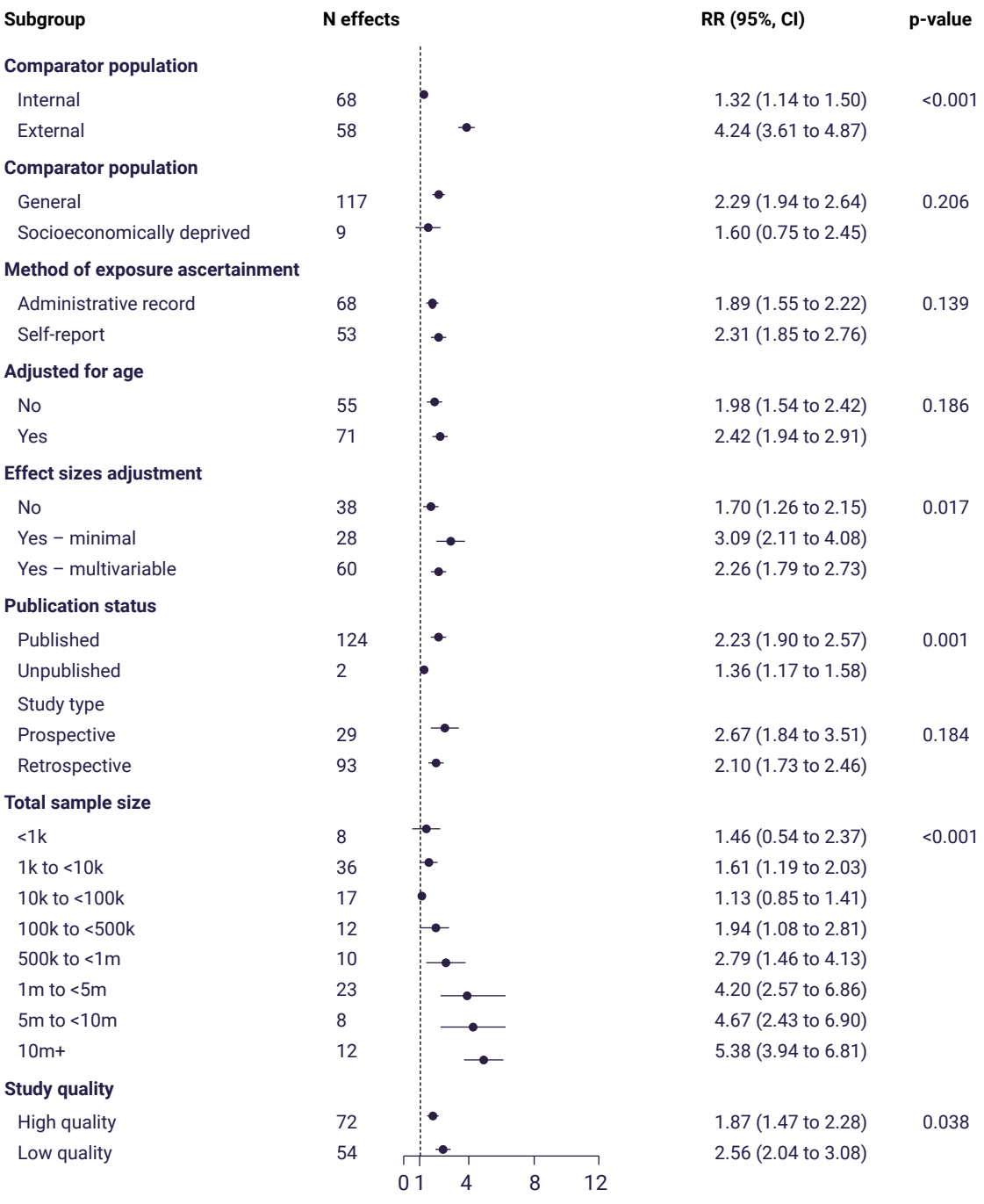
Figure 2 Association between homelessness and all-cause mortality comparing population subgroups.



Alternate Text: Association between homelessness and all-cause mortality shown by participant sex, region study took place, whether homelessness is current or historic, type of homelessness, and country income classification.

