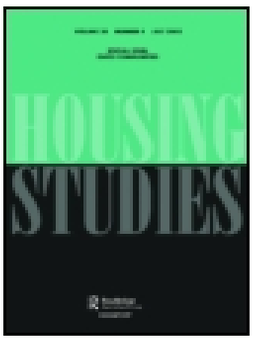

Housing Studies

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/chos20

Rapid rehousing for persons experiencing homelessness: a systematic review of the evidence

Thomas Byrne, Minda Huang, Richard E. Nelson & Jack Tsai

To cite this article: Thomas Byrne, Minda Huang, Richard E. Nelson & Jack Tsai (2021): Rapid rehousing for persons experiencing homelessness: a systematic review of the evidence, Housing Studies, DOI: 10.1080/02673037.2021.1900547

To link to this article: https://doi.org/10.1080/02673037.2021.1900547

HOUSING STUDIES
https://doi.org/10.1080/02673037.2021.1900547

Rapid rehousing for persons experiencing homelessness: a systematic review of the evidence

Thomas Byrne[a,b,c], Minda Huang[d], Richard E. Nelson[a,e,f] and Jack Tsai[a,g*#]

[a]National Center on Homelessness among Veterans, U.S. Department of Veterans Affairs, Philadelphia, PA, USA; [b]Center for Healthcare Outcomes and Implementation Research, U.S. Department of Veterans Affairs, Bedford, MA, USA; [c]School of Social Work, Boston University, Boston, MA, USA; [d]Graduate Institute of Professional Psychology, University of Hartford, West Haven, CT, USA; [e]IDEAS Center of Innovation, VA Salt Lake City Health Care System, Salt Lake City, UT, USA; [f]Division of Epidemiology, Department of Internal Medicine, University of Utah School of Medicine, Salt Lake City, UT, USA; [g]New England Mental Illness Research, Education, and Clinical Center, VA Connecticut Healthcare System, U.S. Department of Veterans Affairs, West Haven, CT, USA

ABSTRACT

Rapid rehousing (RRH), a programmatic approach that seeks to help households currently experiencing homelessness quickly regain stable housing, has garnered increasing attention over the past decade in the United States and internationally. However, there has been no attempt to assess evidence of the effectiveness of RRH. We address this gap by conducting a systematic review to assess the overall quality of evidence on the impact of RRH; summarize evidence of the effectiveness of RRH on housing, health, social, economic and other outcomes; and summarize evidence regarding whether the effectiveness of RRH varies as a function of the characteristics of persons receiving RRH. We rate the overall methodological rigour of evidence on the impact of RRH as moderate. We find mixed evidence about the impact of RRH as compared to usual care and other housing interventions, and no evidence of a differential impact of RRH depending on recipient characteristics. We discuss how future research might help guide the provision of RRH.

ARTICLE HISTORY
Received 7 April 2020
Accepted 15 February 2021

KEYWORDS
Rapid rehousing; homelessness; housing policy; systematic review

Introduction

The past 10 to 15 years have witnessed an international paradigm shift in policy and programmatic responses to homelessness towards interventions that focus on housing-led approaches as the solution to homelessness (Apicello, 2010; Culhane *et al.*, 2011; Pleace *et al.*, 2018). This paradigm shift is exemplified by the international embrace of Housing First (HF), which is a programmatic approach that provides immediate access to non-time limited subsidized housing paired with supportive

CONTACT Thomas Byrne tbyrne@bu.edu School of Social Work, Boston University, 264 Bay State Rd., Boston, MA 02215, USA
*Current affiliation: School of Public Health, University of Texas Health Science Center, Houston, TX, USA.
#Department of Psychiatry, Yale University School of Medicine, New Haven, CT, USA.

services (Padgett *et al.*, 2016). HF is typically targeted to high-need, chronically homeless individuals and does not mandate participation in treatment or services as a condition for obtaining or retaining housing (Padgett *et al.*, 2016; Tsemberis, 2010). As such, the HF approach stands in contrast to the previously dominant 'treatment first' paradigm that provided temporary housing and required treatment compliance as an intermediary step towards independent housing. The HF model was pioneered by the organization Pathways to Housing in New York City (Tsemberis & Eisenberg, 2000), and was ultimately adopted as a key component of the United States' federal government's strategy to end chronic and Veteran homelessness (U.S. Interagency Council on Homelessness, 2010). HF has also been diffused internationally. Drawing in part on the American experience, Canada (Gaetz *et al.*, 2013) and Finland (Y Foundation, 2018) also made HF a key component of their national strategies to address homelessness, although the Canadian emphasis on HF has recently been walked back somewhat (Government of Canada, 2019a). HF programs have also been implemented at varying scales in other countries including France, Australia and Denmark (Johnson, 2012; Pleace *et al.*, 2018). The international expansion of HF has been driven in no small part by a rigorous body of evidence, including experimental studies conducted in multiple countries, of the effectiveness of HF in reducing homelessness (Baxter *et al.*, 2019; Woodhall-Melnik & Dunn, 2016).

While HF is the primary example of the growing international emphasis on housing-centered solutions to homelessness, it is not the only program that embraces rapid access to housing as a guiding principle. Indeed, an approach known as rapid rehousing (RRH) similarly aims to help households currently experiencing homelessness regain stable housing as quickly as possible. In contrast to the ongoing housing and service supports provided by HF, RRH focuses on stabilizing households experiencing housing crises by providing time-limited, yet highly flexible, forms of assistance (National Alliance to End Homelessness, 2016). Conceptually, RRH is perhaps best described using the concept of 'secondary prevention' from the field of public health: it seeks to reduce the impact and duration of homelessness by intervening and rehousing individuals quickly as possible after the onset of an episode of homelessness (Culhane *et al.*, 2011).

RRH is most prevalent in the United States, where it achieved temporary nationwide implementation through the Homelessness Prevention and Rapid Re-Housing Program (HPRP), which was funded during last decade's Great Recession as part of the American Recovery and Reinvestment Act (U.S. Department of Housing and Urban Development, 2016). During its three-year existence from July 2009 to September 2012, HPRP provided RRH to roughly 150,000 households in the United States (U.S. Department of Housing and Urban Development, 2016). The expansion of RRH was then made more permanent through the passage of legislation that reauthorized federal homeless assistance programs in the United States in 2009, (Berg, 2013) and there was a roughly 469% increase in the availability of RRH beds[1] in the United States between 2013 and 2019 (U.S. Department of Housing and Urban Development, 2020). RRH is less common outside of the United States, but there appears to be growing international interest in RRH. For example, the Canadian federal government's recently revised homelessness policy strategy clearly states that

rapid rehousing programs are eligible for federal funds (Government of Canada, 2019b). In addition, the European Observatory on Homelessness included RRH as a component of its recently proposed typology of homelessness services in Europe, and RRH is already being used as a part of efforts to address homelessness in a number of European countries, including France, Ireland and the United Kingdom (Pleace *et al.*, 2018). In response to the COVID-19 pandemic, many countries throughout the world have increased funding for RRH. For instance, in the United States, the Coronavirus Aid, Relief, and Economic Security (CARES) Act of 2020 included an additional $4 billion for the Emergency Solutions Grant (ESG) program, which is the main federal mechanism for funding RRH in the US (National Low Income Housing Coalition, 2020). The Government of Canada has committed to investing $1 billion in 2020 and early 2021 RRH through the Rapid Housing Initiative (Canada Mortgage and Housing Corporation, 2020; National Low Income Housing Coalition, 2020). And an update to the Scottish government homelessness strategy in response to the pandemic included a plan to expand RRH as a mechanism to replace the use of congregate emergency shelter (Scottish Government, 2020).

As noted above, RRH is intended to be flexible. However, this flexibility exists within the context of a set of core components that are generally accepted as defining RRH. Specifically, key advocacy stakeholders and several federal agencies in the United States have developed a set of RRH program standards and performance benchmarks (National Alliance to End Homelessness, 2016). The program standards require that all RRH programs make the following three core service components available: 1) housing identification, to help individuals find safe, decent and affordable housing as quickly as possible; 2) rent and move-in assistance, which can include payment for security deposits, utility payments, move-in costs and/or short-term rental assistance; and 3) case management, which is geared towards helping households stabilize in housing and connecting them with services and supports that may help promote housing stability. The corresponding set of RRH performance benchmarks indicate that the performance of RRH programs should be evaluated based on the model's three main goals of reducing the length of time spent homeless (with a benchmark of exiting homelessness within 30 days), increasing exits to permanent housing (with a benchmark of 80% of households exiting RRH to permanent housing) and reducing returns to homelessness within a year of program exit (with a benchmark of 85% of households not returning to homelessness).

