

Housing interventions for women experiencing intimate partner violence: a systematic review

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Summary

Background Intimate partner violence (IPV) is the leading cause of women's homelessness. However, what works best to respond to the needs of women experiencing IPV and homelessness remains unclear. We aimed to systematically review the effects of housing interventions on the physical, psychosocial, and economic wellbeing of women experiencing IPV.

Methods In this systematic review, we searched 15 electronic databases and conducted an extensive grey literature and hand reference search between Jan 29, 2020, and May 31, 2021. We included controlled quantitative studies of housing interventions (from emergency shelter to permanent supportive housing) that were reported in English, without time restrictions, and examined any physical, psychosocial, or economic outcomes among women experiencing IPV. We critically appraised included studies using the Cochrane Effective Practice and Organisation of Care criteria and extracted data using a piloted extraction form. We synthesised our results using harvest plots to summarise whether the weight of the evidence suggested benefits, disadvantages, or null effects; patterns by study quality; and evidence gaps. This study is registered with PROSPERO, CRD42020176705.

Findings We screened 23 902 unique records and identified 34 eligible studies with quantitative data on the outcomes of housing interventions among women experiencing IPV. Most studies evaluated the outcomes of either shelter interventions (18 studies [53%]) or shelter plus some other programming (eight [24%]). The remaining eight studies evaluated longer-term housing solutions, including supportive housing (five studies [15%]), critical time interventions (one [3%]), transitional housing (one [3%]), and stay-at-home models (one [3%]). There was no cumulative evidence of disadvantages following any IPV-housing intervention. Evidence of benefits was strongest for mental health outcomes, intent to leave partner, perceived safety, and housing and partner-related stress. Included studies were at high risk of bias across most domains (eg, confounding).

Interpretation There is promising evidence on the continuum of IPV-housing services for women, especially in terms of proximal outcomes, such as mental health, intent to leave partner, safety, and housing stress. However, more research of higher quality is needed, particularly on long-term housing solutions and from outside of the USA.

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Introduction

Physical, psychological, or sexual violence by a current or former partner is the most common form of violence against women (VAW).¹ An estimated 30% of women have experienced physical or sexual intimate partner violence (IPV) worldwide.² IPV has severe health consequences, including death, injury, and mental health problems.³ In addition, IPV is the leading cause of women's homelessness, which precipitates and exacerbates poor health conditions.⁴⁻⁶ The reduced availability of affordable housing (eg, due to increased housing shortages plus demand, limited incentives, and rising costs of living)⁷ paired with structural barriers to service access (eg, racism, sexism, homophobia, transphobia, ableism, or poverty) further increases the risk of women experiencing IPV-related homelessness.^{8,9} Given the high prevalence of IPV and its negative consequences for health and society,

implementing effective preventive and response strategies is a priority for public health internationally.¹⁰ Safe, accessible, and affordable housing options—from emergency shelters to permanent supportive housing—are crucial to a holistic IPV response strategy.⁵

Compared with men, women's homelessness is less visible in routine data because women experiencing homelessness are less likely to be in homelessness shelters or to sleep rough, which are the typical targets of point-in-time data captures.¹¹ In addition to barriers in accessing emergency homelessness shelters, which are largely occupied by men, women can experience or have concerns around further structural or interpersonal violence in these shelters and when rough sleeping, such as state surveillance and child apprehension, which is especially the case for racialised and Indigenous women. This situation is perpetuated by the fact that most

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Research in context**Evidence before this study**

There have been several reviews on interventions relevant to the intersections of homelessness, housing, and intimate partner violence (IPV) over the past 12 years. However, there has been no systematic review of housing interventions for women experiencing IPV that has included evidence from outside of the USA. We searched 15 electronic databases and conducted a grey literature and hand reference search between Jan 29, 2020, and May 31, 2021, using search terms (including free text, subject headings, and synonyms) for housing, intimate partner violence, and women-identified people. We included controlled quantitative studies of housing interventions (from emergency shelter to permanent supportive housing) that were reported in English, without time restrictions, and examined any physical, psychosocial, or economic outcome among women experiencing IPV. We critically appraised included studies using the Cochrane Effective Practice and Organisation of Care criteria.

Added value of this study

To our knowledge, this is the first systematic review of the international evidence on housing interventions for women experiencing IPV. We included both published and unpublished studies on the full continuum of IPV-housing services for women, appraised the risk of bias of included studies using a rigorous tool, and produced a graphical summary that clearly shows the cumulative results of the available evidence. Evaluated interventions ranged from emergency shelters to long-term housing solutions (eg, supportive housing); however, the majority of the 34 included studies focused on emergency shelters. We found no cumulative evidence of disadvantages following any of the IPV-housing interventions.

Evidence of benefits was strongest for mental health-related outcomes (eg, depression), intent to leave partner, perceived safety, and housing and partner-related stress. Our review also systematically identified evidence gaps; most notably, the limited evaluative evidence on transitional housing, permanent supportive housing, and stay-at-home models for women experiencing IPV, as well as housing subsidies, flexible funding, and reciprocal schemes, for which no eligible evidence was available.

Implications of all the available evidence

Our review shows that policy makers and practitioners should continue to invest in and innovate across the IPV-housing continuum, including shelters with robust social support and psychotherapy interventions, permanent supportive housing with trauma-informed care, stay-at-home models, and flexible and housing-specific funding and advocacy. However, these efforts should be coupled with rigorous and dynamic monitoring and evaluation systems to meaningfully advance the evidence base. In particular, there is a need for more research of higher quality that evaluates IPV-housing interventions for women, and especially long-term housing solutions outside of the USA. This research should include validated measures for hypothesised short-term and long-term outcomes (eg, freedom from violence, safety, housing and economic security, and improved physical and mental health). Research, policy, and practice should address the unique needs of women experiencing IPV and homelessness and consider what might work best for women across different social circumstances (including sexual, gender, ethnic, and racial identities).