We examined the methodological characteristics of the studies finding no strong evidence of bias arising from the type of comparator population used; the method of exposure ascertainment; whether age was adjusted for in the model or not; or the study design. Summary RRs were higher in studies that used an external compared with an internal comparator population; in studies that provided adjusted compared with unadjusted estimates; in lower-quality studies; and in studies with larger sample sizes (P for trend for increasing sample size < .001); published studies had larger effects than unpublished studies (Fig. 3).

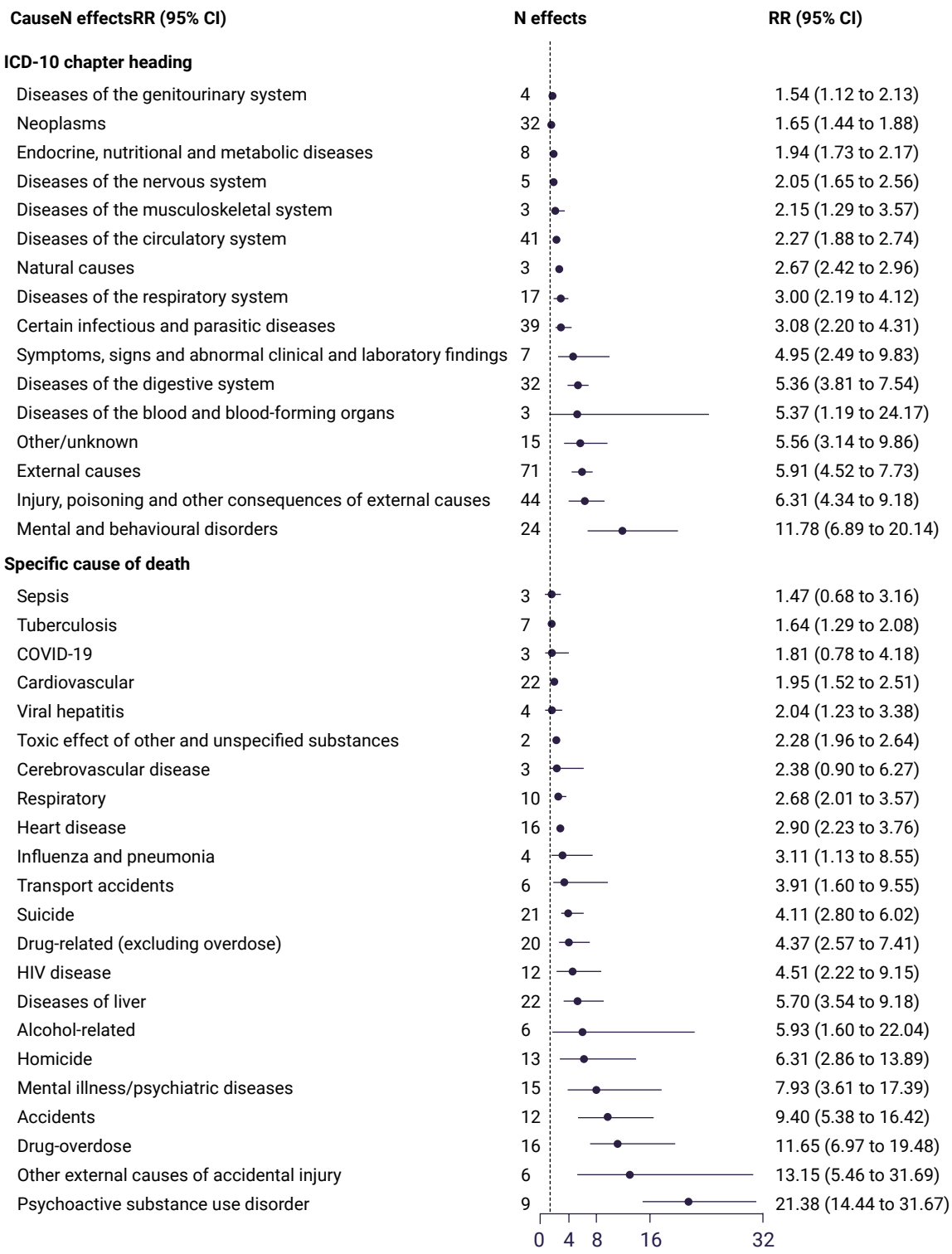
Figure 3 Association between homelessness and all-cause mortality comparing study characteristics.