Despite both growing interest in RRH both in the United States and a clear articulation of RRH program standards, the relative scope and strength of the evidence for the effectiveness of RRH remains unclear. This stands in contrast to HF, where there is a robust body of research that has been the subject of several systematic reviews and meta-analyses (Baxter *et al.*, 2019; Ly & Latimer, 2015; National Academies of Sciences Engineering and Medicine, 2018; Rog *et al.*, 2014; Woodhall-Melnik & Dunn, 2016). To be clear, there have been a few efforts to synthesize state of evidence on RRH (Cunningham *et al.*, 2015; Cunningham & Batko, 2018; Gubits *et al.*, 2018a), although only one of these efforts (Gubits *et al.*, 2018a) was a systematic review. However, that review focussed broadly on outcomes tied to the above described performance benchmarks and did not focus on the effectiveness of RRH in meeting these

benchmarks relative to usual care or to other housing interventions, and more broadly, there has been no attempt to synthesize the state of the evidence on the impact of RRH versus usual care or other housing interventions. To address this gap, we conducted a systematic review of the existing body of research on RRH. More specifically, the aims of this review were to: 1) assess the overall quality of evidence of studies examining the impact of RRH; 2) summarize evidence of the effectiveness of RRH on housing, health, social, economic and other outcomes compared to both usual care (which typically means emergency shelter only) and other housing interventions; and 3) summarize evidence regarding whether the effectiveness of RRH varies as a function of the characteristics of individuals and households receiving RRH services.

Materials and methods

Search strategy

We used the following two sets of terms: 1) 'homeless*' AND ('rapid rehousing' OR 'rapid-rehousing) and 2) 'homeless*' AND 'rapid exit' in conducting separate searches of the following databases: PubMed, PsycINFO, Proquest Dissertations and Theses, Social Services Abstracts, Social Science Citation Index, Sociological Abstracts and Google Scholar. In following the approached used in a prior systematic review of the cost impact of Housing First, (Ly & Latimer, 2015) we also searched the Homeless Hub, which is a website maintained by the Canadian Observatory on Homelessness that archives research studies and reports related to homelessness, including both peer-reviewed studies and grey literature. We also reviewed the reference list of manuscripts identified by the search for other relevant studies and consulted experts who may have been aware of additional unpublished studies. In conducting our search, we did not place any restriction on the date of studies, but most were published from 2010 onwards. All searches were conducted in summer and fall of 2019.

Study selection

We selected manuscripts for inclusion that met all of the following criteria: 1) reported results of original research; 2) used persons experiencing homelessness as its study population; 3) examined outcomes among persons receiving a housing intervention that the article described or identified as 'rapid rehousing', 'rapid re-housing', or 'rapid exit'; 4) included all of the core elements of RRH, as described by the U.S. Interagency Council on Homelessness; and 5) examined housing, health/well being, social, economic or educational outcomes. We limited our review to U.S. and international studies published in English. In line with our goal to assess the evidence of the effectiveness of RRH on our outcomes of interest, we limited our review to only include studies employing either experimental or quasi-experimental (i.e. including a comparison group that did not receive RRH) designs. We included both peer reviewed studies and grey literature that met all other inclusion criteria.

To assess whether studies met our inclusion criteria, two reviewers independently conducted initial screenings of the titles and abstracts of all manuscripts identified in

the search process. We then obtained the full text of all manuscripts determined to be potentially relevant by either reviewer. The two reviewers then independently assessed whether studies met inclusion criteria using a standardized screening form. Any disagreements between reviewers regarding whether studies met inclusion criteria were resolved through discussion between the two reviewers to reach consensus about whether to include or exclude a study.

Data extraction

We used a standardized review form to extract the following set of study characteristics from each study included in the review: study design, study location, characteristics of study population receiving RRH (e.g. family households, single homeless adults, military veterans), description of RRH intervention (i.e. type and amount of assistance provided, duration of assistance provided, entity/organization providing assistance), sample size, follow-up period and outcome measures. We also developed a summary of the main findings of each study.

Data synthesis

To synthesize studies included in our review, we tabulated frequencies of study design, study location, characteristics of the study population, sample size, follow up period and outcome measures. To assess the overall quality of evidence from studies examining the impact of RRH, we used the rating scale used in the Substance Abuse and Mental Health Service Administration's Assess the Evidence Base Series (Dougherty *et al.*, 2014). We chose this rating scale as it has been used in a previous systematic review of permanent supportive housing (PSH) a housing intervention that provides ongoing subsidized housing with supportive services and that is frequently, but not always, operated under a HF approach (Rog *et al.*, 2014).[2]

Rather than assessing the quality of individual studies, the rating scale we used classifies the overall quality of manuscripts included in the review as 'high', 'moderate' or 'low' based on a set of pre-established benchmarks related to the number of studies and their design. Briefly, to meet the criteria for a 'high' level of evidence, a review needs to identify three or more randomized controlled trials with adequate designs or two randomized controlled trials plus two quasi-experimental studies, all with adequate designs. To be rated as 'moderate', a body of evidence must meet one of the following four criteria: two or more quasi-experimental studies with adequate designs; one quasi-experimental study plus one randomized controlled trial with adequate designs; two or more randomized controlled trials with some methodological weaknesses; or three or more quasi-experimental studies with some methodological weaknesses. A 'low' rating for a body of evidence is given when the review does not identify any randomized controlled trials or there is not more than one quasi-experimental study with an adequate design. An important factor in this rating scale is whether a study is judged to have an 'adequate' design. Although the developers of the scale do not define precise criteria for what is considered 'adequate', they do offer some guidance on factors that decrease the evidence strength (e.g. lack of

generalizability, poorly defined control or comparison group interventions, poor or inconsistent definitions of practices or populations) and factors that increase the evidence strength (e.g. frequency of follow-up and examination of outcomes in real-world settings, clear definitions of 'usual care' or other comparison group interventions, similar definitions of the services across studies and/or inclusion of effects on subpopulations defined by sex, race-ethnicity or age).

Importantly, under this rating scale, the level of evidence for an intervention does not equate to its effectiveness (i.e. whether the intervention has an impact on outcomes of interest). Thus, to address our review's second aim, and following prior research (Rog *et al.*, 2014) that has employed this rating scale, we conducted a separate assessment of the effectiveness of RRH by compiling findings from identified studies and summarizing their results stratified by outcome type. Similarly, to address our third aim, we compiled and summarized evidence from prior studies on whether the impact of RRH varies according to the characteristics of households served.

Results

Results of literature search

The initial literature search yielded a total of 1,484 manuscripts, or 345 manuscripts after de-duplication (Figure 1). Based on the two reviewers' independent screening of the titles and abstracts of these manuscripts, we obtained the full text for 53 manuscripts that were determined to be potentially eligible. One of these manuscripts was a systematic review, (Gubits *et al.*, 2018a) from which we identified an additional 3 manuscripts that were determined to be potentially eligible for inclusion. We thus obtained the full text for a total of 56 unique manuscripts. A total of 11 manuscripts were determined to meet the inclusion criteria for our review; these manuscripts report the results of 6 unique studies (see Table 1). Of the 45 manuscripts that did not meet inclusion criteria 11 did not ultimately turn out to examine a housing intervention that the article described or identified as 'rapid rehousing', 'rapid re-housing', or 'rapid exit and 34 did not use an experimental or quasi-experimental design.

