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Homelessness Among Female Veterans: A Systematic Review of the Literature

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The authors conducted a systematic, critical review of the literature to assess and summarize existing research on homelessness among female veterans. They searched seven electronic databases (ERIC, Proquest Dissertations and Theses, PsycINFO, PubMed, Social Services Abstracts, Social Science Citation Index, and Sociological Abstracts), websites of several government and research organizations, and reference lists of prior studies. They abstracted data on study design, funding source, and topic from studies meeting inclusion criteria and classified each study into one of the following categories: epidemiology, health and other services utilization, and interventions. The authors included both experimental and observational studies of interventions in the review and performed a narrative synthesis for each of the 26 studies identified. No studies were experimental, 20 were observational, and the remainder were either qualitative or descriptive. Of the 26 identified studies,

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14 were epidemiologic, 7 focused on the health and additional service utilization, and 5 were intervention studies. Findings provided important baseline epidemiologic information about homelessness among female veterans and indicated that female veterans were at an increased risk of homelessness relative to their male veteran and female non-veteran counterparts. Additional research is needed to develop and implement effective, evidence-based programs to prevent and end homelessness among women veterans.

KEYWORDS homelessness, women, veterans, systematic review

BACKGROUND

Increasingly, women are playing a significant role in the United States military; women now comprise 14% of the active duty military force, and the number of women on active duty expanded by more than 300% over the past three decades (Patten & Parker, 2011). In addition, women are beginning to assume duties that have historically been reserved for men, evidenced by the growth in women among the officer corps and the increased exposure of women to combat situations in the recent conflicts in Iraq and Afghanistan (Patten & Parker, 2011). As a direct result of their growing role in the military, the number of female veterans grew by 12% between 2006 and 2008 and is projected to increase again by another 17% by 2033 (Williamson, 2009). This growth in the population of female veterans has been—and will continue to be—accompanied by an increased demand for services and new challenges for the U.S. Department of Veterans Affairs (VA). Indeed, whereas 11% of all women veterans in the United States receive at least some health care through the Veterans Health Administration (VHA) (Goldzweig et al., 2006), 44% of women veterans who were deployed in the recent conflicts in Iraq and Afghanistan have enrolled for VHA care (Hayes & Krauthamer, 2009). Other systems of care that provide health, behavioral health, educational, housing, and other services to female veterans will also face new challenges as the population of women veterans continues to increase. The problem of homelessness among female veterans represents one of the most pressing of these new challenges, and meeting the health care and housing needs of homeless female veterans will continue to be a challenge in coming years for both the VA and other systems of care.

Homelessness is associated with a myriad of negative health (Baggett et al., 2010; Haddad et al., 2005; Hwang, 2001), social (Lee & Schreck, 2005), and economic outcomes (Burt et al., 2001; Wright, Rubin, & Devine, 1998), making women veterans without stable housing an especially vulnerable

group. Female veterans who experience homelessness may also be more likely than male veterans to be homeless as part of a family with children. Female veterans also have different health needs and outcomes than their male counterparts (Haskell et al., 2011; Leslie et al., 2011; Maguen et al., 2010). Indeed, female veterans, particularly those who were deployed, may have encountered risk factors for poor health and mental health outcomes during their military careers that differ from male veterans. These include family separation (especially from children), inadequate social support, and increased risk of sexual harassment and assault, which are all more strongly associated with adverse mental health outcomes for women veterans than for male veterans (Street, Vogt, & Dutra, 2009; Vogt et al., 2005). The health needs of female veterans are also distinct from those of male veterans due to more general gender differences in health needs, such as the need for reproductive health care (Cope et al., 2006).

Moreover, women experiencing homelessness are exposed to more HIV risk behaviors (Weinreb, Goldberg, & Perloff, 1998; Wenzel et al., 2004), report higher rates of physical and sexual violence and substance abuse (Wenzel et al., 2004), and are more likely to use emergency department and inpatient services than their housed female counterparts (Weinreb et al., 1998). These findings indicate that female veterans who become homeless are likely to have housing, health, and additional service needs that are qualitatively different than both their male counterparts and housed female veterans.

The unique challenges that accompany the problem of homelessness among female veterans have increasingly drawn the attention of the media ("Homelessness among female veterans," 2012; Davis, 2012; Gowen, 2012; Rhee, 2011), advocates (National Alliance to End Homelessness, n.d.), and policymakers (U.S. Interagency Council on Homelessness, 2010; VA, 2012b). The VA has placed a priority on meeting the unique needs of homeless veterans' families, many of whom are headed by female veterans, as part of its plan to end homelessness among veterans by 2015. Despite the increased focus on this highly vulnerable group, no attempt has been made to date to collect and synthesize evidence systematically about the problem of homelessness among female veterans or the interventions that might prove effective in addressing their unique needs. Although previous systematic reviews of literature on female veteran health identified several studies that included samples of homeless female veterans (Bean-Mayberry et al., 2011; Goldzweig et al., 2006), a review that included research conducted in more recent years and focused specifically on the issue of homelessness among female veterans was much needed. The objective of this review was to assess and summarize the body of knowledge on homelessness among female veterans, inform policy and programmatic interventions, and highlight important gaps in this literature that may be filled by future research.