Alternate Text: Association between homelessness and all-cause mortality according to the study characteristics, including choice of comparator group, comparator population, method of exposure ascertainment, adjustment for age, effect size adjustment, publication status, study type, sample size and study quality.

Summary estimates for cause-specific mortality were elevated for 33 of the 36 (92%) causes of death investigated (n homeless = 1,202,205; n comparator = 25,089,695, Fig. 4). At the ICD-10 chapter level, summary RRs were particularly high for mental and behavioural disorders (11.78, 95% CI 6.89–20.14, F00–F99 in ICD-10); injury, poisoning, and other consequences of external causes (6.31, 95% CI 4.34–9.18, S00–T98 in ICD-10); other/unknown deaths (5.56, 95% CI 3.14–9.86, R00–R99 in ICD-10); diseases of the blood and blood-forming organs (5.37, 95% CI 1.19–24.17, D50–D89 in ICD-10); and external causes (5.91, 95% CI 4.52–7.73, V01–Y98 in ICD-10).

Figure 4 Association between homelessness and cause-specific mortality according to the ICD-10 disease categories.



Alternate Text: Association between homelessness and cause-specific mortality according to the ICD-10 disease categories.

Summary RRs for disaggregated individual causes were the highest for deaths attributed to psychoactive-substance-use disorder (21.38, 95% CI, 14.44–31.67); drug overdose (11.65, 95% CI 6.97–19.48); other external causes of accidental injury (13.15, 95% CI 5.46–31.69); accidents (9.40, 95% CI 5.38–16.42); alcohol-related causes (5.93, 95% CI 1.60–22.04); drug-related (excluding overdose) (4.37, 95% CI 2.57–7.41); homicide (6.31, 95% CI 2.86–13.89); and suicide (4.11, 95% CI 2.80–6.02) (Fig. 4).

Sensitivity analyses using the leaving-one-study-out approach to explore the effect of individual studies had little impact on the majority of findings. Excluding one study conducted in the UK [33], with Standardised Mortality Ratios (SMRs) 2–3.7 times larger than those of any other study, reduced the pooled RR for Europe from 3.09 (95% CI 2.21–3.97) to 2.39 (95% CI 1.84, 3.11). The authors of this study acknowledged uncertainty in the denominator for the group with experience of homelessness such that the SMRs may have been inflated.

Discussion

Our systematic review and meta-analysis found a doubling in the risk of death in people with a history of homelessness relative to a general comparator population. The magnitude was comparable for men and women, by current or historical exposure, and elevated across all forms of homelessness, including rough sleeping and residence in a low-cost hotel or shelter, and higher in studies drawn from Canada compared with the USA. We found that the mortality was elevated for almost all health conditions examined, with some extreme RRs of >20 for psychoactive-substance use disorder, 10–19 for drug overdose and external causes of accidental injury, and 5–10 for accidents and alcohol-related causes.

Our findings are consistent with those of the previous systematic reviews of homelessness and all-cause mortality [7, 8] that included a substantially smaller evidence base (11 studies) as well as a comparatively large study with 6.3 million people conducted in a single high-income county [12]. In the present review, we included 116 studies comprising at least 131.9 million people. Consistently with the one previous study on the type of homelessness [32], we found that mortality was increased across all types, including low-cost hotels. This is likely to be of interest to policy makers, as low-cost hotels have recently been used in high-income countries to house single adults [34] and asylum seekers [35, 36] over long periods when settled accommodation is not available. Importantly, we provided a comprehensive assessment of the association between homelessness across 36 causes of death [7, 8]. The evidence base was the largest for external causes of death but, at the ICD-10 chapter level, the risk of death was higher for mental and behavioural disorders, injury, and poisonings. For some causes of death, associations were of a magnitude rarely seen in modern epidemiology [37]. We found no evidence of publication bias.