One of the studies included in our review is the Family Options Study, which was a large, multi-site randomized controlled trial that assigned families to one of the following conditions: permanent housing subsidy; community-based RRH; project-based transitional housing (or usual care, which was any housing or services a family would receive absent a referral to any of the other three interventions. Families enrolled in the Family Options Study were followed prospectively for a three-year period. However, initial reports of findings from the Family Options Study focussed on outcomes at 20-months post random assignment, with a separate set of manuscripts and reports summarizing findings at 37-months post random assignment. In our synthesis of the Family Options Study, we thus grouped together two manuscripts (Gubits *et al.*, 2015; Shinn *et al.*, 2016) that report outcomes at 20 months and two manuscripts that report on outcomes at 37-months (Gubits *et al.*, 2016, 2018b). We focus our summary of these manuscripts on the set of 18 outcomes across five domains that were pre-selected by the Family Options Study team as their primary outcomes, even though the study tracked additional outcomes. In our summary of studies, we

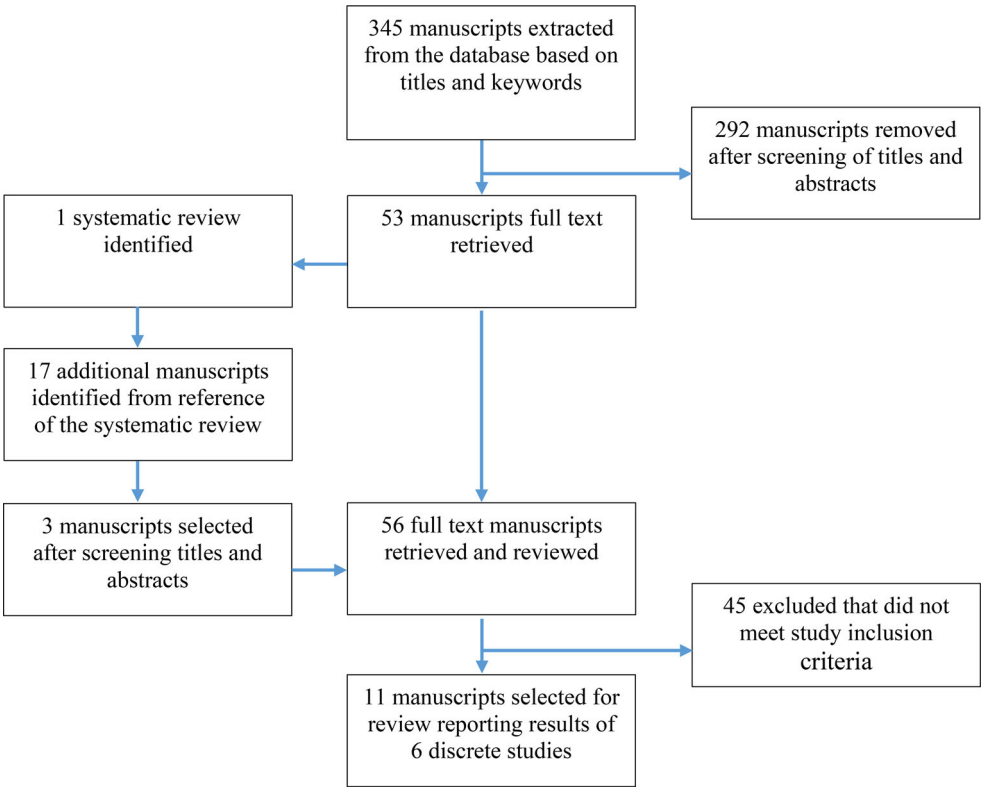

Figure 1. Flow diagram showing literature search and screening process.

reclassified how some of the Family Options outcomes were grouped. For example, whereas the Family Options study included food security in the 'self-sufficiency' domain, we classified it as a health outcome.

Our search also identified two additional manuscripts (Cutuli & Herbers, 2019; Shinn *et al.*, 2017) that involved re-analysis of data from the Family Options Study. We do not treat these manuscripts as representing separate, unique studies, but we summarize each of these articles separately, given that they were not included in the original analytic plan for the study, (Gubits *et al.*, 2013) and because one (Cutuli & Herbers, 2019) uses data from just one study site that was not available as part of the original study. For the sake of consistency, when referring to the Family Options study in generic terms (as opposed to findings from a specific manuscript) throughout the remainder of this review, we cite the peer-reviewed manuscript (Gubits *et al.*, 2018b) that reports findings at 37-months. In addition, although the analytic plan for the Family Options Study involved contrasting each of the three housing interventions with usual care as well as pairwise comparisons between each housing intervention, we focussed our data extraction efforts on the comparisons that assessed the impact of RRH relative to usual care, transitional housing (temporary housing with on-site intensive services for up to two years) and permanent housing. That is, we do not report on study findings of comparisons between transitional housing and permanent housing, or of either of these interventions with usual care.

Table 1. Summary of design of included studies.

Study number	Citation	Study design	Study location	Study population	Sample size	Description of RRH assistance provided	Outcome measures	Follow up time period
Experimental studies								
1a	Gubits *et al.* (2015) Shinn *et al.* (2016)	Randomized controlled trial with participants assigned to one of following: 1. Priority access to permanent housing subsidy 2. Priority access to community-based RRH 3. Priority access to project-based transitional housing 4. Usual care services	12 communities in United States[a]	Families with children	2282 families (569 families assigned to community based RRH; 599 assigned to permanent housing subsidy; 368 assigned to project based transitional housing; 746 assigned to usual care)	Priority access to temporary rental assistance (renewable every 3 months for up to 18 months) paired with limited services focussed on housing and self-sufficiency. Programs varied in the design but all programs aligned with core components for RRH programs outlined by HUD and USICH.	1. Housing stability[b] 2. Family preservation[c] 3. Adult well-being[d] 4. Child well-being[e] 5. Family self-sufficiency[f]	20 months
1b	Gubits *et al.* (2016) Gubits *et al.* (2018b)	Randomized controlled trial with participants assigned to one of following: 1. Priority access to permanent housing subsidy 2. Priority access to community-based RRH 3. Priority access to project-based transitional housing	12 communities in United States[a]	Families with children	2282 families (569 families assigned to community based RRH; 599 assigned to permanent housing subsidy; 368 assigned to project based transitional housing; 746 assigned to usual care)	Priority access to temporary rental assistance (renewable every 3 months for up to 18 months) paired with limited services focussed on housing and self-sufficiency. Programs varied in the design but all programs aligned with	1. Housing stability[b] 2. Family preservation[c] 3. Adult well-being[d] 4. Child well-being[e] 5. Family self-sufficiency[f]	37 months

(*continued*)

Table 1. Continued.

Study number	Citation	Study design	Study location	Study population	Sample size	Description of RRH assistance provided	Outcome measures	Follow up time period
		4. Usual care services				core components for RRH programs outlined by HUD and USICH.		
1c	Shinn *et al.* (2017)	Randomized controlled trial with participants assigned to one of following: 1. Priority access to permanent housing subsidy 2. Priority access to community-based RRH 3. Priority access to project-based transitional housing 4. Usual care services	12 communities in United States[a]	Families with children	2282 families (569 families assigned to community based RRH; 599 assigned to permanent housing subsidy; 368 assigned to project based transitional housing; 746 assigned to usual care)	Priority access to temporary rental assistance (renewable every 3 months for up to 18 months) paired with limited services focussed on housing and self-sufficiency. Programs varied in the design but all programs aligned with core components for RRH programs outlined by HUD and USICH.	1. Child separation 2. Foster care placement 3. Separation of spouse or partner	20 months
1d	Cutuli & Herbers (2019)	Randomized controlled trial with participants assigned to one of following: 1. Priority access to permanent housing subsidy 2. Priority access to community-based RRH	Hennepin County, MN	Families with children	61 students in families assigned to RRH; 48 students in families assigned to permanent housing subsidy; 63 students in families assigned to usual care	Families received priority access to the Hennepin County Rapid Exit program, which is a short-term rent subsidy designed to assist families in returning to private-sector	1.School attendance 2.School mobility 3. Math achievement 4. Reading achievement	Up to 4 years

(*continued*)

Table 1. Continued.

Study number	Citation	Study design	Study location	Study population	Sample size	Description of RRH assistance provided	Outcome measures	Follow up time period
		3. Priority access to project-based transitional housing 4. Usual care services				housing as quickly as possible. Rapid Exit provides assistance with housing start up-costs (e.g., security deposits) and 3–6 months of a fixed subsidy. Families also receive additional support services including legal assistance and case management for issues related to housing barriers or to help stabilize families after moving into permanent housing.		
2	Towe *et al.* (2019)	Randomized controlled trial assigning participants to: 1. Enhanced Housing Placement Assistance (EHPA) 2. Usual care	New York City	People living with HIV/AIDS residing in emergency shelters for single adults	119 persons assigned to EHPA; 117 persons assigned to usual care	Enhanced Housing Placement Assistance (EHPA), which is described as a RRH program that provides the immediate assignment to a case manager,	1. Placement in stable housing 2. Engagement in HIV medical care 3. HIV Viral suppression	12 months post enrollment

(*continued*)

Table 1. Continued.

