

## Comparison of Outcomes of Homeless Female and Male Veterans in Transitional Housing

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**Abstract** Homelessness among female veterans is of national concern, but there have been few studies of how they differ from male veterans or whether they have different outcomes. This study compared 59 female and 1,181 male participants in a multi-site study of three VA-funded transitional housing programs over a 1-year period following completion of an episode of treatment. At baseline, female participants were younger, reported more psychiatric symptoms, had shorter histories of homelessness, were less likely to have substance use disorders, and were less likely to be working than males. After controlling for these baseline differences, there were no overall gender differences in outcomes measures of housing, employment, substance use, physical and mental health, or quality of life. These results suggest homeless female veterans have different characteristics than male veterans, but benefit equally from transitional housing.

**Keywords** Women veterans · Transitional housing · Homelessness · Mental health

### Introduction

There are currently more than 1.8 million women veterans in the United States, representing almost 8% of the total veteran population, and the number is expected to grow rapidly over the next two decades (Williamson 2009). The health and healthcare of female veterans have become an important priority for the Department of Veterans Affairs (VA) as female veterans represent one of the fastest growing groups of new VA healthcare users (US Department of Veterans Affairs 2007). Studies have shown female veterans are less healthy than their nonveteran female counterparts and are in poorer mental health compared to male veterans (Skinner and Furey 1998; Skinner et al. 1999), which has been attributed to barriers for women in accessing VA health services (Hoff and Rosenheck 1998; Vogt et al. 2006) and allegations that the VA is male-dominated and not attentive enough to the needs of women (MacGregor et al. 2011; Weiss 1995). This issue has not been examined among homeless female veterans and there is inadequate understanding of gender differences in the homeless veteran population.

Homelessness among female veterans is a central issue as the VA strives to end homelessness among all veterans (United States Department of Veterans Affairs 2009; United States Interagency Council on Homelessness 2010). Although women constitute only a small proportion- about 8% of the sheltered homeless veteran population- that number is expected to increase and women veterans have been found to be at higher risk of being homeless than their

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male counterparts and much higher risk than non-veteran women (United States Department of Housing and Urban Development & United States Department of Veterans Affairs 2009).

The literature on homeless female veterans is small, with only two previous studies identified in a comprehensive review of the research on female veterans (Goldzweig et al. 2006). One study concluded that the risk of homelessness is two to four times greater for women veterans than for nonveterans (Gamache et al. 2003), and the other study found that compared to homeless male veterans, homeless female veterans are younger, less likely to be employed, more likely to have a major mental illness, but less likely to have a substance use disorder (Leda et al. 1992). A recent, small case-control study also found that sexual assault during military service, being unemployed, being disabled, and having worse physical and mental health were risk factors for homelessness among female veterans (Washington et al. 2010). These findings are consistent with studies comparing homeless men and women in the general population, which have also reported that homeless women had more difficult childhoods, shorter homeless histories, fewer incarcerations, are more likely to be caring for dependent children, and are more often dependent on public support than homeless men (Calsyn and Morse 1990; Crystal 1984; North and Smith 1993).

In the current study, we used data from a multi-site outcome study of homeless veterans enrolled in VA-funded transitional housing services (McGuire et al. 2011) to extend previous findings through cross-sectional comparisons of homeless male and female veterans at the time of entry into transitional housing and examining outcomes 12 months after discharge. Building on previous findings, we expected to find similar patterns of differences between homeless female and male veterans (e.g., females are younger, less likely to have a substance use disorder), and further hypothesized that, due to suggestions that there may be increased barriers for female veterans in accessing VA health services, females veterans would have worse outcomes than their male counterparts after transitional housing.