Our work is, of course, not without its limitations. We found evidence of heterogeneity between studies. The absence of agreed definitions of homelessness may explain some of this variation. Other sources of heterogeneity that we identified included stronger associations in studies using external comparators, of low quality, and lacking adjustment. To reduce the risk of confounding, we selected the most comprehensively adjusted estimate and, if multiple comparator populations were used, we selected the socio-economically disadvantaged. The main pooled estimate may therefore be an underestimate. We conducted a meta-analysis despite heterogeneity, as the effect of exposure to homelessness across all of its manifestations is arguably the most policy-relevant estimate. No studies were retrieved from low-income countries, including countries in Africa. The effects of homelessness on mortality in these contexts are therefore largely unknown. Lastly, exposure to homelessness, a time-varying exposure, was measured only once in the studies. Because people are likely to transition in and out of stable housing [38], our results might be subject to some misclassification and have underestimated the true magnitude of the association.

Many of the individual causes of death that we identified in people exposed to homelessness—psychoactive-substance-use disorder, drug overdose, and alcohol-related—are avoidable [39]. Similarly, drug misuse and alcohol misuse are likely to be implicated in other causes of mortality that we found, such as transport accidents, external causes of accidental injuries (e.g. drowning, falls), and other accidents (e.g. accidental poisonings). This would suggest that access to evidence-based treatments for substance use, such as methadone [40], standard or long-acting buprenorphine maintenance therapy [41,42], the distribution of naloxone to treat opiate overdose [43], and psychosocial interventions [44], may help ameliorate some of these excess deaths. Indeed, integration of these measures into rapid-response housing schemes such as Housing First, where housing is provided before issues such as mental illness or substance use are treated, have been associated with increases in the number of days in stable housing and hospital attendances [45]. Housing First has not, however, been associated with improvements in mental health or quality of life, and reductions in substance use [46]. In parallel, the lack of social housing and affordable private accommodation [47,48] is a structural barrier that urgently needs to be addressed to enable policy responses to house people and support them to remain housed.

In conclusion, our meta-analysis shows that homelessness is associated with around a doubling of the risk of all-cause mortality. The most extreme inequalities were found for deaths due to psychoactive-substance-use disorder, drug overdose, accidental injury, and alcohol-related causes, which may have an interrelated aetiology. This suggests that more investment and evaluation of the inclusion of health-policy responses integrating health, housing, and social services targeting these deaths and their causes are needed.

Ethics approval

The Survey of Health, Ageing and Retirement in Europe (SHARE) cohort was approved by the Ethics Council of the Max Planck Society. The Health and Retirement Study (HRS) cohort was approved by the University of Michigan's Institutional Review Board. Written informed consent was given by study participants before the start of data collection.

Acknowledgements

We thank the study members from the SHARE and HRS cohort studies for their participation.

Author contributions

J.W. and G.D.B. generated the idea for this systematic review, with all authors contributing to its development and the analytical plan. A.W., M.K., Y.M., and A.P. carried out the literature search and reviewed studies for inclusion. All authors extracted and checked the data. R.C.J. and M.L. conducted all the meta-analyses and J.W. wrote the first draft of the manuscript, to which all authors contributed. All authors had full access to all the data in the study and had final responsibility for the decision to submit for publication.

Supplementary material

Supplementary material is available at IJE online.

Conflicts of interest

None declared.

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Data availability

Individual-participant data from the SHARE and HRS cohort studies are available to download from the Inter-University Consortium for Political and Social Research (http://www.icpsr.umich.edu/ icpsrweb/ICPSR/). The data and code for the meta-analyses can be found at GitHub (https://github.com/jameswhite1979/Homelessness-systematic-review).

Use of artificial intelligence (AI) tools

No AI tools were used in performing the study or writing the report.

References

1. United Nations Department of Economic and Social Affairs, Division for Inclusive Social Development, 2020. *First-ever United Nations Resolution on Homelessness.* Available at: **https://www.un.org/development/desa/dspd/2020/03/resolution-homelessness/** (Accessed: 20 June 2021).

2. UN-Habitat, 2022. *World Cities Report* 2022. Nairobi: UN-Habitat. Available at: **https://unhabitat.org/wcr/2022/** (Accessed: 8 October 2025).

