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Patterns of Resource Utilization and Mental Health Symptoms among Women Exposed to Multiple Types of Victimization: A Latent Class Analysis

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Abstract

While the value of resources aimed to support women who experience intimate partner violence (IPV) is clear, few studies have investigated how exposure to multiple types of victimization influences women's resource utilization. We applied latent class analysis to a sample of 412 women who used IPV in their current relationships to test whether women's resource utilization is associated with different patterns of victimization, including current IPV victimization, past IPV victimization, and childhood victimization. Three classes of women were identified: the Low Cumulative IPV class ($n = 121$) included women with a low prevalence of past IPV victimization and low severity of current IPV victimization; The High Past/Low Current IPV class ($n = 258$) included women with a high prevalence of past IPV victimization but low severity of current IPV victimization; and the High Cumulative IPV class ($n = 33$) included women with a high prevalence of past IPV victimization and severe current IPV victimization. Multiple types of childhood victimization were highly prevalent among women in all three classes. Women in the High Cumulative IPV class used a greater variety of resources, experienced a greater number of posttraumatic stress and depression symptoms, drug problems, and used more severe IPV aggression compared to women in other classes. These findings highlight the heterogeneity of resource utilization among women in relationships characterized by bidirectional IPV and underscore the potential clinical utility of adapting services to meet the specific needs of women with unique profiles of victimization.

Introduction

Women's resource utilization related to intimate partner violence (IPV) is associated with positive outcomes, including greater coping skills, increased self-efficacy, and protection against revictimization (Bennett, Riger, Schewe, Howard, & Wasco, 2004; Bybee & Sullivan, 2005; Goodman, Dutton, Vankos, & Weinfurt, 2005; Perez & Johnson, 2008; Taft, Resick, Panuzio, Vogt, & Mechannic, 2007). However, there are large individual differences in resource utilization and many women who might benefit from these resources (e.g., social support, criminal justice resources, health care services) do not use them (Davis, Hagen, & Early, 1994; Henning & Klesges, 2002; Johnson & Zlotnick, 2007). Available theories of help-seeking for IPV suggest that resource utilization is shaped by individual, familial,

economic, and cultural factors, and involves defining and recognizing the problem, deciding whether to seek help, and selecting which resource to use (for review, see Liang et al., 2005). Greater resource utilization for IPV is associated with higher socioeconomic status (Coker, Derrick, Lumpkin, Aldrich, & Oldendick, 2000; Henning & Klesges, 2002; Hutchison & Hirschel, 1998), more severe IPV victimization (Coker, Derrick, et al., 2000; Duterte et al., 2008; Goodkind, Sullivan, & Bybee, 2004; Macy, Nurius, Kernic, & Holt, 2005; Paranjape, Heron, & Kaslow, 2006), and exposure to a greater number of prior traumas (Johnson & Zlotnick, 2007).

Current knowledge of women's resource utilization for IPV is limited in five ways. First, despite evidence that sexual, psychological, and physical IPV victimization frequently co-occur (Coker, Smith, McKeown, & King, 2000; Smith, Thornton, DeVellis, Earp, & Coker, 2002; Sullivan, McPartland, Armeli, Jaquier, & Tennen, 2012), the majority of research on resource utilization has assessed IPV as a unidimensional construct and focused specifically on exposure to physical IPV victimization. Because exposure to multiple types of IPV victimization may have a cumulative negative impact on women's mental and physical health (Edwards, Black, Dhingra, McKnight-Eily, & Perry, 2009; Hedtke et al., 2008), and women's resource utilization can vary depending on the types of IPV experienced (Cattaneo, DeLoveh, & Zweig, 2008; Duterte et al., 2008; Flicker et al., 2011), it is important to examine exposure to concurrent psychological, sexual, and physical IPV victimization when studying resource utilization.

Second, while childhood victimization, including sexual and physical abuse, neglect, and witnessing parental violence, is associated with greater risk for experiencing or using violence in intimate relationships (Coid et al., 2001; Noll, 2005; Stith et al., 2000; Wood & Sommers, 2011), there is a dearth of research investigating the association of childhood victimization with women's resource utilization for IPV in adulthood. Multiple factors are thought to contribute to the high prevalence of childhood victimization among IPV-exposed women. The social learning theory (Bandera, 1977) posits that childhood victimization legitimizes violence and increases risk for later IPV victimization or perpetration through observation and modeling. For example, women exposed to childhood physical abuse may perceive violence as normative and learn to imitate or tolerate violence in their intimate relationships in adulthood (Liang, Goodman, Tummala-Narra, & Weintraub, 2005). The association between childhood victimization and IPV may also be mediated by insecure attachment styles, mental health problems, and greater sensitivity to future stressors (Dutton, 2003; Mair, Cunradi, & Todd, 2012; Roberts, McLaughlin, Conron, & Koenen, 2011; Stith et al., 2000). Incorporating measures of childhood victimization into studies of resource utilization for IPV is especially important, as IPV-exposed women who experienced childhood victimization may have unique resource needs due to their greater risk of health problems, substance abuse, and posttraumatic stress symptoms (Filipas & Ullman, 2006; Follette, Polusny, Bechtle, & Naugle, 1996; Scott-Storey, 2011).

Third, although many women experiencing IPV in current relationships have also experienced IPV in a past relationship (Cole, Logan, & Shannon, 2008), it is unclear whether prior exposure to IPV shapes women's resource utilization to cope with current IPV. Women exposed to IPV in past relationships may have already exhausted support through their informal social networks (Mitchell & Hodson, 1983) and therefore, may be more likely than women experiencing IPV for the first time to utilize formal resources (e.g., IPV hotlines, criminal justice resources). Alternatively, women exposed to IPV in past relationships may be less willing to seek resources if they found such resources to be unhelpful in the past (Liang et al., 2005).

Fourth, research on resource utilization among IPV-exposed women has almost exclusively utilized variable-centered approaches (e.g., ANOVA, regression). Although these techniques are important for identifying overarching associations among types of IPV victimization and resource utilization, person-centered analytic approaches (e.g., latent class analysis; LCA) are needed to examine patterns of resource utilization among subgroups of women with similar victimization profiles (Nurius, Macy, Nwabuzor, & Holt, 2011). Only one person-centered study has examined resource utilization among subgroups of women classified on the basis of exposure to multiple types of IPV. Ansara and Hindin (2010) used LCA to examine IPV-related resource utilization among subgroups of women with different patterns of exposure to physical violence, sexual coercion, psychological abuse and controlling behavior with a current *or* former partner. Results indicated that women in subgroups with exposure to more severe IPV victimization and greater coercive control were more likely to use formal resources (e.g., legal help, shelters), whereas women across all subgroups commonly utilized informal resources. While this study is informative about heterogeneity in patterns of resource utilization among women with different exposure to multiple types of IPV, the assessment of victimization did not account for exposure to victimization in childhood or across intimate relationships (e.g., in past *and* current intimate relationships). Thus, it is unclear whether heterogeneity in exposure to multiple types of victimization in childhood and past and current intimate relationships shapes resource utilization.