## Methods

### Program Description

Three major forms of VA-funded transitional housing service for homeless veterans were included in this study: the Health care for homeless veterans (HCHV) program, the grant and per diem (GPD) program, and the domiciliary care for homeless veteran program (DCHV). The HCHV

and GPD programs provide assistance to veterans through contracts with or grants to community service providers while the DCHV program provides services directly through VA staff in domiciliaries located on VA grounds. Data were collected for a prospective, naturalistic study to compare these three transitional housing services (McGuire et al. 2011) across five VA administrative regions encompassing Cleveland/Cincinnati, Ohio; Los Angeles, California; Philadelphia, Pennsylvania; Tampa/Miami, Florida; Baltimore/Martinsburg/Washington, District of Columbia. All three types of transitional housing services were available to veterans at each of the five sites. The current study focused on 59 female participants and 1,181 male participants (62 participants were missing data on gender and were excluded) at 16 HCHV, 18 GPD, and 6 DCHV programs. The majority of female participants were Black (53.45%) or White (41.38%) and had a mean age of 43.89 (SD = 7.79) years, while the majority of male participants were Black (59.54%) or White (35.88%), and had a mean age of 48.13 (SD = 7.16) years.

### Procedures

Data collection was conducted from May 2002 through September 2005. At each site, independent study evaluators recruited, consented, and conducted baseline and follow-up interviews with veterans in the transitional housing programs. Intake interviews were conducted before veterans entered transitional housing, baseline interviews were conducted after admission, and follow-up interviews were conducted 6 and 12 months after program discharge. All veterans admitted to one of the three transitional housing services were eligible for participation in the study. There was a very high participation rate (99.16%) with only 11 veterans declining to participate. Each participant gave informed consent and was paid \$10 for the baseline interview and \$25 for each of the follow-up interviews. All procedures were approved by the institutional review boards at each of the sites.

### Measures

At intake, a structured form was used in interviews with participants to document sociodemographic characteristics, combat exposure, housing and work history, psychiatric diagnoses, a brief hospitalization history, and an assessment of mental and physical health status. At baseline, participants were asked to complete a measure of the social climate of their residential care service (Moos and Otto 1972). At both baseline and follow-up interviews, a series of measures were administered to participants to assess their housing, income and employment substance abuse, general physical and mental health, and quality of life.

### *Housing*

Participants were asked how many days in the last 30 days they had slept in nine different types of places. These places were classified as days housed (i.e., own apartment, room, or house; somebody else's apartment, room, or house), days in institution (i.e., hospital or nursing home, domiciliary, halfway house programs, hotels, boarding homes, hotels, prisons, jails) and days homeless (i.e., shelters, outdoors, abandoned buildings, automobiles, boats).

### *Income and Employment*

Participants were asked about their current employment pattern and classified as either employed (i.e., full time, part time, vocational training) or not employed (i.e., retired/disability, unemployed). Participants were asked the number of days they worked for pay and their employment income in the past 30 days. Participants were also asked how much money they received from disability compensation and public assistance (VA service-connection, VA non-service connected pension non-VA disability, other public support).

### *Substance Abuse Status*

Alcohol and drug use in the past month was assessed with the Addiction Severity Index (ASI; McLellan et al. 1980), which consists of 6 items on an alcohol composite scale and 13 items on a drug composite scale. The number of days participants used alcohol and drugs were documented. Responses were calculated for a standard index score ranging from 0 to 1 for each subscale with higher scores reflecting more serious substance use. The ASI has demonstrated acceptable reliability and validity in homeless samples (Zanis et al. 1994).

### *General Physical and Mental Health Status*

Medical conditions were assessed with 12 questions that asked participants yes/no whether they had any of 12 common serious medical problems (e.g., hypertension, cardiovascular problems, liver disease, orthopedic problems). Responses were summed for a total score indicating the number of serious medical problems (Melfi et al. 1995).

The Addiction Severity Index (ASI; McLellan et al. 1980) also includes an 8-item psychiatric composite scale which was used to assess general mental health status. Responses were calculated for a standard index score ranging from 0 to 1 for each subscale with higher scores reflecting more serious psychiatric problems.

General physical and mental health were assessed with the Medical Outcomes Short-Form 12 (SF-12; Ware et al. 1996). The SF-12 consists of 12 items that generate a standardized

mental component summary (MCS) score and a physical component summary (PCS) score. Scores range from 0 to 100, with an average score of 50 (sd = 10) in the general population and higher scores indicating better health. The SF-12 has been validated as an outcome measure in homeless populations (Larson, 2002) and shown to be reliable among people with severe mental illness (Salyers et al. 2000).

