WOMEN COPING WITH LIFE:
A MIXED METHODS STUDY OF
INCARCERATED WOMEN WITH LIFE SENTENCES

By

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ABSTRACT

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Life sentences have increasingly translated into prison stays until the end of natural life. Incarcerated women serving life sentences comprise a small, but growing, sub-population of the prison population. Women with life sentences enter prison with high rates of physical and mental health concerns, and these concerns are often chronic and recurring needs for women's duration in prison. Pressing concerns include persistent depression and suicide risk factors. However, there is a lack of research focused on improving this population's mental health, and specifically, no existing intervention for this population of women. Thus, this dissertation seeks to enhance and broaden the knowledge base about factors that influence the mental health of women with life sentence in order to provide clarity and guide advocacy for prison-based mental health services. Also, this dissertation includes a sub-study that examines the mental health outcomes for a new intervention with this population of women. Two key theories serve as the foundation for this dissertation: importation theory and deprivation theory. Three sub-studies comprise three core chapters of this dissertation. Across these studies, the results highlight implications for social work practice, policy, and research.

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TESTING A NEW INTERVENTION WITH INCARCERATED WOMEN WITH LIFE SENTENCES: ASSESSING CHANGES IN MENTAL HEALTH AND ANGER

ABSTRACT

Women in prison serving a life sentence are a small but growing subpopulation of incarcerated women. Despite their long-term presence within prisons, there is no existing intervention designed for, tested with, or tailored for this population of women. However, incarcerated women with life sentences present with and report multiple persistent physical and mental health needs upon entry and throughout their stays in prison. This study tested a new gender-responsive, trauma-informed violence prevention intervention (Beyond Violence) that was designed for women with violent offenses and targeted improving women's mental health and anger expression. Pre, post, and follow up surveys were administered to two treatment groups with women with life sentences. Multilevel modeling was conducted to assess changes over time for women's mental health and anger expression and to compare outcomes for women based on their length of time served. While significant positive outcomes were found for all women in regards to trait anger and anger control, women who had been in prison for less than ten years started with higher scores on multiple measures and showed significant rates of change over time. This study is preliminary and offers insight into further social work practice, policy advocacy and research for this population of women.

Introduction

Incarcerated women serving life sentences are a sub-population in prisons that has been largely neglected by prison administrators, practice professionals, and researchers (Owen, 1998; Nellis, 2013). This gap is especially evident in the general lack of evidence-based interventions for incarcerated women with violent offenses, as well as specifically, the absence of interventions tailored for this sub-population and the lack of inclusion of this sub-population in samples testing new interventions. This lack corresponds with the common prison policy of denying or excluding women with life sentences from treatment-based interventions, as such interventions are commonly reserved for women re-entering the community (Nellis, 2013). However, incarcerated women with life sentences have high rates of risk factors based on their pre-prison life experiences and reports of physical and mental health needs during incarceration (Aday & Kabrill, 2011; Dye & Aday, 2013; Leigey & Reed, 2010). Given the rising number of incarcerated women with life sentences (Nellis, 2013), an intervention that is efficacious in addressing these women's mental health and wellbeing in prison may benefit not only the women, but also prison administrators and clinical staff and the women's families. Thus, this study examined the short-term outcomes for incarcerated women with life sentences who completed a new violence prevention intervention which also focused on improving women's mental health and anger-related feeling and expressions.

Background

Women comprise a small fraction of those arrested (14%) and sentenced (5%) for a violent offense within the U.S. (West, Sabol, & Greenman, 2010). A majority of women with life sentences (94%) are serving time for violent offenses and the number of women sentenced to life sentences are a growing subpopulation, rising 14% from 2008-2012 (Nellis, 2013). The increase

in the number of women with life sentences is linked to "tough on crime" sentencing practices (such as the two-strike law in Georgia) focused on long sentences (Nellis & King, 2009). Also, the implication of a life sentence has shifted from indeterminate (i.e. until rehabilitation occurs) to literally the end of natural life (Mauer, King, & Young, 2004). While sentencing varies state to state, there are two main types of life sentences: a "life sentence" and "life without parole". A "life sentence" carries the potential for a prisoner to be released from prison on parole, whereas "life without parole" is typically devoid of that potential. On a national scale, one out of every nine prisoners has a life sentence, either with or without parole, or as a long sentence that exceeds natural life span (Nellis, 2013). On average, a person serving a life sentence is incarcerated for 29 years with little opportunity to be released (Mauer, et al., 2004). For example, in California, those in prison with a life sentence have an 18% chance of being approved for release by the Parole Board (Weisberg, et al., 2011), and in Michigan, the chance is 9% (Levine, 2014) making release a rare event.

A key component for women's release from prison is their reduced risk for criminal behavior and recidivism, gained often through required, formal treatment-based interventions (Chesney-Lind, 1998; Messina, Burdon, Hagopian, & Prendergast, 2006). In order for women to be even considered for possible release, prison administrators evaluate women's progress toward and capacity for positively managing dynamic risk factors, such as attitudes, emotionality, and coping skills, in decision-making processes related to release and risk (Hannah-Moffat & Yule, 2011). These skills and progress are often obtained through treatment-based programming while in prison. In a recent systematic review of interventions specifically for women in correctional settings in the United States, none of the reviewed interventions were primarily focused on anger management or violence prevention (Tripodi, Bledsoe, Kim, & Bender, 2011). Most of the

interventions concentrated on substance abuse treatment with the goal of preventing recidivism, and were designed to be delivered to women preparing to exit prison and re-enter their communities. (Of note, the review excluded a study by Eamon, Munchua, and Reddon (2002) that focused on an anger management intervention for incarcerated Canadian women convicted of violent and/or nonviolent offenses.) A small number of the reviewed interventions had the purpose of improving women's behavior, as well as physical and mental health while in prison (Tripodi, Bledsoe, Kim, & Bender, 2011).

While none of the reviewed interventions detailed a specific focus or inclusion of women with life sentences, this population of women could benefit from interventions aimed at improving wellbeing in prison. Women with life sentences arrive at prison with higher rates of psychosocial needs, including high rates of mental health concerns, suicide risk factors, and histories of sexual abuse, childhood abuse, and intimate partner violence victimization (Leigey & Reed, 2010). Based on personal accounts, women who enter prison with a life sentence describe feeling unable to process their reality and emotionally numb, as well as easily hopeless and depressed (George, 2010). In a qualitative study, women with life and long term sentences reported depression, hopelessness, and anger, especially at the beginning of their sentence, as they described adjusting to prison as a process of coming to terms with "an existential death", akin to the stages of grief often described by terminally-ill patients (Jose-Kampfner, 1990). This process also includes perpetual psychological distress over time in prison. Women with life sentences report a multitude of physical and mental health concerns especially as they age in prison (Aday & Krabrill, 2011). Women who have served longer sentences (over ten years) have reported more problems with the prison environment, such as boredom and a dearth of educational, work, and social opportunities (MacKenzie, et al., 1989), and one study suggested

that the more time a woman serves, the more difficulty she may have with psychologically responding to prison (Vuolo & Kruttschnitt, 2008). Depression and suicide risk are particular recurring factors for concern, both early in women's stays in prison (Dye & Aday, 2013) and after longer periods of time in prison (Clements-Nolle, Wolden, & Bargmann-Losche, 2009) .

Women with life sentences are in need of physical and mental health treatment opportunities in prison. The prison physical and psychological health care system may face increased demands as the number of women serving life sentences increases, both for women upon arrival to prison and over their long-term stay in prison. Thus, given the lack of interventions for this population of women with the corresponding needs of these women, testing and evaluating a new intervention with women with life sentences fills a current gap in both research and practice, with an opportunity to advance policy advocacy efforts as well.