METHODS

Search Strategy

Researchers used the terms "woman," "women," or "female" AND "homeless*," AND "military" or "veteran" in a search of the following computerized databases: ERIC, Proquest Dissertations and Theses, PsycINFO, PubMed, Social Services Abstracts, Social Science Citation Index, and Sociological Abstracts. All literature published between 1988 and July 2012, when the search was conducted, was considered for possible inclusion. To supplement this search, researchers sought unpublished and "gray" literature from a number of sources including organizations that have conducted original research on homelessness (e.g., Urban Institute) and the websites of the U.S. Department of Housing and Urban Development (HUD), VA, and the Substance Abuse and Mental Health Service Administration's Homeless Resource Center. Searching gray literature was considered an important strategy for identifying all potentially relevant studies (Littell, Corcoran, & Pillai, 2008), especially in areas with a less developed body of research; a gray literature search was also used as part of the search strategy in two prior systematic reviews involving the health of female veterans (Bean-Mayberry et al., 2011; Goldzweig et al., 2006). The present review differed from these prior reviews both in that its focus was exclusively on the issue of homelessness among female veterans, and it included studies that were conducted after 2008, the last date included in the more recent of the two existing reviews. This latter contribution was significant, as concern about homelessness among female veterans grew substantially between 2008 and the time that the present review was conducted. Researchers also reviewed the references lists of articles identified by the search for relevant studies. A full review protocol form, which provides complete details of the methods used, search strategy, data extraction, and data synthesis, is available from the first author.

Study Selection

Researchers selected articles for inclusion in this review that reported the results of original research on homeless veterans or interventions for homeless veterans and met any of the following criteria: (1) focused exclusively on female veterans; (2) included specific information about female veterans (i.e., reported separate results for women); and/or (3) involved a comparison of male and female veterans. Researchers included the following types of research: experimental, observational (i.e., quasi-experimental and other research involving hypothesis testing through the use of inferential statistics), descriptive (i.e., no hypothesis testing or inferential statistics), and qualitative. They excluded studies conducted outside of the United States or about

veterans who served in the military of a foreign country. This review included only English language studies.

Two reviewers independently conducted initial screenings of the titles and abstracts of all articles identified in the search process and retrieved the full text for articles deemed relevant by either reviewer. Each reviewer used a standardized screening form (available upon request from the first author) to assess whether studies met the criteria for inclusion in the review. A third reviewer resolved disagreements regarding which studies were included in the review.

Data Extraction

The reviewers used a standardized review form (available upon request from the first author) to extract data from all articles that were selected for the review. They collected the following variables: study design, funding source, study population, sample size (female and total), whether the study was female-focused or included females as a sub-group, study aim, outcome measures, and summary of main findings. They categorized each study into one of the following topic areas: epidemiology, health and other services utilization, or interventions. They created these topic categories to mirror the primary conceptual foci of contemporary research on homelessness, based on the opinion of experts in the field of homelessness research and by examining the organization of prior reviews of homelessness research (Lee, Tyler, & Wright, 2010; Sommer, 2000). These reviews focused on the general, largely non-veteran homeless population, but included veteran-specific studies as well. The current researchers defined an epidemiologic study as any study that included estimates of the size of the population of homeless female veterans, the prevalence of homelessness among female veterans, characteristics of homeless female veterans, factors associated with the likelihood of a female veteran to experience homelessness, or other basic epidemiologic information about the problem of homelessness among female veterans. Studies assigned to the health and other services utilization category focused on the use of health or behavioral health treatment—or barriers to such treatment—among homeless female veterans. All studies that described programs providing residential services were classified as intervention studies. These topic areas were mutually exclusive.

Prior systematic reviews of research on the health status of the more general population of female veterans (Bean-Mayberry et al., 2011; Goldzweig et al., 2006) did not assess study quality as part of their analyses, due to the lack of experimental studies identified through the search process as well as the lack of consensus regarding how to assess the quality of descriptive and observational studies. For these same reasons, this review did not include an assessment of study quality.

Data Synthesis

Researchers tabulated frequencies for study design, funding source, whether the study was female-focused or had females as a sub-group, and topic category. They also identified the primary areas of focus within each topic category and performed a narrative synthesis to summarize studies included in the review.

Role of Funding Source

The funder did not play any role in conducting this review or reporting its results.