Finally, no person-centered studies of resource utilization for IPV have included data on women's use of IPV. Given that bidirectional aggression is common in intimate relationships characterized by IPV among community samples (though the motivation and outcomes of IPV differ among men and women) (Caldwell et al., 2012; Dixon & Graham-Kevan, 2011; Archer 2002)), it is important to measure women's use of different types of IPV and examine patterns of resource utilization among women who use IPV.

The current study was undertaken to address these gaps in the literature. We used an ethnically diverse sample of community women who had used aggression in their current intimate relationship to examine resource utilization among subgroups with different exposure to multiple types of victimization. LCA was used to form homogeneous classes (i.e., subgroups) of women based on similar patterns of exposure to multiple types of victimization, including childhood physical, sexual, and emotional abuse, childhood physical and emotional neglect, witnessing parental violence, past IPV victimization, and severity of current IPV victimization, and to relate those classes to current use of resources to cope with IPV. LCA studies indicate that classes of women with more severe or chronic exposure to multiple types of victimization experience more mental health symptoms than those exposed to less severe victimization (e.g., Ansara & Hindin, 2011; Bogat et al., 2003; Golder et al., 2011), which may influence resource utilization, and we investigate whether mental health and substance use problems differ across classes.

All women in the current investigation used IPV aggression. Thus, the purpose of this study was not to describe the incidence of IPV victimization or use of IPV, but rather to differentiate women who use IPV into distinct groups based on multiple, repeated victimization experiences and to examine how these groups may differ in their resource utilization for IPV.

Method

Sample and Recruitment

Recruitment flyers in English and Spanish advertising the Women's Relationship Study were posted throughout public places in an urban community including primary care clinics and emergency departments, grocery stores, and laundromats. Women were invited to

complete a phone screen to determine eligibility. Data originally were collected to examine a theory of women's use of IPV. Therefore, inclusion criteria indicated that participants were: (a) adult females between 18 to 64 years of age; (b) currently involved in a heterosexual intimate relationship of at least six-month duration; (c) used at least one act of physical aggression against a male partner within the previous six months; (d) resided in the greater urban area; (e) had a household income of less than \$50,000 as determined a priori to methodologically control for differential resources associated with income; and (f) self-identified as African American, Latina, or White. Of note, although women's use of physical IPV was an inclusion criterion, 90% experienced physical IPV victimization, and >99% experienced psychological or sexual IPV victimization by their current partners.

Eligible women who provided informed consent for study participation met with a trained female interviewer of the same race/ethnicity who administered a 2-hour protocol via computer-assisted interviewing in English or Spanish. Nearly half (49%) of the Latina participants elected to have the protocol administered in Spanish. At the conclusion of the interview, participants were debriefed, remunerated \$50, and provided with a list of community resources. All study procedures were approved by the Human Investigation Committee of the primary investigator's home institution.

The final sample comprised 412 women (150 of African descent, 150 Latina women, and 112 non-Latina White women). The majority of participants in this sample had completed a high-school level education ($n = 284$, 69%), were unemployed ($n = 171$, 66%), and cohabited with their partners ($n = 259$, 63%). Participants reported low annual household incomes (mode < \$10,000, 43%). On average, participants were 36.6 years old ($SD = 8.92$) with a mean number of 1.96 children ($SD = 1.65$), and 8 years in the current relationship ($SD = 6.9$).

Measures

Resource Utilization—Resource utilization was assessed with the Resource Utilization Questionnaire (insert author self-citation post review). Participants were asked if they had used 24 resources to address the IPV that occurred between themselves and their partners in the past six months (0 = *no*, 1 = *yes*). Four items that measured resources for children and two items that measured non-voluntary use of services (e.g., court-mandated programs) were excluded from the current analyses as our primary focus was women's resource utilization to cope with their own exposure to IPV. The remaining items were grouped to form eight dichotomous resource utilization categories (0 = *no*, 1 = *yes*): social support (i.e., talked to friends or family for support; stayed with a friend, family member, or someone you knew to keep yourself safe), counseling/support group (i.e., attended individual, family, or couples counseling; attended a support group), criminal justice services (i.e., called police; spoke to a victim advocate at court; received a protective or restraining order from the court; help from a lawyer or legal aid), substance abuse treatment (i.e., attended 12-step group; attended substance abuse treatment), healthcare services (i.e., saw a doctor or other healthcare provider as a result of a fight with your partner), called IPV hotline/infoline, religious or spiritual services, and stayed at a shelter.

IPV victimization and use of IPV—Psychological, sexual, and physical victimization and use of psychological, sexual, and physical IPV in the past six months were measured using three separate assessments: The Psychological Maltreatment of Women Inventory-Short version (PMWI-S) (Tolman, 1999), the Sexual Experiences Survey (SES; (Koss, Gidycz, & Wisniewski, 1987), and the Conflict Tactics Scale – 2 (CTS-2; (Straus, Hamby, & Warren, 2003). The SES and PMWI supplemented the CTS-2 because these measures assess their respective domains more comprehensively than the CTS-2. Psychological IPV

victimization and use of psychological IPV were measured using 21 non-overlapping items from the PMWI –Short version, which included response options from 1 (*never*) to 5 (*very frequently*), and the CTS-2 emotional/verbal subscale, and one item developed for this study (e.g., “*Did your partner ever follow you when you were out of the house to check on what you were doing*”). The observed range for psychological IPV victimization was 0 – 113, Cronbach’s $\alpha = 0.86$; observed range for use of psychological IPV aggression was 3 – 111, Cronbach’s $\alpha = 0.66$.