A New Intervention: Beyond Violence

In response to the need for a violence prevention intervention for incarcerated women, Beyond Violence (Covington, 2011) was developed as a gender-responsive and trauma informed intervention specifically for incarcerated women with violent offenses. Gender-responsive and trauma informed services have been strongly advocated for incarcerated women (Bloom, Owen, & Covington, 2003; Fournier, Hughes, Hurford, & Sainio, 2011; Laux et. al, 2008) given that motivations for, and victims of, crimes perpetrated by women frequently differ from male perpetrated crimes (e.g. Pollock & Davis, 2005; Kruttschnitt, Gartner, & Ferraro, 2002). Also gender differences have been found in comparisons of background and incarceration experiences of men and women (e.g. Messina, Burdon, Hagopian, & Prendergrast, 2006; Raj et al., 2008; Fazel, Bains, & Doll, 2006; Kubiak, Beeble & Bybee, 2010; James & Glaze, 2006). Gender-responsive interventions focus on empowerment and improving problem solving, self-image, and

self-efficacy, based on understanding the pathways to crime common for women include their high rates of victimization, mental health distress and substance use disorders (Chesney-Lind & Pasko, 2013; Bloom, Owen, & Covington, 2003; Green, Miranda, Daroowalla, & Siddique, 2005).

Beyond Violence (Covington, 2011) is based in trauma theory (Herman, 1992,1997) and incorporates a guiding tenant that experiences of trauma influence both perceptions of and reactions to life events (Kendall-Tackett, 2000). This trauma-informed approach incorporates an understanding that early or ongoing exposure to traumatic events can result in mental health distress (Breslau et al. 1999; Ehrensaft, Moffitt, & Caspi, 2006; Horwitz et al. 2001; Molnar, Buka, & Kessler 2001), repressed anger (Cougle, Timpano, Sachs-Ericsson, Keough, & Riccardi, 2010; Neumann, Houskamp, Pollock, & Briere, 1996; Newman & Peterson, 1996; Springer, Sheridan, Kuo, & Carnes, 2007) and the use of alcohol and other drugs as ways of coping and responding to trauma (Hedtke et al., 2008; Najavitis, Weiss, & Shaw, 1997). Likewise, these factors have shown significant associations with violence perpetration by women: serious mental illness and symptoms of depression, anxiety, and PTSD (Goldenson, Geffner, Foster, & Clipson, 2007; Kirby et al., 2012; Logan & Blackburn, 2009; Silver, Felson, & Vaneseltine, 2008); anger expression as highly suppressed or highly expressed (Maneta, Cohen, Schulz, & Waldinger, 2012; Swan, Gambone, Fields, Sullivan, & Snow, 2005; Wolfe, Wekerle, & Straatman, 2004), and substance abuse (White & Widom, 2003). Also, these factors have shown significant associations when studied individually and when studied in tandem as a conceptual model of women's involvement in violence (Kubiak, Kim, Fedock, & Bybee, under review; Swan & Snow, 2006).

In addition to a foundation in trauma-theory, Beyond Violence is centered in the socio-ecological model of violence prevention (Dahlberg & Krug, 2002) endorsed and utilized by the World Health Organization. Violence is defined in this model as falling into three broad categories: self-directed violence, interpersonal violence, and collective violence. This model incorporates addressing risk factors for violence prevention, which are the same for violence victimization and perpetration. Likewise, the socio-ecological model of violence prevention acknowledges risk factors on individual, relational, community, and societal level and organizes the curriculum content into these four areas. The content of the intervention was developed after an extensive review of existing interventions, focus groups conducted with likely participants about the material (e.g. psycho-education and activities), and discussions with professionals (treatment and criminal justice oriented). Beyond Violence utilizes a multimodal approach and a variety of evidence-based therapeutic strategies (i.e., psycho-education, role-playing, mindfulness activities, cognitive behavioral restructuring, and grounding skills for trauma triggers) to address issues of mental health, substance abuse, trauma histories, and anger regulation. This 20-session group intervention is designed to be delivered by a trained professional with a group size of 8-15 women. Beyond Violence incorporates attention to women's victimization histories, gender socialization, and co-occurring substance use and mental health disorders in order to prevent future violence and improve women's wellbeing.

Current Study

Thus far, Beyond Violence has demonstrated efficacy with positively influencing women's mental health and anger-related outcomes in both the therapeutic treatment unit of prison (Kubiak, Kim, Fedock, & Bybee, 2012) and in general population (Kubiak, Kim, Fedock, & Bybee, 2014) with women convicted of violent offenses. For the pilot testing of Beyond

Violence, three groups of women with violent offenses were utilized, which included a small sub-sample of eight incarcerated women with life sentences (Kubiak, Fedock, Tillander, Kim, & Bybee, 2014). This small sub-sample had higher scores on measures of mental health and showed a significant decrease in PTSD symptoms when compared to women without life sentences (Kubiak, Kim, Fedock, & Bybee, 2012). Feedback from the women with life sentences in the pilot groups was elicited in order to make the Beyond Violence content applicable and relevant for women with life sentences. Given that women's rates of violence in prison are low (Owen, Wells, Pollock, Muscat, & Torres, 2008), this study focused mainly on the mental health and anger-related outcomes of Beyond Violence with this population of women. It is seemingly the first study to utilize a treatment sample of only women with life sentences and to investigate outcomes specifically for these women.

This study examines the short-term outcomes related to changes in mental health symptoms and anger experiences and expressions for two Beyond Violence treatment groups of incarcerated women with life sentences. The research questions for this study were: 1) Do mental health symptoms of anxiety, depression, PTSD, and serious mental illness improve for incarcerated women with life sentences after participating in Beyond Violence?; 2) Do forms of anger and anger expression change after participating in Beyond Violence?. Also, based on the current research that differences may exist between women new to prison and those who have been in prison for a long period of time, the last research question is: 3) Are there differences in mental health and anger-related outcomes for women based on the length of time served?

Methods

Study Design

This study was quasi-experimental with a pretest-posttest design (Shadish, Cook, & Campbell, 2002). A survey was administered by the research staff prior to the start of treatment,

at the end of treatment, and three months following the end of treatment. A sample of 26 incarcerated women was divided into two Beyond Violence treatment groups (Group A with 14 women; Group B with 12 women) with no control group. This study was part of a larger multi-phase intervention study, and all study procedures were approved by the Institutional Review Board at Michigan State University, which included review by a prison advocate.

Participants

An initial random sample of 68 women with life sentences was utilized in order to form two Beyond Violence treatment groups within a state women's prison. Considering that women with life sentences are typically not included in treatment groups within this prison, the sample of women met the researchers' criteria as well as received final approval by prison administrative leadership. Correctional administrators worked with research staff to determine women who met criteria for group inclusion. Criteria included: (1) currently housed in a lower security level; (2) absence of major misconduct tickets in the previous eighteen months and a need for substance abuse treatment; and (3) currently serving a life sentence (with or without possibility of parole) for a violent offense. From the list generated by the prison administrators, women were stratified on amount of time served and then assigned to the treatment groups such that the groups were equivalent in amount of time served. Prison administrators also prohibited certain relational dynamics within the groups' composition (e.g. no relatives such as mothers/daughters and no co-defendants within the same group.) Also, women's schedules were reviewed to ensure availability for group participation on the chosen day/times for the treatment; women who had work conflicts were considered ineligible.