RESULTS

Results of Literature Search

The search yielded a total of 316 unduplicated records, which researchers screened for inclusion based on their title and abstract. Of these, they excluded 246 because the population or sample was not relevant (i.e., the article was not about homeless veterans or did not include female veterans in the sample); 1 because it did not meet the inclusion criteria for research designs (i.e., reported results of a case study); 14 because they did not report results of original research; and 10 because they reported research that was conducted outside of the United States and did not involve U.S. veterans (Figure 1). Researchers retrieved the full text for the remaining 45 articles; upon review of these articles, they excluded 19 because the population or sample was not relevant (16 articles), the article did not fall into one of the eligible research design categories (1 article), or the article did not report results of original research (2 articles). Ultimately, 26 of the 316 unduplicated articles that they screened met inclusion criteria for the review. Of these, they identified 5 (Hines, 2009; U.S. Government Accountability Office [GAO], 2011; U.S. Department of Housing and Urban Development [HUD] & VA, 2010; HUD & VA, 2011; VA Office of the Inspector General, 2012) from gray literature sources, and the remaining 21 were from peer-reviewed scientific journals.

Description of Studies

Of the 26 included studies, 20 (77%) were observational, and the remainder were either qualitative (12%) or descriptive (12%) (Table 1). Although 11 studies (42%) did not identify a funding source, at least 14 (54%) of the studies were funded in whole or in part by VA, and only 1 study was solely funded by another source (the GAO). The majority of studies (16) included

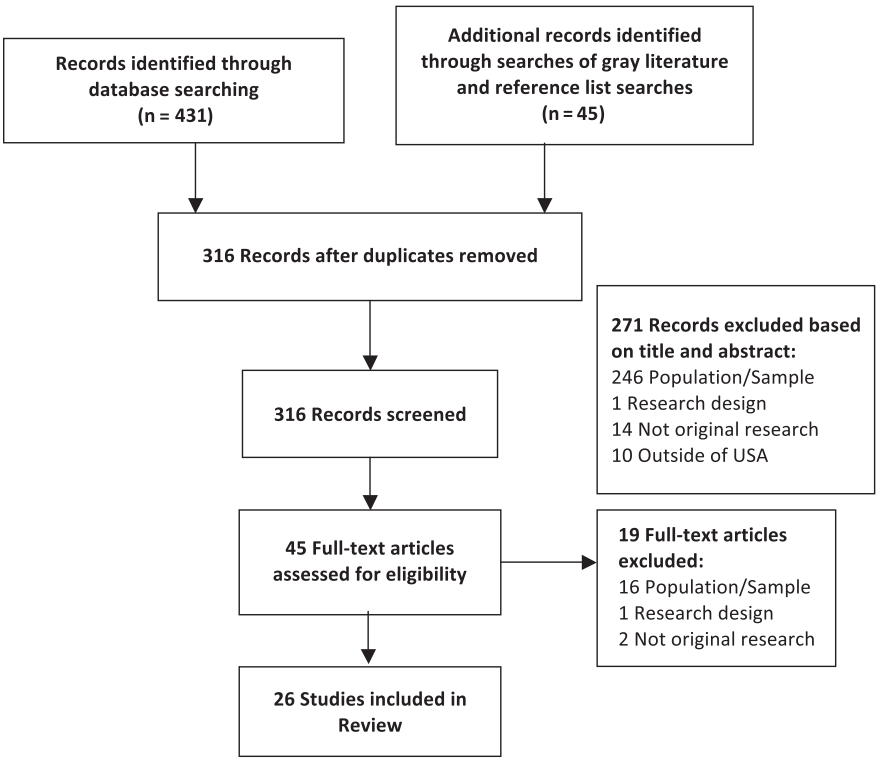

FIGURE 1 Literature Flow.

TABLE 1 Characteristics of Homeless Women Veterans Research Studies Included in the Review ($N = 26$)

Characteristic	*N*	%
Design		
Observational	20	77
Qualitative	3	12
Descriptive	3	12
Funding source		
VA funding source[a]	14	54
GAO	1	4
Not reported	11	42
Focus		
Female-Focused	10	38
Females as sub-group	16	62
Topic		
Epidemiologic	14	54
Health & other services utilization	7	27
Intervention	5	19

[a]Includes studies jointly funded by VA and other source.

females as a sub-group, while 10 studies (38%) focused exclusively on females. Fourteen of the studies were epidemiologic, seven described health and other services utilization, and five were intervention studies. Researchers also identified the primary areas of focus within each topic area, which they used as a framework to synthesize the studies included in the review. These focus areas, which are not mutually exclusive, are described in the following sections. Table 2 presents a summary of each study included in the review.

Epidemiologic Studies

The 14 epidemiologic studies identified for this review focused on the following areas: describing the characteristics of homeless women veterans, assessing the prevalence of females in the homeless veteran population as well as the prevalence of homelessness among the female veteran population, comparing the risk of homelessness among veterans by gender and comparing the risk of homelessness among women by veteran status, identifying risk factors for homelessness among female veterans, and assessing the impact of homelessness on children of female veterans.