Sexual IPV victimization and use of sexual IPV aggression were measured by the SES (observed range: sexual IPV victimization: 0 – 96, Cronbach’s $\alpha = 0.87$; use of sexual IPV aggression: 1 – 50, Cronbach’s $\alpha = 0.85$). The SES was modified to assess women’s sexual aggression in addition to their sexual victimization during the past six months resulting in a 20-item assessment (rather than the original 10-item assessment of sexual victimization only). Given that the SES has been used largely with college populations and requires a fairly high reading level, the measure was revised to facilitate comprehension among study participants. For example, a standard SES item reads, “have you had a man attempt sexual intercourse (get on top of you, attempt to insert his penis) when you didn’t want to by threatening or using some degree of force (twisting your arm, holding you down, etc.) but intercourse *did not* occur?” Rather, a brief introduction to the section of the measure that queries attempted forced sexual intercourse explained “the next set of questions asks about when your partner *tried* to insert his penis but the sex did *not* happen.” This explanation was followed by, for example, “has your partner tried to make you have sex by using force like twisting your arm or holding you down, or by threatening to use force?”

Women’s physical IPV victimization and use of physical IPV aggression were each assessed using 12 items from the physical assault subscale of the CTS-2. Response options were recoded (Straus et al., 2003) [e.g., 3 - 5 times (recoded to 4), 6 - 10 times (recoded to 8), 10 or more times (conservatively recoded to 11)]. Values were then summed to obtain a total score (observed range: physical IPV victimization: 0 – 111, Cronbach’s $\alpha = 0.87$; physical IPV aggression: 1 – 104, Cronbach’s $\alpha = 0.80$).

Past IPV Victimization—The Past Abusive Behavior Inventory (Swan & Sullivan, 2004) was used to assess the types of IPV victimization participants experienced in their past intimate relationships. Past psychological IPV included controlling behaviors, swearing, putting down, or calling names; past sexual IPV included sexual touching or forced sex; past physical IPV included hitting, slapping, or punching. Three binary variables (0 = *no*, 1 = *yes*) were created to indicate whether women ever experienced psychological, sexual, or physical IPV, respectively, in a past relationship.

Childhood Victimization—Childhood sexual abuse, physical abuse, physical neglect, emotional abuse and emotional neglect were assessed with the 28-item Childhood Trauma Questionnaire (CTQ; (Bernstein & Fink, 1998). Items are rated on a five-point scale where 0 = *never true* and 4 = *very often true*. For the purposes of this study, a binary variable was computed for each of the five CTQ subscales (0 = *never true or rarely true*, 1 = *sometimes true, often true, very often true*).

Witnessing parental violence—Childhood witnessing of IPV between parents or caregivers was measured using two questions that assessed whether participants had observed their male and/or female caregivers engaging in violent behavior toward one another when participants were children (e.g., “*When I was growing up I saw or heard my (father/stepfather/mother's boyfriend) hitting or physically hurting my (mother/ stepmother/ grandmother)*”). While the measure assesses violence between male and female caregivers more generally, we refer to these variables in this manuscript as parental violence for the

sake of brevity. These items were each rated on the same five-point Likert scale as for the CTQ where 0 = *never true* and 4 = *very often true*; the measure was dichotomized (0 = *never true or rarely true*, 1 = *sometimes true, often true, very often true*).

Depression—Depression was assessed using the 20-item Center for Epidemiological Studies Depression Scale (CES-D; (Radloff, 1977). Participants rated the frequency of varying depression symptoms on a scale where 1 = *rarely or none of the time*, 2 = *some or a little of the time*, 3 = *occasionally or a moderate amount of time*, and 4 = *most or all of the time*. Total scores were obtained by summing the score from each item (observed range: 0 – 56, Cronbach's $\alpha = 0.83$).

Posttraumatic Stress Symptoms—Posttraumatic stress symptoms, consistent with the criteria of the Diagnostic and Statistical Manual of Mental Disorders-IV (American Psychiatric Association, 1994), were assessed using the 49-item self-report Posttraumatic Stress Diagnostic Scale (PDS) (Foa, 1995). A reference period of six months was used and, to the extent possible, participants reported the severity of their symptoms in relation to IPV victimization by their current partner. The frequency of each of the 17 posttraumatic stress symptoms was rated on a 4-point Likert scale (0 = *not at all or only one time* to 3 = *five or more times a week/almost always*). A total symptom severity score was created by summing the responses from each of the 17 symptom items (observed range: 0 – 49, Cronbach's $\alpha = 0.92$).

Alcohol Problems—Alcohol problems were assessed using the 10-item Alcohol Use Disorders Identification Test (AUDIT; (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001). This measure was developed by the World Health Organization to assess alcohol consumption, drinking behavior, adverse reactions, and problems related to alcohol use. Each item is scored from 0 to 4 (0 = *never*, 1 = *less than monthly*, 2 = *monthly*, 3 = *weekly*, and 4 = *daily or almost daily*). A total score was obtained by summing each item with higher scores indicative of greater alcohol problems (observed range: 0 – 36, Cronbach's $\alpha = 0.89$).

Drug Problems—Drug problems were assessed using the 20-item Drug Abuse Screening Test (DAST) (Skinner, 1982). Each item assesses the presence of problems related to the participant's drug use such as occupational or relational problems, regret, or illegal activities. Each item has a yes/no response option, where 0 = *no* and 1 = *yes*. A total score was obtained by summing each item; observed scores in this study ranged from 0 – 18, Cronbach's $\alpha = 0.92$.

Statistical Analyses

Latent Class Analysis (LCA) (Lubke & Muthén, 2005; McCutcheon, 1987) was used to: (a) identify classes of women with similar patterns of exposure to multiple types of victimization in childhood and adult intimate relationships, and (b) relate these groups to women's resource utilization, mental health outcomes, and women's use of IPV. Specifically, the following 12 indicator variables were used to determine latent classes: the severity of psychological, sexual, and physical current IPV victimization; the experience of psychological, sexual, or physical IPV in a past adult relationship; having experienced childhood sexual abuse, physical abuse, physical neglect, emotional abuse and emotional neglect; and having witnessed violence between parents or caregivers during childhood. Sociodemographic variables were included in the LCA models as covariates. These variables included participants' living arrangement (1 = *married and/or cohabitating*, 0 = *not married or cohabitating*), employment status (1 = *employed*, 0 = *unemployed*), years of education (observed range: 3–17), respondents' age in years (observed range: 18–65), race/

ethnicity (Caucasian, Latina, African American coded as dummy variables with White as the reference group), and number of children (observed range: 0–9).

In contrast to factor models that cluster indicator variables, person-centered approaches identify meaningful subgroups or classes of individuals based on similar responses to measured variables (Lubke & Muthén, 2005; Nylund, Asparouhov, & Muthén, 2007). LCA has several advantages over standard cluster analysis techniques, including adjustment of estimates for measurement error, use of probabilities as the basis for interpretation of results, flexible treatment of variance among classes, formal statistical procedures for determining the number of classes, analysis of both continuous and categorical indicators, and a model-based method for estimating population characteristics derived from sample data (Magidson & Vermunt, 2001; Muthén & Muthén, 2007; Nylund et al., 2007).