3. Schuettler, K. and Do, Q-T., 2025. Outcomes for internally displaced persons and refugees in low- and middle-income countries. In: K.F. Zimmermann, ed. *Handbook of Labor, Human Resources and Population Economics.* Cham: Springer, pp.1–24. Available at: **https://link.springer.com/rwe/10.1007/978-3-319-57365-6_371-1** (Accessed: 8 October 2025).

4. UN-Habitat, n.d. *Housing.* Nairobi: UN-Habitat. Available at: **https://unhabitat.org/topic/housing** (Accessed: 8 October 2025).

5. FEANTSA, 2024. *Ninth Overview of Housing Exclusion in Europe* 2024. Brussels: FEANTSA. Available at: **https://www.feantsa.org/en/report/2024/09/19/report-9th-overview-of-housing-exclusion-in-europe-2024** (Accessed: 8 October 2025).

6. U.S. Department of Housing and Urban Development, 2023. *The 2023 Annual Homelessness Assessment Report (AHAR) to Congress.* Washington, DC: HUD. Available at: **https://www.huduser.gov/portal/sites/default/files/pdf/2023-AHAR-Part-1.pdf** (Accessed: 8 October 2025).

7. Aldridge, R.W., Story, A., Hwang, S.W. et al., 2018. Morbidity and mortality in homeless individuals, prisoners, sex workers, and individuals with substance use disorders in high-income countries: a systematic review and meta-analysis. *The Lancet*, 391(10117), pp.241–250. **https://doi.org/10.1016/S0140-6736(17)31869-X**

8. Funk, A.M., Greene, R.N., Dill, K. et al., 2022. The impact of homelessness on mortality of individuals living in the United States: a systematic review of the literature. *Journal of Health Care for the Poor and Underserved*, 33(1), pp.457–477. **https://doi.org/10.1353/hpu.2022.0035**

9. Morrison, D.S., 2009. Homelessness as an independent risk factor for mortality: results from a retrospective cohort study. *International Journal of Epidemiology*, 38(3), pp.877–883. **https://doi.org/10.1093/ije/dyp160**

10. Nilsson, S.F., Laursen, T.M., Hjorthøj, C. et al., 2018. Homelessness as a predictor of mortality: an 11-year register-based cohort study. *Social Psychiatry and Psychiatric Epidemiology*, 53, pp.63–75.

11. Hwang, S.W., 2000. Mortality among men using homeless shelters in Toronto, Ontario. *JAMA*, 283(16), pp.2152–2157. **https://doi.org/10.1001/jama.283.16.2152**

12. Nilsson, S.F., Erlangsen, A., Nielsen, C.M. et al., 2025. Life-years lost in people experiencing homelessness and other high-risk groups in Denmark: a population-based, register-based, cohort study. *The Lancet Public Health*, 10(9), pp.e762–e773. **https://doi.org/10.1016/S2468-2667(25)00171-9**

13. Moriarty, Y., White, J., Cannings-John, R. et al., 2024. *Mortality among people who have experienced homelessness: protocol for a systematic review and meta-analysis using published and unpublished data*. PROSPERO, CRD42023430984. Available at: **https://www.crd.york.ac.uk/PROSPERO/display_record.php?RecordID=430984** (Accessed: 17 January 2025).

14. White, J., Moriarty, Y., Cannings-John, R. et al., 2023. *Protocol for a systematic review of association between homelessness and mortality*, v1.0. Open Science Framework. Available at: **https://osf.io.qtn7w/** (Accessed: 17 January 2025).

15. Stewart, L.A., Clarke, M., Rovers, M. et al., 2015. Preferred reporting items for a systematic review and meta-analysis of individual participant data: the PRISMA-IPD statement. *JAMA*, 313(16), pp.1657–1665. **https://doi.org/10.1001/jama.2015.3656**

16. Brooke, B.S., Schwartz, T.A. and Pawlik, T.M., 2021. MOOSE reporting guidelines for meta-analyses of observational studies. *JAMA Surgery*, 156(8), pp.787–788. **https://doi.org/10.1001/jamasurg.2021.0522**

17. Edgar, B., 2012. The ETHOS definition and classification of homelessness and housing exclusion. *European Journal of Homelessness*, 6(2), pp.219–225.