Research staff held an informational meeting with the remaining eligible women (n=28) to discuss their possibility of participating in a Beyond Violence treatment group, provide an

overview of the process and specific information about the study, and gather informed consent from women who were interested in the intervention. Of the 28 women called-out for this meeting, three women did not attend, and a second informational meeting was held with these three women at a subsequent date. After these two informational meetings, a total of 26 women agreed to participate after one woman declined to participate and one woman was ineligible. All women were living on the General Population unit of the prison. Likewise, all women had been convicted of murder; however, 15 of the women serving life sentences were convicted of first degree murder (i.e. premeditated or intentional murder) and 11 were convicted of second degree murder (i.e. unplanned, unintentional murder or murder due to reckless or neglectful behavior). The characteristics of this sample (see Table 4) are reflective of overall characteristics of incarcerated women with life sentences (Nellis, 2013).

Procedures

As is standard in intervention research (Fraser et al, 2009), pre- and post-tests were used to assess changes in repeated measures at the end of the intervention. A member of the study's research team (who was not involved in the treatment groups) met with women at three time points for survey collection: (1) before the first group session; (2) at the end of the intervention; and (3) three months after the end of the group.

The same facilitator conducted both treatment groups and had an extensive, over ten-year clinical experience background with women involved in the criminal justice system. The groups did not occur completely simultaneously; Group 1 lasted for approximately three months from July-September 2012 and Group 2 occurred from August-November 2012. Both groups met twice a week for one and half hours per group session. In regards to attendance, prison policy

dictated that women could not miss more than two group sessions in order to participate; women attended an average of 19.42 sessions out of the 20 sessions.

Table 4: Participant demographics and background experiences (n=26)

	Frequency	%
Conviction		
First Degree Murder	15	57.69%
Second Degree Murder	11	42.31%
Sentence		
Life with Opportunity for Parole	17	65.38%
Life without Opportunity for Parole	9	34.62%
Race		
Black women	13	50%
White women	13	50%
Time Served (# of Years Incarcerated)		
>10 years	10	38.46%
<10 years	16	61.54%
Marital Status		
Single	20	76.92%
Married/Partner	3	11.54%
Separated/Divorced	3	11.54%
Mothering		
Children, Minors	11	42.31%
Children, Not Minors	11	42.31%
No Children	4	15.38%
Trauma Histories		
Childhood Emotional Abuse	19	73.08%
Childhood Physical Abuse	15	57.69%
Childhood Sexual Abuse	22	84.61%
Any Childhood Abuse	24	92.31%
Intimate Partner Violence	19	73.08%
Adult Victimization (not-IPV)	14	53.85%
Any Trauma	26	100%
Perpetration Histories		
Physical Violence (Partner)	11	42.31%
Physical Violence (Other)	8	30.77%
Both Partner and Other	5	19.23%
Uncaught Violent Behaviors	13	50%

Measures

The survey used at each time point included measures assessing various constructs of mental health (i.e., depression, anxiety, PTSD and serious mental illness) and types of anger and anger expressions. These measures were used to examine differences over time.

Depression. The Patient Health Questionnaire: Depression Subscale (Kroenke, Spitzer & Williams, 2001) is a 9-item subscale that assesses the number of depression symptoms experienced in the prior two week period. This scale has been used to measure depression with multiple populations including adults with offense histories, incarcerated youths, and incarcerated women (Domalanta, Risser, Roberts, & Risser, 2003; Kubiak, Kim, Fedock, & Bybee, 2012). The scale has items such as "Experienced little interest or pleasure in doing things" and "Felt bad about yourself, or felt that you are a failure or have let yourself or your family down." Respondents rated items on 4-point Likert scale ranging from "Not at all (0)" to "Nearly everyday (3)." The nine responses were summed to measure the severity of depression symptoms and had a Cronbach's alpha ranging from .75-.90 with this sample.

Anxiety. The Patient Health Questionnaire: Anxiety Subscale (Spitzer, Kroenke, & Williams, 1999) is comprised of 7-items that examine the number of anxiety symptoms over the past four weeks. The first item ,"Over the last four weeks, how often have you been feeling nervous, anxious, on edge, or worrying a lot about different things?", was a screening question to determine if participants had experienced anxiety symptoms over the prior four week period. Participants then responded to the remaining six items which included "Getting tired very easily", and "Feeling so restless that it's hard to sit still." Respondents rated each item with a response on a 4-point Likert scale ranging from "Not at all (0)" to "Nearly every day (3)". The summed score of the 7 items was used for analysis and the Cronbach's alpha ranged from .87-.88 with this sample.

Post-Traumatic Stress Disorder/PTSD. The Short Screening Scale for DSM-IV Posttraumatic Stress Disorder (modified version, Breslau, Peterson, Kessler, & Schultz, 1999) was an 8-item measure that collected current PTSD symptoms. This measure has been used for detained youth and women involved in the criminal justice system (Abram, Teplin, Charles, Longworth, McClelland, & Dulcan, 2004; Kubiak, Beeble, & Bybee, 2010) The first item was a screening question to determine if participants were ever exposed to a traumatic event; specifically, "In your life, have you ever had any experience that was considered frightening, horrible, or upsetting?" Participants who provided an affirmative response to the screening question were then asked to answer the remaining seven items, which included items such as, "Avoided being reminded of this experience by staying away from certain places, people, or activities" and "Became jumpy or got easily startled by ordinary noises or movements." Respondents provided responses on a 4-point Likert scale ranging from "Not at all (0)" to "Nearly everyday (3)". Cronbach's alpha for this scale ranged from .79 to .83 for this sample.

Serious mental illness/ SMI. The K6 (Kessler et al., 2002; Kessler et al,. 2003) is a brief 6-item measure that assesses the participant's overall mental health and examines their level of serious mental health distress over the prior four week period. The items include, "Over the last 4 weeks, how often have you felt nervous" and "Over the last 4 weeks, how often have you felt hopeless?" Respondents provided responses to items on a 5-point Likert scale of frequency ranging from "None of the time (0)" to "All of the time (4)". A total score was used for analysis and Crohbach's alpha ranged from .87 to .91 for this sample.

State and trait anger. The State-Trait Expression Inventory – 2 (STAXI-2; Spielberger, 1999) is used to measure the experience and intensity of anger as an emotional state and as an emotional trait. This instrument has been commonly and widely used for the measurement of the

experience and expression of anger among incarcerated men and women (Dear, Thomson, Howells, & Hall, 2001; Fernández-Montalvo, Echeburúa, & Amor, 2005; Schützwohl & Maercker, 2000; Suter, Bryne, Bryne, Howells, & Day, 2002). The test-retest reliability of this instrument has also shown to remain stable over time (Bishop & Quah, 1998; Jacobs, Latham, & Brown, 1988). The STAXI-2 was included to explore changes in the experience of, responses to, and the expression of anger, mainly through the constructs of state anger (i.e. anger as a temporary emotional state) and trait anger (i.e. intensity of anger as a constant component of the personality).

The 57-item STAXI-2 includes six scales, five subscales, and an Anger Expression Index. The State Anger scale assesses the intensity of angry feelings at a particular time, specifically the present moment. High State Anger scores translate to having experiences of relatively intense angry feelings. The State Anger scale consists of 15 items in three subscales, Feeling Angry, Feel like Expressing Anger Verbally, and Feel like Expressing Anger Physically. Participants rate the intensity of their emotions "right now" on a 4-point Likert scale ranging from "1 (Not at all)" to "4 (Very much so)". The Cronbach's alpha for this scale ranged from .91 to .97 with this sample

The Trait Anger scale measures how the respondent feels anger over time and perceives this anger. High Trait Anger scores indicate that a respondent may feel frequently and persistently angry feelings and often feel treated unfairly by others. The Trait Anger scale consists of 10 items in two subscales, Angry Temperament and Angry Reaction. Participants rate how they 'generally' feel on a 4-point Likert scale ranging from "1 (Almost never)" to "4 (Almost always)". Cronbach's alpha for this scale ranged from .84 to .90 with this sample.