In order to identify the appropriate number of classes, a one-class model was fit first, followed by successive models with increasing numbers of classes until the addition of a new classes no longer improved model fit. Based on existing research recommendations (Nylund et al., 2007) multiple indices were used to identify the smallest number of latent classes that adequately describe the observed variables. Goodness-of-fit measures, including the Akaike information criterion (AIC) and sample-size adjusted Bayesian Information Criterion (BIC) were used to balance model fit against model parsimony, with lower values indicating better fit. The Lo-Mendell-Rubin Likelihood Ratio Test (LMR LRT) was also used to aid the selection of the most parsimonious model. This test compares the fit of the model being tested with a model with one less class, and provides a p value ($p < .05$ indicates significant improvement in fit; (Nylund et al., 2007). Finally, entropy values representing the quality of classification across models were used to determine the appropriate number of classes.

Posterior probabilities conditional on response profiles from the best fitting model were used to estimate the proportion of the sample assigned to each class and to determine the response probabilities and means of multiple types of victimization experiences by members of each class. Simultaneously, multinomial logistic regression was used to relate demographic covariates to latent classes and the corresponding odds ratios were used to determine statistically significant group differences. To examine whether classes differed on resource utilization, mental health and substance use outcomes, and use of IPV were included as auxiliary variables (i.e., external variables not included in the determination of latent classes) in all models. Means and variances of mental health and substance use outcomes, women's use of IPV, and prevalence of resource utilization across classes were concurrently examined using posterior probability-based multiple imputation and chi-square significance tests. All analyses were conducted using Mplus™ software version 5.2 (Muthén & Muthén, 2007).

Results

Results of LCA models are shown in Table 1. The AIC and adjusted BIC were smallest for the three- and four-class models. The LRT was non-significant for the four-class model, indicating that the three-class model provided a better fit. The three-class model correctly classified individuals into their respective classes approximately 91% of the time (i.e., entropy = 0.91) and was selected as the most parsimonious model.

The proportion of respondents assigned to each class and the conditional probabilities for each indicator variable are shown in Table 2. Women in class 1 ('Low Cumulative IPV'; $n = 121$ [29.4%]) reported the lowest probabilities of past IPV victimization and the least severe current IPV victimization. Women in class 2 ('High Past/Low Current IPV'; $n = 258$

[62.6%]) reported high probabilities of past IPV victimization, but lower severity of current IPV victimization, similar to women in the Low Cumulative IPV class. Women in class 3 ('High Cumulative IPV'; $n = 33$ [8.0%]) endorsed high probabilities of past IPV similar to women in the High Past/Low Current IPV class, but were distinct in their exposure to severe current IPV victimization. Childhood victimization was highly prevalent across classes. Nevertheless, there were subtle distinctions between classes such that women in the Low Cumulative IPV class were the least likely to have experienced childhood sexual and physical abuse, while those in the High Cumulative IPV class were markedly more likely than women in other classes to have witnessed father to mother violence during childhood.

Multinomial regression analyses were used to predict class membership from demographic variables. Compared to women in the High Cumulative IPV class, those in the Low Cumulative IPV class were more likely to be White (Odds Ratio [OR] = 4.42, $p = 0.02$) or Latina (OR = 7.14, $p = 0.002$) vs. African American, had significantly greater years of education (OR = 1.25, $p = 0.03$) and were more likely to be married (OR = 3.03, $p = 0.01$). Women in the High Cumulative IPV class were not significantly different from women in the Low Cumulative IPV class in age, number of children, or employment status. No significant differences were found between the High Past/Low Current IPV and High Cumulative IPV classes on any demographic variables.

Multivariate logistic regression analyses were employed to relate class membership to resource utilization, women's use of IPV, and mental health outcomes, after adjusting for sociodemographic covariates (see Figure 1 and Table 3). Results indicated that classes of women differed significantly in their resource utilization. Compared to women in the Low Cumulative IPV and High Past/Low Current IPV classes, those in the High Cumulative IPV class were more likely to use multiple types of resources to cope with IPV, including social support, criminal justice resources, healthcare services, and counseling/support groups. Women in the High Cumulative IPV class were also more likely than those in the Low Cumulative IPV class to have attended substance abuse treatment. Women in the High Past/Low Current IPV class had greater utilization of substance abuse treatment and lower utilization of religious and spiritual services compared to women in the Low Cumulative IPV class.

Table 3 also depicts class differences in mental health outcomes and women's use of IPV. Women in the High Cumulative IPV class reported significantly greater symptoms of depression, posttraumatic stress, drug problems, and more severe use of physical and psychological IPV aggression than women in other classes. Additionally, they experienced more severe alcohol problems and use of sexual IPV aggression than women in the Low Cumulative IPV class. Women in the High Past/Low Current IPV class reported significantly more posttraumatic stress symptoms, alcohol and drug problems, and more severe use of physical and sexual IPV aggression compared to women in the Low Cumulative IPV class.

Discussion

Despite evidence that exposure to multiple types of victimization has a cumulative negative impact on women's mental and physical health (Scott-Storey, 2011), few studies have investigated how multiple types of victimization in childhood and adult intimate relationships are related to women's resource utilization for current IPV. This gap in the literature is problematic because a variety of resources may have great power to reduce the negative impact of IPV on women's physical and mental health. If we can understand which women use which resources, researchers, clinicians, and advocates may be better able to devote assets to bolster those services and make appropriate referrals. The current study

used a person-centered approach to address these research gaps in a sample of community women who used aggression against their current intimate partner. We examined whether subgroups of women with different levels of exposure to multiple types of victimization had unique patterns of resource utilization and mental health outcomes. Results indicated that women's resource utilization varied depending on their exposure to past and current victimization, highlighting the importance of considering heterogeneity in type of victimization when studying resource utilization.

Latent class analyses identified three classes of women characterized by distinct patterns of past and current victimization experiences. The Low Cumulative IPV class had a low prevalence of past IPV victimization and low severity of current IPV victimization. The High Past/Low Current IPV class had a high prevalence of past IPV victimization but low severity of current IPV victimization. The High Cumulative IPV class had a high prevalence of past IPV victimization and severe current IPV victimization. Multiple types of childhood victimization were highly prevalent among women in all three classes. However, it is particularly noteworthy that women in the Low Cumulative IPV class experienced relatively low levels of past and current IPV, in spite of quite high exposure to multiple types of childhood victimization. This finding reiterates the notion that the downstream impact of childhood victimization on future exposure to IPV is heterogeneous, and additional research is needed to identify the specific factors associated with resilience among subgroups of women who are exposed to multiple types of childhood victimization but do not experience high levels of violence in adult intimate relationships.