evaluated housing and homelessness services are gender blind and, as a result, best meet the needs of heterosexual, cisgender men, while failing to address the unique needs of women experiencing violence and homelessness.¹² Organisations working to end VAW and provide housing for women are also underfunded and continue to struggle to meet the housing needs of women experiencing IPV.¹³ Therefore, women in violent relationships often rely on accommodation that is provisional (eg, someone else's home), overcrowded, or unaffordable (ie, where they cannot meet basic needs).⁸ Alternatively, women might keep living with violent partners because they cannot afford to leave or maintain child custody.¹⁴

These circumstances have only been exacerbated by the COVID-19 crisis. The pandemic has increased demand for VAW services and emergency and supportive housing, and has intensified challenges with service access.^{15–17} Governments in many countries have committed financial support for immediate crisis and long-term response strategies to gender-based violence and VAW

housing.¹⁸ However, the most effective housing solutions for women to secure housing stability, maintain safety from further IPV, and receive trauma-informed care are unclear.¹⁹ In particular, there has been no systematic review of the available evidence on housing interventions for women, or specifically for women experiencing IPV (as the leading cause of women's homelessness), outside of the USA (appendix p 1).²⁰ This research gap has precluded full consideration of the differences in resources and policies between the USA and other countries internationally, and means that housing options available outside of the USA to prevent women's homelessness—eg, models that support women to stay in their homes while removing violent partners (ie, stay-at-home models)²¹—have not been systematically reviewed (appendix p 2). Consequently, conclusions on healthy policy and research directions across contexts have been hindered.¹⁸ Therefore, we aimed to systematically synthesise and appraise the international evidence on the effectiveness of housing interventions for women experiencing IPV.

See Online for appendix

	Inclusion criteria	Exclusion criteria
Intervention	Involved a housing component for women experiencing IPV at risk of or experiencing homelessness (eg, rapid rehousing, emergency shelters, transitional housing, rent subsidies, or stay-at-home models), also including (but not limited to): policy and law evaluations relevant to housing issues (eg, housing acts or nuisance property laws); housing and legal interventions (eg, protection orders); multiagency programmes (eg, community coordination) that seemed to or might have included housing; or service interventions (eg, counselling or support groups) linked to supportive housing interventions	Did not involve a housing component; aetiological studies in which homelessness or housing status was an exposure or outcome variable (ie, not an intervention evaluation); aetiological studies of women in shelters (eg, histories of IPV or demographic predictors of mental health status on a shelter-based sample—ie, studies not focused on evaluating housing interventions); post-shelter interventions without a housing component (ie, interventions and data collection begin only once women have exited shelters); shelter resident sample only comparing subjective perceptions or experiences of unspecified shelter models (eg, rules in place or number of services engaged in) on different outcomes;* or evaluation of another service intervention (eg, shelter or home-based) not specifically evaluating a shelter or housing intervention model (eg, home-visit programmes that have nothing to do with housing)
Study design	Reported quantitative data, including before-and-after studies, controlled before-and-after studies, non-randomised controlled trials, or randomised controlled trials	Essays, theory papers, think pieces, and reviews; needs assessments (eg, studies on the needs of women experiencing IPV at risk of homelessness not currently accessing shelters or housing services)
Comparator	Study participants before engaging with the intervention; people experiencing IPV without access to the housing intervention; people accessing a different or more basic intervention (eg, transitional housing without mental health counselling)	Studies with no comparator (eg, cross-sectional studies in which only women accessing shelter services are interviewed once); before-and-after studies of service interventions linked to housing interventions in which data collection began at some undetermined time after residence had already begun (ie, not evaluating any housing component or housing plus model)
Population	Majority of sample included women (cisgender or transgender) aged ≥18 years with recent experiences of IPV (or disaggregated data)	Majority of sample were not adult women (and no disaggregated analysis); majority of sample had not experienced IPV; sample was service providers rather than service users
Outcomes	Any outcomes related to women's physical, emotional, or socioeconomic wellbeing (eg, housing status, housing stability, employment, experiences of violence, mental health, safety, health)	Studies with service-related outcomes only (eg, number of people accessing or referred to services, or number of services available); outcomes such as client satisfaction or goals being met without objective markers; outcomes not centred on women (eg, children, pets, or partners)
Location	All	None
Language	English	Non-English

A shelter plus additional services (eg, mental health counselling) vs shelter or counselling alone would have been eligible, but mental health counselling given to a shelter-based sample would have not been eligible (focus is entirely on counselling). IPV=intimate partner violence. *The key attribute of these studies is that they did not compare different shelter models, but rather people's experiences of some unknown shelter models (which could be from the same or different shelter models), without any objective comparator (eg, participants not accessing a housing intervention, participants accessing a different housing intervention, or participants before they accessed the shelter).

Table 1: Final eligibility criteria for study inclusion

Methods

Search strategy and selection criteria

We reported this systematic review according to the Preferred Reporting Items for Systematic reviews and Meta-Analyses guidelines and the synthesis without meta-analysis guidelines.^{22,23} We implemented a systematic search strategy (appendix pp 2–4), designed in consultation with an information specialist at St Michael's Hospital (Toronto, ON, Canada), to retrieve published and unpublished evidence. Study searching and inclusion started on Jan 29, 2020, and continued until May 31, 2021. Between Jan 29 and Feb 14, 2020, we searched 15 electronic databases for studies published without time restrictions using free-text terms and subject headings for housing, women and gender diverse populations, and IPV, tailored to each of the following databases: MEDLINE, PsycINFO, Embase, International Bibliography of the Social Sciences, Scopus, Social Service Abstracts, Social Work Abstracts, Sociological Abstracts, NCJRS, Web of Science, CINAHL, ASSIA, Cochrane Library, Campbell Collaboration, and ProQuest Dissertations and Theses. The full list of search terms can be found in the appendix (pp 2–4). We also conducted

directed searches of Google Scholar, OpenGrey, the World Bank Open Knowledge Repository, the WHO Institutional Repository for Information Sharing, and the WHO Violence database, as well as key organisational websites based on the identified literature. These websites included the Homeless Hub, Wellesley Institute, Women's Homelessness in Europe Network, Centre for Housing Policy, the Domestic Abuse Housing Alliance, Australia's National Research Organisation for Women's Safety, and the Washington State Coalition Against Domestic Violence. We set up search alerts with Google Scholar and PubMed, hand-searched reference lists of included studies and relevant reviews, and consulted with knowledge user partners for any additional studies not identified.