Characteristics of homeless women veterans

Several studies provided general characteristics of homeless women veterans; their findings indicated that the majority (two-thirds) of homeless female veterans were between the ages of 40 and 59 years, and roughly one-half were African American (Gamache, Rosenheck, & Tessler, 2003; GAO, 2011). Other studies consistently found that nearly one-half (45%) of the homeless female veterans had dependent children (HUD & VA, 2010, 2011). While homeless female veterans had similar demographic and clinical characteristics to their homeless female non-veteran counterparts (Gamache et al., 2003), the evidence was consistent that when compared to their homeless male veteran counterparts, homeless female veterans were younger, less likely to be employed, and had lower rates of drug or alcohol dependence or abuse but higher rates of mental health problems (Blackstock et al., 2012; Leda, Rosenheck, & Gallup, 1992; Tsai, Rosenheck, & McGuire, 2012).

Prevalence of homeless women veterans

Several studies examined either the prevalence of females in the homeless veteran population, the prevalence of homelessness among the female veteran population, or both. An early study estimated the prevalence of females among homeless veterans who used VA homelessness services between 1988 and 1991, and found that female veterans comprised approximately 2% of the homeless veteran population (Leda et al., 1992). In contrast, females

TABLE 2 Studies Reviewed, with Study Design, Sample Size, Funding Source, Female Focus vs. Females as Sub-Group, Study Category, and Focus Area

Study	Design	Female veterans in sample	Funding source	Female-Focused vs. females as sub-group	Study category	Focus area
Benda (2004a)[a]	Observational	310	Not reported	Females as sub-group	Health and other services utilization	• Substance abuse and psychiatric treatment recidivism
Benda (2004b)[a]	Observational	310	Not reported	Females as sub-group	Health and other services utilization	• Substance abuse and psychiatric treatment recidivism
Benda (2005a)[a]	Observational	310	Not reported	Females as sub-group	Health and other services utilization	• Substance abuse and psychiatric treatment recidivism
Benda (2005b)[a]	Observational	310	Not reported	Females as sub-group	Health and other services utilization	• Suicidality among homeless veterans who use substances
Benda (2006)[a]	Observational	310	Not reported	Females as sub-group	Health and other services utilization	• Substance abuse and psychiatric treatment recidivism
Blackstock et al. (2012)	Observational	53,650	Not reported	Females as sub-group	Epidemiologic	• Characteristics of homeless women veterans • Comparison of risk of homelessness among veterans by gender
Desai et al. (2003)	Observational	755	Not reported	Females as sub-group	Health and other services utilization	• Access to health and other services
Desai et al. (2008)	Observational	450	Not reported	Female-focused	Intervention	• Relapse prevention program outcomes

Study	Design	Female veterans in sample	Funding source	Female-Focused vs. females as sub-group	Study category	Focus area
Fargo et al. (2012)	Observational	59,690	Not reported	Females as sub-group	Epidemiologic	• Prevalence of homeless women veterans • Comparison of risk of homelessness among veterans by gender • Comparison of risk of homelessness among women by veteran status • Risk factors for homelessness among female veterans
Gamache et al. (2003)	Observational	3,490	Not reported	Female-focused	Epidemiologic	• Characteristics of homeless women veterans • Comparison of risk of homelessness among women by veteran status
Hamilton et al. (2011)[b]	Qualitative	30	Not reported	Female-focused	Epidemiologic	• Risk factors for homelessness among female veterans
Hamilton et al. (2012)[b]	Qualitative	30	Not reported	Female-focused	Health and other services utilization	• Access to health and other services
Harpaz-Rotem et al. (2011)	Observational	451	VA	Female-focused	Intervention	• Residential treatment outcomes

(*Continued*)

TABLE 2 Studies Reviewed, with Study Design, Sample Size, Funding Source, Female Focus vs. Females as Sub-Group, Study Category, and Focus Area (*Continued*)

Study	Design	Female veterans in sample	Funding source	Female-Focused vs. females as sub-group	Study category	Focus area
Harpaz-Rotem et al. (2009)	Observational	142	Not reported	Female-focused	Epidemiologic	• Impact of homelessness on children of parenting female veterans
Harpaz-Rotem et al. (2006)	Observational	195	Not reported	Female-focused	Epidemiologic	• Impact of homelessness on children of parenting female veterans
Hines (2009)	Qualitative	6	Not reported	Female-focused	Epidemiologic	• Risk factors for homelessness among female veterans
Justus et al. (2006)	Observational	22	Not reported	Female as sub-group	Intervention	• Residential treatment outcomes
Kasprow et al. (2000)	Observational	851	VA	Female as sub-group	Intervention	• Housing program outcomes
Leda et al. (1992)	Observational	310	VA	Female as sub-group	Epidemiologic	• Prevalence of homeless women veterans
Murphy et al. (2005)	Observational	128	Not reported	Female as sub-group	Epidemiologic	• Impact of homelessness on children of parenting female veterans
Tsai et al. (2012)	Observational	59	Not reported	Female as sub-group	Intervention	• Housing program outcomes