Four sub-scales assess the expression and management of anger: Anger Expression-Out, Anger Expression-In, Anger Control-Out and Anger Control-In. Each sub-scale is comprised of 8 items. Anger Expression-Out measures the expression of anger toward other persons in the environment, and high scores indicate frequent use of aggressive behaviors as an expression of anger. Cronbach's alpha for this subscale ranged from .61 to .77 for this sample. Anger Expression-In measures the angry feelings directed inward, and high scores correspond to having intense angry feelings, but with the tendency to suppress these feelings rather than expressing them either physically or verbally. Cronbach's alpha for this sub-scale ranged from .68 to .81 for this sample. Anger Control-Out is related to behaviorally preventing the expression of anger toward other persons or objects in the environment, and higher scores are typically favorable as they display a monitoring of angry feelings and preventing of aggressive outward anger expression. Cronbach's alpha for this sub-scale ranged from .87 to .93 for this sample. Anger Control-In is related to the control of suppressed angry feelings by calming down or cooling off when angered. Persons with high Anger Control-In scores tend to calm down and reduce their anger quickly. Cronbach's alpha for this sub-scale ranged from .93 to .95 for this sample. For each of these sub-scales, participants rate how they generally react in certain situations on a 4-point Likert scale ranging from "1 (Almost never)" to "4 (Almost always)" for these four scales.

Analysis

Preliminary analysis was conducted using paired-samples t-tests to examine differences in mental health and anger-related measures across all participants over time. To confirm and further test these results, multilevel modeling (MLM; Raudenbush & Bryk, 2002) was used for final analysis, in effect taking into account that repeated measures are nested within individuals. MLM is currently suggested in treatment studies for an analysis of longitudinal data with

repeated measures (Nash, Kupper, & Fraser, 2004). The intraclass correlation (ICC) ranged from .40 to .71 for all outcome variables, indicating that substantial proportions of variance were accounted for by grouping of observations within women, thus confirming MLM as an appropriate analytic strategy. Also, the number of months between the baseline and the end of treatment survey ranged from 2.56 months to 2.93 months, with a mean of 2.76 months (*SD*=0.19) and between the baseline and final follow-up survey, the number of months ranged from 5.93 to 7.63 across women, with a mean of 6.72 months (*SD*=0.42). In addition to appropriately handling dependencies in repeated measures data, MLM allows for variability in the timing of the collection of measures across participants over time and accommodates missing data.MLM shows the relationship and type of change between participants' starting scores and their change over time based on each participant's individual intercept and slope. This allows for examining the changes in the slope, taking into account at what point each woman started. This two-level MLM incorporated three assessments collected over three time points (Time=Level 1) for each of the 26 participants in the sample (Participants =Level 2). For Level 1, Time was measured as number of days since the pre-test survey and centered on the pre-test.

The MIXED procedure in SPSS was utilized for this analysis (IBM SPSS Statistics, version 22.0; Peugh & Enders, 2005). The models included random intercepts. A comparison of models with random and fixed slope effects was conducted and the model with the best fit according to Likelihood Ratio Chi-Square was chosen. For all models, a quadratic term (e.g. converting time into a power polynomial) was tested, but no significant quadratic trends were found with any of the models. The results presented below are based on models with Time centered on the pre-test assessment; however, analyses were also run with the results centered on the post-test with similar results found. To test for differences in outcomes between women

based on the length of time served (short versus a long time served), the grouping variable was added to the best-fitting model for each dependent variable. This variable was given the label of "Length of Time Served" with women given a code of "0" for less than 10 years and a "1" for having served more than 10 years of their life sentence. Additional analysis included probing significant 2-way interaction effects in order to fully explore the direction and significance of the simple slopes for each group (Preacher, Curran, & Bauer, 2006).

Surveys were collected from all 26 women at the pre and post-test time points. However, two women were unable to complete their surveys at the three month time point; one woman who undergoing chemotherapy which confined her to her cell and another woman declined to participate in this final assessment. Also, at each time point, some women chose not to answer some survey questions- however, a majority of questions were answered. Taking into account the data from all three time points, Little's Test of Missing Completely at Random (Little's MCAR) was conducted and suggested that the pattern of missing data was random (Little's MCAR chi square =148.58, df= 2618, p=1.00). All cases were included in the analysis, and in consideration of the small sample and other issues, a restricted maximum likelihood (REML) approach was used for estimation (Snijders & Bosker, 1999). For this sample of 26 women, power estimation for multilevel analyses was conducted with Optimal Design Software (Raudenbush et al., 2011). This showed that the sample of 26 would provide statistical of power of .8 to detect as significantly different from zero at two-tailed $p<.05$ a large slope effect (i.e., accounting for at least 17% of the variance with ICC of .40; 20% with ICC of .70). For detection of differences between groups who had served long vs. short amounts of time, the minimum detectable effects would be larger, accounting for at least 25% of the variance.

Results

Participants

Demographic and background characteristics of the participants are reported in Table 4. The mean age for the sample was 42 years old (*SD*=9.48 years; range 22-60) and the average length of time served in prison was 14.35 years (*SD*=8.95 years, range 1-38 years). The two treatment groups were relatively equivalent in regards to the stratification variables used for randomization; the groups did not significantly differ in average age or length of incarceration. All women were convicted of homicide. Therefore, the analyses were conducted with data combined from both groups of women. Women's scores on the mental health and anger related outcomes at pre, post, and 3 month follow-up time points are reported in Table 4. These scores are also reported based on women's length of time served. For screening purposes, women who had served less than 10 years went from an average depression score of 10.10 (*SD*=6.37) to 5.70 (*SD*=5.52). The clinical cut-off score for major depression is 10 or higher, indicating the average score fell below the clinical cut-off over time (Kroenke & Spitzer, 2002).

Preliminary Paired Sample T-Tests Results for Changes for All Women over Time

The results of the initial paired sample t-tests are reported in Table 5. For mental health measures, significant score changes were found for serious mental illness at both post-test and the 3 month follow-up time point. Significant changes in scores were also found for PTSD from pre-test to the 3 month follow-up time point. For the anger-related measures, significant changes were found for Trait anger, as well as Anger Control In and Anger Control Out from the pre-test to the post-test time point and also from the pre-test to the 3 month follow-up time point.