Despite the lack of variation in exposure to childhood victimization, there were subtle and potentially important differences across classes. Women in the Low Cumulative IPV class were the least likely to experience childhood sexual and physical abuse, while women in the High Cumulative IPV class were the most likely to report witnessing parental violence. In particular, witnessing father to mother violence was a robust childhood indicator of membership in the High Cumulative IPV class, further underscoring the long-term impact of witnessing parental violence during childhood on risk for adulthood IPV (Wood & Sommers, 2011). Future longitudinal studies with greater heterogeneity in women's exposure to childhood victimization will allow for a more nuanced investigation of how childhood and adulthood victimization experiences cluster over time.

Relation of Classes to Resource Utilization

Subgroups of women exposed to differing levels of victimization in current and past intimate relationships had unique patterns of resource utilization. Most notably, women in the High Cumulative class utilized a broader range of resources to cope with current IPV. These findings complement results from variable-centered (Coker, Derrick, et al., 2000; Duterte et al., 2008; Johnson & Zlotnick, 2007) and person-centered studies (Ansara & Hindin, 2010) and indicate that women exposed to more severe victimization actively seek and use a wide variety of resources. For example, in the most severe victimization class, almost 90% of women utilized social support to cope with current IPV and approximately 70% of women utilized criminal justice resources. Moreover, 63% and 62%, respectively, of women in this class used healthcare services and counseling services to cope with IPV, suggesting that IPV victimization has a tremendous ripple effect, impacting not only physical health, but mental health as well. This speaks to the need for mental health and health care providers to routinely screen for multiple types of past and current IPV victimization, as well as use of IPV, and to provide referrals for appropriately related services as necessary. Additional research is needed to examine how resource utilization outcomes might differ in relationships where IPV is uni-directional versus bi-directional.

Across all classes, women were most likely to use informal resources (e.g., religious and spiritual services, social support) and least likely to use traditional IPV services (e.g., IPV hotline, shelters). The great percentage of women in the High Past/Low Current IPV and High Cumulative IPV classes who reported utilizing social support to cope with IPV in their current relationships suggests that women exposed to IPV in past relationships have not exhausted support through their informal networks. The low prevalence of shelter utilization across classes (ranging from 12.8% to 25.6% across classes) is particularly notable and reiterates the observation that findings from studies conducted with women who have sought shelter cannot necessarily be generalized to women in the community (Archer, 2000, 2002). Further, women in the Low Cumulative IPV class were as likely as women in the High Cumulative IPV class to utilize religious and spiritual services to cope with IPV (71.7% vs. 69.5%). This suggests that utilization of religious or spiritual services may be adequate to cope with the relatively lower levels of victimization among women in the Low Cumulative IPV class, whereas a greater range and intensity of services are needed to deal with the more severe victimization experienced among women in the High Cumulative IPV class.

Women in classes with greater exposure to multiple types of victimization had more severe use of IPV *and* utilized a wider variety of resources. These results may indicate that women's use of IPV aggression is not necessarily a barrier to accessing and utilizing resources to cope with IPV victimization. Instead, our findings are more consistent with the notion that use of IPV may be best viewed as one of many strategies that women employ to escape or manage severe violence in their intimate relationships (Swan & Sullivan, 2009). Unfortunately, few mental health treatments are designed to address the specific needs of subgroups of women in relationships characterized by bidirectional IPV.

Relation of Classes to Mental Health Outcomes

In general, subgroups of women with greater exposure to multiple types of victimization reported increasingly more mental health and substance use problems, consistent with their greater use of mental health and substance use resources. Compared to women in the High Cumulative IPV class, those in the Low Cumulative IPV class reported significantly fewer mental health and substance use problems and less severe use of all forms of IPV aggression. Additionally, women in the High Past/Low Current IPV class experienced significantly fewer posttraumatic stress and depression symptoms and fewer drug problems than women in the High Cumulative IPV class, despite their similar prevalence of multiple types of past IPV victimization. Although we cannot ascertain whether women in the High Past/Low Current IPV class experienced improved mental health subsequent to the termination of their past abusive relationship, this hypothesis is consistent with evidence that women's physical and mental health symptoms improve following the cessation of violence (Golding, 1999; Lindhorst & Beadnell, 2011; Tolman & Rosen, 2001). Nevertheless, when compared to women in the Low Cumulative IPV class, those in the High Past/Low Current IPV class still experienced a greater number of posttraumatic stress symptoms and drug and alcohol problems, and were more likely to use substance abuse resources, underscoring the clinical importance of assessing past IPV victimization in mental health and substance use treatment settings.

Limitations

Findings should be interpreted within the context of the following limitations. First, our data are cross-sectional and the temporal relation among variables (with the exception of childhood victimization) cannot be determined. Prospective studies are needed to better capture how exposure to multiple types of victimization influences utilization of resources and to determine whether the use of such resources decreases risk for victimization and improves functioning over time. Second, data were based on retrospective self-report, which

may limit the accuracy of our findings. However, research generally suggests that the accuracy of women's self-report of IPV is reliable (Caetano, Schafer, Field, & Nelson, 2002; Magdol, Moffitt, Caspi, & Silva, 1998). Third, women were selected for their use of IPV and results may not generalize to women who experience IPV victimization but do not use IPV aggression. Nevertheless, our sample of women is not atypical in their use of IPV, as empirical research suggests that bidirectional violence is common in intimate relationships characterized by IPV (Archer, 2000, 2002; Dixon & Graham-Kevan, 2011). Further, our own research has shown that using an inclusion criterion based on women's use of IPV rather than women's IPV victimization does not result in different distributions of severity and type of IPV or IPV-related injury (Sullivan et al., 2010). Fourth, our measure of IPV does not account for different motivations for and consequences of using IPV among men and women and future studies should explore these gender differences including differentiating offensive vs. defensive use of IPV. Fifth, childhood maltreatment did not differentiate class membership, as there was little variability in exposure to childhood maltreatment in the current sample. Less severe samples with a greater range of exposure to childhood maltreatment may be more sensitive to classifying women on the basis of exposure to multiple types of victimization. Finally, we did not measure all possible types of victimization across the lifespan. Future studies should investigate additional interpersonal victimization experiences over the lifespan (e.g., victimization in adulthood by a stranger, stalking) to further advance our understanding of how women's exposure to multiple types of victimization impacts their utilization of resources to cope with IPV.

