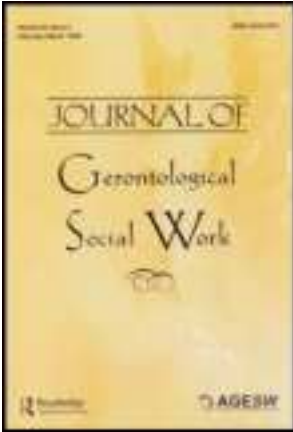


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Tina Maschi^a, Kelly Sullivan Dennis^a, Sandy Gibson^a, Thalia MacMillan^a, Susan Sternberg^a & Maryann Hom^a

^a Graduate School of Social Service, Fordham University, New York, New York, USA

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Trauma and Stress Among Older Adults in the Criminal Justice System: A Review of the Literature with Implications for Social Work

TINA MASCHI, KELLY SULLIVAN DENNIS, SANDY GIBSON,
THALIA MACMILLAN, SUSAN STERNBERG, and MARYANN HOM
Graduate School of Social Service, Fordham University, New York, New York, USA

The purpose of this article was to review the empirical literature that investigated trauma and stress among older adults in the criminal justice system. Nineteen journal articles published between 1988 and 2010 were identified and extracted via research databases and included mixed age samples of adjudicated older and younger adults (n = 11) or older adult only samples (n = 8). Findings revealed past and current trauma and stress, consequences and/or correlates, and internal and external coping resources among aging offenders. The implications and future directions for gerontological social work, research, and policy with older adults in the criminal justice system are advanced.

KEYWORDS trauma, victimization, older adults, elderly, prisoners, older adult prisoners, criminal justice, social work, inmates, human rights, literature review

BACKGROUND

The Aging Prison Population: Scope of the Problem

As correctional facilities are overflowing with prisoners who have long sentences that guarantee they will reach old age while in prison, America's prison population is rapidly graying. The National Institute of Corrections

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Address correspondence to Tina Maschi, Risk and Resilience Project, Fordham University, Graduate School of Social Service, 113 West 60th Street, New York, NY 10023. E-mail: collab@fordham.edu

has classified incarcerated individuals as *older adult* or *elderly* at age 50, as compared to the common classification of older adults in the community at the retirement age of 65 (Falter, 1999). This seemingly low age for older adults in prison is often attributed to the fact that the average prisoner has a reduced health state that approximates that of a community age adult who is 10 to 15 years older (Falter, 1999; Reimer, 2008). Older adults in the criminal justice system often have more documented physical health problems than their younger counterparts, especially chronic diseases, such as heart disease and diabetes (Baum & Singer, 1982; Booth, 1989; Maruschak, 2008).

Older adults in prison also are the fastest growing sector of the prison population. According to Sabol and Couture (2008), in 2007, prisoners aged 50 and older consisted of 10% of the 2.4 million prisoners in the general prison population. This number is twice as large as it was in 2001 and five times as large as it was in 1990 (Aday, 2003; Sabol & Couture, 2008). Additionally, older adult prisoners are a diverse heterogeneous group. The overwhelming majority of older adult prisoners are men (93%), and half (50%) are of Caucasian descent. However, similar to the general prison population, there is a disproportionate number of minorities, such as African Americans (32%) and Hispanics (14%), represented in the older adult prison population (Sabol & Couture, 2008). They also have a host of health, mental health, and age-related psychosocial issues in which the correctional system is not adequately prepared to address (Fazel, Hope, O'Donnell, & Jacoby, 2001; Goetting, 1983; Kinsella, 2004).

The age of entry to the criminal justice differs among older adults. Goetting (1984) identified four types of older offenders: (a) young short-term first offenders; (b) old timers; (c) career criminals; and (d) older offenders. The young short-term first offenders are juveniles or adults who were incarcerated before older adulthood and released before older adulthood. The old timers are adult prisoners who serve 20 or more years and grow old while in prison. Career criminals are recidivists (not including old timers) who serve two or more prison terms for varying lengths of time, sometimes into older adulthood. The distinction is that young short-term first offenders will serve a short prison term as a juvenile or adult, but older offenders will serve long prison terms in which they will reach older adulthood while in prison. Career criminals are chronic recidivists who will cycle in and out of prison and often will spend older adulthood years in prison. Older offenders will first be incarcerated in older adulthood. Regardless of their timing of prison placement, the majority of older offenders eventually will be released to the community as compared to serving their life in prison (Aday, 2003).

Currently, of significant import is the rapidly growing aging-in population, who will reach older adulthood while in prison. The growing-in aging prison population has been attributed to the passage of criminal justice policy changes, such as stricter sentencing laws, including *three strikes you're out* and *truth-in-sentencing laws*, and longer mandatory prison terms (Aday,

2003; Gaydon & Miller, 2007; Kinsella, 2004). In fact, the correctional system has reached a crisis state as it attempts to manage the needs of this rapidly aging prison population, particularly in need of both specialized long-term care in prison and upon their release (Aday, 2003; Rikard & Rosenberg, 2007; Snyder, van Wormer, Chad, & Jagers, 2009). Of the 650,000 prisoners released yearly, statistics suggests that about 10% ($n = 65,000$) will be older adults (Nunez-Neto, 2008).

As a requisite for social justice, it is imperative that the social work profession begins to address the growing crisis of older adults involved in the criminal justice system, especially among elders in prison. It also is an ethical responsibility to advocate for this neglected and stigmatized population, such as older adults with criminal offense histories (National Association of Social Workers [NASW], 1999).

Moreover, imprisoning older adults is costly. Current estimates suggest that it costs about \$70,000 annually to incarcerate an inmate over the age of 60, versus younger inmates whose incarceration costs approximately \$22,000 per year, because of the chronic physical and mental deterioration of older adults in prison (Kinsella, 2004). Although prisoners are US citizens with the constitutional rights to health care, the continuing rise in costs to deliver this care compromises the quality and consistency of these services (Falter, 1999).

Therefore, it is essential that the correctional system be prepared to address older adults with complex service needs while in prison and when released to the community, especially while under parole supervision. Community reintegration or reentry planning for older adults in prison is especially important given a host of complex health, mental health, housing, and employment or retirement needs, including linking them to entitlements, such as Social Security and Medicare or Medicaid.