Four reviewers (including ARY, AB, and NM) independently pilot tested the screening criteria on a random sample of 200 titles and abstracts to establish consistency. Pairs of reviewers then double screened the remaining titles and abstracts. At this stage, we included studies with quantitative data on interventions with a housing component for women experiencing IPV. The same reviewers then double screened eligible full texts (ARY

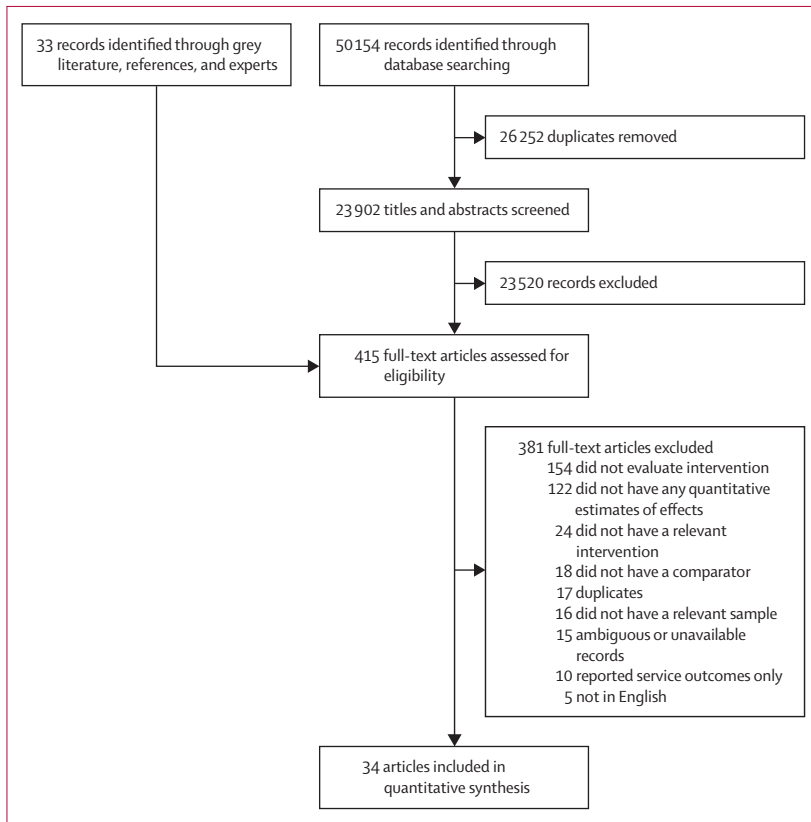


Figure 1: Study selection

For the protocol see <https://osf.io/84xyf/>

screened all full texts) on the basis of the final eligibility criteria (table 1). Briefly, we included controlled quantitative studies of housing interventions (from emergency shelter to permanent supportive housing) that were reported in English, and examined any physical, psychosocial, or economic outcomes among women experiencing IPV. We applied liberal study design criteria, given minimal experimental evidence in the field and to cover as much of the IPV-housing continuum as possible.²⁴

Data analysis

We extracted data from included studies using a piloted extraction form that included study characteristics (eg, sample, location, years of data collection), design, and outcomes. We evaluated study risk of bias using the Cochrane Effective Practice and Organisation of Care criteria.²⁵ Reflecting the diversity of included studies, we also used additional criteria from the Joanna Briggs Institute critical appraisal checklist for quasi-experimental studies and the Cambridge Quality Checklists.^{26,27} ARY conducted data extraction and risk of bias assessments and a second reviewer (AB or NM) double checked a random 20% of studies, whereby no major discrepancies were found.

Given the high risk of bias of included studies, we did not conduct a meta-analysis. Instead, we graphically

synthesised the evidence using harvest plots, which allowed for a summary of heterogeneous evidence that showed whether the weight of evidence suggested benefits, disadvantages, or null effects; patterns by study quality; and evidence gaps.^{28–31}

This study is registered with PROSPERO, CRD42020176705, and the protocol is available online on Open Science Framework.

Role of the funding source

The funder of the study had no role in study design, data collection, data analysis, data interpretation, or writing of the report.

Results

After removing duplicates, we screened 23 902 titles and abstracts, followed by 415 full texts (figure 1). This screening resulted in 34 studies with quantitative data on the outcomes of housing interventions among women experiencing IPV. There were 30 unique datasets: two pairs of studies each analysed the same shelter sample (a full³² and subgroup³³ analysis in the USA and a full³⁴ and subgroup³⁵ analysis in Canada), and three studies^{36–38} evaluated the same randomised controlled trial of a supportive housing intervention in a sample of women, among whom the majority had experienced IPV recently (table 2; appendix pp 4–5). The 34 studies were published between 1985 and 2021, with 17 (50%) published between 2011 and 2021. 23 studies (68%) were published in peer-reviewed journals, and the remainder were grey literature (mainly dissertations). 25 studies (74%) were based in the USA; the other countries represented were Canada, Australia, Israel, South Korea, and the Netherlands. Among studies that reported their settings, most took place in urban centres and none took place in rural settings alone.

The most common design was an uncontrolled before-and-after study (18 studies [53%]); seven studies (21%) evaluated randomised controlled trials (table 2; appendix pp 4–5). Accordingly, the most common comparator analysed was the pre-intervention period (15 studies [44%]). Three before-and-after studies only examined variation in length of shelter stay, so were classified as using a control group receiving a partly different intervention, along with eight other studies (32%). The mean number of timepoints was 2.4 (SD 0.9), with a mean follow-up of 4.8 months (3.9). The mean sample size was 123 participants (SD 258).