Implications for Clinical Practice and Future Research

In summary, this study demonstrated the utility of a person-centered approach and revealed substantial heterogeneity in resource utilization and mental health outcomes among women in relationships characterized by IPV. If replicated, results of this study have potential to advance research and practice. In particular, findings speak to the need for a range of resource and service providers – not just those who provide IPV-specific services – to be better trained about the various ways in which past and current victimization experiences manifest in women. Ultimately, being better informed about the heterogeneity of IPV exposures among women may allow providers to tailor resources to better mitigate the impact of IPV on women's physical and mental health. Intervention programs that teach women skills associated with decreased risk for continued IPV victimization (Follette et al., 1996) and use of IPV, facilitate access to mental health services, and assist women in leaving abusive relationships if they so desire may be especially beneficial.

Future research should investigate the processes through which victimization experiences affect women's decisions to use specific resources, and examine the outcomes of resource utilization among subgroups of women with differing patterns of exposure to multiple types of victimization. In particular, studies that examine women's motivations for seeking help, experiences of violence (Bell, Goodman, & Dutton, 2007), and perceived usefulness of services, will help service providers to better understand how multiple types of victimization impact women's evaluations of their own resource needs and help-seeking behaviors.

Reference

- American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 4th ed.. Washington, DC: American Psychiatric Publishing, Inc.; 1994.
- Ansara DL, Hindin MJ. Formal and informal help-seeking associated with women's and men's experiences of intimate partner violence in Canada. *Social Science & Medicine*. 2010; 70(7):1011–1018. [PubMed: 20122774]
- Archer J. Sex differences in aggression between heterosexual partners: A meta-analytic review. *Psychological Bulletin*. 2000; 126(5):651–680. [PubMed: 10989615]

- Archer J. Sex differences in physically aggressive acts between heterosexual partners: A metaanalytic review. *Aggression and Violent Behavior*. 2002; 7(4):313–351.
- Babor, TF.; Higgins-Biddle, JC.; Saunders, JB.; Monteiro, MG. *The Alcohol Use Disorders Identification Test*. 2nd ed.. World Health Organization; 2001.
- Bell M, Goodman L, Dutton M. The Dynamics of Staying and Leaving: Implications for Battered Women's Emotional Well-Being and Experiences of Violence at the End of a Year. *Journal of Family Violence*. 2007; 22(6):413–428.
- Bennett L, Riger S, Schewe P, Howard A, Wasco S. Effectiveness of Hotline, Advocacy, Counseling, and Shelter Services for Victims of Domestic Violence A Statewide Evaluation. *Journal of Interpersonal Violence*. 2004; 19(7):815–829. [PubMed: 15186538]
- Bernstein, DP.; Fink, L. *Childhood trauma questionnaire. A retrospective self-report questionnaire and manual*. San Antonio, TX: The Psychological Corporation; 1998.
- Bybee D, Sullivan CM. Predicting re-victimization of battered women 3 years after exiting a shelter program. *American Journal of Community Psychology*. 2005; 36(1):85–96. [PubMed: 16134046]
- Caetano R, Schafer J, Field C, Nelson SM. Agreements on reports of intimate partner violence among White, Black and Hispanic couples in the United States. *Journal of Interpersonal Violence*. 2002; 17(12):1308–1322.
- Cattaneo LB, DeLoveh HLM, Zweig JM. Sexual assault within intimate partner violence: Impact on helpseeking in a national sample. *Journal of Prevention & Intervention in the Community*. 2008; 36(1–2):137–153. [PubMed: 19042468]
- Coid J, Petruckevitch A, Feder G, Chung WS, Richardson J, Mooney S. Relation between childhood sexual and physical abuse and risk of revictimisation in women: a cross-sectional survey. *The Lancet*. 2001; 358(9280):450–454.
- Coker AL, Derrick C, Lumpkin JL, Aldrich TE, Oldendick R. Help-seeking for intimate partner violence and forced sex in South Carolina. *American Journal of Preventive Medicine*. 2000; 19(4):316–320. [PubMed: 11064237]
- Coker AL, Smith PH, McKeown RE, King MJ. Frequency and correlates of intimate partner violence by type: physical, sexual, and psychological battering.[see comment]. *American Journal of Public Health*. 2000; 90(4):553–559. [PubMed: 10754969]
- Cole J, Logan TK, Shannon L. Women's Risk for Revictimization by a New Abusive Partner: For What Should We Be Looking? *Violence and Victims*. 2008; 23:315–330. [PubMed: 18624097]
- Davis LV, Hagen JL, Early TJ. Social services for battered women: Are they adequate, accessible, and appropriate? *Social Work*. 1994
- Dixon L, Graham-Kevan N. Understanding the nature and etiology of intimate partner violence and implications for practice and policy: A review of the evidence. *Clinical Psychology Review*. 2011
- Duterte EE, Bonomi AE, Kernic MA, Schiff MA, Thompson RS, Rivara FP. Correlates of medical and legal help seeking among women reporting intimate partner violence. *Journal of Women's Health*. 2008; 17(1):85–95.
- Dutton, DG. *The abusive personality: Violence and control in intimate relationships*. New York: Guilford Press; 2003.
- Edwards V, Black M, Dhingra S, McKnight-Eily L, Perry G. Physical and sexual intimate partner violence and reported serious psychological distress in the 2007 BRFSS. *International Journal of Public Health*. 2009; 54(0):37–42. [PubMed: 19363588]
- Filipas HH, Ullman SE. Child Sexual Abuse, Coping Responses, Self-Blame, Posttraumatic Stress Disorder, and Adult Sexual Revictimization. *Journal of Interpersonal Violence*. 2006; 21(5):652–672. [PubMed: 16574638]
- Flicker SM, Cerulli C, Zhao X, Tang W, Watts A, Xia Y, Talbot NL. Concomitant Forms of Abuse and Help-Seeking Behavior Among White, African American, and Latina Women Who Experience Intimate Partner Violence. *Violence Against Women*. 2011; 17(8):1067–1085. [PubMed: 21821618]
- Foa, EB. *Posttraumatic stress diagnostic scale*. National Computer Systems; 1995.
- Follette VM, Polusny MA, Bechtle AE, Naugle AE. Cumulative trauma: The impact of child sexual abuse, adult sexual assault, and spouse abuse. *Journal of Traumatic Stress*. 1996; 9(1):25–35. [PubMed: 8750449]