18. Watts, B., Bramley, G., Pawson, H. et al., 2022. *The Homelessness Monitor: England* 2022. London: Crisis. Available at: **https://www.crisis.org.uk/ending-homelessness/homelessness-monitor/the-homelessness-monitor-england-2022/** (Accessed: 8 October 2025).

19. Börsch-Supan, A., 2006. *Survey of Health, Ageing and Retirement in Europe*. Available at: **https://books.google.com/books?hl=en&lr=&id=v0cdEAAAQBAJ** (Accessed: 17 January 2025).

20. Sonnega, A., Faul, J.D., Ofstedal, M.B. et al., 2014. Cohort profile: the health and retirement study (HRS). *International Journal of Epidemiology*, 43(2), pp.576–585. **https://doi.org/10.1093/ije/dyu067**

21. Stone, J.C., Glass, K., Clark, J. et al., 2021. The Methodological Standards for Epidemiological Research (MASTER) scale demonstrated a unified framework for bias assessment. *Journal of Clinical Epidemiology*, 134, pp.52–64. **https://doi.org/10.1016/j.jclinepi.2021.01.012**

22. Cox, D.R., 2018. *Analysis of Survival Data*. Boca Raton: Chapman and Hall/CRC.

23. Higgins, J.P., 2008. C*ochrane Handbook for Systematic Reviews of Interventions*. Chichester: Cochrane Collaboration and John Wiley & Sons.

24. VanderWeele, T.J., 2020. Optimal approximate conversions of odds ratios and hazard ratios to risk ratios. *Biometrics*, 76(3), pp.746–752. **https://doi.org/10.1111/biom.13197**

25. VanderWeele, T., 2017. On a square-root transformation of the odds ratio for a common outcome. *Epidemiology*, 28(6), pp.e58–e60. **https://doi.org/10.1097/EDE.0000000000000733**

26. López-López, J.A., Page, M.J., Lipsey, M.W. et al., 2018. Dealing with effect size multiplicity in systematic reviews and meta-analyses. *Research Synthesis Methods*, 9(3), pp.336–351. **https://doi.org/10.1002/jrsm.1310**

27. Higgins, J.P., 2008. Commentary: heterogeneity in meta-analysis should be expected and appropriately quantified. *International Journal of Epidemiology*, 37(5), pp.1158–1160. **https://doi.org/10.1093/ije/dyn204**

28. World Bank, 2025. *World Bank Country and Lending Groups*. Washington, DC: World Bank. Available at: **https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups** (Accessed: 24 February 2025).

29. Egger, M., Davey Smith, G., Schneider, M. et al., 1997. Bias in meta-analysis detected by a simple, graphical test. *BMJ*, 315(7109), pp.629–634. **https://doi.org/10.1136/bmj.315.7109.629**

30. Duval, S. and Tweedie, R., 2000. Trim and fill: a simple funnel-plot-based method of testing and adjusting for publication bias in meta-analysis. *Biometrics*, 56(2), pp.455–463. **https://doi.org/10.1111/j.0006-341x.2000.00455.x**

31. StataCorp LLC, 2021. *Leave-one-out meta-analysis. College Station*, TX: StataCorp LLC. Available at: **https://www.stata.com/stata17/leave-one-out-meta-analysis/** (Accessed: 17 January 2025).

32. White, J., Fluharty, M., de G, R. et al., 2022. Mortality among rough sleepers, squatters, residents of homeless shelters or hotels and sofa-surfers: a pooled analysis of UK birth cohorts. *International Journal of Epidemiology*, 51(3), pp.839–846. **https://doi.org/10.1093/ije/dyab253**

33. Shaw, M., Dorling, D. and Brimblecombe, N., 1999. Life chances in Britain by housing wealth and for the homeless and vulnerably housed. *Environment and Planning A*, 31(12), pp.2239–2248. **https://doi.org/10.1068/a312239**

34. Ministry of Housing, Communities and Local Government, 2025. *Statutory Homelessness in England: January to March 2025*. London: HM Government. Available at: **https://www.gov.uk/government/statistics/statutory-homelessness-in-england-january-to-march-2025/statutory-homelessness-in-england-january-to-march-2025** (Accessed: 30 October 2025).