Most studies evaluated the outcomes of shelter interventions (18 studies [53%]) or those of shelter plus some other programming—ie, shelter-plus models (eight studies [24%]; table 2; appendix pp 4–5). Standard shelter services included various programming, such as crisis intervention; safety planning; counselling; group support; IPV, family violence, and relationship education; legal advocacy; parenting support and education; children's programming; financial assistance; and vocational training. The plus component in evaluations of

	Number of women included in analysis	Country (urban or rural)	Study design	Number of timepoints (longest follow-up, months)	Intervention type	Comparator type	Outcome category	Specific outcomes
Abitbol-Devine (2003) ³⁹	21	USA (urban)	Uncontrolled before-and-after	2 (not reported)	Shelter	Pre-intervention period	Abuse-related experience	Readiness to leave partner
Allen et al (2021) ⁴⁰	36	USA (not reported)	Uncontrolled before-and-after	2 (not reported)	Shelter	Pre-intervention period	Mental health and abuse-related experience	Self-compassion, empowerment, positive emotion, and safety
Berk et al (1986) ⁴¹	155	USA (not reported)	Controlled before-and-after	2 (1.5)	Shelter	Control group receiving different intervention	Abuse-related experience	Violent incidents and readiness to leave partner
Cesario et al (2014) ^{33*}	54	USA (urban)	Uncontrolled before-and-after	2 (4.0)	Shelter	Pre-intervention period	Mental health, abuse-related experience, and sociostructural supports	Psychological distress, PTSD symptoms, self-efficacy, resiliency safety behaviours, danger assessment, IPV, social support, and marginalisation
Constantino et al (2005) ⁴²	24	USA (not reported)	Randomised controlled trial	2 (2.0)	Shelter-plus model	Control group receiving partly different intervention	Mental health, physical health, and sociostructural supports	Psychological distress, health-care use, and social support
Deighan (1994) ⁴³	30	USA (urban)	Uncontrolled before-and-after	2 (0.25)	Shelter	Pre-intervention period	Mental health	Depression, anxiety, and self-esteem
Diemer (2017) ⁴⁴	124	Australia (urban and rural)	Cross-sectional	1 (NA)	Stay-at-home model	Control group receiving partly different intervention	Sociostructural supports	Intervention order
Erdem (2014) ^{36†}	60	USA (urban)	Randomised controlled trial	4 (9.0)	Supportive housing	Control group receiving different intervention	Physical health and sociostructural supports	Seeking medical care, victimisation experiences, income, employment status, education, religious ceremony attendance, and problems meeting basic needs
Greaves et al (2006) ^{34‡}	74	Canada (not reported)	Uncontrolled before-and-after	2 (3.0)	Shelter	Pre-intervention period	Mental health	Alcohol use, stimulant use, depressant use, tobacco use, and causes of anxiety
Guo et al (2016) ^{37†}	60	USA (urban)	Randomised controlled trial	4 (9.0)	Supportive housing	Control group receiving different intervention	Mental health, physical health, and abuse-related experience	Self-efficacy, depressive symptoms, parenting stress, mental health, physical health, and IPV
Harris (1985) ⁴⁵	27	USA (urban)	Controlled before-and-after	2 (not reported)	Shelter	Control group receiving different intervention	Mental health	Locus of control
Hoyeck et al (2014) ⁴⁶	94	Canada (urban)	Historical control	4 (not reported)	Shelter	Control group receiving partly different intervention	Abuse-related experience	Mental health related to domestic violence
Itzhaky and Porat (2005) ⁴⁷	40	Israel (not reported)	Uncontrolled before-and-after	2 (3.0)	Shelter	Pre-intervention period	Mental health	Self-esteem, empowerment, life satisfaction, and hope
Johnson et al (2016) ⁴⁸	60	USA (not reported)	Randomised controlled trial	4 (6.0)	Shelter-plus model	Control group receiving partly different intervention	Mental health, abuse-related experience, and sociostructural supports	PTSD, depression, empowerment, IPV, personal and social resources, social support satisfaction, and employment
Johnson et al (2011) ⁴⁹	70	USA (urban)	Randomised controlled trial	4 (6.0)	Shelter-plus model	Control group receiving partly different intervention	Mental health, abuse-related experience, and sociostructural supports	PTSD, depressive symptoms, empowerment, IPV, personal and social resources, and social support satisfaction

(Table 2 continues on next page)

shelter-plus models was most often group-based support or individual psychotherapy or counselling. In two cases, plus equated to an analysis of variation in practices across shelters (ie, trauma-informed practices⁶¹ or substance use interventions³⁵). The remaining studies evaluated longer-term housing solutions: one pilot study⁶⁰ and three studies³⁶⁻³⁸ on a randomised controlled trial of a

supportive housing intervention (including independent housing, individual substance use counselling, and case management services covering basic needs assistance and social service advocacy); a randomised controlled trial of a critical time intervention (strengths-based intervention providing continuity of care during transition from shelter to long-term housing);⁵¹ a cross-sectional study of Safe At