Study number	Citation	Study design	Study location	Study population	Sample size	Description of RRH assistance provided	Outcome measures	Follow up time period
						housing search assistance, rent and move-in assistance (types and amounts not described), intensive housing stabilization services for up to one-year post baseline		
Quasi-experimental studies								
3	Rodriguez & Eidelman (2017)	Quasi-experimental (RRH participants matched to households using transitional housing or emergency shelter using propensity scores)	Georgia (statewide)	1. Households with children 2. Households without children	1. Households with children (189 households receiving RRH and equally sized matched groups receiving transitional housing and emergency shelter) 2. Households without children (117 households receiving RRH and equally sized matched groups receiving transitional housing and emergency shelter)	RRH programs funded through HUD's Emergency Solutions Grants Program, which restricts RRH services to housing search and placement, housing stability case management, landlord–tenant mediation, tenant legal services, and credit repair.	Returns to emergency shelter	2 years

(*continued*)

Table 1. Continued.

Study number	Citation	Study design	Study location	Study population	Sample size	Description of RRH assistance provided	Outcome measures	Follow up time period
4	Mayfield *et al.* (2012)	Quasi-experimental (Matched comparison using propensity scores of working-age RRH clients with homeless persons who did not receive RRH)	Washington state	Working age (18–64 years old) adults	1,537 RRH clients; 1,537 homeless persons in matched comparison group not receiving RRH	RRH through the HPRP program	Employment status	One year
5	Shah *et al.* (2015)	Quasi-experimental (Matched comparison using propensity scores of intervention group who received services through the Ending Family Homelessness pilot (EFH) with 1. other non-EFH RRH; 2. transitional housing; 3. homeless families not receiving any housing assistance	Washington state	Families with children receiving Temporary Assistance for Needy Families	111 parents in families receiving EFH and equally sized matched comparison groups of parents in families receiving non-EFH RRH, transitional housing and no housing assistance	The Ending Family Homelessness (EFH) pilot program in Washington State, provides RRH and employment services.	1. Temporary Assistance for Needy Families (TANF) receipt 2. TANF-related employment activities 3. TANF sanctions 4. Self-reported employment 5. Self-reported earnings 6. Returns to homelessness 7.Arrests	12 months
6	Taylor (2014)	Quasi-experimental: 1. Matched comparison using propensity scores of	Philadelphia, PA	All households entering shelter grouping together households with	1,169 households receiving RRH and matched comparison group of 1,286	RRH through HPRP	Returns to homelessness	Varying follow-up length; At least 1 year post exit from RRH for all households

(*continued*)

Table 1. Continued.

Study number	Citation	Study design	Study location	Study population	Sample size	Description of RRH assistance provided	Outcome measures	Follow up time period
		households who received RRH and households entering shelter system who did not receive RRH. 2. Instrumental variable approach using zip code of shelter making referral to RRH as instrument for RRH receipt		and without children	households not receiving RRH			

[a]The 12 communities in which the Family Options Study was conducted were: Alameda County, California; Atlanta, Georgia; Baltimore, Maryland; Boston, Massachusetts; New Haven and Bridgeport regions of Connecticut; Denver, Colorado; Honolulu, Hawaii; Kansas City, Missouri; Louisville, Kentucky; Minneapolis, Minnesota; Phoenix, Arizona; Salt Lake City, Utah.
[b]The housing stability outcomes in the Family Options Study were: at least 1 night homeless or doubled up in past 6 months; any stay in emergency shelter in months 7 to 18 after random assignment; number places lived in past 6 months; at least one night homeless or doubled up in past 6 months or any stay in emergency shelter in past 12 months.
[c]The family preservation outcomes in the Family Options Study were: child separation in past 6 months; spouse/partner separation in past 6 months; lack of child reunification (among families with child separated at random assignment).
[d]The adult well-being outcomes in the Family Options Study were: poor/fair health in past 30 days; psychological distress in past 30 days; alcohol dependence or drug abuse in past 6 months; experienced intimate partner violence in past 6 months.
[e]The child well-being outcomes in the Family Options Study were: number of schools attended since random assignment; number of days absent from school in past month; poor/fair health in past 30 days; behaviour problems in past 6 months.
[f]The family self-sufficiency outcomes in the Family Options Study were: any work for pay in prior week; total family income in past year; food security in past 30 days.

Descriptive summary of studies included

Of the six discrete studies identified by our review, two (Gubits *et al.*, 2018b; Towe *et al.*, 2019) were randomized controlled trials and four (Mayfield *et al.*, 2012; Rodriguez & Eidelman, 2017; Shah *et al.*, 2015; Taylor, 2014) had quasi-experimental designs (Table 1). All of the quasi-experimental studies used propensity score matching to account for differences between the intervention and comparison groups and one (Taylor, 2014) also employed an instrumental variable approach in a supplemental analysis.

With the exception of the Family Options study, which was conducted in 12 communities throughout the United States, the remaining five studies were conducted in a single jurisdiction, either a state, county or city. Two of the studies (Gubits *et al.*, 2018b; Shah *et al.*, 2015) only included households or families with children; one study (Towe *et al.*, 2019) focussed exclusively on households without children; one study (Rodriguez & Eidelman, 2017) treated households with and without children as discrete subsamples; and two studies (Mayfield *et al.*, 2012; Taylor, 2014) grouped together all households, without differentiating between those with and without children. Separately from household type, several studies focussed on discrete sub-populations including one study that only included persons with HIV/AIDS, (Towe *et al.*, 2019) one study (Shah *et al.*, 2015) that only included families receiving Temporary Assistance for Needy Families benefits and one study that was limited to working age adults (Mayfield *et al.*, 2012). The studies varied in the level of detail they provided regarding the specific characteristics of the three core elements of RRH assistance available to recipients, which made it challenging to formally assess the comparability of RRH models across studies. The follow-up time period for studies also varied and ranged from 12 months to up to 4 years. Likewise, the outcomes measured varied substantially across studies, with returns to emergency shelter being the most commonly used outcome and tracked in four of the studies (Gubits *et al.*, 2018b; Rodriguez & Eidelman, 2017; Shah *et al.*, 2015; Taylor, 2014) included in the review.

Level of evidence

We rated the overall level of evidence for RRH as moderate. While our review identified two randomized controlled trials and four quasi-experimental studies, our moderate rating was motivated primarily by limitations in the generalizability of the included studies, which the rating scale we used specifically noted as a factor that decreases the strength of the evidence for an intervention.

The limited generalizability of studies stems from several factors. First, the study populations varied substantially across the included studies. Most saliently, of the two randomized controlled trials, one focussed on households with children and the other focussed on adults without children with a diagnosis of HIV/AIDS. Given evidence of the significant differences in the characteristics of persons who are homeless as part of a family with children versus those who are homeless as single adults (Burt & Cohen, 1989; North & Smith, 1993), the existence of only one randomized study for each sub-group greatly tempers our assessment of the overall strength of the evidence for RRH. Second, with one exception (the Family Options Study), studies included in

the review were conducted in one jurisdiction; thus, the extent to which findings from other studies are likely to hold true in housing markets that may be vastly different from the ones in which they were conducted is unclear. Finally, three of the included studies (Gubits *et al.*, 2018b; Mayfield *et al.*, 2012; Taylor, 2014) were conducted during the three-year implementation period of the HPRP program, and the intervention they evaluated was RRH provided through HPRP. HPRP was the first time many communities and providers had implemented RRH. Thus, it is unclear whether findings from these studies would hold true in the context of the development and establishment of more concrete RRH programmatic standards and best practices.

An additional factor that influenced our rating of the level of evidence as moderate was the lack of consistency in outcomes measures used across studies. Apart from returns to emergency shelter, which by itself is an imperfect way to capture housing stability, there was little consistency in outcomes measures. This inconsistency made synthesizing the study results quite challenging.

Effectiveness of RRH

We examined outcomes in several domains including housing, health, social, economic, and educational and summarize each domain separately below. Table 2 summarizes the findings from studies included in our review with respect to these domains.