35. Home Office, 2025. *How Many Cases Are in the UK Asylum System?* London: HM Government. Available at: **https://www.gov.uk/government/statistics/immigration-system-statistics-year-ending-march-2025/how-many-cases-are-in-the-uk-asylum-system** (Accessed: 30 October 2025).

36. Immigration, Refugees and Citizenship Canada, 2025. *IRCC Minister Transition Binder 2025-03: Asylum Housing.* Ottawa: Government of Canada. Available at: **https://www.canada.ca/en/immigration-refugees-citizenship/corporate/transparency/transition-binders/minister-2025-03/asylum-housing.html** (Accessed: 30 October 2025).

37. Kavvoura, F.K., Liberopoulos, G. and Ioannidis, J.P.A., 2007. Selection in reported epidemiological risks: an empirical assessment. *PLoS Medicine*, 4(3), p.e79. **https://doi.org/10.1371/journal.pmed.0040079**

38. Orwin, R.G., Scott, C.K. and Arieira, C., 2005. Transitions through homelessness and factors that predict them: three-year treatment outcomes. *Journal of Substance Abuse Treatment*, 28(Suppl 1), pp.S23–S39. **https://doi.org/10.1016/j.jsat.2004.10.011**

39. Fazel, S., Geddes, J.R. and Kushel, M., 2014. The health of homeless people in high-income countries: descriptive epidemiology, health consequences, and clinical and policy recommendations. *The Lancet*, 384(9953), pp.1529–1540. **https://doi.org/10.1016/S0140-6736(14)61132-6**

40. Mattick, R.P., Breen, C., Kimber, J. et al., 2009. Methadone maintenance therapy versus no opioid replacement therapy for opioid dependence. *Cochrane Database of Systematic Reviews*, (3), CD002209. **https://doi.org/10.1002/14651858.CD002209.pub2**

41. Horspool, M.J., Seivewright, N., Armitage, C.J. et al., 2008. Post-treatment outcomes of buprenorphine detoxification in community settings: a systematic review. *European Addiction Research*, 14(4), pp.179–185. **https://doi.org/10.1159/000141641**

42. McMaster, J. and Abeysundera, H., 2025. Effectiveness of long-acting buprenorphine – a systematic review. *Australasian Psychiatry*, 33(2), pp.235–248. **https://doi.org/10.1177/10398562241295872**

43. Coffin, P.O. and Sullivan, S.D., 2013. Cost-effectiveness of distributing naloxone to heroin users for lay overdose reversal. *Annals of Internal Medicine*, 158(1), pp.1–9. **https://doi.org/10.7326/0003-4819-158-1-201301010-00003**

44. Hunt, G.E., Siegfried, N., Morley, K. et al., 2019. Psychosocial interventions for people with both severe mental illness and substance misuse. *Cochrane Database of Systematic Reviews*, (12), CD001088.

45. Baxter, A.J., Tweed, E.J., Katikireddi, S.V. et al., 2019. Effects of Housing First approaches on health and well-being of adults who are homeless or at risk of homelessness: systematic review and meta-analysis of randomised controlled trials. *Journal of Epidemiology and Community Health*, 73(5), pp.379–387. **https://doi.org/10.1136/jech-2018-210981**

46. Woodhall-Melnik, J.R. and Dunn, J.R., 2016. A systematic review of outcomes associated with participation in Housing First programs. *Housing Studies*, 31(3), pp.287–304. **https://doi.org/10.1080/02673037.2015.1080816**

47. Barton, C., Greaves, F. and Rankl, F. et al., 2024. *Affordable Housing in England*. London: House of Commons Library. Available at: **https://commonslibrary.parliament.uk/affordable-housing-in-england/** (Accessed: 24 January 2025).

48. Shelter, n.d. *Loss of Social Housing*. London: Shelter. Available at: **https://england.shelter.org.uk/support_us/campaigns/social_housing_deficit** (Accessed: 24 January 2025).

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