	Number of women included in analysis	Country (urban or rural)	Study design	Number of timepoints (longest follow-up, months)	Intervention type	Comparator type	Outcome category	Specific outcomes
(Continued from previous page)								
Kim and Kim (2001) ⁵⁰	33	South Korea (urban)	Non-randomised controlled trial	2 (2-0)	Shelter-plus model	Control group receiving partly different intervention	Mental health	Anxiety, depression, and self-esteem
Lako et al (2018) ⁵¹	136	Netherlands (not reported)	Randomised controlled trial	4 (9-0)	Critical time intervention	Control group receiving different intervention	Mental health, abuse-related experience, and sociostructural supports	Quality of life, psychological distress, PTSD, depressive symptoms, self-esteem, re-abuse, family support, social support, and unmet care needs
Leib (1991) ⁵²	118	USA (urban)	Non-randomised controlled trial	2 (not reported)	Shelter-plus model	Control group receiving partly different intervention	Abuse-related experience	Intent to return to partner
McFarlane et al (2014) ^{32*}	138	USA (urban)	Uncontrolled before-and-after	2 (4-0)	Shelter	Pre-intervention period	Mental health, physical health, abuse-related experience, and sociostructural supports	Self-efficacy, anxiety, depressive symptoms, somatisation, PTSD, pain, danger, IPV, marginalisation, and social supports
McNamara et al (2008) ⁵³	41	USA (urban)	Uncontrolled before-and-after	4 (not reported)	Shelter-plus models	Pre-intervention period	Mental health, abuse-related experience, and sociostructural supports	Symptom distress, interpersonal relations, social role, coping with partner, and coping with finances, work, family, and housing
Mockler (1998) ⁵⁴	1615	Canada (urban and rural)	Controlled before-and-after	2 (12-0)	Shelter	Control group receiving partly different intervention	Abuse-related experience	Left partner
Murphy (1999) ⁵⁵	60	USA (urban)	Uncontrolled before-and-after	2 (1-0)	Shelter	Pre-intervention period	Mental health and abuse-related experience	PTSD, depression, locus of control, intent to return to partner, and ability to perform safety behaviours
O'Brien (1995) ⁵⁶	150	USA (urban)	Uncontrolled before-and-after	2 (3-0)	Shelter	Pre-intervention period	Mental health and abuse-related experience	Control over one's life, self-worth, guilt, and helplessness about abuse
Perez et al (2012) ⁵⁷	103	USA (urban)	Cohort study	4 (6-0)	Shelter	Control group receiving partly different intervention	Abuse-related experience	Re-abuse
Plath (2001) ⁵⁸	107	USA (urban)	Controlled before-and-after	2 (0-25)	Shelter	Control group receiving no intervention	Mental health and abuse-related experience	Depressive symptoms, mood disturbance, automatic negative thoughts, irrational beliefs, hopelessness, IPV, and abused person belief inventory
Poole et al (2008) ^{35‡}	74	Canada (urban and rural)	Uncontrolled before-and-after	2 (3-0)	Shelter-plus model	Pre-intervention period	Mental health, physical health, abuse-related experience, and sociostructural supports	Alcohol and substance use, motives for drinking, mental health, physical health, partner as a stressor, housing, legal issues, parents, children, and money issues
Sedlak (1988) ⁵⁹	20	USA (urban)	Uncontrolled before-and-after	2 (0-75)	Shelter	Pre-intervention period	Mental health, abuse-related experience, and sociostructural supports	Depressive symptoms, self-esteem, hopelessness, locus of control, likelihood of returning to abuser, gain in friendships
Slesnick and Erdem (2012) ⁶⁰	60	USA (urban)	Uncontrolled before-and-after	3 (6-0)	Supportive housing	Pre-intervention period	Mental health, physical health, abuse-related experience, and sociostructural supports	Depressive symptoms, mental health status, substance use, IPV, parenting stress, employment, and homelessness
Slesnick and Erdem† (2013) ³⁸	15	USA (urban)	Randomised controlled trial	4 (9-0)	Supportive housing	Control group receiving different intervention	Mental health and sociostructural supports	Alcohol use, drug use, problematic substance use, and independent living

(Table 2 continues on next page)

	Number of women included in analysis	Country (urban or rural)	Study design	Number of timepoints (longest follow-up, months)	Intervention type	Comparator type	Outcome category	Specific outcomes
(Continued from previous page)								
Sullivan (2017) ⁶¹	425	USA (not reported)	Uncontrolled before-and-after	2 (not reported)	Shelter	Control group receiving partly different intervention	Mental health	Self-efficacy and hopefulness
Sullivan (2018) ⁶²	57	USA (not reported)	Uncontrolled before-and-after	2 (1-0)	Shelter-plus model	Control group receiving partly different intervention	Mental health and abuse-related experience	Self-efficacy, depressive symptoms, and safety-related empowerment
The National Center on Family Homelessness and Vaulton (2012) ⁶³	114	USA (urban)	Uncontrolled before-and-after	2 (12-0)	Supportive housing	Pre-intervention period	Mental health and sociostructural supports	Parenting stress, satisfaction with housing, education, and income
Tutty (2015) ⁶⁴	188	Canada (urban and rural)	Uncontrolled before-and-after	2 (0-75)	Shelter	Pre-intervention period	Mental health	PTSD
Yoo (1997) ⁶⁵	50	USA (urban)	Controlled before-and-after	2 (not reported)	Transitional housing	Control group receiving different intervention	Mental health, abuse-related experience, and sociostructural supports	Wellbeing, fear of abuser, and satisfaction (eg, physical health, safety, housing)

PTSD=post-traumatic stress disorder. IPV=intimate partner violence. NA=not applicable. *Data are from the same sample (Cesario et al⁶³ is a substudy of immigrant mothers only from the full sample used in McFarlane et al⁶²). †Data are from the same sample. ‡Data are from the same sample.

Table 2: Characteristics of each included study (n=34)

Home (civil protection order supporting women to stay in their homes);⁴⁴ and a controlled before-and-after study of transitional housing (up to 1 year of housing with case management, legal assistance, and therapy).⁶⁵

The most commonly studied outcomes were related to mental health (26 studies [76%]; table 2; appendix 4–5), including depressive symptoms, post-traumatic stress disorder (PTSD), and mood disturbance or psychological distress. Abuse-related experiences were the next most common outcome (22 studies [65%]), including reoccurrence of IPV, readiness or decision to leave partner, and perceived safety. The least commonly investigated outcomes were social or structural supports (15 studies [44%])—including social support and issues with money, housing, or employment—and physical health (six studies [18%]), including health-care use, pain, and overall health status.

The mean age of participants in the included studies was 31.7 years (SD 3.9). Although 15 studies (44%) did not report data on the ethnic or racial makeup of cohorts, 12 studies (35%) sampled participants of various ethnicities and races (no subgroup comprised >70% of the sample), and six (18%) sampled majority White participants. Nine studies sampled specific subgroups of women accessing housing interventions, including mothers (six studies [18%]), women with substance use or alcohol-related issues (six [18%]), those diagnosed with PTSD (one [3%]), or immigrants (one [3%]).