Trauma, Stress, and Aging Prisoners

Perhaps the most unexplored issue among older adults in the criminal justice system is the prevalence of lifetime trauma and its potential health and mental health consequences. If left unidentified and unaddressed, trauma and stress among aging prisoners may have significant short and long-term consequences on their physical and mental health and subsequent care (Hyer & Sohnle, 2001). The types of impacts of trauma also may vary among different sociodemographic groups, such as gender and race/ethnicity (Hyer & Sohnle, 2001; Norris, 1992).

Whereas high levels of lifetime traumatic experiences and life event stressors have been documented consistently among both juvenile and adults sentenced to prison, little is known about older adults involved in the criminal justice system, especially in prisons (e.g. Abram et al., 2007; Erwin, Newman, McCackin, Morrissey, & Kaloupek, 2000; Harlow, 1999). This oversight of older adults and trauma in prior studies leaves many

questions unanswered about older adults in prison. Preliminary evidence suggests that older adults may experience unique stressors and traumas, and that their reactions to these events may be vastly different from younger offenders, particularly the short- and long-term consequences on physical and mental health (Aday, 2003; Hyer & Sohnle, 2001; Krause, Shaw, & Cairney, 2004).

The prison environment also can be an additional source of traumatic experiences and stressor events, especially for older adults who may fear dying in prison and are particularly vulnerable to victimization by other prisoners (Aday, 2006; Dawes, 2009). This fear appears not to be unwarranted. In 2004, 2,019 prisoners aged 55 and older died in prison. Although older adult prisoners represent about 10%, they represented 67% of deaths (Bureau of Justice Statistics, 2007; Mumola, 2005).

Despite the consistent findings of trauma and stress among prisoners, there is minimal research on traumatic and stressful life experiences, especially as it relates to physical and mental health, among older adults in prison. Of the 18 studies that included older adults in their examination of trauma among criminal justice populations, five studies were conducted outside the United States, but corroborate similar findings to United States studies. This suggests support for the trauma and stress link among criminal justice populations, which may not be limited by or attributed to geographic location, culture, or policy. Whereas these collective studies suggest that trauma and stress may be a common phenomenon among prisoners, this knowledge gap in research, especially in the United States, is quite surprising, given the consistent evidence of mental health problems among American prison detainees, including older adults (James & Glaze, 2006). Therefore, it is important that people gain a better understanding of the older adults in the criminal justice system and their biopsychosocial needs, including trauma, stress, and the potential mental and physical consequences.

To date, there has been no systematic examination of the methods and major findings of the research that examines trauma and life events stressors in which older adults were included in the sample. Understanding and appraising the methods and major findings is a critical initial step toward synthesizing the information that has been accrued thus far. In the future, this information can be used to steer research, practice, and policy improvements with older adults under correctional care.

The purpose of this article is to build upon the extant literature by providing a comprehensive review of the literature of the methods and major findings of the research studies that examined trauma and stress among offenders, in which older adults were included in the sample. The research question guiding this review was as follows: What does the empirical literature report about the methods and major findings about trauma among older adults in prison?

Research in this area has implications for practice with older adults involved in the criminal justice system, especially while in prison. Taking stock of the prior research can help discern future directions for social work research, practice, and policy with older adults in the criminal justice system. Additionally, this description and critical appraisal of the literature review can serve as a springboard for practitioners, researchers, and policy makers in a variety of fields to use and help improve health and social justice outcomes among the all too often neglected population of older adults in prison.

METHODS

Sample Selection

To gather the data on the research that examined trauma and life events stressors among older adults in prison, a comprehensive literature review was conducted. Articles that were published between July 1985 and July 2010 were located through a search of online scholarly databases. EBSCO Host was used, as it housed 59 research databases of particular relevance to social work, i.e., *Academic Search Complete*, *PsychARTICLES*, *socINDEX*, *MEDLINE*, and *Criminal Justice Abstracts*. Keyword search terms were used in various combination, which included *trauma*, *prisoners*, *and older adults*, and *trauma and offenders*.

Articles were included in the review if they met the following criteria: (a) It was an empirical study (quantitative or qualitative research study); (b) the study examined trauma and/or life event stressors; (c) the study sample included adults aged 50 and older officially involved in the criminal justice system (i.e., arrestee, probationer, jail detainee, prisoner, parolee); and (d) if the article was published in a peer reviewed social science or science journal in the last 25 years (1985 and 2010).

A total of 36 prospective articles were located and reviewed by three members of the research team until 100% consensus was achieved that all four criteria were met to include an article. Nineteen scholarly peer reviewed articles that met all four criteria were included in the review. Articles that did not meet this selection criteria included samples that did not include adjudicated offenders or included at least some portion of the sample identified as age 50 or older.

Data Collection Procedures

To assess the empirical literature on trauma and stress among prisoners that included older adults in the sample, a data extraction tool created by the research team was used. It consisted of a series of categories to represent the methods and major findings of the research studies. Two members of the

research team were trained to extract relevant information for the extraction tables and typed their responses into an Excel spreadsheet. The two coders completed the 18-article extractions in weekly consultation with the lead researcher over a 12-week time period from June to August 2010. An interrater reliability check that included crosschecking the data extracted for all 19 articles was conducted until interrater reliability agreement was at least 95% ($r = .95$) per category extracted.

Data Analysis

ANALYSIS OF METHODS USED ACROSS STUDIES

The narrative data on the methods used across studies was analyzed using quantitative content analysis strategies outlined by Krippendorff (2004) and Neuendorf (2002). Content analysis is a systematic procedure that codes and analyzes qualitative data, such as the content of published articles, in which a combination of deductive and inductive approaches can be used (Bernard & Ryan, 2010). For example, our review of study methods used preexisting categories for the methods (such as research design and measures used) that were utilized across the studies (see Tables 1 and 2).

Next, counts of textual variables were used to identify frequencies per category identified. For example, nonprobability versus probability sampling frequencies and percentages were calculated. This portion of the data was transferred from qualitative to quantitative data using SPSS 18.0. For example, *sampling strategies* was coded 1 for *probability sampling* and 0 for *nonprobability sampling*. Frequencies and percentages were calculated using the descriptive statistics function of SPSS 18.0.