### *Quality of Life*

General quality of life and quality of social life were assessed with the Lehman Quality of Life Interview, which has been found to be a valid and reliable measure for people with severe mental illness (Lehman 1988). Participants were asked to rate each domain on a 7-point scale from 1 (Terrible) to 7 (Delighted).

### *Residential Social Climate*

At baseline, participants were asked to rate their perceptions of the treatment environment of their residential care program using the Community-Oriented Programs Environment Scale (COPEs; Moos and Otto 1972). The COPEs is a well-validated, reliable 100-item instrument (Moos 1972) that consists of ten subscales: Involvement, Support, Spontaneity, Autonomy, Practical Orientation, Personal Problem Orientation, Anger and Aggression, Order and Organization, Program Clarity, and Staff Control.

### *Data Analysis*

The significance of differences at intake between male and female participants on program type, sociodemographics, mental health diagnoses, housing, employment and income, substance abuse and mental health status were evaluated with t-tests and Chi-square tests. Levene's test for equality of variances was used and appropriate corrections were made when assumptions of t-tests were violated. Differences between male and female participants in their ratings of the residential social climate after program entry were also examined with t-tests. Repeated measures analyses of covariance were conducted to compare male and female participants on housing, employment and income, substance abuse and mental health outcomes over a 1-year period. Adjustment for significant intake differences was made by entering them as covariates and an autoregressive covariance structured was specified.

### **Results**

At intake, female participants were significantly younger,  $t(1,238) = 4.41$ ,  $p < 0.001$ ; had higher ASI-Psychiatric

scores,  $t(1,000) = -2.84$ ,  $p < 0.01$ ; fewer days homeless in past month,  $t(1,001) = 3.61$ ,  $p < 0.01$ ; more days housed in past month,  $t(1,001) = -3.10$ ,  $p < 0.01$ ; fewer days of alcohol use in the past month,  $t(46.84) = 2.73$ ,  $p < 0.01$ ; and fewer days of paid work,  $t(70.03) = 2.49$ ,  $p < 0.05$ . Female participants were also less likely to be exposed to combat,  $\chi^2(1) = 6.98$ ,  $p < 0.01$ ; less likely to have an alcohol abuse/dependency disorder,  $\chi^2(1) = 4.67$ ,  $p < 0.05$ ; but more likely to have a mood disorder,  $\chi^2(1) = 6.09$ ,  $p < 0.05$ ; and more likely to have been hospitalized previously for a psychiatric problem,  $\chi^2(1) = 14.44$ ,  $p < 0.00$ , than male participants. There were no significant differences on program type or other variables measured.

After program entry, there were significant gender differences on two of the ten scales of the COPEs. Female participants tended to rate their transitional housing service lower on Autonomy,  $t(1,232) = 2.59$ ,  $p < 0.05$ , and lower on Order and Organization,  $t(61.73) = 2.33$ ,  $p < 0.05$ . But these were no longer significant after using a Bonferroni correction to adjust for multiple comparisons (significance level set at  $p < 0.005$ ).

At 12 months, the sample, as a whole, showed significant improvements with more days housed,  $F(2,1198) = 29.29$ ,  $p < 0.001$ , fewer days in institutions,  $F(2,1202) = 40.25$ ,  $p < 0.001$ , more days worked,  $F(2,1120) = 5.82$ ,  $p < 0.01$ , and greater employment income,  $F(2,1946) = 8.96$ ,  $p < 0.001$ .

Controlling for gender differences at intake, there were no differences in outcomes between female and male participants on housing (days housed, days in institution, days homeless), employment (days worked for pay, employment income, disability/public assistance income), substance use (days of alcohol use, ASI-Alcohol score, days of drug use, ASI-Drug score), general physical and mental health (ASI-Psychiatric score, SF-12 Mental Component Summary score, SF-12 Physical Mental Component Summary score), or quality of life (Lehman General Quality of Life, Quality of Social Life) 1 year after program discharge.