Study	Design	Female veterans in sample	Funding source	Female-Focused vs. females as sub-group	Study category	Focus area
HUD & VA (2010)	Descriptive	10,214	VA & other source (HUD)	Female as sub-group	Epidemiologic	• Characteristics of homeless women veterans • Prevalence of homeless women veterans • Comparison of risk of homelessness among veterans by gender • Comparison of risk of homelessness among women by veteran status
HUD & VA (2011)	Descriptive	11,577	VA & other source (HUD)	Female as sub-group	Epidemiologic	• Characteristics of homeless women veterans • Prevalence of homeless women veterans • Comparison of risk of homelessness among veterans by gender • Comparison of risk of homelessness among women by veteran status

(*Continued*)

TABLE 2 Studies Reviewed, with Study Design, Sample Size, Funding Source, Female Focus vs. Females as Sub-Group, Study Category, and Focus Area (*Continued*)

Study	Design	Female veterans in sample	Funding source	Female-Focused vs. females as sub-group	Study category	Focus area
VA Office of the Inspector General (2012)	Observational	47,119	VA	Female as sub-group	Epidemiologic	• Risk factors for homelessness among female veterans
GAO (2011)	Descriptive	3,328	Other (GAO)	Female-focused	Epidemiologic	• Characteristics of homeless women veterans • Prevalence of homeless women veterans
Washington et al. (2010)	Observational	198	VA & other source (HHS)	Female-focused	Epidemiologic	• Risk factors for homelessness among female veterans

[a]Benda (2004a, 2004b, 2005a, 2005b, 2006) use the same sample and dataset for analysis.
[b]Hamilton et al. (2011, 2012) use the same sample and dataset for analysis.

accounted for 4% of the overall veteran population in 1990 (VA Office of Policy and Planning, 2007), suggesting that female veterans were underrepresented in the homeless population in the late 1980s and early 1990s. More recent studies provided evidence of a growth in homelessness among female veterans, both in absolute terms and as a share of the overall homeless veteran population. A recent report by the GAO (2011) estimated that the number of women veterans identified as homeless by the VA more than doubled between 2006 and 2010 (from 1,380 to 3,328), while the 2009 and 2010 veteran supplements to the *Annual Homeless Assessment Report to Congress* (*AHAR*) indicated that female veterans accounted for 7.5% of all homeless veterans nationwide in 2009 and 8.0% in 2010 (HUD & VA, 2010, 2011). By comparison, according to data from the U.S. Census Bureau's American Community Survey, females accounted for 6.8% and 7.2% of the overall veteran population in 2009 and 2010, respectively. This suggests that female veterans were slightly overrepresented in the homeless population in these years, a shift from the observations in the study conducted roughly 20 years earlier by Leda and colleagues. One additional study, which used data from the public shelter system in seven municipalities, found that women comprised 10% of all veterans who stayed in an emergency shelter at some point during 2008 (Fargo et al., 2012), but women comprised only 7% of the overall veteran population in those seven jurisdictions. Studies that examined the prevalence of homelessness among female veterans found that between 1% and 2% of all female veterans and 13% to 15% of female veterans in poverty experienced homelessness at some point over the course of a year (HUD & VA, 2010; Fargo et al., 2012).

Comparison of risk of homelessness among veterans by gender

In addition to addressing basic prevalence questions, several studies also compared risk of homelessness among veterans by gender. Two studies found that female veterans experienced a greater risk of homelessness compared to male veterans (HUD & VA, 2010, 2011). In both studies, as noted above, female veterans were slightly overrepresented in the homeless veteran population relative to their share of the overall veteran population. In addition, whereas both male and female veterans were overrepresented in the overall adult male and adult female homeless populations, female veterans were overrepresented to a greater degree than their male veteran counterparts. Finally, study of veterans involved in the conflicts in Iraq and Afghanistan did not find a difference in the risk of homelessness by gender for the overall sample, but identified several subgroups of female veterans who were more likely than male veterans to use VA homeless programs: female veterans in the 26–35 year age bracket, those with 100% disability rating or a diagnosis of posttraumatic stress disorder (PTSD), and those living in the Northeast (Blackstock et al., 2012).

Comparison of risk of homelessness among women by veteran status

Findings from studies included in the review also indicated that female veterans were at greater risk of homelessness compared to their female non-veteran counterparts (HUD & VA, 2010, 2011). One study found that veteran women were two to four times more likely to be homeless than non-veteran women (Gamache et al., 2003). Additional studies yielded similar results: When comparing the rates of homelessness among female veterans and female veterans in poverty to the rates of homelessness in the comparable non-veteran female populations, female veterans were 2.1–2.5 times as likely as women in the general population and 3.0–3.4 times as likely as non-veteran women living in poverty to be homeless (Fargo et al., 2012; HUD & VA, 2010, 2011).