ANALYSIS OF MAJOR FINDINGS

To inductively analyze the major findings across studies (see Table 3), the Tutty, Rothery, and Grinnell (1996) three-step coding scheme was used to analyze the qualitative data. In step one, first-level coding was completed. This involved identifying *meaning units* (i.e., in-vivo codes) from the data. Codes were assigned to the data to accurately reflect the author's exact words. For example, the assignment of meaning units included developing codes to reflect the findings, such as child physical abuse and violent victimization.

In step two, second-level coding, first-level meaning units were sorted and placed into emerging categories or themes (e.g., trauma and stress, correlates and consequences of trauma and stress, and coping resources as protective factors). The codes that were similar were clustered together; for instance, *child physical abuse* and *violent victimization* were clustered under a category or theme of *trauma and stress*. In step three, the categories of themes were examined for the relationship within and across categories. A conceptually-clustered or thematic matrix (see Table 4) was constructed to

TABLE 1 Overview of Research Designs Across Studies ($N = 19$)

Authors and year (in alphabetical order)	Purpose of study	Study setting	Design and sampling strategies	Data sources/collection	Informants
Aday (2006) ^{OA}	Investigate death anxiety among aging prisoners	United States—Mississippi State Department of Corrections	Cross-sectional/nonprobability sampling/single group	Questionnaire/survey, in-person interviews, retrospective self-report	Prisoners
Akyuz, Kugu, Sar, & Dogan (2007)	Examine correlation of child abuse, dissociative symptoms, and posttraumatic stress disorder among offenders	Turkey—Sivas Maximum Security Prison	Cross-sectional/nonprobability sampling/single group	Clinician administered questionnaire/survey, in-person interviews, retrospective self-report	Prisoners
Crawley & Sparks (2005) ^{OA}	Study the prison experience for men aged 65 and older	England—Four prisons that house older prisoners	Cross-sectional/nonprobability sampling/single group	Qualitative—in-depth, in-person interviews, retrospective self-report	Staff and prisoners
Dawes (2009) ^{OA}	Aging prisoners' experiences related to prison regimes, housing and healthcare, pre- and postrelease	Australia—Women's prisons in Australia	Cross-sectional/nonprobability sampling/single group	Qualitative—in-person interviews (guided conversations), retrospective self-report, observation	Prisoners
Day et al. (2008)	Compare anger levels among Australian indigenous versus nonindigenous prisoners	Australia (south)—Medium- to maximum-security prison	Cross-sectional/nonprobability sampling/single group	Self administered questionnaire/survey, low literacy—in-person administration, retrospective self-report	Prisoners

Goetting (1992) ^{OA}	Analyze homicide offenders aged 55 and older in context of their deadly acts	United States—Detroit, Michigan	Cross-sectional/nonprobability sampling/single group	Record reviews/police data—investigator's report, interrogation record, witness statements, retrospective	Offender case records
Goldenson, Geffner, Foster, & Clipson (2007)	Examine the trauma symptoms, attachment style, personality organization of female offenders versus nonoffenders	United States—San Diego County, CA court-mandated domestic violence group; clinical treatment (nonoffenders)	Cross-sectional/nonprobability sampling/comparison group of treatment and nontreatment parolees	Self-report questionnaire/survey, in-person interviews, retrospective self-report	Adjudicated offenders and nonoffenders
Grella, Stein, & Greenwell (2005)	Explore relationship of child abuse, conduct problems, substance abuse, mental distress, and criminal behavior in women offenders	United States—California Dept. of Corrections program sites	Pre–posttest design/quasi-experimental two group design/study used only pretest intake data	Retrospective self report questionnaire/survey, in-person interviews	Ex-prisoners (parolees) in program or on waiting list
Haugebrook et al. (2010) ^{OA}	Describe trauma, stress, health, mental health, and substance abuse among older adults in prison	United States—New Jersey Department of Corrections	Cross-sectional/nonprobability sampling/single group	Record reviews, retrospective	Offender case records
Hochstetler, Murphy, & Simons (2004)	Assess current and prior victimization on prisoner distress	United States—Mid-western state with work release residents	Cross-sectional/nonprobability sampling/single group	Mailed anonymous self-report questionnaire/survey retrospective self-report	Prisoners
Kerbs & Jolley (2007) ^{OA}	To examine older adults males victimization in prison	United States—unidentified state prison system	Cross-sectional/probability sampling/single group/mixed methods study	Questionnaire/survey, in-person interviews, retrospective self-report	Prisoners

(Continued)

TABLE 1 (Continued)

Authors and year (in alphabetical order)	Purpose of study	Study setting	Design and sampling strategies	Data sources/collection	Informants
Krabill & Aday (2005) ^{OA}	Identify how older female offenders adapt to prison life	United States— Southeast-major women's prisons	Cross-sectional/ nonprobability sampling/single group	Qualitative interview-focus group interviews, retrospective self-report	Prisoners
Messina & Grella (2006)	Examined the relationship between cumulative childhood trauma and adult physical and mental health among women in prison	United States—State of California-prisons	Cross-sectional/ nonprobability sampling/single group	Questionnaire/ survey, in-person interviews, retrospective self-report	Prisoners
Neller, Denny, Pietz, & Thomlinson (2006)	Examine relationship between trauma and violence among jail inmates	United States— Midwest-maximum security detention center	Cross-sectional/ nonprobability sampling/single group	Questionnaire/ survey, 30 min in-person interviews, retrospective self-report	Prisoners
Salina, Lesonak, Razzano, & Weilbaecher (2007)	Examine the co-occurrence of mental disorders among women in prison with substance use problems	United States—Cook County, IL Sheriff's Department— Women's Justice Services residential program	Cross-sectional/ nonprobability sampling/single group	Clinician-administered semistructured in-person interviews, retrospective self-report	Prisoners
Strickland (2008)	Compare women with and without sex offenders on trauma history and deviant behavior	United States—State of Georgia—Three women's state prisons	Cross-sectional/ nonprobability sampling/ comparison group (female sex and non-sex offenders)	Self administered questionnaire/survey (3 hr), retrospective self-report	Prisoners

Struckman-Johnson, Struckman-Johnson, Rucker, Bumby, & Donaldson (1996)	Identify sexual coercion rate reported among prisoners	United States—Midwestern state prison system maximum-minimum security prisons	Cross-sectional/nonprobability sampling/single group	Retrospective self administered anonymous survey	Prisoners and staff
Timmerman & Emmelkamp (2001)	Study the relationship between trauma, dissociation and borderline personality disorder among forensic patients and prisoners	Holland—Amsterdam: Two settings—forensic mental health state hospital, three prisons	Cross-sectional/nonprobability sampling/comparison group—forensic hospital patients and prisoners	Retrospective self-report questionnaire administered by personal computer	Prisoners
Vega & Silverman (1988) ^{OA}	Examine the prison environment as a source of stress for older prisoners and compared with younger prisoners	United States—Florida Avon Park, Polk Correctional facilities	Cross-sectional/nonprobability sampling/comparison group (older adult vs. adult prisoners)	Retrospective self administered surveys in group setting; in-person one-on-one structured interviews in private room	Prisoners

Note. ^{OA}Study used older adult sample as a central aspect of the research design.