Housing outcomes

Overall, studies offered mixed results with respect to the effectiveness of RRH at improving housing outcomes, with the quasi-experimental studies generally providing more favourable results than the randomized controlled trials. The Family Options Study did not find any significant difference between families assigned to RRH and those assigned to usual care or transitional housing on any of the housing outcomes it considered at either 20 (Gubits *et al.*, 2015) or 37 months (Gubits *et al.*, 2016). However, that study did find, when compared to families assigned to receive a permanent housing subsidy, families assigned to RRH had less stable housing. Specifically, the study found higher rates of being homeless or doubled up, more stays in emergency shelter, and to have lived in more places in the past 6 months at both 20 and 37-month time points. By contrast, the only other randomized controlled trial included in our review (Towe *et al.*, 2019) found that RRH participants living with HIV/AIDS were more likely to be placed in stable housing (45% vs. 32% at 12 months post-enrollment) and were placed faster than persons receiving usual care. However, it bears noting that the 45% of RRH participants placed in housing is well below the target of 80% described in the aforementioned RRH benchmarks, thus raising questions about the robustness of the effect of RRH in this study.

The quasi-experimental studies were more consistent in their findings with respect to the impact of RRH on housing outcomes. The three studies (Rodriguez & Eidelman, 2017; Shah *et al.*, 2015; Taylor, 2014) that examined returns to emergency

Table 2. Summary of findings of included studies.

Study number	Citation	Summary of findings
Experimental studies		
1a	Gubits *et al.* (2015) Shinn *et al.* (2016)	There was no statistically significant difference between families assigned to RRH versus those assigned to usual care on any of the housing stability, family preservation, or adult well-being outcomes. In the child well-being domain, children in families assigned to RRH had fewer school absences than usual care families. In the self-sufficiency domain, families assigned to RRH had higher annual income and higher rates of food security than families assigned to usual care. Families assigned to RRH had less favourable outcomes than families assigned to subsidized housing including less housing stability, higher rates of spouse/partner separations, higher rates of intimate partner violence, and a higher number of schools attended by children. Compared to families assigned to transitional housing, families assigned to RRH had better outcomes for certain measures of adult well-being (overall health, psychological distress and alcohol/drug dependence, but there were otherwise no significant differences between the two groups on any of the other outcomes. The impact of RRH relative to usual care, subsidized housing or transitional housing did not vary as a function of the extent of family psychosocial challenges or housing barriers. RRH had the lowest program cost during the study period ($878 per month), as compared to subsidized housing ($1,162), transitional housing ($2,706) or emergency shelter ($4,819) . Total cost of all programs used varied only slightly (by less than 10 percent) across all assignment arms.
1b	Gubits *et al.* (2016) Gubits *et al.* (2018b)	There was no statistically significant difference between families assigned to RRH versus those assigned to usual care on any of the housing stability, family preservation, adult well-being or self-sufficiency outcomes. In the child well-being domain, children in families assigned to RRH had fewer behaviour problems than children usual care families. Families assigned to RRH had less favourable outcomes than families assigned to subsidized housing including less housing stability, and a higher number of schools attended by children. Compared to families assigned to transitional housing, families assigned to RRH had better outcomes for certain measures of adult well-being (psychological distress and alcohol/drug dependence), child well-being (less behavior problems) and self-sufficiency (greater food security) but there were otherwise no significant differences between the two groups on any of the other outcomes. The impact of RRH relative to usual care, subsidized housing or transitional housing did

(*continued*)

Table 2. Continued.

Study number	Citation	Summary of findings
		not vary as a function of the extent of family psychosocial challenges or housing barriers. RRH had the lowest program cost during the study period ($880 per month), as compared to subsidized housing ($1,172 per month), transitional housing ($2,706 per month) or emergency shelter ($4,819 per month) . Total cost of all programs used varied only slightly across all assignment arms.
1c	Shinn *et al.* (2017)	As compared to usual care, RRH did not have a statistically significant impact on child separation, foster care placement or separation of spouse/partner. Mediation models found that RRH (relative to usual care) had a total indirect effect on reducing child separations, through the mediating variables of homelessness, drug abuse, alcohol dependence, intimate partner violence and economic stressors (although none of the specific indirect effects for any of these variables were statistically significant)
1d	Cutuli & Herbers (2019)	Students in families assigned RRH had lower school attendance, lower math achievement and lower reading achievement over time as compared to students in families assigned to usual care. There was no significant difference in school mobility. Students in families assigned to RRH had lower attendance and higher school mobility over time as compared to students in families assigned to a permanent housing subsidy. There was no significant difference in reading or math achievement.
2	Towe *et al.* (2019)	RRH participants were placed in stable housing faster than usual services clients, were more likely to be placed and were roughly twice as likely to achieve or maintain HIV viral suppression.
Quasi-experimental studies		
3	Rodriguez & Eidelman (2017)	For households with children, 10.1% of those exiting RRH returned to shelter within 2 years which was significantly less than matched comparison group of those exiting ES (23.8%) but was not significantly different from matched comparison group of those exiting TH (9.5%) For households without children, 13.7% of those exiting RRH returned to shelter within 2 years which was significantly less than matched comparison group of those exiting ES (39.3%) but was not significantly different from matched comparison group of those exiting TH (18.0%) Effects of RRH and TH relative to ES on probability of return to shelter remained after controlling for program-level and household characteristics for both households with and without children There was no evidence that impact of RRH and TH on return to shelter varied as a function of household characteristics

(*continued*)

Table 2. Continued.

Study number	Citation	Summary of findings
4	Mayfield *et al.* (2012)	RRH clients were more likely than homeless clients who did not receive RRH both in the quarter in which they received RRH and every quarter during a one-year follow up period. RRH participants had 1.25 times greater odds of being employed at any point over the one-year follow-up period than the matched comparison group of homeless working age adults who did not receive RRH.
5	Shah *et al.* (2015)	EFH clients were more likely to continue receiving TANF than those non-EFH RRH clients and homeless clients who did not receive any housing assistance, but there were no statistically significant differences between EFH clients and transitional housing clients. EFH clients were more likely to complete TANF-related employment activities and less likely to receive TANF sanctions than homeless clients who did not receive any housing assistance, but there were no statistically significant differences on these outcomes between EFH clients and clients who received non-EFH RRH or transitional housing. EFH clients had higher earnings over the follow-up period than homeless clients who did not receive any housing assistance ($3,856 vs. $2,142) but there were no statistically significant differences in earnings between EFH clients and non-EFH RRH or transitional housing clients. EFH clients were less likely to return to homelessness over the follow up period than homeless clients who did not receive any housing assistance (9% vs. 32%) but there were no statistically significant differences in returns to homelessness between EFH clients and non-EFH RRH or transitional housing clients EFH clients were less likely to be arrested than homeless clients who did not receive any housing assistance (14% vs. 24%) but there were no statistically significant differences in arrests between EFH clients and non-EFH RRH or transitional housing clients
6	Taylor (2014)	13.6% of RRH households returned to homelessness over the follow-up period as compared to 39.3% of matched comparison group The instrumental variable analysis showed 32% reduction in probability of returns to homelessness among RRH participants

shelter all found that households receiving RRH were less likely to return to emergency shelter following program exit over each study's respective follow-up period, when compared to households that did not receive a housing intervention apart from usual care (which was typically emergency shelter only). In the one study (Rodriguez & Eidelman, 2017) that conducted separate analyses for households with and without children, this finding held up across both household types.

Two studies (Rodriguez & Eidelman, 2017; Shah *et al.*, 2015) included comparisons of RRH against other housing interventions. These studies found that returns to emergency shelter did not significantly differ between RRH participants and those who received some other housing intervention. One of these studies (Shah *et al.*, 2015), which focussed on an RRH intervention that included enhanced employment services, did not find any significant difference in returns to homelessness between families that received this intervention as compared to those who received non-enhanced RRH or those who received transitional housing. The other study (Rodriguez & Eidelman, 2017) found no significant differences in rates of returns to emergency shelter between RRH participants and transitional housing participants among both households with or without children.

Health outcomes

Only two studies (Gubits *et al.*, 2018b; Towe *et al.*, 2019)—both of the randomized controlled trials included in the review—examined health outcomes. The study of RRH for single homeless adults with HIV/AIDS provides some tentative evidence that RRH may have a positive impact on health. Specifically, that study found that RRH participants were more than twice as likely to achieve or maintain HIV viral suppression as compared to usual care, which entailed providing participants with a referral typically provided to persons in shelter who are living with HIV/AIDS. However, at baseline there was a statistically significant and substantively large difference between the RRH and usual care group with respect to the rate of viral suppression (28% vs. 52%), leaving open the possibility that the gains in viral suppression made by the RRH group relative to the usual care group may have been due to regression to the mean and not to RRH itself.