Table 5: Mental health and anger outcome variables across time for all women
Means and standard deviations (SD)

	Baseline		**Post-BV**		**Follow-Up**	
	Mean	***SD***	**Mean**	***SD***	**Mean**	***SD***
Depression	7.19	*5.80*	5.46	*6.00*	5.25	*5.14*
1-9 years served	10.10	*6.37*	6.40	*7.04*	5.70	*5.52*
10+ years served	5.38	*4.75*	4.88	*5.41*	4.93	*5.05*
Anxiety	5.42	*4.51*	4.42	*4.73*	4.96	*5.39*
1-9 years served	7.80	*4.64*	5.80	*5.82*	4.50	*5.56*
10+ years served	3.94	*3.87*	3.56	*3.85*	5.29	*5.44*
PTSD	6.65	*5.07*	5.34	*4.90*	4.88	*4.50*
1-9 years served	9.50	*5.60*	6.00	*5.35*	4.90	*4.66*
10+ years served	4.88	*3.90*	4.94	*4.72*	4.86	*4.56*
SMI	7.35	*5.54*	5.35	*6.17*	5.88	*6.28*
1-9 years served	10.40	*5.37*	5.50	*5.91*	6.50	*7.34*
10+ years served	5.44	*4.87*	5.25	*6.52*	5.43	*5.65*
Trait Anger	15.69	*5.11*	13.15	*3.99*	12.92	*4.60*
1-9 years served	16.80	*5.75*	13.40	*4.14*	13.00	*5.68*
10+ years served	15.00	*4.72*	13.00	*4.01*	12.86	*3.88*
State Anger	20.04	*6.94*	18.85	*5.91*	20.13	*9.60*
1-9 years served	20.90	*9.10*	20.20	*7.90*	20.80	*9.64*
10+ years served	19.50	*5.47*	18.00	*4.34*	19.64	*9.91*
Anger Expression Out	13.88	*3.35*	13.04	*3.78*	12.79	*3.08*
1-9 years served	15.00	*3.80*	12.90	*4.33*	13.00	*4.00*
10+ years served	13.19	*2.95*	13.13	*3.54*	12.64	*2.37*
Anger Expression In	16.11	*4.62*	15.42	*4.45*	17.04	*5.83*
1-9 years served	18.30	*5.32*	17.90	*4.61*	17.60	*5.99*
10+ years served	14.75	*3.66*	13.13	*3.69*	16.64	*5.92*
Anger Control Out	21.65	*6.25*	24.04	*6.96*	24.75	*5.77*
1-9 years served	21.90	*6.89*	24.20	*7.42*	21.70	*5.89*
10+ years served	21.50	*6.04*	23.94	*6.90*	26.93	*4.76*
Anger Control In	22.50	*7.38*	25.73	*6.58*	26.88	*6.15*
1-9 years served	21.60	*7.55*	25.90	*6.38*	23.30	*6.40*
10+ years served	23.06	*7.46*	25.63	*6.91*	29.43	*4.67*

Table 6: Paired-samples t-tests results for mental health and anger measures for all women over time

	Pre/Post Tests				**Pre/Follow-Up Tests**			
	Pre-Test Mean (SD)	***Post-Test Mean (SD)***	***Test Statistic[1]***	***Effect Size[2]***	***Pre-Test Mean (SD)***	***Follow-Up Test Mean (SD)***	***Test Statistic[1]***	***Effect Size[2]***
Depression	7.19 (5.80)	5.46 (6.00)	1.65	0.32	7.19 (5.80)	5.25 (5.14)	1.68	0.34
Anxiety	5.42 (4.51)	4.42 (4.73)	1.35	0.26	5.42 (4.51)	4.96 (5.39)	0.38	0.07
PTSD	6.65 (5.07)	5.34 (4.90)	1.61	0.31	6.65 (5.07)	4.88 (4.50)	2.25*	0.46
SMI	7.35 (5.54)	5.35 (6.17)	2.11*	0.41	7.35 (5.54)	5.88 (6.28)	1.23*	0.25
State Anger	20.04 (6.94)	18.85 (5.91)	1.32	0.26	20.04 (6.94)	20.13 (9.60)	-0.297	0.06
Trait Anger	15.69 (5.11)	13.15 (3.99)	3.91*	0.77	15.69 (5.11)	12.92 (4.60)	-2.86*	0.58
Anger Expression Out	13.88 (3.35)	13.04 (3.78)	1.72	0.34	13.88 (3.35)	12.79 (3.08)	1.37	0.28
Anger Expression In	16.11 (4.62)	15.42 (4.45)	0.87	0.17	16.11 (4.62)	17.04 (5.83)	-0.62	0.13
Anger Control Out	21.65 (6.25)	24.04 (6.96)	-2.49*	-0.49[3]	21.65 (6.25)	24.75 (5.77)	-2.05*	-0.42[3]
Anger Control In	22.50 (7.38)	25.73 (6.58)	-2.75*	-0.54	22.50 (7.38)	26.88 (6.15)	-3.07*	-0.63

*: p<.05, **: p<.01, ***: p<.001

[1] T-value from paired samples t-test, *df*=25

[2] Cohen's D

[3]Negative d's reflect average increases in scores

Changes in Mental Health and Anger Outcome Variables over Time

The results of MLM analyses on each of the outcome measures are summarized in Table 6. The first set of columns lists the intercept terms, which were estimated as random and centered at the pre-intervention time point. For example, on average, the women scored 6.65 on the depression measure, which is significant (e.g. significantly different than zero). Average scores were found to be significant for all measures, but this result is not necessarily informative. The second set of columns lists the slope coefficients describing the trajectory of change over time. In most cases, slope terms were estimated as fixed; for two dependent variables, slopes were estimated as random. The *mental health* outcome variable slope coefficients were negative, indicating that the scores of mental health symptoms decreased from the pre-test to the 3 month follow up assessment. However, none of these slopes were significantly different from zero. For the *types of anger* related variables, the slope coefficients for Trait anger were also negative, indicating the desired decrease in this types of anger. This decrease for Trait anger was significant over time. Unlike Trait anger, State anger showed an increase, yet this change was not significantly different than zero. In terms of *forms of anger expression*, the coefficients for the variable of Anger Expression Out decreased, meaning a lessening of physical acts (such as pushing, yelling) to express anger while the slope coefficients for Anger Expression In increased. However, neither of these changes were significantly different than zero. Lastly, the coefficients for Anger Control Out and Anger Control In increased, and for Anger Control In, this change was significant, indicating positive changes in skills of managing and defusing anger.

Table 7: Multilevel analysis of mental health and anger outcomes over time (2-level multilevel models)

	Intercept at the Baseline Time Point			Time		
	B	***sig***	***se***	***B***	***sig***	***se***
Depression	6.65	***	1.01	-0.24		0.16
Anxiety	5.06	***	0.90	-0.03		0.14
PTSD	6.17	***	0.90	-0.19		0.14
SMI	6.58	***	1.14	-0.10		0.15
State Anger[a]	19.49	***	1.34	0.07		0.29
Trait Anger	15.12	***	0.86	-0.38	**	0.12
Anger Expression Out	13.69	***	0.65	-0.11		0.08
Anger Expression In	15.67	***	0.91	0.16		0.15
Anger Control Out	22.45	***	1.22	0.31		0.31
Anger Control In	23.26	***	1.22	0.58	**	0.18

*: p<.05, **: p<.01, ***: p<.001

a. For this dependent variable, the random slope model was used as it was estimated through the Likelihood Ratio Chi-Square comparison test to be the best fit. For all other dependent variables, models with a fixed slope were used as they were estimated to be the best fit.

Changes in Mental Health and Anger Variables over Time by Amount of Time Served

The results of MLM analyses for all measures including the covariate of length of time served are reported in Table 7. Women's length of time served was categorized into less than 10 years (coded 0) and more than 10 years (coded 1). Women who had served less than 10 years started Beyond Violence with higher scores on all *mental health measures*. They were significantly higher on scores of anxiety (-4.08, *SE*=1.82, *p*=0.03), with scores approaching significant difference for depression (-3.87, *SE*=2.05, *p*=0.07) and PTSD (-3.37, *SE*=1.85, *p*=0.08). [Note that the negative coefficients indicate higher levels for this group, which was coded 0.] Also, for women who had served less than 10 years, the rate of change was significantly different than zero for depression (an average decrease of 0.58 points per month, *SE*=0.24, *p*=0.02), anxiety (an average decrease of 0.47 points per month, *SE*= 0.21, *p*=0.03), and PTSD (an average decrease of 0.48 points per month, *SE*=0.21, *p*=0.03). The monthly average

rate of change for serious mental illness approached significance for women who had been in prison for less than 10 years (-0.41, *SE*= 0.23, *p*=0.08).