TABLE 2 Overview of Measures Used Across Studies ($N = 18$)

Authors and year	Measures used
Aday (2006) ^{OA}	Trauma/Stress: Templer Death Anxiety Scale (Templer, 1970)
Akuz, Kugu, Sar, & Dogan (2007)	Childhood Abuse and Neglect Questionnaire (Walker et al., 1988), Dissociative Experiences Scale (Bernstein & Putnam, 1986), Structured Clinical Interview for DSM-I module and DSM-IV- PTSD module (SCID-1; Kranzler, Kadden, Babor, Tennen, & Rounsaville, 1996)
Crawley & Sparks (2005) ^{OA}	Qualitative interview schedule for prisoners and staff (instrument developed by research team)
Dawes (2009) ^{OA}	Qualitative interview schedule for prisoners and (instrument developed by research team). Questions about family contact, physical and psychological aging, fear of younger prisoners and dying in prison, boredom
Day et al. (2008)	Trauma Symptom Inventory (TSI; Briere, 1995), Loss and Separation Checklist (developed by researchers), Racism and Life Experience Scales (Harrell, 1997), State-Trait Anger Expression Inventory (Spielberger, 1991), Beliefs about Anger Measure (developed by researchers), Generalized Self-Efficacy Scale (Schwartz & Jerusalem, 1995), Toronto Alexithymia Scale (Bagby et al., 1994)
Goetting (1992) ^{OA}	Official records of arrestees and general population (instrument developed by research team). Extracted data on characteristics of victims and offenders, victim-offender relationships, offense circumstance, arrest disposition
Goldenson, Geffner, Foster, & Clipson (2007)	TSI; (Briere, 1995), Experience in Close Relationships Revised (Fraley, Waller, & Brennan, 2000), Million clinical Multiaxial Inventory III (Millon, Davis, & Millon, 1997)
Grella, Stein, & Greenwell (2005)	Life Stressor Checklist-Revised (LSC-R; Wolfe & Kimerling, 1997; Wolfe, Kimerling, Brown, Chrestman, & Levin, 1996). Trauma Symptom Checklist-40 (TSC-40; Briere, Elliott, Harris, & Cotman, 1995), Brief Symptom Inventory (BSI; Derogatis, 1993; Derogatis & Melisaratos, 1983), RAND Health Survey (SF-36; Ware & Sherbourne, 1992)
Haugebrook, Zgoba, Maschi, Morgen, & Brown (2010) ^{OA}	Data extraction instrument developed by researchers, fields for biopsychosocial and legal characteristics, including trauma and stress, among older adults in prison
Hochstetler, Murphy, & Simons (2004)	Posttraumatic Stress Diagnostic Scale, Symptoms Checklist 90-Revised (PTSDS; Wittchen, Kessler, Zao, & Abelson, 1995), Self-Control Scale (SCS; Grasmick, Tittle, Burksi, & Arnekelev, 1993; Pratt & Cullen, 2000) . The researchers developed additional questions on victimization, preincarceration trauma, support by family and friends while incarcerated, self-control, race, age, precious exposure to violence, time served in prison, depressive symptoms, and posttraumatic stress disorder.
Kerbs & Jolley (2006) ^{OA}	Forty-four page survey/questionnaire developed by the researchers. Included qualitative and quantitative questions about victimization, fear and perceived risk of victimization, and opinions about staff and prison programming.

- Krabill & Aday (2005)^{OA} Qualitative interview schedule developed by researchers: family contact, transition to prison life, prison relationships, social support network, and work and recreational interaction.,
- Messina & Grella (2006) LSC-R (Wolfe & Kimerling, 1997; Wolfe et al., 1996), TSC-40 (Briere et al., 1995), BSI (Derogatis, 1993)
- Neller, Denny, Pietz, & Thomlinson (2006) Traumatic Events Questionnaire (Vrana and Lauterbach, 1994), Conflict Tactics Scale (Straus, 1979)
- Salina, Lesonak, Razzano, & Weilbaecher (2007) SCID-I (Kranzler et al., 1996)
- Strickland (2009) Childhood Trauma Questionnaire-Brief Version (Bernstein et al., 2003), Multiphasic Sex Inventory-II (Nichols & Molinder, 1996), Substance Abuse Subtle Screening Inventory-3 (Miller, 1985),
- Struckman-Johnson, Struckman-Johnson, Rucker, Bumby, & Donaldson (1996) Prison Environment Inventory (inmates & staff), strategy of assessing general information about overall coercion experience (inmates only; Wright, 1985), Coercion Survey developed by researchers based on Sorenson, Stein, Siegel, Golding, and Burman (1987)
- Timmerman & Emmelkamp (2001) Dissociation Questionnaire (Vanderlinder, van Dyck, Vandereyken, Vertommen, & Verkes, 1993), Personality Disorder Questionnaire (Hyler & Rieder, 1987)
- Vega & Silverman (1988)^{OA} State-Trait Personality Inventory (Spielberger, 1979, 1991), Anger Expression Scale (Spielberger et al., 1985)

Note. ^{OA}Study used older adult sample as a central aspect of the research design.