Evidence from the Family Options study is effectively inconclusive about the impact of RRH as compared to usual care on health outcomes. On the one hand, relative to those assigned to usual care, families assigned to RRH had higher rates of food security at 20 months, and children in families assigned to RRH had fewer behavioural problems at 37 months. On the other hand, the study did not identify any significant differences between the RRH and usual care groups at both 20 or 37 months with respect to adult and child self-reported health status, adult psychological distress, adult alcohol or drug abuse or experiences of intimate partner violence. Put differently, with the large amount of statistical tests required to compare multiple health outcomes at two time points, the two statistically significant differences between the RRH and usual care groups noted above could simply be due to Type 1 error.

Only one study (the Family Options Study) compared RRH with other housing interventions with respect to health outcomes. Findings were similarly inconclusive when comparing families assigned to RRH as compared to those assigned to a permanent housing subsidy: there were no clear and consistent patterns of statistically significant differences between these two groups at 20 and 37 months. This finding held true when considering the comparison between RRH and transitional housing, with one exception. Specifically, there was some tentative evidence of more favourable behavioural health outcomes for adults in families assigned to RRH as compared to

those assigned to transitional housing: at both 20 and 37 months those assigned to RRH reported less psychological distress and less drug/alcohol dependence for adults.

Social outcomes

Two studies (Gubits *et al.*, 2018b; Shah *et al.*, 2015) examined social outcomes and they offer mixed results. The Family Options Study did not find any significant differences between families assigned to RRH and those assigned to either usual care or transitional housing with respect to any of the family preservation outcomes it considered at either 20 (Gubits *et al.*, 2015) or 37 months (Gubits *et al.*, 2016). However, a study (Shinn *et al.*, 2017) involving a re-analysis of data from Family Options found that, as compared to usual care, RRH had an indirect effect on reductions in child separations.

On the other hand, a quasi-experimental study (Shah *et al.*, 2015) examining the impact of an RRH intervention enhanced with employment services found that RRH participants were less likely to be arrested over the study's 12-month follow-up period, as compared to participants that received usual care; the study did not find any statistically significant difference in arrest rates between those assigned to the enhanced RRH intervention as compared to those assigned to non-enhanced RRH or transitional housing.

Economic outcomes

Three studies (Gubits *et al.*, 2018b; Mayfield *et al.*, 2012; Shah *et al.*, 2015) examined economic outcomes. In the Family Options Study,families assigned to RRH reported more favourable outcomes with respect to amount of income and receipt of Supplemental Nutrition Assistance Program (SNAP) or Temporary Assistance for Needy Families (TANF) benefits at either 20 or 37 months, but not at both time points (Gubits *et al.*, 2015, 2016). There were no significant differences on any of the nine other employment or income related outcomes considered at either time point, again pointing to Type 1 error as a plausible explanation for the significant differences that were observed. In a study of working-age adults in Washington state, (Mayfield *et al.*, 2012) those who received RRH through HPRP were more likely to be employed than a matched comparison group who of homeless persons who did not receive RRH over the duration of the study's 12-month follow-up period. A separate study conducted in Washington state (Shah *et al.*, 2015) found that families who received RRH with enhanced employment services had better employment and earnings outcomes than a matched comparison group of homeless families who did not receive RRH. Two of these studies (Gubits *et al.*, 2015, 2016; Shah *et al.*, 2015) found no evidence of an impact of RRH on economic outcomes as compared to other housing interventions, including permanent housing subsidies and transitional housing.

Educational outcomes

Only one study (the Family Options Study) examined educational outcomes, focussing on the number of schools attended and child care or school absences as outcomes, both of which the study grouped in the 'child well-being' outcome domain.

The study offers little evidence of a positive impact of RRH on these outcomes as compared to usual care or other housing interventions. In the full Family Options study (Gubits *et al.*, 2018b), children in families assigned to RRH had significantly fewer child care or school absences at 20 months as compared to those assigned to usual care, although this significant difference did not persist at 37 months. There were no significant difference at either time point in terms of the number of schools attended between children in families assigned to RRH and those assigned to usual care.

There was no difference in either outcome (number of schools attended or child care/school absences) between children in families assigned to RRH and those assigned to transitional housing at either 20 or 37 months, although children assigned to RRH attended significantly more schools than children in families assigned to a permanent housing subsidy at both time points.

A separate analysis (Cutuli & Herbers, 2019) of Family Options data from the Hennepin County, Minnesota study site linked study data with administrative data from the local public school system. This linkage allowed for the construction of outcomes capturing attendance, school mobility and reading and math achievement (from standardized test scores) that were based on educational records. Overall, the study found less favourable educational outcomes for students in families assigned to RRH as compared to those assigned to usual care (lower school attendance, lower math and reading achievement over time) or a permanent housing subsidy (lower attendance, higher school mobility).

Variation in effectiveness of RRH by participant characteristics

Only two studies (Gubits *et al.*, 2018b; Rodriguez & Eidelman, 2017) considered whether the effect of RRH was moderated by household characteristics, and neither provides strong evidence that RRH works better (or worse) for certain households. The Family Options Study constructed separate indices capturing both housing barriers (e.g. poor credit history, past eviction) and psychosocial challenges (e.g. domestic violence, psychological distress) to assess whether RRH and the other housing interventions compared had a differential effect, depending on whether families had more (or less) housing barriers and psychosocial challenges. The study found little evidence that either housing barriers or psychosocial challenges moderated the effect of RRH as compared to usual care, transitional housing and a permanent housing subsidy on any of the outcomes considered. However, the authors note that the lack of evidence of a differential effect of RRH by household characteristics could be due to the low statistical power to identify effects in this analysis. A second study (Rodriguez & Eidelman, 2017) examined whether the impact of RRH as compared to usual care and transitional housing on returns to homelessness varied as a function of a range of household characteristics, including race, gender, military veteran status, disability, prior shelter use, and having any cash income. That study also found little evidence that household characteristics moderated the impact of RRH on the study's outcome measure, although the study was only able to consider the ultimately limited array of characteristics that are

captured in the Homelessness Management Information Systems (HMIS) data on which the study relied.

Discussion

Our review identified only six studies that have used either experimental or quasi-experimental methods to identify the effect of RRH as compared to usual care or other housing interventions on housing, health, social, economic and educational outcomes. All six of these studies were conducted in the United States. We rated the overall level of evidence, which is a function of both the number of studies and their quality, as moderate. The study populations varied significantly across studies as did the outcome measures considered, thus presenting some challenges to draw comparisons across studies.

Despite this challenge, three key findings emerge from our assessment of the effectiveness of RRH. First, there is no evidence to suggest that RRH has a negative impact on housing, health, social and economic outcomes as compared to usual care (typically emergency shelter only). Given the evidence at this point, we simply cannot make a determination about whether RRH has a positive impact on these outcomes as compared to usual care.

There were indeed scattered findings suggesting positive impacts of RRH as compared to usual care on these outcomes. However, positive findings from the two experimental studies are tempered by several factors. The Family Options Study involved a large number of comparisons, and thus the potential that the inconsistent positive impacts of RRH were due to Type 1 error cannot be ruled out. Similarly, in the experimental study by Towe *et al.* (2019) the fact that less than half of RRH participants achieved permanent housing and potential that the positive impact of RRH on the health outcome that study considered was due to regression to the mean dampen enthusiasm for its findings. Positive findings regarding the impact of RRH as compared to usual care were more consistent in quasi-experimental studies, the methodological details of these quasi-experimental studies are important for placing their more favourable findings in context. All of the quasi-experimental studies relied on propensity score matching approaches, which can reduce, but not fully address the threat of selection bias. As an example of the potential limitations of the matching approaches used by these studies, in at least two cases there is reason to suspect that, even after matching, there was likely imbalance between groups with respect to employment and income, both of which may be associated with housing and other outcomes. In the study by Rodriguez & Eidelman (2017) the authors used a dichotomous indicator of whether households had any cash income in generating propensity scores, and there were large differences in the proportion of the matched sample of households with children (75%) and full sample of household with children (35%) with any cash income. This points to potential differences in the *amount* of income, even after matching, which the authors note is a major limitation of their matching approach. Similarly, in the study by Shah et al. (2015), even after matching, there are substantively large differences in the proportion of the RRH participants and the emergency shelter only group (30% vs. 18%) who participated in Community Jobs,

which is a comprehensive, paid work program that seeks to improve the employability of participants. In sum, RRH clearly appears to be no worse than usual care, but it is unclear about whether it actually is any better in promoting housing, health, social and economic outcomes.