Table 8: Multilevel analysis of mental health and anger outcomes over time by length of time served[1]

	Intercept			**Time**			**Years**			**Time * Years**		
	B	**sig**	**se**	**B**	**sig**	**se**	**B**	**sig**	**se**	**B**	**sig**	**se**
Depression	9.01	***	1.61	-0.58	*	0.24	-3.87		2.05	0.59		0.32
Anxiety	7.54	***	1.43	-0.47	*	0.21	-4.08	*	1.82	0.76	**	0.27
PTSD	8.23	***	1.45	-0.48	*	0.21	-3.37		1.85	0.49		0.27
SMI	8.72	***	1.84	-0.41		0.23	-3.53		2.35	0.55		0.31
State[a]	20.61	***	2.18	-0.00		0.47	-1.82		2.78	0.12		0.61
Trait	16.02	***	1.41	-0.50	**	0.18	-1.48		1.80	0.22		0.24
Expression Out	14.48	***	1.08	-0.26	*	0.12	-1.32		1.37	0.27		0.16
Expression In	18.28	***	1.42	-0.11		0.23	-4.27	**	1.81	0.45		0.30
Control Out	23.68	***	1.98	-0.08		0.25	-2.06		2.53	0.66	*	0.33
Control In	24.45	***	1.98	0.19		0.28	-2.00		2.53	0.68		0.37

*: p<.05, **: p<.01, ***: p<.001

[1]Length of time incarcerated (Years) was categorized into 0= Less than 10 years; 1= 10 years or longer.

[a] For this dependent variable, the random slope model was used as it was estimated through the Likelihood Ratio Chi-Square comparison test to be the best fit. For all other dependent variables, models with a fixed slope were used as they were estimated to be the best fit.

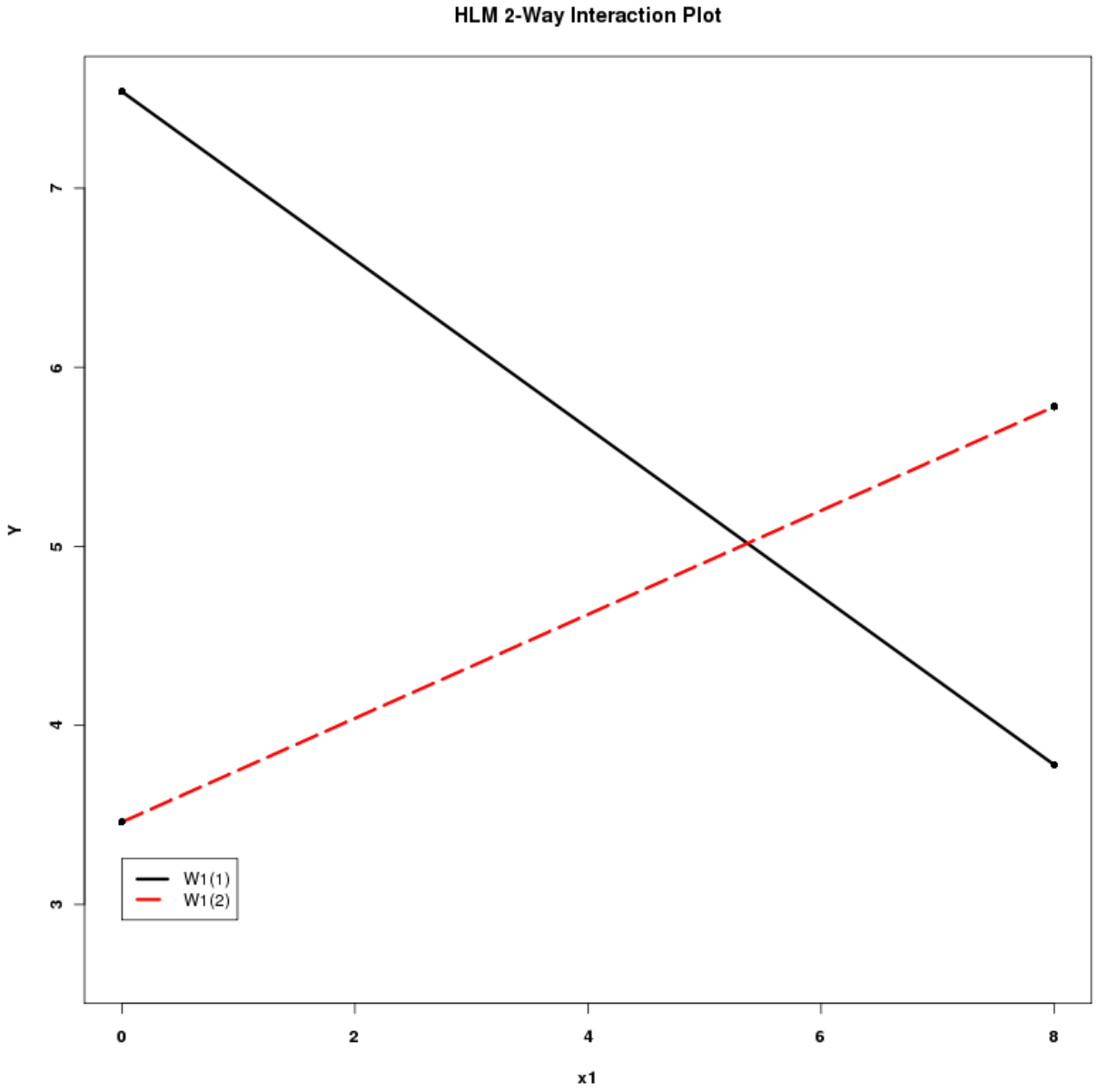
Significant interactions of time and length of time incarcerated were found for anxiety (*B*=0.76, *SE*=0.27, *p*=0.008), and approached significant for depression (*B*=0.59, *SE*=0.32, *p*=0.08), PTSD (*B*=0.49, *SE*=0.27, *p*=0.08) and serious mental illness (*B*=0.55, *SE*=0.31, *p*=0.08). The simple slopes for anxiety showed that the score for women who had served less time significantly decreased (-0.47, *z*=-2.35, *p*=0.02) while the score for women who had served more time increased and approached significance (0.29, z=1.6743, p=0.09). The plot of changes over time for both sub-groups is presented in Figure 5. [Note that the plots are constructed with the x-axis covering the full range of time and the y-axis displaying only the observed range- this which was done to provide maximum visibility of this interaction.] For depression, serious

mental illness, and PTSD, women who had served a longer period of time did not show changes significantly different from zero.

In regards to the *anger variables*, women who had served less than 10 years started Beyond Violence with higher scores on all anger measures, and were significantly higher on scores of Anger Expression In (-4.27, *SE*=1.81, *p*=0.02) than women who had served over 10 years in prison. For women who had served less than 10 years in prison the rate of change was significantly different than zero on Trait anger (an average decrease of 0.50 points per month, *SE*=0.18, *p*=0.009) and Anger Expression Out (an average decrease of 0.26 points per month, *SE*=0.12, *p*=0.03).