- Golding JM. Intimate partner violence as a risk factor for mental disorders: A meta-analysis. *Journal of Family Violence*. 1999; 14(2):99–132.
- Goodkind JR, Sullivan CM, Bybee DI. A contextual analysis of battered women's safety planning. *Violence Against Women*. 2004; 10(5):514–533.
- Goodman L, Dutton MA, Vankos N, Weinfurt K. Women's resources and use of strategies as risk and protective factors for reabuse over time. *Violence Against Women*. 2005; 11(3):311–336. [PubMed: 16043552]
- Hedtke KA, Ruggiero KJ, Fitzgerald MM, Zinzow HM, Saunders BE, Resnick HS, Kilpatrick DG. A Longitudinal Investigation of Interpersonal Violence in Relation to Mental Health and Substance Use. *Journal of Consulting & Clinical Psychology*. 2008; 76(4):633–647. [PubMed: 18665691]
- Henning KR, Klesges LM. Utilization of counseling and supportive services by female victims of domestic abuse. *Violence and Victims*. 2002; 17(5):623–636. [PubMed: 12477102]
- Hutchison IW, Hirschel JD. Abused women: Help-seeking strategies and police utilization. *Violence Against Women*. 1998; 4(4):436–456.
- Johnson DM, Zlotnick C. Utilization of mental health treatment and other services by battered women in shelters. *Psychiatric Services*. 2007; 58(12):1595–1597. [PubMed: 18048563]
- Koss MP, Gidycz CA, Wisniewski N. The Scope of Rape - Incidence and Prevalence of Sexual Aggression and Victimization in a National Sample of Higher-Education Students. *Journal of Consulting and Clinical Psychology*. 1987; 55(2):162–170. [PubMed: 3494755]
- Liang B, Goodman L, Tummala-Narra P, Weintraub S. A theoretical framework for understanding help-seeking processes among survivors of intimate partner violence. *Am J Community Psychol*. 2005; 36(1–2):71–84. [PubMed: 16134045]
- Lindhorst T, Beadnell B. The long arc of recovery: characterizing intimate partner violence and its psychosocial effects across 17 years. *Violence Against Women*. 2011; 17(4):480–499. [PubMed: 21502116]
- Lubke GH, Muthén BO. Investigating population heterogeneity with factor mixture models. *Psychological Methods*. 2005; 10(1):21. [PubMed: 15810867]
- Macy RJ, Nurius PS, Kernic MA, Holt VL. Battered women's profiles associated with service help-seeking efforts: Illuminating opportunities for intervention. *Social Work Research*. 2005; 29(3):137–150.
- Magdol L, Moffitt TE, Caspi A, Silva PA. Developmental antecedents of partner abuse: A prospective-longitudinal study. *Journal of Abnormal Psychology*. 1998; 107(3):375–389. [PubMed: 9715573]
- Magidson J, Vermunt JK. Latent Class Factor and Cluster Models, Bi-Plots, and Related Graphical Displays. *Sociological methodology*. 2001; 31(1):223–264.
- Mair C, Cunradi CB, Todd M. Adverse childhood experiences and intimate partner violence: testing psychosocial mediational pathways among couples. *Ann Epidemiol*. 2012; 22(12):832–839. [PubMed: 23084843]
- McCutcheon, AL. Latent class analysis. Vol. Vol. 64. Sage Publications, Inc; 1987.
- Mitchell RE, Hodson CA. Coping with domestic violence: Social support and psychological health among battered women. *American Journal of Community Psychology*. 1983; 11(6):629–654. [PubMed: 6666751]
- Muthén, LK.; Muthén, BO. 1998–2007. Mplus User's Guide. Los Angeles, CA: Muthén & Muthén; 2007.
- Noll JG. Does Childhood Sexual Abuse Set in Motion a Cycle of Violence Against Women? *Journal of Interpersonal Violence*. 2005; 20(4):455–462. [PubMed: 15722501]
- Nurius PS, Macy RJ, Nwabuzor I, Holt VL. Intimate Partner Survivors' Help-Seeking and Protection Efforts: A Person-Oriented Analysis. *Journal of Interpersonal Violence*. 2011; 26(3):539–566. [PubMed: 20448232]
- Nylund KL, Asparouhov T, Muthén BO. Deciding on the number of classes in latent class analysis and growth mixture modeling: A Monte Carlo simulation study. *Structural Equation Modeling*. 2007; 14(4):535–569.
- Paranjape A, Heron S, Kaslow NJ. Utilization of Services by Abused, Low-income African-American Women. *Journal of General Internal Medicine*. 2006; 21(2):189–192. [PubMed: 16390509]

- Perez S, Johnson DM. PTSD compromises battered women's future safety. *Journal of Interpersonal Violence*. 2008; 23(5):635–651. [PubMed: 18272729]
- Radloff LS. The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*. 1977; 1(3):385–401.
- Roberts AL, McLaughlin KA, Conron KJ, Koenen KC. Adulthood stressors, history of childhood adversity, and risk of perpetration of intimate partner violence. *American Journal of Preventive Medicine*. 2011; 40(2):128–138. [PubMed: 21238860]
- Scott-Storey K. Cumulative Abuse: Do Things Add Up? An Evaluation of the Conceptualization, Operationalization, and Methodological Approaches in the Study of the Phenomenon of Cumulative Abuse. *Trauma, Violence, & Abuse*. 2011; 12(3):135–150.
- Skinner HA. The Drug Abuse Screening Test. *Addictive Behaviors*. 1982; 7(4):363–371. [PubMed: 7183189]
- Smith PH, Thornton GE, DeVellis R, Earp J, Coker AL. A population-based study of the prevalence and distinctiveness of battering, physical assault, and sexual assault in intimate relationships. *Violence Against Women*. 2002; 8(10):1208–1232.
- Stith SM, Rosen KH, Middleton KA, Busch AL, Lundeborg K, Carlton RP. The Intergenerational Transmission of Spouse Abuse: A Meta-Analysis. *Journal of Marriage and Family*. 2000; 62(3): 640–654.
- Straus, MA.; Hamby, SL.; Warren, WL. *The Conflict Tactics Scales Handbook*. Los Angeles: Western Psychological Services; 2003.
- Sullivan TP, McPartland TS, Armeli S, Jaquier V, Tennen H. Is it the exception or the rule? Daily co-occurrence of physical, sexual, and psychological partner violence in a 90-day study of substance-using, community women. *Psychology of Violence*. 2012; 2(2):154–164.
- Sullivan TP, Titus JA, Holt LJ, Swan SC, Fisher BS, Snow DL. Does the Inclusion Criterion of Women's Aggression as Opposed to Their Victimization Result in Samples That Differ on Key Dimensions of Intimate Partner Violence? *Violence Against Women*. 2010; 16(1):84–98. [PubMed: 19949230]
- Swan, SC.; Sullivan, TP. *Past Abusive Relationships*. Yale University School of Medicine; 2004. New Haven.
- Taft CT, Resick PA, Panuzio J, Vogt DS, Mechannic MB. Examining the correlates of engagement and disengagement coping among help-seeking battered women. *Violence and Victims*. 2007; 22(1):3. [PubMed: 17390560]
- Tolman RM. The validation of the Psychological Maltreatment of Women Inventory. *Violence and Victims*. 1999; 14(1):25–37. [PubMed: 10397624]
- Tolman RM, Rosen D. Domestic violence in the lives of women receiving welfare. *Violence Against Women*. 2001; 7(2):141–158.
- Wood SL, Sommers MS. Consequences of Intimate Partner Violence on Child Witnesses: A Systematic Review of the Literature. *Journal of Child and Adolescent Psychiatric Nursing*. 2011