The appendix (pp 6–7) shows the risk of bias ratings for each included study. Risk of bias was concerning across all studies for most domains of bias (figure 2). However,

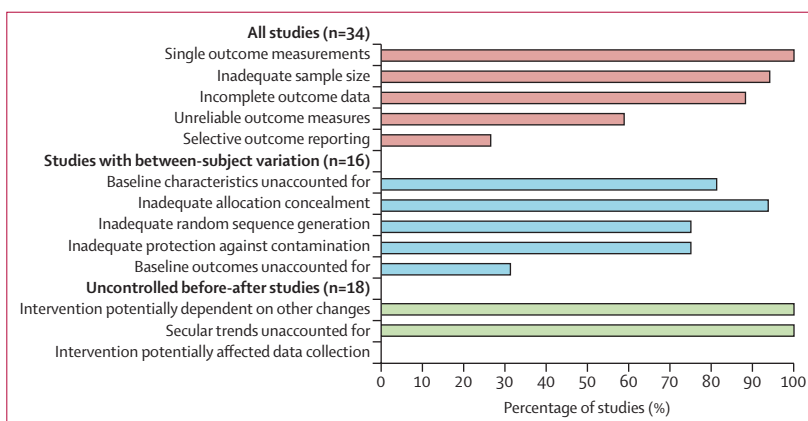


Figure 2: Summary of risk of bias assessments across included studies (n=34)
 Bars indicate the percentage of studies that showed some concerns, high risk, or unclear risk of bias (vs low risk of bias) in each domain, as relevant by study type. The risk of bias rating for each study on each domain is shown in the appendix (pp 6–7).

on the domains of selective outcome reporting (among all studies), differences in baseline outcomes being unaccounted for (among studies with between-subject variation), and intervention potentially affecting data collection (among before-and-after studies), the majority of relevant studies received low risk of bias ratings.

Figure 3 shows the harvest plots for all outcomes investigated in more than one included study. Notably, no study showed evidence that IPV-housing interventions led to disadvantages among participants. Mental health outcomes, such as depressive symptoms, PTSD, and psychological distress, largely showed evidence of

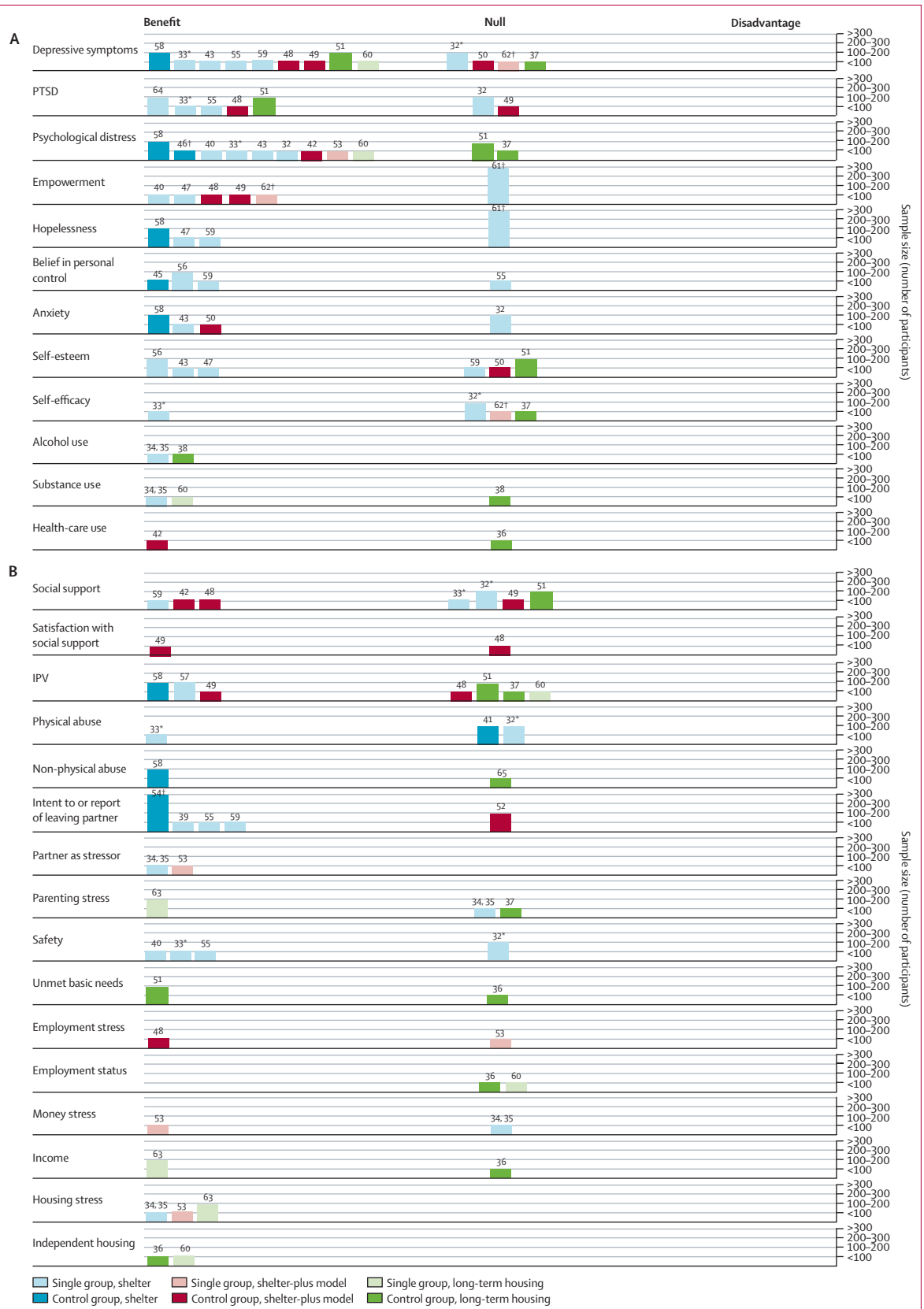


Figure 3: Harvest plots of synthesis results for outcomes investigated in more than one included study (n=32)

(A) Mental health outcomes.

(B) Abuse-related and sociostructural outcomes.

The numbers above each bar indicate the corresponding study reference. IPV=intimate partner violence. PTSD=post-traumatic stress disorder.