Our second key finding is that there is little evidence that RRH produces more favourable outcomes than transitional housing, and permanent housing subsidies appear to result in better outcomes than RRH. Third, we found no evidence to suggest that RRH works better for some types of households than it does for others, although methodological limitation of the moderation analysis conducted by studies included in our review mean that this should still be viewed as an open question.

Our findings point to the need for additional research to identify key gaps in knowledge about this intervention. We highlight several of the most pressing of these gaps below. Given the apparent increasing policy emphasis on RRH both in the United States and in other countries, filling these gaps is highly important for informing policy and funding decisions to promote the best possible outcomes for individuals and families experiencing homelessness.

First, our review did not identify any studies meeting our inclusion criteria that were conducted outside of the United States. This is a key gap as the effectiveness of RRH may be sensitive to the broader social welfare policy context, and thus, the extent to which findings in the studies we reviewed are likely to hold true in other countries is unclear. In the ideal case, research on RRH would follow the trajectory of research on HF, with American research being replicated and expanded upon in other countries.

Second, only one study included in our review (the Family Options Study) used a rigorous design that maximized both the study's internal and external validity while simultaneously examining outcomes across a number of domains. The Family Options Study is a highly important study, but it only included homeless families who are characteristically different from persons who experience homelessness as single adults, and who comprise the bulk of the homeless population in many countries. We identified only one experimental study examining the impact of RRH that was based solely on single homeless adults (Towe *et al.*, 2019). That study was conducted in a single city and was further limited by its focus solely on persons with HIV/AIDS. There is a pressing need for additional research to better understand the potential of RRH as an intervention for homeless single adults. We are aware of at least two studies in progress in the United States (U.S. Department of Veterans Affairs, 2019; Wilson Sheehan Lab for Economic Opportunities, 2019) that will help address this gap and others are sorely needed.

Third, apart from returns to emergency shelter, there was little consistency in the outcomes examined in the studies included in our review. This lack of consistency makes it difficult to draw strong conclusions from the body of evidence as a whole. Moving forward, studies examining the impact of RRH would benefit from the use of a standard set of outcome measures. The Family Options Study examined in a range of outcomes in the five domains of housing stability, family preservation, adult well-being, child well-being and family self-sufficiency. This approach to measuring outcomes, the specific measures used in Family Options, provides a template ripe for replication. However, future studies should also include the RRH performance

benchmarks established by the National Alliance to End Homelessness, particularly in comparing RRH to usual care. These outcomes—rapid exits from homelessness, exits to permanent housing, and not returning to homelessness within a year—focus on the more proximal outcomes that RRH is intended to and is best positioned to impact.

Fourth, because communities are unlikely to have sufficient resources to provide RRH to all households who enter shelter, future research should continue to address the question of whether RRH works better for certain households. The studies included in our review found little evidence of a differential impact of RRH based on household characteristics, but more research is needed to address this issue in thorough manner. Similarly, future research should assess whether the impact of RRH varies by location—including whether RRH is more (or less) effective in areas with expensive rental markers or in rural vs. urban areas, or in countries with social welfare and housing policy contexts that differ from the United States.

Finally, while all studies included in our review made the three core service components of RRH described above available to recipients, the studies did not describe their RRH models in a uniform way making it difficult to evaluate the extent to which RRH services were comparable across studies. Thus, future research could benefit from the development of a fidelity measure for RRH programs or, at a minimum, the establishment of a standard framework for describing the type, duration, volume and intensity of the core RRH service components.

In closing, there are several limitations to our study that are important to note. The scope of our review was limited by its focus on experimental or quasi-experimental studies. There is a broader body of research that has examined the outcomes of persons receiving RRH using both quantitative and qualitative data. These studies were of less utility for this study's aim of assessing the effectiveness of RRH, but they do provide useful insights on the context and implementation of RRH. As an additional limitation, given the lack of consistency in outcomes examined, we were unable to conduct a meta-analysis using the included studies. As the body of research on RRH continues to grow, we hope to repeat this review and conduct such a meta-analysis.

Acknowledgements

This study was supported by funding from the U.S. Department of Veterans Affairs (VA) National Center on Homelessness Among Veterans. The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was funded by United States Department of Veterans Affairs National Center on Homelessness among Veterans.

Notes on contributors

Thomas Byrne is an Investigator with the U.S. Department of Veterans Affairs National Center on Homelessness among Veterans and the U.S. Department of Veterans Affairs Center for Healthcare Outcomes and Implementation Research and an Assistant Professor of Social Welfare Policy at the Boston University School of Social Work.

Minda Huang is a doctoral candidate in the Graduate Institute of Professional Psychology at the University of Hartford.

Richard E. Nelson is an Affiliate Investigator at the U.S. Department of Veterans Affairs National Center on Homelessness among Veterans, an Investigator at the U.S. Department of Veterans Affairs IDEAS Center of Innovation and a Research Assistant Professor in the Division of Epidemiology, Department of Internal Medicine, at the University of Utah School of Medicine.

Jack Tsai is Director of Research at the U.S. Department of Veterans Affairs, National Center on Homelessness among Veterans, an Investigator at the U.S. Department of Veterans Affairs New England Mental Illness Research, Education and Clinical Center and an Associate Professor of Psychiatry in the Department of Psychiatry at the Yale University School of Medicine.

ORCID

Jack Tsai http://orcid.org/0000-0002-0329-648X

References

Apicello, J. (2010) A paradigm shift in housing and homeless services: Applying the population and high-risk framework to preventing homelessness, *Open Health Services and Policy Journal*, *3*, pp. 41–52.

Baxter, A. J., Tweed, E. J., Katikireddi, S. V. & Thomson, H. (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, pp. 379–387.

Berg, S. (2013) The HEARTH Act, *Cityscape: A Journal of Policy Development and Research*, 15, pp. 317–323.

Burt, M. R. & Cohen, B. E. (1989) Differences among homeless single women, women with children, and single men, *Social Problems*, 36, pp. 508–524.

Canada Mortgage and Housing Corporation. (2020) Canada to rapidly create affordable housing and support the homeless. Available at https://www.cmhc-schl.gc.ca/en/media-newsroom/news-releases/2020/canada-rapidly-create-affordable-housing-support-homeless (accessed 10 March 2021).

Culhane, D. P., Metraux, S. & Byrne, T. (2011) A prevention-centered approach to homelessness assistance: A paradigm shift? *Housing Policy Debate*, 21, pp. 295–315.

Cunningham, M. & Batko, S. (2018) *Rapid re-Housing's Role in Responding to Homelessness: What the Evidence Says*. Available at https://www.urban.org/sites/default/files/publication/99153/rapid_re-housings_role_in_responding_to_homelessness.pdf (accessed 10 March 2021).

Cunningham, M., Gillespie, S. & Anderson, J. (2015) *Rapid Re-Housing: What the Research Says*. Available at https://www.urban.org/sites/default/files/publication/54201/2000265-Rapid-Re-housing-What-the-Research-Says.pdf (accessed 21 March 2021).

Cutuli, J. J. & Herbers, J. E. (2019) Housing interventions and the chronic and acute risks of family homelessness: Experimental evidence for education, *Child Development*, 90, pp. 1664–1683.

Dougherty, R. H., Lyman, D. R., George, P., Ghose, S. S., Daniels, A. S. & Delphin-Rittmon, M. E. (2014) Assessing the evidence base for behavioral health services: Introduction to the series, *Psychiatric Services (Washington, D.C.)*, 65, pp. 11–15.

Gaetz, S., Scott, F. & Gullivery, T. (2013) *Housing First in Canada: Supporting Communities to End Homelessness*. Available at https://www.homelesshub.ca/sites/default/files/HousingFirstInCanada.pdf (accessed 10 March 2021).

Government of Canada. (2019a). About reaching home: Canada's homelessness strategy. Available at https://www.canada.ca/en/employment-social-development/programs/homelessness.html (accessed 10 March 2021).

Government of Canada. (2019b). Reaching Home: Canada's Homelessness Strategy Directives. Available at https://www.canada.ca/en/employment-social-development/programs/homelessness/directives.html#h2.3-h3.1 (accessed 10 March 2021).