Risk factors for homelessness among female veterans

Five studies examined risk factors for homelessness among female veterans (Fargo et al., 2012; Hamilton, Poza, & Washington, 2011; Hines, 2009; VA Office of the Inspector General, 2012; Washington et al., 2010). Washington and colleagues (2010) compared homeless female veterans with a matched group of housed female veterans and found that unemployment, disability, PTSD, sexual assault or harassment during military service, anxiety disorder, and being in fair or poor health were all associated with an increased likelihood of homelessness among female veterans. Another study found that homeless female veterans had rates of treatment for sexual trauma during military service that were approximately three times higher than their housed counterparts and had higher rates of traumatic brain injury (TBI) and mental disorders before separation from the military than female veterans who were not homeless (VA Office of the Inspector General, 2012). An additional study found that homelessness among female veterans decreased with age; risk of homelessness for older women veterans was much lower than for younger women veterans (Fargo et al., 2012).

Finally, two qualitative studies examined pathways to homelessness among female veterans (Hamilton et al., 2011; Hines, 2009). Both studies identified trauma, substance abuse, and mental illness as factors that contributed to homelessness, and one (Hamilton et al., 2011) identified a set of five precipitating factors for the onset of homelessness. These factors included pre-military adversity (e.g., childhood abuse, foster care placement), substance abuse or trauma during military service, post-military relationship problems (e.g., domestic violence, divorce), post-military physical or behavioral health problems, and employment problems following discharge from the military.

Impact of homelessness on children of parenting female veterans

Although several epidemiologic studies indicated that many female veterans experiencing homelessness had children, few studies assessed the

relationship between parenting and homelessness as well as the potential impact of a female veteran's homelessness on her children. Two studies (Harpaz-Rotem, Rosenheck, & Desai, 2006, 2009) assessed the relationships of PTSD, substance abuse, psychiatric symptoms, physical health, and homeless status of parenting female veterans with their children's emotional distress and school enrollment and attendance. Mothers' PTSD symptoms, alcohol use (Harpaz-Rotem et al., 2006), poor mental health status, and incarceration history (Harpaz-Rotem et al., 2009) were positively associated with the child's level of emotional distress; a negative association between emotional distress and income was also observed (Harpaz-Rotem et al., 2006). Although an increase in the number of days homeless was not associated with increases in the child's level of emotional distress, it was negatively associated with the child's school enrollment and attendance (Harpaz-Rotem et al., 2006, 2009).

A third study (Murphy, Kasprow, & Rosenheck, 2005) found that among homeless veterans participating in a community-based residential treatment program, almost 38% had children under the age of 18 years. Although children were only rarely involved in their parents' treatment (10.6% of cases), females were 2.6 times as likely as their male counterparts to have children involved in their treatment (Murphy et al., 2005).

Health and Services Utilization Studies

Researchers identified seven studies that examined health and other services utilization among homeless women veterans. The focus areas of these studies were access to health and other services, substance use and psychiatric treatment recidivism, and suicidality among homeless veterans who used substances.

Access to health and other services

Two studies provided information about access to health care and other services among homeless female veterans. One study found that more than one-half (56%) of female veterans who used VA homeless services made regular use of VA ambulatory care in the six-month period following their initial identification as homeless (Desai, Rosenheck, & Kasprow, 2003). Moreover, homeless female veterans were about 1.5 times as likely as homeless male veterans to use VA ambulatory care regularly, suggesting that homeless female veterans experienced fewer barriers to care than their male counterparts. However, a second study found that at least some homeless women veterans faced barriers to using social and psychosocial services, including lack of awareness about services (e.g., uncertainty about eligibility requirements, location of services, and type of services available), limited access to services (e.g., lack of gender appropriate care, geographic barriers, restrictive

housing program entry criteria), and lack of coordination across services between VA and non-VA providers (Hamilton et al., 2012).

Substance abuse and psychiatric treatment recidivism

A series of articles based on a study of homeless veterans who participated in an inpatient program for co-occurring substance use disorder and mental illness found that recidivism to treatment within two years was quite high in general but similar for men and women (70% and 66%, respectively; Benda, 2004a). In gender-stratified models predicting recidivism, several factors related to readmission to treatment made the case for developing gender-specific interventions: Women's readmission was related to abuse (both childhood and recent) as well as traumatic life events, while men indicated that physical problems impeded their recovery (Benda, 2004b, 2005b). In addition, increased social support was associated with a decreased likelihood of readmission among women, while men with increased job satisfaction were less likely to return to treatment (Benda, 2006).