TABLE 3 Review of Categories and Themes and Major Findings Across Studies ($N = 19$)

Authors and year	Categories/themes	Major findings across studies
Aday (2006) ^{OA}	Death anxiety/fear, inmate social support, coping resources	Age, inmate social supports, and a number of health-related variables were important predictors of death fear. Fear of death was higher for older prisoners than for similar aged groups in community settings. Death anxiety may be reduced through variety of coping mechanisms. Significant concerns about dying in prison setting were uncovered.
Akyuz, Kugu, Sar, & Dogan (2007)	Childhood trauma, posttraumatic stress disorder (PTSD), coping resources	PTSD and childhood traumas occur at higher rates among prisoners. Prisoners also exhibited higher rates of amnesia and absorption possibly as a way of coping with their living situation
Crawley & Sparks (2005) ^{OA}	Victimization, psychological and physical well-being	Prisons function without considering the physical/mental needs of older inmates. The prison experience can cause damaging hidden injuries.
Dawes (2009) ^{OA}	Victimization, physical well-being, human rights violations	Themes that emerged included concern over prison regimes, housing, and health care and release.
Day et al. (2008)	Early trauma, victimization, loss and separation, psychological well-being	As compared to nonindigenous prisoners, indigenous participants reported more experiences of early trauma, loss and separation as children and adults, have greater difficulties identifying and describing feelings and perceive higher levels of discrimination.
Goetting (1992) ^{OA}	Violence, behavioral well-being, offender characteristics	Authors generated a profile of older adult arrestee identifying risk factors of nonmarital status, African American, low educational status, and unemployment. Deadly incidents with older adult offenders tend to result from domestic quarrel or argument with friend, neighbor or acquaintance.
Goldenson, Geffner, Foster, & Clipson (2007)	Trauma, psychological well-being	Female domestic violence offenders reported less attachment security, more trauma symptoms, and more personality psychopathology than non-offender clinical comparison women.

Grella, Stein, & Greenwell (2005)	Childhood trauma, psychological well-being, substance abuse	There is a direct relationship between several types of childhood trauma and adolescent conduct problems and substance abuse which related to adult criminal behavior and substance abuse. Ethnic differences were noted.
Haugebrook, Zgoba, Maschi, Morgen, & Brown (2010) ^{OA}	Childhood trauma, physical and psychological well-being, substance abuse	A review of the records reveals varied psychosocial issues and needs, including trauma and stress histories, substance use, health and mental health issues, and family problems.
Hochstetler, Murphy, & Simons (2004)	Victimization, PTSD, psychological and physical well-being, race/ethnicity	Victimization in prison significantly predicts the occurrence of posttraumatic stress (PTS) symptoms and depressive symptoms. Previous trauma, self-control, and race have direct effects. Previous trauma and race have indirect effects on PTS and depressive symptoms.
Kerbs & Jolley (2007) ^{OA}	Victimization, fear, perception of staff and prison programming	Older prisoners described victimization experiences that included psychological, property, financial, physical, and sexual exploitation.
Krabill & Aday (2005) ^{OA}	Social support, family support, inmate support	Although most inmates in the study have strong relationships with family, prison friendships help inmates when family members are not available.
Messina & Grella (2006)	Childhood trauma, physical well-being	The impact of childhood traumatic events on health outcomes is strong and cumulative.
Neller, Denny, Pietz, & Thomlinson (2006)	Childhood trauma, behavioral well-being, violent behavior	Experiencing traumatic events and witnessing violence significantly contribute to violence perpetration.
Salina et al. (2007)	Trauma, PTSD, substance abuse	The majority (75%) of 283 women in prison with substance abuse diagnosis had PTSD (chronic) as the primary mental health diagnosis.
Strickland (2008)	Victimization, sexual coercion physical well-being	20% of inmates reported being pressured or forced into sexual contact.

(Continued)

TABLE 3 (Continued)

Authors and year	Categories/themes	Major findings across studies
Struckman-Johnson, Struckman-Johnson, Rucker, Bumby, & Donaldson (1996)	Child trauma, gender, mental and physical well-being, substance abuse, coping	Childhood trauma, abuse, neglect, and severity of sexual abuse are significant risk factors and positively correlated to female sex offenders. Abuse of substances, personality disorders, emotional neediness or cognitive distortions were not found to be significant.
Timmerman & Emmelkamp (2001)	Childhood trauma, sexual and emotional abuse, psychological well-being	Both forensic and prisoner participants had a high frequency of traumatic experiences. Sexual and emotional abuse are significantly more common among forensic patients than among prisoners who had more dissociative symptoms. Sexual abuse was not significantly related to dissociative symptoms but was significantly related to borderline personality disorder.
Vega and Silverman (1988) ^{OA}	Psychological well-being, anxiety / anger, coping resources, victimization	Older inmates tend to create a façade of adjustment that masks their stress and anger and inhibits development of programs to cope with this problems. Prison administrators generally respond only to those issues which are overt.

Note. ^{OA}Study used older adult sample as a central aspect of the research design.

TABLE 4 Categories/Themes Across Studies: Trauma and Stress, Correlates and Consequences, and Coping Resources

Categories/themes	Number of total studies	Adults aged 50+ studies	Studies included in categories and themes
History of trauma and stress			
Trauma and stress: broad definition	9	0	Day et al., 2008; Goldenson, Geffner, Foster, & Clipson, 2007; Grella et al., 2005; Haugebrook, Zgoba, Maschi, Morgen, & Brown, 2010; Hochstetler, Murphy, & Simons, 2004; Messina & Grella, 2006; Neller, Denny, Pietz, & Thomlinson, 2006; Strickland, 2008; Timmerman & Emmelkamp, 2001
Childhood abuse victim	3	0	Akyuz, Kugu, Sar, & Dogan 2007; Messina & Grella, 2006; Strickland, 2008
Victimization in prison	3	1	Hochstetler et al., 2004; Kerbs & Jolley, 2007; Struckman-Johnson, 1996
Poor prison conditions	2	2	Crawley & Sparks, 2005; Dawes, 2009
Loss and separation	1	0	Day et al., 2008
End of life concerns	3	3	Aday, 2006; Crawley & Sparks, 2005; Dawes, 2009
Discrimination-racial	1	0	Day et al., 2008
Life stresses	4	1	Day et al., 2008; Grella et al., 2005; Haugebrook et al., 2010; Messina & Grella, 2006
Correlates or consequences of lifetime trauma or stress			
Mental/emotional well-being			
Mental disorders/distress-general	4	3	Crawley & Sparks, 2005; Dawes, 2009; Haugebrook et al., 2010; Struckman-Johnson, Struckman-Johnson, Rucker, Bumby, & Donaldson, 1996
Depression	1	0	Hochstetler et al., 2004
PTSD	4	0	Akyuz et al., 2007; Day et al., 2008; Hochstetler et al., 2004; Salina, Lesonak, Razzano, & Weilbaecher, 2007
Anxiety and fear	3	3	Dawes, 2009; Kerbs & Jolley, 2007; Vega & Silverman, 1998
Dissociative symptoms	2	0	Akyuz et al., 2007; Timmerman & Emmelkam, 2001
Personality disorders	3	0	Goldenson et al., 2007; Strickland, 2008; Timmerman & Emmelkamp, 2001
Substance abuse	3	1	Haugebrook et al., 2010; Salina et al., 2007; Strickland, 2008
Anger	3	0	Akyuz et al., 2007; Day et al., 2008; Timmerman & Emmelkamp, 2001
Death anxiety	2	2	Aday, 2006; Dawes, 2009