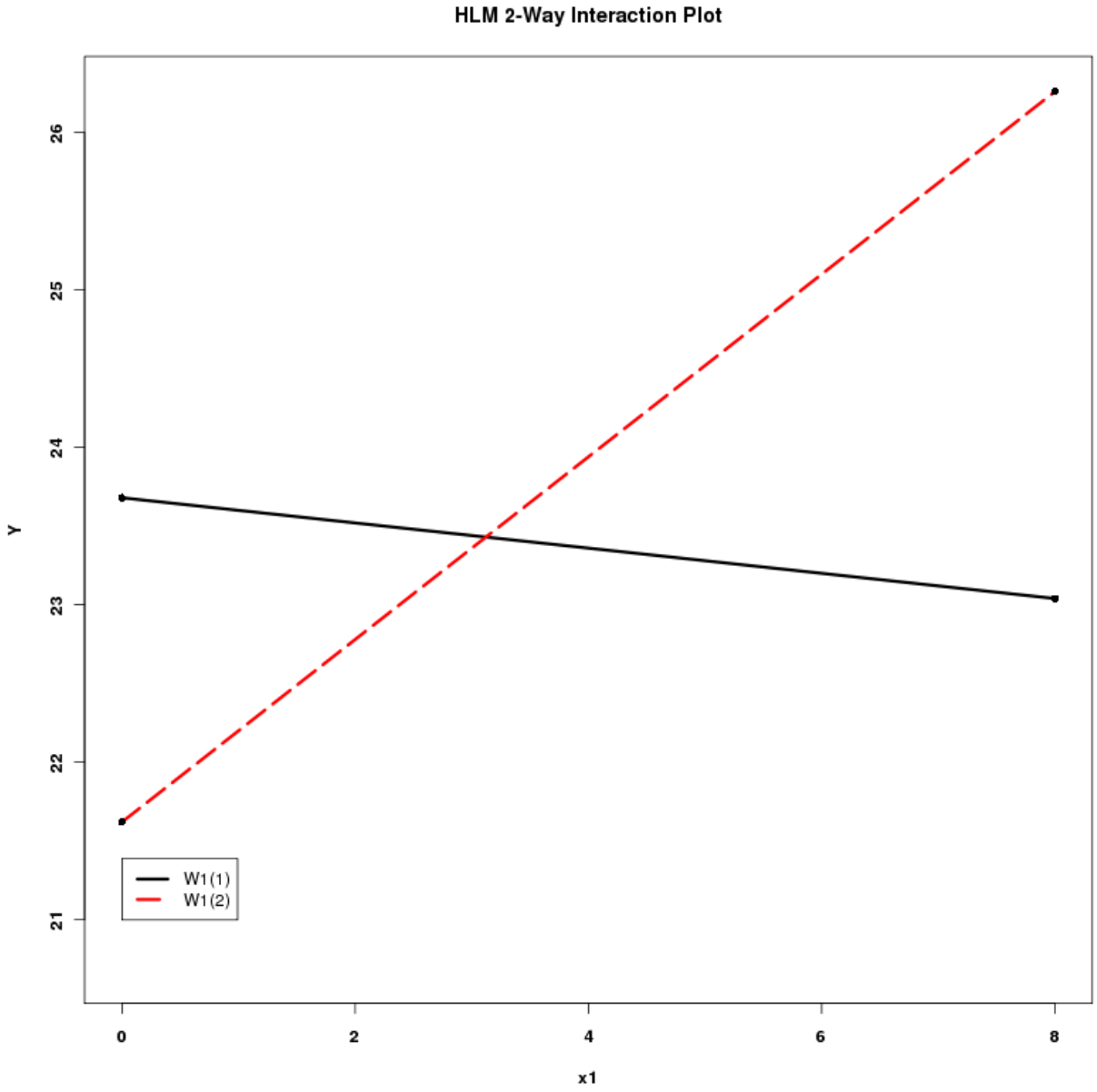
Significant interactions were also found for Anger Control Out (*B*=0.66, *SE*=0.33, *p*=0.05), and approaching significant for Anger Expression Out (*B*=0.27, *SE*=0.16, *p*=0.09) and Anger Control In (*B*=0.66, *SE*=0.33, *p*=0.07). The simple slope for Anger Control Out showed that the score for women who had served longer amounts of time significantly increased over time (0.58, *z*=2.59, *p*=0.009) and women who had served less time did not have a significant change. The plot of both sub-groups changes over time for Anger Control Out in presented in Figure 6. [Note that the plots are constructed with the x-axis covering the full range of time and the y-axis displaying only the observed range- this which was done to provide maximum visibility of this interaction.] For Anger Expression Out and Anger Control In, women who had served a longer period of time did not show changes significantly different from zero in their scores.

Figure 5: Simple slope of anxiety by women who had served less time (1) and women who had served longer time (2)[a]



[a] Note that the plots are aligned with the x-axis covering the full range of time and the y-axis covering only the observed points- this was done to provide maximum visibility of this interaction.

Figure 6: Simple slope of Anger Control Out by women who had served less time (1) and women who had served longer time (2)[a]



[a] Note that the plots are aligned with the x-axis covering the full range of time and the y-axis covering only the observed points- this was done to provide maximum visibility of this interaction.

Discussion

This study examined the mental health and anger related outcomes for 26 women incarcerated with life sentences who completed a new group intervention entitled Beyond Violence. Also, outcomes were assessed and compared for women based on their amount of time served in prison (i.e. women who have been in prison less than 10 years and those who have been in prison for 10 or more years). While this study had a small sample, it offers preliminary indications of intervention efficacy with this underserved population of incarcerated women, as well as provides insight into a trajectory of future work in regards to social work practice, policy, and research with women with life sentences.

This new intervention displays some indications of a good fit for this population of women. Beyond Violence is a trauma-informed, gender responsive intervention aimed at violence prevention and targets improving mental health, preventing substance abuse, and changing women's experiences of and emotional and behavioral responses to anger. In terms of this study's sample, all women reported experiencing at least one form of trauma in their lifetimes; a majority of women reported experiences of childhood emotional and physical abuse, sexual abuse, and intimate partner violence. Also, as all women were serving sentences for a conviction of murder, the core component of Beyond Violence in addressing experiences of both victimization and perpetration of violence appears to fit with the background experiences of this sample. These high rates of trauma experiences are similar to another study of women with life sentences' pre-prison life experiences (Leigey & Reed, 2010), and extensive trauma histories are not uncommon for women involved in the perpetration of violence (e.g. Magdol, Moffitt, Caspi, & Silva, 1998; Swan & Snow, 2006; Temple, Weston, & Marshall, 2005). Therefore, for social work practice with women with life sentences (and indeed, even more generally, with women

convicted of violent offenses), a trauma-informed approach should be considered as a crucial element, especially with a perspective of understanding the multiple and varied forms of violence women may have experienced.

Beyond Violence is intended to decrease symptoms of mental health concerns. While the averages of the mental health outcome scores decreased over time, none of these changes were significant for all women over time. Sub-group analyses displayed specific dynamics for women who had served less than 10 years of their life sentence. This group of women who had served less time had higher scores for depression, PTSD and serious mental illness and a significantly higher score of anxiety. Likewise, they showed a significant rate of change for depression, anxiety, and PTSD. These findings are similar to previous work that has focused on women's distress upon the beginning of their life sentence. In Dye and Aday's (2013) examination of women with life sentences and suicide risk, women with less time served had a higher rate of suicide ideation than women who had been in prison longer. However, time served was not a significant factor in predicting suicide ideation. Other contextual factors, such as level of outside support, and mental health concerns (specifically depression) shaped women's suicide risk. Another study found that a longer time in prison (over 5 years) was significant with suicide attempts by women in prison (Clements-Nolle, Wolden, & Bargmann-Losche, 2009). Typically, serving ten years or longer in prison has been considered a "long term" sentence in previous studies (e.g. Thompson & Loper, 2005). However, it is not fully understand how women serving life sentences monitor or conceptualize time—what is the significance of 10 years in prison? For this sample of women, it was common practice within the prison to go to the parole board after serving ten years (regardless of the life sentence). Therefore, more information is needed on women's experiences as connected to time served—particularly how women's mental health in

prison changes with life events and environmental shifts throughout their prison stay, especially fluxes in support, changes in security levels, release related opportunities (e.g. parole board hearings, legal appeals) and prison programs (e.g. access to visitation programs).