Gubits, D., Bishop, K., Dunton, L., Wood, M., Albanese, T., Spellman, B. & Khadduri, J. (2018a) *Understanding Rapid Re-Housing: Systematic Review of Rapid Re-Housing Outcomes Literature*. Available at https://www.huduser.gov/portal/sites/default/files/pdf/Systematic-Review-of-Rapid-Re-housing.pdf (accessed 10 March 2021).

Gubits, D., Shinn, M., Bell, S., Wood, M., Dastrup, S., Solari, C. D., Brown, S. R., Brown, S., Dunton, L., Lin, W., McInnis, D., Rodriguez, J., Savidge, G. & Spellman, B. E. (2015) *Family Options Study: Short-Term Impacts of Housing and Services Interventions for Homeless Families*. Available at https://www.huduser.gov/portal/portal/sites/default/files/pdf/familyoptionsstudy_final.pdf (accessed 10 March 2021).

Gubits, D., Shinn, M., Wood, M., Bell, S., Dastrup, S., Solari, C. D., Brown, S. R., McInnis, D., McCall, T. & Kattel, U. (2016) *Family Options Study: 3-Year Impacts of Housing and Service Interventions for Homeless Families*. Available at https://www.huduser.gov/portal/sites/default/files/pdf/Family-Options-Study-Full-Report.pdf (accessed 10 March 2021).

Gubits, D., Shinn, M., Wood, M., Brown, S. R., Dastrup, S. R. & Bell, S. H. (2018b) What interventions work best for families Who experience homelessness? Impact estimates from the family options study, *Journal of Policy Analysis and Management*, 37, pp. 835–866.

Gubits, D., Wood, M., McInnis, D., Brown, S., Spellman, B. E., Bell, S. & Shinn, M. (2013) *Data Collection and Analysis Plan: Family Options Study*. Available at https://www.huduser.gov/publications/pdf/HUD_501_family_options_Data_Collection_Analysis_Plan_v2.pdf (accessed 10 March 2021).

Johnson, G. (2012) Housing first "down under": Revolution, realignment or rhetoric, *European Journal of Homelessness*, 6, pp. 183–191.

Ly, A. & Latimer, E. (2015) Housing first impact on costs and associated cost offsets : A review of the literature, *Canadian Journal of Psychiatry. Revue Canadienne de Psychiatrie*, 60, pp. 475–487.

Mayfield, J., Black, C. & Felver, B. E. M. (2012) *Employment Outcomes Associated with Rapid Re-Housing Assistance for Homeless DSHS Clients in Washington State*. Available at https://www.dshs.wa.gov/ffa/rda/research-reports/employment-outcomes-associated-rapid-re-housing-assistance-homeless-dshs-clients-washington-state#:~:text=HMIS%2DDSHS%20Rapid%20Re%2Dhousing%20clients%20were%20almost%2050%20percent,the%20entire%20follow%2Dup%20year (accessed 10 March 2021).

National Academies of Sciences Engineering and Medicine. (2018). *Permanent Supportive Housing: Evaluating the Evidence for Improving Health Outcomes among People Experiencing Chronic Homelessness*. Available at https://www.nap.edu/catalog/25133/permanent-supportive-housing-evaluating-the-evidence-for-improving-health-outcomes (accessed 10 March 2021).

National Alliance to End Homelessness. (2016). *Rapid Re-Housing Performance Benchmarks and Program Standards*. Available at http://endhomelessness.org/wp-content/uploads/2016/02/Performance-Benchmarks-and-Program-Standards.pdf (accessed 10 March 2021).

National Low Income Housing Coalition. (2020). *CARES Act Suggestions for State, Local, Tribal and Territorial Elected Officials*. Available at https://nlihc.org/sites/default/files/Housing-Instability-and-Homelessness_Cares-Act.pdf (accessed 10 March 2021).

North, C. S. & Smith, E. M. (1993) A comparison of homeless men and women: Different populations, different needs, *Community Mental Health Journal*, 29, pp. 423–431.

Padgett, D. K., Henwood, B. F. & Tsemberis, S. (2016) *Housing First: Ending Homelessness, Transforming Systems and Changing Lives* (New York: Oxford University Press).
Pleace, N., Baptista, I., Benjaminsen, L. & Busch-Geerstema, V. (2018) *Homelessness Services in Europe: European observatory on Homelessness Comparative Studies on Homelessness* (Brussels: European Observatory on Homelessness).
Rodriguez, J. M. & Eidelman, T. A. (2017) Homelessness interventions in Georgia: Rapid re-housing, transitional housing, and the likelihood of returning to shelter, *Housing Policy Debate*, 27, pp. 825–842.
Rog, D., Marshall, T., Dougherty, R., George, P., Daniels, A., Ghose, S. & Delphin-Rittmon, M. (2014) Permanent supportive housing: Assessing the evidence, *Psychiatric Services (Washington, D.C.)*, 65, pp. 287–294.
Scottish Government. (2020). *Ending Homelessness Together: Updated Action Plan - October* 2020. Available at https://www.gov.scot/publications/ending-homelessness-together-updated-action-plan-october-2020/pages/4/ (accessed 10 March 2021).
Shah, M. F., Liu, Q., Patton, D. & Felver, B. (2015) *Impact of Housing Assistance on Outcomes for Homeless Families: An Evaluation of the Ending Family Homelessnes Pilot*. Available at www.https://www.dshs.wa.gov/sites/default/files/rda/reports/research-11-219.pdf (accessed 10 March 2021).
Shinn, M., Brown, S. R. & Gubits, D. (2017) Can housing and service interventions reduce family separations for families who experience homelessness? *American Journal of Community Psychology*, 60, pp. 79–90.
Shinn, M., Brown, S. R., Wood, M. & Gubits, D. (2016) Housing and service interventions for families experiencing homelessness in the United States: An experimental evaluation, *European Journal of Homelessness*, 10, pp. 13–30.
Taylor, J. V. (2014) *Housing Assistance for Households Experiencing Homelessness*. Doctoral dissertation, The New School, 2014.
Towe, V. L., Wiewel, E. W., Zhong, Y., Linnemayr, S., Johnson, R. & Rojas, J. (2019) A randomized controlled trial of a rapid re-housing intervention for homeless persons living with HIV/AIDS: Impact on housing and HIV medical outcomes, *AIDS and Behavior*, 23, pp. 2315–2325.
Tsemberis, S. (2010) Housing first: Ending homelessness, promoting recovery and reducing costs, in: I. G. Ellen & B. O'Flaherty (Eds), *How to House the Homeless*, pp. 37–56 (New York: Russell Sage Foundation).
Tsemberis, S. & Eisenberg, R. F. (2000) Pathways to housing: Supported housing for street-dwelling homeless individuals with psychiatric disabilities, *Psychiatric Services (Washington, D.C.)*, 51, pp. 487–493.
U.S. Department of Housing and Urban Development. (2016) *Homelessness Prevention and Rapid Re-Housing Program (HPRP): Year 3 & Final Program Summary*. Available at https://files.hudexchange.info/resources/documents/HPRP-Year-3-Summary.pdf (accessed 10 March 2021).
U.S. Department of Housing and Urban Development. (2020). *The 2019 Annual Homeless Assessment Report To Congress: Part 1-PIT Estimates of Homelessness in the U.S. Washington, DC: U.S. Department of Housing and Urban Development.*
U.S. Department of Veterans Affairs. (2019) *IIR 17-029 – HSR&D Study*. Available at https://www.hsrd.research.va.gov/research/abstracts.cfm?Project_ID=2141706880 (accessed 10 March 2021).
U.S. Interagency Council on Homelessness. (2010). *Opening Doors: The Federal Strategic Plan to Prevent and End Homelessness* (Washington, DC: U.S. Interagency Council on Homelessness).
Wilson Sheehan Lab for Economic Opportunities. (2019) *Rapid Re-housing for Single Adults*. Available at https://leo.nd.edu/partners-projects/projects/santa-clara-countys-rapid-re-housing-program/ (accessed 10 March 2021).
Woodhall-Melnik, J. R. & Dunn, J. R. (2016) A systematic review of outcomes associated with participation in housing first programs, *Housing Studies*, 31, pp. 287–304.
Y Foundation. (2018). *A Home of Your Own: Housing First and Ending Homelessness in Finland* (Keuruu, Finland: Y Foundation).