*Data are from the same study; however, McFarlane and colleagues³² investigated length of stay in shelter as the main intervention variable using the full sample, whereas Cesario and colleagues³³

investigated differences in outcomes before and after shelter in the subset of women who were immigrants only.

†Length of stay in the shelter was analysed as the intervention variable.

reductions following housing interventions, mainly in the form of shelters (figure 3A). This trend was generally seen across study design and sample size; however, no study with a combinable outcome had more than 200 participants. By contrast, evidence on abuse-related and sociostructural outcomes (eg, social support, IPV, or employment or money stress) were more equivocal and sparsely populated, especially sociostructural outcomes (figure 3B). Although evidence was minimal, studies tended to find reductions in housing and partner stress, and increases in perceived safety and intent to leave partner following housing interventions. Only evaluations of long-term housing interventions, done in different samples by the same study team, considered independent housing as an outcome and found evidence for improvements.^{36,60} A single physical health outcome was investigated in more than one study (figure 3A), with two small, controlled studies examining health-care use before and after housing interventions. One of these studies investigated a shelter-plus social support intervention and found reductions in health-care use,⁴² whereas a study of a supportive housing model found no differences.³⁶

Few studies (n=4) conducted eligible subgroup analyses (ie, comparing controlled intervention effect estimates between subgroups), only one of which focused on differences in intervention outcomes by participants' social identities. In particular, one US-based shelter evaluation of 150 participants found that feelings of self-worth, guilt about the abuse, and helplessness after the shelter intervention (adjusting for pre-shelter values) did not differ among Black, Hispanic, and White women.⁵⁶ By contrast, feelings of control over one's life were reported to be highest among Hispanic women following the shelter intervention, which the author hypothesised as being due to the benefits of bilingual services in the shelter.⁵⁶

Additionally, two studies analysed the same shelter evaluation, with one study focusing on the whole sample (mothers who experienced abuse)³² and the other focusing only on the subsample who were immigrants.³³ In general, the subsample reported more beneficial outcomes after the shelter intervention (eg, reduced depressive symptoms, PTSD, and psychological distress) than did the total sample (figure 3). However, the total sample study only compared length of stay in shelter, whereas the substudy reported the main effects of time (ie, outcome differences before and after shelter). Therefore, we cannot reliably infer differences in the observed outcomes between the two subgroups.

One study compared differences in outcomes of substance use among women in shelters with varying levels of substance use services (as defined by the study team on the basis of information from the shelters).³⁵ The authors found that women reported lower alcohol and stimulant use after their shelter stay compared with before, but no changes in depressant or tobacco use.

These results persisted regardless of the extent of substance use services at the shelter (all included shelters had at least minimal substance use services). No other study compared controlled effect estimates between different, externally defined intervention models.

Discussion

To the best of our knowledge, this study is the first international systematic review of housing interventions for women experiencing IPV. As such, it is an important step forward in understanding what evaluative evidence is available on the full continuum of IPV-housing services and the extent to which this continuum is meeting the diversity of needs of women at risk of continued violence and homelessness. Without taking such a gender-based approach, homelessness prevention strategies risk further perpetuating gender-based inequities.¹² As in a US-based review,²⁰ we found that the evaluative evidence has been largely focused on emergency shelters, with less than a quarter of the available literature focused on longer-term housing solutions, which are crucial for ongoing stability and safety.⁶⁶ Most of the combinable evidence has been centred on mental health outcomes, especially around symptoms of depression, PTSD, and psychological distress, with few studies focusing on abuse-related, sociostructural, or physical health outcomes. With these conditions in mind, there was no cumulative evidence of disadvantages following any of the studied IPV-housing interventions, from emergency shelter to long-term supportive housing. However, the evidence of benefits was more equivocal for outcomes not related to mental health, aside from intent to leave partner, perceived safety, and housing and partner-related stress. Although still understudied, these latter outcomes reflect proximal outcomes that would be expected to improve following IPV-housing interventions.^{66,67} Therefore, the observed benefits might be seen as evidence of the beginning of a hypothesised causal pathway to long-term personal and situational changes. These long-term goals are often conceptualised as, for example, freedom from violence, housing and economic security, empowerment, improved physical and mental health, and higher quality of life.^{5,66,67} Considering the mean endpoint for follow-up was 4.8 months, more evidence on the potential for positive effects in the long term is needed.

Despite searching for published and unpublished evidence internationally, the majority of the available evaluative evidence was from the USA and many longer-term housing models were under-represented (table 1). These models included transitional housing, permanent supportive housing, and stay-at-home models, as well as housing subsidies, flexible funding, and reciprocal schemes, for which no eligible evidence was available. There is promising descriptive evidence on these interventions for women experiencing IPV^{20,68} and a scoping review identified positive effects of permanent supportive housing, critical time interventions, and

housing subsidies in reducing homelessness among women in general.⁶⁹ However, controlled evaluations with quantitative effect estimates of these housing interventions, for women experiencing IPV in particular, are essential to maximising effectiveness in addressing the needs of these women. Similarly, we did not identify evidence that met our eligibility criteria on housing interventions in low-income or middle-income countries. This evidence gap included, for instance, one-stop models, for which Olson and colleagues⁷⁰ also highlighted the absence of effectiveness evidence. These models are a coordinated intersectoral strategy widely implemented across some low-income and middle-income countries (eg, Thailand, Malaysia, Kenya, and Zambia) that links or co-locates some combination of health, police, legal, psychosocial, or shelter services for women who experiencing IPV. We also found that most interventions were tested in urban sites only, with no IPV-housing intervention designed and evaluated specifically for rural areas, despite differing accessibility needs and contextual factors.^{11,71}