This study and existing work suggest that women may benefit greatly from intervention earlier in their prison stay, and more insight is needed into treatment engagement and response for women with longer time served. Based on a qualitative exploration, women serving lengthy sentences who have been in prison a long time still experience persistent and daily psychological distress (in a different manner than when they first entered prison) related to the deprivations of prison (Jose-Kampfner, 1990). Interestingly, in this study, women who had served over ten years showed a significant increase in anxiety over time. This finding may suggest a need for changes within the prison environment. A common coping strategy for women in prison is emotionally shutting-down as a way to stay safe (Greer, 2002). Therefore, asking women with life sentences and with a longer history of time served to examine their life histories (including trauma experiences and crime) may require additional time for processing, changes to the prison environment and staff responses to women's emotions, and a complimentary focus on continued coping with emotional vulnerability. These needs are in alignment with the core principles of gender-responsive services within prison (Bloom, Covington, & Owen, 2003). These studies, taken together, suggest that intervention development work is needed that addresses women's experiences over time in prison and with an intervention design with multiple points of intervention. Ongoing support through peer groups, mentoring, and further treatment opportunities may be especially helpful for this population of women, as prison life both changes and remains monotonous.

Similarly, for the anger related variables, desired changes in the average scores occurred over time, however, only Trait Anger and Anger Control In were found to significantly change for all women. Trait anger examines a woman's feelings of chronic anger and often presents as a feeling of constant frustration. It has emerged as significantly mediating the relationship between impulsivity and women's use of both intimate partner violence and general violence (Shorey, Brasfield, Febres, & Stuart, 2011). Thus, it has value for a violence-prevention intervention variable. However, one aspect of Trait anger is a perceived sense of injustice (Spielberger, 1999). Given the conditions of prison in terms of overcrowding, replicating social inequities (e.g. De Viggiani, 2007), and human rights violations (e.g. Culley, 2012; Greer, 2000; Labelle, 2008), Trait anger as both a conceptualized personality factor and as an indication of perceived injustice within the environment may represent an intersection of importation and deprivation theories. Future research would benefit from exploring women's perceptions of injustice, prison conditions, and histories of anger, as well as how they navigate these factors while incarcerated.

Anger Control In significantly increased, which is a desired change considering it reflects a skill in anger management (e.g. the ability to cool off, calm down, and self-regulate one's anger). Women with high levels of perpetration of intimate partner violence report suppressed anger with low anger control in addition to experiences of victimization, mental health concerns, and substance use (Swan & Snow, 2003). Therefore, Beyond Violence appears to be successfully targeting a form of anger and an anger expression connected with women's involvement in violence. In a prison environment where women are deprived of numerous external resources, the procurement of skills in internal, or intrapersonal, management of anger is seemingly a positive gain and appropriate for the setting. Anger Control Out and Anger Control In are connected to behavioral changes in the sense of relating to the expression of feelings of

anger. Notably, women with longer time served showed a significant increase in their Anger Control Out scores, which displays their ability to gain new coping skills and utilize them within the prison. Future research may benefit from exploring further how women navigate their feelings of anger within prison and how they safely express anger in an environment incompatible with emotional expression, especially anger (Greer, 2002).

Lastly, while Beyond Violence offers preliminary indicators of efficacy, an overarching issue is the need for social work policy advocacy to improve prison policies and the treatment of incarcerated women with life sentences. One tangible and crucial policy implication is the need to modify policies that restrict eligibility for women with life sentences for treatment-based programming within prisons. Based on a national survey, approximately 62% of prisoners with a life sentence were not involved in treatment-based programming—mainly due to prison-based policies prohibiting those with life sentences from participating (Nellis, 2012). State-level and prison-specific policies may differ, and social workers should critically evaluate these policies for issues of inclusion and exclusion, quality and duration of treatment, and ultimate provision of treatment.

Correspondingly, women with life sentences need to be considered a priority for treatment based intervention; beyond just being placed on a waitlist for group, they may benefit from opportunities to actually engage in treatment. The issue of treatment for all women in prison is a larger concern for the field of social work to consider in the context of the new penology. The concept of a "new penology" is that prisons now have a heightened focused on containment, custody, control, surveillance, and risk assessment and management with intensified bureaucratization (Adler & Longhurst, 2002; Cullen, et al., 2000; Feeley & Simon, 1992; Pratt, 2000; Simon & Feeley, 2003). The new penology discourse has emerged from the

intensified focus on risk management and prisoner security classification, and the shift of emphasis on individual responsibility instead of institution-guided rehabilitation (O'Malley, 1992, 1996, 2000). Thus, social work policy advocacy requires presenting an ethical, human-rights focused treatment framework (Ward & Birgden, 2007), which includes services for women with life sentences. Future research is needed to continue to ascertain the treatment needs of this sub-population and test interventions, as well as simultaneous policy advocacy to ensure the translation of clinical research efforts into practice.

Limitations

As a preliminary and novel study, several limitations require attention. First, this study used a small sample from one prison, making these results non-generalizable. Likewise, the results must be viewed in light of the limited power of the sample size. However, other studies of new interventions have utilized MLM with similar sized samples in order to ascertain outcomes over time (e.g. Goodkind, 2005), and this study sought to utilize rigorous methods in order to most appropriately analyze the data. Thus, this work should be considered preliminary and guide future intervention implementation and testing with this population of women. In particular, larger samples with attention to the length of time women have served will yield further examination into the efficacy of this intervention with this population of women. Given this study was performed in one state prison, deprivation factors (e.g. factors related to the prison climate/environment, policies, and procedures) could not be examined in relation to women's outcomes. Future studies may include testing Beyond Violence at multiple prisons and within varying security levels in order to assess these factors and compare outcomes.

Second, this study did not have a control group which limits the ability to attribute the changes in measures to Beyond Violence specifically. Given few women had been in a treatment

group prior to Beyond Violence, simply the opportunity to be in a group may have influenced their outcomes. Thus, future studies including a control group will allow for comparisons of results with an ability to ascertain the specific effect of Beyond Violence.

Lastly, Beyond Violence is primarily a violence prevention intervention. Typically prison-based studies focused on prisoner behavioral change focus on reductions in the number of misconduct tickets as this is especially important for prison administrators (e.g. Van Tongeren & Klebe, 2010). For this study, the sample was ultimately authorized by prison administrators and given the novelty of such an opportunity, only women in "good standing" with administrators were approved. (This was done with the idea of utilizing these women as future "mentors" for Beyond Violence groups with women with non-life sentences.) Therefore, future studies can consider examining this type of outcome, with an understanding of the often arbitrary and inconsistent nature of tickets (Acevedo & Bakken, 2003; Sexton, 2012), as well as consider assessing positive changes in women's daily functioning within the prison.

Conclusion

This preliminary study examines the mental health and anger related outcomes for incarcerated women with life sentences who completed Beyond Violence. While this study shows some positive results nuanced by women's amount of time served, it also highlights directions for future research, practice, and policy for this underserved population of incarcerated women.

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