(Continued)

TABLE 4 (Continued)

Categories/themes	Number of total studies	Adults aged 50+ studies	Studies included in categories and themes
Other psychological/emotional correlates	6	1	Day et al., 2008; Goldenson et al., 2007; Grella et al., 2005; Kerbs & Jolley, 2007; Messina & Grella, 2006; Strickland, 2008
Physical well-being	4	3	Aday, 2006; Dawes, 2009; Grella et al., 2005; Haugebrook et al., 2010
General medical conditions	3	2	Crawley & Sparks, 2005; Dawes, 2009; Salina et al., 2007
Health care	2	2	Crawley & Sparks, 2005; Dawes, 2009
Housing	1	1	Dawes, 2009
Behavioral well-being			
History of adolescent conduct problems	1	0	Grella et al., 2005
Criminal behavior	3	2	Goetting, 1992; Grella et al., 2005; Haugebrook et al., 2010
Violent acts	1	0	Neller et al., 2006
Characteristics (gender, race, age)	6	4	Aday, 2006; Day et al., 2008; Goetting, 1992; Haugebrook et al., 2010; Hochstetler et al., 2004; Vega & Silverman, 1988
Coping resources as a protective factors			
Internal resources			
Self control	1	0	Hochstetler et al., 2004
Emotional awareness	1	0	Day et al., 2008
External resources			
Religious activities	1	1	Aday, 2006
Social/occupational functioning	5	1	Goetting, 1992; Krabill & Aday, 2005; Hochstetler et al., 2004; Salina et al., 2007; Strickland, 2008
Social support—Family/peers	3	0	Dawes, 2009; Hochstetler et al., 2004; Krabill & Aday, 2005
Peer support—Other prisoners	3	1	Aday, 2006; Hochstetler et al., 2004; Krabill & Aday, 2005

Note. Studies included more than category and may appear in more than one category. PTSD = posttraumatic stress disorder.

^{0A}Study used older adult sample as a central aspect of the research design.

illustrate categories or themes that emerged and relationships and accompanied by a narrative description of these findings (see findings section; Miles & Huberman, 1994).

FINDINGS

Research Methods Used Across Studies

Tables 1, 2, 5 and 6 provide an overview of the methods used across studies. This included study objectives, study settings, research design, and sampling strategies, data collection procedures, measures, and characteristics of the sample. They are reviewed in that order, respectively.

STUDY SETTING AND RESEARCH DESIGNS

Overall, the study settings varied regionally within the United States and abroad. Of the 19 studies, five were conducted in Europe and Australia. The majority ($n = 14$) were conducted in the United States in the northeast, southeast, midwest, and southwest. Data was collected at various study settings, including entire state prison systems, jails, and community corrections settings.

Research designs used across studies were similar in their methodological limitations. Most of the studies ($n = 15$) used cross-sectional research designs, nonprobability sampling strategies ($n = 14$), and lacked comparison groups ($n = 15$). Only four of the studies used some type of comparison groups. For example, Goldenson, Geffner, Foster, and Clipson (2007) used comparison groups to compare a mixed-age sample of offenders and nonoffenders on trauma, attachment style, and personality organization. Similarly, Timmerman and Emmelkamp (2001) used comparison groups to compare a mixed age group of forensic state hospital patients with prisoners on trauma, dissociation, and borderline personality disorder. Only one study by Vega and Silverman (1988) made age group comparisons between older adult and younger adult populations in prison on their experience of stress and the prison environment.

DATA COLLECTION PROCEDURES

Data collection strategies differed across studies. The most commonly used data collection strategy involved in-person interviews with offenders in a criminal justice setting ($n = 12$), of which 2 included clinician-administered surveys/questionnaires. Only one study administered a questionnaire via personal computers. Similarly, the use of focus group interviews was only used in one study.

Four studies used self-administered survey/questionnaires. One study used a mailed, anonymous, self-administered survey. Two studies used case

TABLE 5 Sample Characteristics Across Studies ($N = 19$): Sample Size, Gender, and Age

Authors and year (in alphabetical order)	Sample size	Age characteristics	Adult or older adult ^{OA} study focus	Gender
Aday (2006) ^{OA}	102	Ages 50–64, 80%; 65–84, 20%; mean age = 59	Older adults	Men only
Akyuz, Kugu, Sar, & Dogan (2007)	108	Ages 19–68, mean age = 36.4	Adult	Men only
Crawley & Sparks (2005) ^{OA}	91	Ages 65–84	Older adults	Men only
Dawes (2009) ^{OA}	14	Age 50 and older	Older adults	Women only
Day et al. (2008)	101	Ages 18–64; mean age = 32.7	Adult	Men only
Goetting (1992) ^{OA}	45	Ages 55–82 ; mean age = 64.5	Older adults	Mixed gender—82% men; 18% woman
Goldenson, Geffner, Foster, & Clipson (2007)	65	Offenders: 20–52, mean age = 30.9/Non-offenders: 20–49, mean age = 32.0	Adult	Women only
Grella, Stein, & Greenwell (2005)	440	Ages 22–58; mean age = 35.3	Adult	Women only
Haugebrook, Zgoba, Maschi, Morgen, & Brown (2010) ^{OA}	114	Age 55 and older; mean age = 55.5	Older adults	Mixed gender—92% men, 8% women
Hochstetler, Murphy, & Simons (2004)	208	Some aged 50+ ; mean age = 32	Adult	Men only
Kerbs & Jolley (2007) ^{OA}	65	Ages 50+; mean age = 57.9	Older adults	Men only
Krabill & Aday (2005) ^{OA}	29	Mean age = 56.0	Older adults	Women only
Messina & Grella (2006)	500	Ages 21–57; mean age = 35.1	Adult	Women only
Neller, Denny, Pietz, & Thomlinson (2006)	93	Ages 17–58; mean age = 34	Adult	Men only
Salina, Lesonak, Razzano, & Weilbaecher (2007)	283	No current age reported; Ages witness violence was between 2 -58	Adult	Women only
Strickland (2008)	130	Ages 20–68; mean age = 36	Adult	Women only
Struckman-Johnson, Struckman-Johnson, Rucker, Bumby, & Donaldson (1996)	780	Ages 17–25 (22%), 26–36 (44%), 37–47 (25%) 48 and older (9%)	Adult	Mixed gender—prisoners: 95% men; 5% women; staff: 70% men, 30% women
Timmerman & Emmelkamp (2001)	231	21–66; mean age = 34	Adults	Men only
Vega & Silverman (1988) ^{OA}	40	Ages 63 to 80	Older adults	Men only