There was a significant gender\*time interaction effect on employment income,  $F(2,1946) = 3.09$ ,  $p < 0.05$ , and ASI-Psychiatric scores,  $F(2,1184) = 3.44$ ,  $p < 0.05$ , showing improvement on both outcomes from both genders until 6 months, when female participants showed some decrease in employment income and increase in ASI-Psychiatric scores, whereas male participants continued to show improvement.

## Discussion

This study examined gender differences among a sample of homeless veterans before enrollment in a VA-funded

transitional housing service and 12 months after discharge. Before entry into transitional housing, female participants were found to be younger, reported more psychiatric symptoms, were more likely to be diagnosed with mood disorders, had shorter histories of homelessness, were less likely to abuse substances, and were less likely to be working than male participants. This is fully consistent with a previous study comparing homeless male and female veterans (Leda et al. 1992) and with studies on the general homeless population (Calsyn and Morse 1990; Crystal 1984; North and Smith 1993). In fact, the gender differences in mental disorders mirror those found in epidemiological studies of adults in the general population that have found females are more likely to have mood disorders, less likely to have substance use disorders, and more likely to report psychological distress (American Psychiatric Association 2000; Kessler et al. 1999, 2005; Klose and Jacobi 2004). It is not clear whether these gender differences can explain the increased risk of homelessness found among female veterans compared to male veterans (Gamache et al. 2003), but they suggest substance abuse, one of the most commonly identified risk factors for homelessness (Edens et al. 2011; Folsom et al. 2005; Johnson et al. 1997), may be less prevalent among homeless female veterans.

Contrary to our hypothesis, female participants showed similar improvements in housing, employment and income, substance use, general physical and mental health, and quality of life compared to male participants over a 1-year period. This suggests homeless female veterans can benefit as much from transitional housing services as male veterans, which is in contrast to reports that VA health services are not attentive to women veterans health and there are barriers for females in the VA system (Hoff and Rosenheck 1998; MacGregor et al. 2011; Vogt et al. 2006), but is consistent with several studies that have found no gender differences (Hoff and Rosenheck 1997; Wright et al. 2006). There was a notable gender by time interaction effect though. In contrast to men, female participants showed some decline in employment income and psychiatric status after 6 months. But given the number of statistical tests conducted, this result may be an artifact of multiple comparisons and we can only conclude that this is an area for further examination. Future studies are needed to determine whether female veterans in transitional housing face greater barriers in sustaining employment and psychiatric stability.

Transitional housing programs and shelters have been predominantly male environments focused on serving homeless men (Driscoll 2006), especially in the VA context. Yet, this study found that, after adjusting for multiple comparisons, there were no differences in how homeless male and female veterans perceived the social climate of their transitional housing program or in their overall clinical benefits. This is consistent with previous findings that



female veterans use VA mental health treatment at the same rate as men (Hoff and Rosenheck 1997) and are generally comfortable seeking VA treatment (Fontana and Rosenheck 2006). These findings suggest that VA efforts to improve services for women may be successful, but need to continue. As evidenced by the small proportion of females in this study, many of the community providers the VA contracts with to provide transitional housing are used to primarily serving male veterans and may not have the same focus on providing services for women. For example, some do not admit females, do not offer resources for mothers with children, and are not sensitive to privacy needs. The VA may need to be mindful of these issues when contracting with community providers.

One limitation of this study was the small sample size of homeless female veterans, so our findings should be interpreted with caution. A further limitation is that we were not able to differentiate between female veterans who were caring for dependent children and those who were not. Several researchers have pointed out that the population of homeless women is heterogeneous and that homeless single women without children have different characteristics than homeless women with children (Burt and Cohen 1989; North and Smith 1993; Roll et al. 1999). It is likely most female participants in this study were not caring for children as most transitional housing programs do not provide services for mothers with children, although the VA is making efforts to provide supported housing for families (“Consolidated Appropriations Act,” 2008). Future research should examine how to best provide transitional housing for different groups of homeless female adults.