Suicidality among homeless veterans who use substances

An additional article (Benda, 2005a) related to the studies of substance abuse and psychiatric treatment recidivism explored gender differences in suicidality among homeless veterans who participated in inpatient treatment. Women were more likely than men to have contemplated and attempted suicide in the five years prior to entering inpatient treatment. Among homeless women veterans, self-esteem and social support were two of the factors most strongly related to contemplating or attempting suicide and were inversely related to risk; depression had the strongest positive association with suicide contemplation or attempts, while childhood and current sexual or physical abuse were also positively related to suicidality (Benda, 2005a).

Intervention Studies

Five studies evaluated interventions for homeless veterans and related outcomes, although none of these studies was a randomized controlled trial. Two assessed residential treatment for psychiatric or addiction problems, two evaluated housing programs, and a final study described and tested an intervention aimed at relapse prevention. Only two of these studies examined effectiveness of an intervention using samples comprised solely of female veterans (Desai et al., 2008; Harpaz-Rotem, Rosenheck, & Desai, 2011), while the other three involved only a comparison of the outcomes of male and female veterans in housing and treatment programs (Justus, Burling, & Weingardt, 2006; Kasprow et al., 2000; Tsai et al., 2012).

Residential treatment outcomes

Two studies assessed outcomes of VA residential psychiatric and substance abuse treatment programs (Harpaz-Rotem et al., 2011; Justus et al., 2006). The first, which compared one-year clinical outcomes between homeless female veterans with psychiatric or addiction problems who received residential treatment services and those who did not, found that those who participated in residential treatment worked more days, were homeless for fewer days, and had higher levels of social support over time. The residential treatment group also had better psychiatric outcomes but more use of drugs or alcohol (Harpaz-Rotem et al., 2011). The second study found that homeless female veterans had longer lengths of stay and higher graduation rates from VA inpatient programs than their male counterparts (Justus et al., 2006).

Housing program outcomes

Two studies (Kasprow et al., 2000; Tsai et al., 2012) examined housing-related interventions for homeless veterans: the HUD-VA Supportive Housing (HUD-VASH) program and transitional supportive housing. After controlling for background characteristics and service use history, female veterans were more likely to be referred to HUD-VASH, but men and women did not differ significantly in their likelihood of receiving a HUD-VASH voucher or attaining housing. However, among those who attained an apartment, women were 2.5 times as likely as men to be stably housed after one year (Kasprow et al., 2000).

The study of VA-funded transitional housing programs found that at program entry, females were younger, had more mental health problems and shorter homeless histories, and were less likely to report substance abuse problems or to be working than their male counterparts. No differences in their one-year outcomes (housing, employment, substance abuse, physical and mental health) were observed, suggesting that homeless female veterans were characteristically different from their male counterparts but experienced similar outcomes from transitional housing (Tsai et al., 2012).

Relapse prevention program outcomes

One study (Desai et al., 2008) compared outcomes for women veterans participating in Seeking Safety, a cognitive-behavioral therapy intervention comprised of 25 modules that addressed safe behaviors and relationships, life skills, and relapse prevention, against a non-equivalent comparison group who did not receive the intervention. Women in both the treatment and comparison group had improved employment, homelessness, self-esteem, social support, PTSD, addiction severity, and substance use outcomes over time, although the improvements were larger for those in the treatment group.

DISCUSSION

This systematic review of literature regarding homelessness among women veterans identified a relatively small number of studies, despite broad inclusion criteria. While prior systematic reviews focused on more general issues of female veteran health (Bean-Mayberry et al., 2011; Goldzweig et al., 2006), those reviews were only inclusive of studies published up until 2008. In addition, recent attention to issues of homelessness among women veterans from media outlets ("Homelessness among female veterans," 2012; Davis, 2012; Gowen, 2012; Rhee, 2011) and recent efforts to expand homelessness prevention and rapid rehousing programs provided in partnership between the VA and mainstream homeless services systems (VA, 2012a) indicate growing interest in this problem and underscore the importance of assessing the state of knowledge on the topic. Findings from the present review demonstrated that the research to date on homelessness among women veterans has been heavily dominated by observational and descriptive studies and has focused largely on investigating epidemiologic questions.

The results of these epidemiologic studies are important insofar as they provided a baseline understanding of the problem of homelessness among female veterans. Four key findings emerged from the epidemiologic studies. First, the number of homeless female veterans has grown both in raw numbers and in terms of their share of the population of veterans experiencing homelessness. To some extent, this is a product of the growth of the more general population of female veterans in recent years. However, whereas findings from an early study (Leda et al., 1992) suggested that female veterans were underrepresented in the homeless veteran population relative to their share of the overall veteran population in the late 1980s and early 1990s, more recent studies have indicated that female veterans now comprise a larger share of the homeless veteran population than of the overall veteran population. The growth in the female veteran homeless population may be attributable to factors related to the increased deployment of women in the recent conflicts in Iraq and Afghanistan. Such deployments may strain family and social support networks, increasing the vulnerability of women upon their return (Street et al., 2009; Vogt et al., 2005), although understanding the extent to which this holds true remains an important area for future research.