Note. ^{OA}Study used older adult sample as a central aspect of the research design.

TABLE 6 Racial/Ethnic Groups Across Study Samples

Authors and year (in alphabetical order)	Percentage of racial/ethnic groups across study samples					
	Caucasian	African American	Latino	Other	Over 50% Caucasian	Unknown
Aday (2006) ^{OA}	39%	61%	—	—	—	—
Akyuz, Kugu, Sar, & Dogan (2007)	—	—	—	—	—	100%
Crawley & Sparks (2005) ^{OA}	—	—	—	—	—	100%
Dawes (2009) ^{OA}	—	—	—	—	—	100%
Day et al. (2008)	50%	—	—	50%	—	—
Goetting (1992) ^{OA}	—	89%	—	—	—	11%
Goldenson, Geffner, Foster, & Clipson (2007)	42%, 63%	21%, 16%	15%, 6%	21%, 16%	—	—
Grella, Stein, & Greenwall (2005)	28%	42%	9%	13%	—	—
Haugebrook, Zgoba, Maschi, Morgen, & Brown (2010) ^{OA}	36%	48%	16%	—	—	—
Hochstetler, Murphy, & Simons (2004)	61%	—	—	—	<50% CA	49%
Kerbs & Jolley (2007) ^{OA}	66%	—	—	34%	<50% CA	—
Krabill & Aday (2005) ^{OA}	'vast majority'	—	—	—	<50% CA	unknown
Messina & Grella (2006)	29%	40%	18%	13%	—	—
Neller, Denny, Pietz, & Thomlinson (2006)	74%	—	—	26%	<50% CA	—
Salina, Lesonak, Razzano, & Weilbaeher (2007)	18%	75%	5%	2%	—	—
Strickland (2008)	69%	26%	—	5%	<50% CA	—
Struckman-Johnson, Struckman-Johnson, Rucker, Bumby, & Donaldson (1996)	67%	22%	4%	4%	<50% CA	—
Timmerman & Emmelkamp (2001)	—	—	—	—	—	100%
Vega & Silverman (1988) ^{OA}	—	—	—	—	—	100%

Note. ^{OA}Study used older adult sample as a central aspect of the research design.

record reviews of police or prison records. Additionally, only one study included observation as a data collection technique in combination with staff and prisoner interviews.

As for the use of informants, most data was based on offender self-reports, especially while they were in prison. Only two studies used case record information or included more than one type of informant, which were staff and offender self-report data. It is interesting to note that family members were not used as informants, although family contact was examined in four of the studies.

Measures Used

As shown in Table 2, the studies used differing definitions for trauma and stress and other key variables. As for trauma, some studies used narrower definitions, such as one or more of the following: childhood abuse and neglect, current sexual coercion or psychological or property victimization, death anxiety, loss and separation, or racial discrimination (e.g., Aday, 2006; Kerbs & Jolley, 2007). In comparison, other studies used broader definitions of trauma that included a variety of lifetime traumatic and life event stressors, such as being a victim of and/or witness to physical and sexual victimization and life events stressors, such as loss of a loved one, divorce, or job loss (e.g., Grella, Stein, & Greenwell, 2005).

The measures used for trauma and stress also varied widely among studies. The trauma measures most commonly used across studies included the Trauma Symptom Inventory and the Life Stressor Checklist-Revised with demonstrated reliable and valid psychometric properties (Briere, 1995; Wolfe & Kimerling, 1997). The use of measures for other variables of central interest also varied. Similar to trauma, narrow to broad operational definitions for mental health were used. This included measuring posttraumatic stress disorder with the Post Traumatic Stress Diagnostic Scale (Wittchen, Kessler, Zao, & Abelson, 1995); other trauma related symptoms with the Trauma Symptom Checklist-40 (Briere, Elliott, Harris, & Cottman, 1995); and mental health in general with the use of the Brief Symptom Inventory, which has demonstrated reliable and valid psychometric properties (Derogatis, 1993). However, the degree to which these measures have been validated among older adult prisoner populations is widely unknown.

Sample Characteristics

The sociodemographic characteristics of the samples used across studies were examined next, which included overall sample size and participants' gender, age, and race/ethnicity (see Tables 5 and 6).

SAMPLE SIZE, GENDER, AND AGE

As illustrated in Table 5, the sample sizes varied widely across studies and ranged from 14 to 780. Seven of the 19 studies that used quantitative methods had samples of 150 or higher. As for age, eight of the studies used adults aged 50 and older in which meaningful analyses about older adults in the criminal justice system were conducted. Most studies ($n = 11$) used mixed samples of adult and older adult samples. Of the studies with mixed-age samples, none of them included age-specific analyses or age group comparisons. Most studies used gender specific (man or woman) samples. Of the 19 studies, nine included men only, seven included only women. Only three included a mixed-gender sample, in which the majority of the sample were men.

ETHNICITY

Overall, the studies lacked ethnic diversity in the sampling used across studies. As shown in Table 6, Caucasians were the most dominant ethnic group sampled in the majority ($n = 13$) of the studies. In fact, Caucasians represented over 50% of the sample in six studies.