## References

- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev. ed.). Washington, DC: Author.
- Burt, M. R., & Cohen, B. E. (1989). Differences among homeless single women, women with children, and single men. *Social Problems*, 36(5), 508–524.
- Calsyn, R. J., & Morse, G. (1990). Homeless men and women: Commonalities and a service gender gap. *American Journal of Community Psychology*, 18(4), 597–608.
- Consolidated Appropriations Act. (2008). Pub. L. No. Public Law 110–161 § Section 8(o)(19).
- Crystal, S. (1984). Homeless men and homeless women: The gender gap. *Urban and Social Change Review*, 17(2), 2–6.
- Driscoll, J. (2006). *Report of the veteran homelessness work groups at the national symposium for the needs of young veterans*. Washington, DC: National Coalition for Homeless Veterans.
- Edens, E. L., Kaspro, W., Tsai, J., & Rosenheck, R. A. (2011). Association of substance use and VA service-connected disability benefits with risk of homelessness among veterans. *American Journal of Addictions*, 20(5), 412–419.
- Folsom, D. P., Hawthorne, W., Lindamer, L. A., Gilmer, T., Bailey, A., Golshan, S., et al. (2005). Prevalence and risk factors for homelessness and utilization of mental health services among 10,340 patients with serious mental illness in a large public mental health system. *American Journal of Psychiatry*, 162, 370–376.
- Fontana, A., & Rosenheck, R. A. (2006). Treatment of female veterans with posttraumatic stress disorder: The role of comfort in a predominantly male environment. *Psychiatric Quarterly*, 77(1), 55–67.
- Gamache, G., Rosenheck, R., & Tessler, R. (2003). Overrepresentation of women veterans among homeless women. *American Journal of Public Health*, 93(7), 1132–1136.
- Goldzweig, C. L., Balekian, T. M., Rolon, C., Yano, E. M., & Shekelle, P. G. (2006). The state of women veterans’ health research: Results of a systematic literature review. *Journal of General Internal Medicine*, 21, S82–S92.
- Hoff, R. A., & Rosenheck, R. A. (1997). Utilization of mental health services by women in a male-dominated environment: The VA experience. *Psychiatric Services*, 48, 1408–1414.
- Hoff, R. A., & Rosenheck, R. A. (1998). Female veterans’ use of Department of Veterans Affairs health care services. *Medical Care Research and Review*, 36, 1114–1119.
- Johnson, T. P., Freels, S. A., Parsons, J. A., & Vangeest, J. B. (1997). Substance abuse and homelessness: Social selection or social adaptation. *Addiction*, 92(4), 437–445.
- Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*, 62, 593–602.
- Kessler, R. C., Borges, G., & Walters, E. E. (1999). Prevalence of and risk factors for lifetime suicide attempts in the National Comorbidity Survey. *Archives of General Psychiatry*, 56(7), 617–626.
- Klose, M., & Jacobi, F. (2004). Can gender differences in the prevalence of mental disorders be explained by sociodemographic factors? *Archives of Womens Mental Health*, 7, 133–148.
- Larson, C. O. (2002). Use of the SF-12 instrument for measuring the health of homeless persons. *Health Services Research*, 37, 733–750.
- Leda, C., Rosenheck, R., & Gallup, P. (1992). Mental illness among homeless female veterans. *Hospital & Community Psychiatry*, 43(10), 1026–1028.
- Lehman, A. F. (1988). A quality of life interview for the chronically mentally ill. *Evaluation and Program Planning*, 11(1), 51–62.
- MacGregor, C., Hamilton, A. B., Oishi, S. B., & Yano, E. M. (2011). Descriptive, development, and philosophies of mental health service delivery for female veterans in the VA: A qualitative study. *Women’s Health Issues*, 21(4), S138–S144.
- McGuire, J. F., Rosenheck, R. A., & Kaspro, W. J. (2011). Patient and program predictors of 12-month outcomes for homeless veterans following discharge from time-limited residential treatment. *Administration and Policy in Mental Health and Mental Health Services Research*, 38, 142–154.
- McLellan, A. T., Luborsky, L., Woody, G. E., & O’Brien, C. P. (1980). An improved diagnostic evaluation instrument for substance abuse patients: The Addiction Severity Index. *Journal of Nervous and Mental Disease*, 168, 26–33.
- Melfi, C., Holleman, E., Arthur, D., & Katz, B. (1995). Selecting a patient characteristics index for the prediction of medical outcomes using administrative claims data. *Journal of Clinical Epidemiology*, 48(7), 917–926.
- Moos, R. (1972). Assessment of the psychosocial environments of community-oriented psychiatric treatment programs. *Journal of Abnormal Psychology*, 79(1), 9–18.
- Moos, R., & Otto, J. (1972). The community-oriented programs environment scale: A methodology for the facilitation and