Second, homeless female veterans were characteristically different from their male counterparts, both with respect to demographic and clinical factors. Specifically, homeless female veterans were younger than their male counterparts, had higher levels of unemployment, and had lower rates of drug or alcohol dependence or abuse but higher rates of mental health problems.

Third, female veterans were at an increased risk of homelessness relative to the non-veteran female population. There is also some evidence that females are at a greater risk of homelessness than their male veteran

counterparts, but recent research on a cohort of veterans who served in Iraq and Afghanistan found a differential risk of homelessness by sex only for certain sub-groups of veterans. However, existing studies did not adequately investigate the factors that might explain these differential risks. Fourth, existing studies identified certain factors that may increase the risk of homelessness among women veterans; these included unemployment, disability, PTSD, sexual assault or harassment during military service, anxiety disorder, poor health status, and older age.

In contrast to the relatively well-developed epidemiologic information, researchers found few studies that identified effective interventions to prevent or end homelessness among women veterans, and none were experimental. The lack of experimental studies is not surprising when viewed in the broader context of homelessness research, in which few studies have been experimental due to the challenges in tracking homeless individuals over time and the fact that many interventions occur in naturalistic settings that may make recruitment and randomization difficult. Nonetheless, only two studies examined housing interventions, and only one of these was a permanent housing program. Very limited information was available about the type of housing-based solutions that were effective for ending homelessness among female veterans, which represents the most glaring gap in the extant body of research.

An additional limitation of existing research was that only two studies reviewed for this study focused on access to health and other services among homeless women veterans. As a result, the understanding of the facilitators and barriers to access of needed health care and social services among homeless women veterans remains incomplete. This is problematic, as linking homeless female veterans with services for which they are eligible—particularly VA health care, disability compensation payments, and vocational programs—may be crucial to facilitate their exits from homelessness.

The studies included in this review had key methodological strengths and limitations that bear mentioning. Two recent epidemiologic studies that examined prevalence and characteristics of homeless women veterans (HUD & VA, 2010, 2011) relied on large, nationally representative samples of persons experiencing homelessness. This is an important strength as it indicates that key questions about the scope and nature of homelessness among women veterans were addressed using the appropriate methodological rigor and are likely to have good generalizability. Similarly, two recent studies (Blackstock et al., 2012; VA Office of the Inspector General, 2012) used longitudinal data to examine risk factors for homelessness among women veterans, thereby addressing some of the limitations around temporal ordering of risk factors that were observed in an earlier study (Washington et al., 2010) that used cross-sectional data. Despite these strengths, one crucial limitation of studies included in this review was that the majority of used samples were biased as they recruited solely from recipients of VA health care or

participants in VA homeless programs. Thus, the findings of the reviewed studies cannot be presumed to be representative of homeless female veterans who use non-VA homeless programs, and it remains unclear whether these veterans are different, why they use non-VA programs, and how the VA might better engage these veterans. The use of biased samples is especially problematic as many female veterans may experience homelessness as part of a family with children. Given that VA homeless programs have historically served a single adult male population, women veterans who experience homelessness as part of a family may find assistance more readily available through mainstream, non-VA homeless assistance systems. Thus, future studies should place a high priority on using samples that include homeless women veterans who are not engaged with VA homeless services. Finally, some of the studies reviewed had small sample sizes so that some of the characteristics that were examined for their relation to homelessness may not have demonstrated statistically significant differences between female veterans and non-veterans or between female housed veterans and female homeless veterans.

This review has a number of implications for policy and research. First, examining the effectiveness of housing interventions for homeless female veterans, and especially those with children, should be a top priority for future research. Studies in this area should involve the use of experimental designs to address the lack of methodologic rigor in existing studies on interventions for homeless female veterans. In addition, such research should assess the extent to which tailoring certain components of housing interventions to meet the unique needs of female veterans might promote more positive housing and health outcomes for this population. For example, incorporating supports for parenting female veterans and their children might address issues that can interfere with maintaining stable housing. Second, future research should focus on investigating risk factors for homelessness among female veterans. In particular, the role that deployment and combat-related factors play in contributing to an elevated risk of homelessness among female veterans and how these dynamics may differ from their male counterparts should be more thoroughly investigated. This is especially true given the substantial number of women who were deployed to the conflicts in Iraq and Afghanistan. Finally, additional research is needed to examine issues related to the access to and use of health and other services by homeless female veterans. Such research might inform interventions to overcome barriers to accessing services that support a veteran's ability to maintain or regain housing stability. Further, factors linked to an increased risk of homelessness among female veterans might improve targeting for such interventions.

The primary limitation of this review was the researchers' potential failure to identify additional relevant studies. As they used broad search criteria, they are fairly confident that the review did not miss a significant

number of studies. Nonetheless, as homelessness among female veterans is generating increasing interest among researchers who are interested in understanding the problem better and developing solutions to it, this review should be updated in the coming years as the body of evidence in this area expands.

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