Figure 1.
Predicted Likelihood of Resource Utilization by Class.

Table 1

Fit statistic comparisons of exploratory latent class analysis models.

	1 class	2 classes	3 classes	4 classes
# free parameters	16	37	58	79
Log likelihood	−8041.370	−7774.530	−7572.292	−7492.096
AIC	16114.740	15623.060	15260.584	15142.191
BIC	16128.305	15654.429	15309.757	15209.169
LMR LRT <i>p</i> -value	-	0.0009	0.0014	0.6207
Entropy	-	0.976	0.913	0.849
Class prevalence	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
Class 1	412 (100)	373 (90.5)	121 (29.4)	202 (49.0)
Class 2	-	39 (9.5)	258 (62.6)	121 (29.4)
Class 3	-	-	33 (8.0)	56 (13.6)
Class 4	-	-	-	33 (8.0)
Class 5	-	-	-	-

Notes. AIC, Akaike's information criterion; BIC, sample-size adjusted Bayesian information criterion; LMR LRT, Lo-Mendell-Rubin likelihood ratio test *p*-value for ($K - 1$) classes. A significant *p*-value indicates that the ($K - 1$) class model should be rejected in favor of a model with at least K -classes; All models included covariates and auxiliary variables except the 1 class model.

Table 2

Participant characteristics on indicator variables.

	Total Sample (<i>N</i> = 412)	Low Cumulative IPV (<i>N</i> = 121)	Low Current/ High Past IPV (<i>N</i> = 258)	High Cumulative IPV (<i>N</i> = 33)
<i>Types of IPV Victimization [Mean, (SE)]</i>				
Sexual	7.8 (0.75)	3.8 (0.62)	5.8 (0.71)	37.9 (7.00)
Physical	18.0 (1.13)	12.1 (1.43)	12.8 (1.05)	78.9 (4.14)
Psychological	80.7 (2.22)	69.7 (4.16)	76.1 (2.9)	153.3 (5.30)
<i>Types of Past IPV Victimization (%)</i>				
Sexual	42.5	4.0	58.5	65.9
Physical	64.7	3.1	93.2	80.0
Psychological	72.7	17.5	97.8	89.6
<i>Childhood Victimization (%)</i>				
Sexual abuse	57.6	45.3	62.0	69.2
Physical abuse	71.3	57.1	77.4	76.3
Physical neglect	67.8	63.1	69.7	70.6
Emotional abuse	78.0	67.8	83.2	76.1
Emotional neglect	89.5	91.0	89.0	88.1
Witnessing father to mother IPV	46.9	42.0	46.1	72.0
Witnessing mother to father IPV	24.1	17.0	26.8	31.6

Table 3

Relation of final latent classes to mental health outcomes and use of IPV.

	Total Sample	Class 1: Low Cumulative IPV (N = 121)	Class 2: High Past/Low Current IPV (N = 258)	Class 3: High Cumulative IPV (N = 33)	2 vs. 1 χ^2	2 vs. 3 χ^2	1 vs. 3 χ^2
Resource Utilization (%)							
Religious or spiritual services	63.4	71.7	58.5	69.5	5.9*	1.6	0.06
Social support from friend/family	72.1	69.2	71.3	88.4	0.2	7.3**	7.3**
Counseling/support group	55.1	40.6	43.7	66.2	0.3	6.5*	7.3**
Use of criminal justice resources	46.8	33.5	42.1	71.9	2.4	12.3***	18.0***
Substance abuse tx/12-step	27.4	16.4	42.1	54.0	27.4***	1.6	16.0***
Saw healthcare provider	20.4	13.8	18.0	63.0	1.0	26.0***	29.5***
Called IPV hotline/infoline	17.5	15.5	16.4	32.6	0.05	3.6	3.7
Stayed at a shelter	15.5	12.8	15.5	25.6	0.4	1.7	2.5
Mental Health [Mean (SE)]							
Depression symptoms	22.6 (12.2)	20.1 (1.0)	22.6 (0.8)	31.2 (2.0)	3.53	16.7***	25.3***
PTSD symptoms	18.4 (10.9)	15.7 (0.9)	18.0 (0.7)	31.1 (1.5)	4.18*	67.04***	83.02***
Alcohol problems	4.5 (6.7)	1.8 (0.3)	5.3 (0.5)	7.9 (1.7)	38.9***	2.15	12.91***
Drug problems	2.5 (4.0)	1.0 (0.2)	2.8 (0.3)	5.0 (0.9)	26.1***	5.07*	17.6***
Current use of IPV [Mean (SE)]							
Sexual	22.6 (12.2)	1.4 (0.5)	2.9 (0.4)	5.7 (1.7)	4.4*	2.5	5.6*
Physical	18.4 (10.9)	13.1 (1.2)	16.9 (1.1)	45.2 (5.3)	5.4*	27.7***	35.2***
Psychological	4.5 (6.7)	62.9 (2.7)	68.3 (2.0)	99.4 (6.3)	2.5	22.2***	28.6***

Notes. χ^2 statistics are provided by Mplus as equality tests of %/means across classes using posterior probabilities based on multiple imputations with one degree of freedom for the pairwise tests.

* p .05,

** p .01,

*** p .001.

Tx = treatment.

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