- evaluation of social change. *Community Mental Health Journal*, 8(1), 28–37.
- North, C. S., & Smith, E. M. (1993). A comparison of homeless men and women: Different populations, different needs. *Community Mental Health Journal*, 29(5), 423–431.
- Roll, C. N., Toro, P. A., & Ortola, G. L. (1999). Characteristics and experiences of homeless adults: A comparison of single men, single women, and women with children. *Journal of Community Psychology*, 27(2), 189–198.
- Salyers, M. P., Bosworth, H. B., Swanson, J. W., Lamb-Pagone, J., & Osher, F. C. (2000). Reliability and validity of the SF-12 Health Survey among people with severe mental illness. *Medical Care*, 38(11), 1141–1150.
- Skinner, K. M., & Furey, J. (1998). The focus on women veterans who use Veterans Administration health care: The Veterans Administration women's health project. *Military Medicine*, 163(11), 761–766.
- Skinner, K. M., Sullivan, L. M., Tripp, T. J., Kressin, N. R., Miller, D. R., Kazis, L., et al. (1999). Comparing the health status of male and female veterans who use VA health care: Results from the VA Women's Health Project. *Women and Health*, 29(4), 17–33.
- United States Department of Housing and Urban Development, & United States Department of Veterans Affairs. (2009). *Veteran homelessness: A supplemental report to the 2009 annual homeless assessment report to Congress*. Washington, DC: US Department of Housing and Urban Development, Office of Community Planning and Development; US Department of Veterans Affairs, National Center on Homelessness Among Veterans.
- United States Department of Veterans Affairs. (2009). *Secretary Shinseki details plans to end homelessness for veterans*. Retrieved from <http://www1.va.gov/opa/pressrel/pressrelease.cfm?id=1807>.
- United States Interagency Council on Homelessness. (2010). *Opening doors: Federal strategic plan to prevent and end homelessness*. Washington, DC: United States Interagency Council on Homelessness.
- US Department of Veterans Affairs. (2007). *Women veterans: Past, present, and future*. Washington, DC: US Department of Veterans Affairs, Office of Policy and Planning.
- Vogt, D., Bergeron, A., Salgado, D., Daley, J., Ouimette, P., & Wolfe, J. (2006). Barriers to Veterans Health Administration care in a nationally representative sample of women veterans. *Journal of General Internal Medicine*, 21(S3), S19–S25.
- Ware, J. E., Kosinski, M., & Keller, S. D. (1996). A 12-item Short-Form Health Survey: Construction of scales and preliminary tests of reliability and validity. *Medical Care*, 34(3), 220–233.
- Washington, D. L., Yano, E. M., McGuire, J. F., Hines, V., Lee, M., & Gelberg, L. (2010). Risk factors for homelessness among women veterans. *Journal of Health Care for the Poor and Underserved*, 21, 81–91.
- Weiss, T. W. (1995). Improvements in VA health services for women veterans. *Women and Health*, 23(2), 1–12.
- Williamson, R. B. (2009). *Preliminary findings on VA's provision of health care services to women veterans*. (Testimony before the Committee on Veterans' Affairs, US Senate). Washington, DC: United States Government Accountability Office.
- Wright, S. M., Craig, T., Campbell, S., Schaefer, J., & Humble, C. (2006). Patient satisfaction of female and male users of Veterans Health Administration services. *Journal of General Internal Medicine*, 21(S3), S26–S32.
- Zanis, D. A., McLellan, A. T., Cnann, R. A., & Randall, M. (1994). Reliability and validity of the addiction severity index with a homeless sample. *Journal of Substance Abuse Treatment*, 11(6), 541–548.