Reflective of the challenges of data collection and randomisation in the field,^{72,73} the available evidence is at high risk of bias for drawing causal conclusions around the effectiveness of IPV-housing interventions. Despite these research-related and practical challenges, there are areas for improvement. First, examples in this systematic review show the potential for randomised controlled trials in the field.^{36,48,51} In particular, randomised controlled trials can be used to evaluate novel and longer-term IPV-housing supports, shelter-plus models aiming to determine the best combination of supports, and instances in which interventions can be rolled out (and therefore stepped-wedge designs used), recognising that ethical randomised studies require equipoise (ie, uncertainty around effectiveness).⁷⁴ However, where appropriate, randomised studies in the field need explicit reporting on random sequence generation and allocation concealment (ie, protecting the sequence that determines who is assigned to which intervention so that it cannot be interfered with).⁷⁵ Randomisation will not be ethical or viable in terms of denying or delaying emergency shelter or housing. The large methodological literature on complex intervention evaluation is useful to leverage, especially in terms of making explicit assumptions around hypothesised intervention mechanisms and measuring the most crucial confounders and mediators, intervention components actually delivered, and contextual factors.^{76,77} Measures around interventions delivered and context are particularly important for capturing the dynamic nature of IPV-housing services and finding out whether fidelity of functions was maintained, compared with the traditional fidelity of form.⁷⁶ Relatedly, all evaluations on IPV-housing interventions would benefit from measuring participants longitudinally and accounting for changes in outcomes over and above secular trends.⁷⁸ The evidence base would

be further strengthened by more studies with control groups to compare outcomes, which could be created from community-based samples or from those receiving another specific intervention.

Only one study did a formal subgroup analysis to investigate whether intervention effects varied by participants' social identities or locations.⁵⁶ There were several studies that conducted descriptive comparisons between subgroups; for example, comparing whether point-in-time needs or treatment received varied by race.⁶¹ Therefore, evaluations of IPV-housing interventions that rigorously investigate subgroup differences in programme effects are needed to ensure that we understand not only what works but also for whom.⁷⁹ This review further identified important evidence gaps on sampling in IPV-housing intervention evaluations. Nearly half of the included studies did not report the ethnicity or race of the sample, which is concerning given robust evidence that racialised women experience housing and IPV services differently.¹⁴ Most of the studies predominantly sampled younger adults (mean age <35 years). Although young adulthood is a period when women are at particularly high risk of experiencing IPV,²⁸ older women (especially those aged ≥60 years) experiencing abuse have unique needs and challenges in service access that are important to address in IPV-housing interventions.⁸⁰ There was also no eligible analysis of gender or sexual identity, even though our search included terms for gender diverse populations. Such an analysis is an important area for future research, given the disproportionate burden of IPV and homelessness among gender and sexual minority populations, as well as the tendency for a heteronormative focus in IPV programming.^{11,81}

We also identified that an additional area of growth for the evidence base on IPV-housing interventions is outcome measurement. To date, there has been a large focus on client satisfaction and goal attainment, and this was reflected in the available evaluations.^{72,82–84} We did not include data on these outcomes because our interest was in concrete personal or situational changes following intervention, a crucial tenet of establishing intervention effectiveness.⁷⁴ By contrast, subjective measures of experiences and perceptions are best suited to qualitative data,⁷² beyond the scope of this review but a focus of our overall project.⁸⁵ Programme evaluation benefits from use of both types of data.^{74,79} Nevertheless, quantitative data collection does not need to exclude the expertise of women who have experienced IPV or of service practitioners; instead, knowledge user partnerships can strengthen each stage of intervention design and evaluation.⁸⁶ In the case of outcome measurement, women who have experienced IPV and service practitioners can collaborate on developing the conceptual model of how interventions are expected to work in practice or be polled regarding the most important outcomes to evaluate.^{72,83} From there, evaluators should

select robust measures that capture these outcomes, so that rather than measuring goal attainment, validated measures of hypothesised goals, such as housing, safety, employment, and improved health outcomes, are included in the evaluation.

This review only considered outcomes related to women and not that of their children, pets, partners, or others, which are also important considerations for women experiencing IPV and for preventing violence and homelessness. We only searched for studies using English search terms and included studies available in English, which means that relevant non-English studies could have been missed. We did not include studies evaluating interventions that occurred during or after shelter stay without an additional housing component or baseline data collection that started at or close to shelter intake. This decision was made because our focus was on the housing component of interventions. However, other systematic reviews of IPV service interventions have shown benefits of such programming in improving mental health and reducing abuse, including advocacy,^{87,88} and individual psychotherapy and group support.⁸⁹ Despite its limitations, this study is an essential extension to existing knowledge syntheses on housing interventions (appendix p 1), which have not included an analysis on IPV or gender-based interventions,^{90,91} international evidence,²⁰ non-randomised evaluations,^{69,91} or an assessment of study risk of bias.^{20,69} By applying methods for systematic reviews and graphical syntheses to the international evidence on IPV-housing interventions, we have produced the most conclusive understanding to date on the benefits and uncertainty around different intervention models, the evidence gaps across the full intervention continuum, and key areas for methodological improvement.

This review systematically identified promising evidence on the IPV-housing service continuum for women. Across shelter and long-term supportive housing models, we observed cumulative evidence of benefits among women who have experienced IPV, particularly in terms of mental health outcomes, intent or decision to leave partner, safety, and housing stress. However, the scope of the problem of IPV and homelessness among women clearly exceeds the available evaluative evidence. More research of higher quality is needed that considers what works best and for whom, especially on long-term housing solutions outside of the USA. Given high need and initial positive evidence, policy makers and practitioners should continue to invest in and innovate across the IPV-housing continuum, including shelters with robust social support and psychotherapy interventions, permanent supportive housing with trauma-informed care, stay-at-home models, and flexible and housing-specific funding and advocacy. These efforts should be coupled with rigorous and dynamic monitoring and evaluation systems to meaningfully advance the evidence base and, ultimately, maximise the likelihood of positive outcomes for women experiencing IPV.

Contributors

ARY conceptualised the study, secured funding, coordinated all review activities, and wrote the Article. AB and NM collaborated on study searching, screening, data extraction, and quality appraisal. All authors critically revised the Article for important intellectual content and approved the final version. All authors had full access to all of the data in the study and had final responsibility for the decision to submit for publication.

Declaration of interests

We declare no competing interests.

Data sharing

The review protocol is publicly available on PROSPERO and Open Science Framework. Extraction data sheets can be made available upon request to the corresponding author.

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