Minorities were minimally represented across the studies. African Americans were included in nine studies and Latinos in six studies. A majority of the studies ($n = 11$) indicated an *other* ethnicity, but did not clarify. Three studies provided no information on the ethnicity of the sample. With two exceptions, the ethnicity was not a central aspect of analysis and discussion. Day and colleagues (2008) compared indigenous prisoners to nonindigenous prisoners in Australia. Similarly, Haugebrook, Zgoba, Maschi, Morgen, and Brown (2010) compared trauma, health, and mental health issues across African American, Latino, and Caucasian older adult participants and found some significant differences across these ethnic groups. These findings suggest that when ethnic differences are examined, important distinctions may be found in trauma and stress and health and mental health issues.

Analysis of Major Findings Across Studies

The relationship among categories or themes of the major findings were examined next. Table 3 provides brief summaries of the major findings across the 18 studies. Table 4 presents the matrix of categories and themes found across studies. Three major categories were identified across studies, which were: (a) history of traumatic and stressful experiences, (b) consequences and correlates of traumatic and stressful experiences, and (c) coping resources as a protective factor. A narrative description of these findings follows.

HISTORY OF TRAUMATIC AND STRESSFUL EXPERIENCES

Consistent with previous literature on prisoners in general and juvenile offender populations, early traumatic and stressful experiences, including early childhood physical or sexual abuse, were found in the majority ($n = 14$) of the studies reviewed. Additionally, the experience of current victimization, especially while in prison, also was found. For example, Struckman-Johnson, Struckman-Johnson, Rucker, Bumby and Donaldson (1996) found that 20% of inmates reported being pressured or forced into sexual contact.

AGE SPECIFIC STRESSORS AMONG OLDER ADULT PRISONERS

Among studies that focused on older adults in prison, age specific concerns were noted. These studies revealed that older adults in prison experienced stress over prison conditions, fear of victimization, physical health, access to healthcare, housing, fear of dying in prison, and death and loss. In their mixed methods study of older adult prisoners, Kerbs and Jolley (2007) found a high prevalence of psychological, property, and physical and sexual victimization mostly perpetrated on older prisoners by younger prisoners.

Perhaps the most noteworthy stressor was death anxiety among older adults in prison. For example, Aday (2006) found that older adults in prison reported significant concerns about dying in prison settings. Fear of death was found to be higher for older prisoners than for similarly aged adults in community settings. In addition, both inmate social support and a number of health-related variables were important predictors of death fear.

CONSEQUENCES AND CORRELATES OF TRAUMA AND STRESS

Another related theme or category was the consequences and/or correlates, mostly in response to trauma and stress, including the prison experience. These consequences or correlates were found to be related to well-being (e.g., physical, mental, and behavioral). Several studies suggested that the experience of being in prison can cause damaging psychological *hidden injuries*. These injuries include psychological disorders and symptoms (i.e., depression, anxiety, posttraumatic stress disorder, dissociative symptoms, anger, and fear of safety) and substance abuse. For example, Hochstetler, Murphy, and Simons (2004) found that current victimization in prison significantly predicted the occurrence of posttraumatic stress and depressive symptoms. Kerbs and Jolley (2007) found that older adult male prisoners feared victimization.

Additionally, the experience of trauma among prisoners was found to be correlated with compromised physical well-being. For example, Messina and Grella (2006) found that the negative effect of early trauma on health outcomes among prisoners was strong and cumulative. In addition to general physical health, older adults in prison were found to have concerns

over health care and housing. Dawes (2009) found a significant source of stress among prisoners is concern over the prison system's often inadequate housing and health care services pre- and postprison release.

Studies also found correlates and/or consequences of trauma related to behavioral well-being. Behaviors significantly associated with trauma included prior adolescent conduct problems, violence and criminal behavior. Several studies found a connection between violent victimization and subsequent criminal behavior among adults in prison.

COPING RESOURCES AS A PROTECTIVE FACTOR

Internal and external coping resources was the third related category or theme found. Studies found that internal and/or external coping resources acted as a protective factor with the potential to ameliorate the adverse physical, mental, and behavioral consequences of stress and trauma among prisoners. For example, internal resources, such as self-control and emotional awareness, were significantly correlated with prisoners' overall positive functioning pre- and postprison release (Day et al., 2008). External coping resources included religious activities, social and occupational functioning, and social support from family and friends in the community and the peer support within the prison system. For example, Krabill and Aday (2005) examined social support and found that although most inmates have strong relationships with family, friendships among prisoners were found to be helpful when family members were not available. Furthermore, the study revealed that death anxiety might be reduced through a variety of coping mechanisms, such as family social support and religion (Aday, 2006).

In summary, these findings suggest a relationship among trauma and stress, correlates and consequences, and coping resources among older adults in prison. Older adults in the criminal justice system not only may have a history of trauma and stress including a history of victimization but also age-related stressors, which includes death anxiety, grief, and health-related stress. Common consequences and correlates that may be confounded with old age include physical, mental, and behavioral well-being. However, the literature does provide evidence for the role of internal and external coping resources, such as family and peer support and religious activity, which can help foster resilience in older adults, especially while in prison.

DISCUSSION

Critical Appraisal of the Literature

A review of the empirical research on trauma among older adults in the criminal justice system was conducted. A critical appraisal of this literature shows a small body of research in its early developmental stages fraught

with methodological limitations. Perhaps the largest limitation is the lack of research that used older adult samples or included analyses with age group comparisons. For example, only one study made an age group comparison of older and younger adult prisoners (Vega & Silverman, 1988). Therefore, the effects of trauma on older adults in the criminal justice system remain largely inconclusive.

Another limitation is the exploratory and descriptive nature of most of the studies. These types of designs are subject to multiple sources of biases. For example, research designs comprised mostly of cross-sectional, non-probability, and single-group sampling strategies, making it difficult to draw causal conclusions, especially as it relates to long-term trauma outcomes among older adults in prison.

Additionally, although these studies were international in scope, individual studies used regionally specific samples and small to moderate sample sizes suggesting that these samples are not representative or generalizable to the larger population from which they were drawn. The use of small sample sizes also hinders more sophisticated statistical analysis of key subgroups based on sociodemographic distinctions, such as age, gender, and race/ethnicity. These distinctions are particularly important considering the disproportionate confinement of men and racial minorities and the rapidly growing aging prisoner population.

Different definitions and measures for trauma and stress used across studies were another limitation. These definitional discrepancies across studies make it difficult to make cross-case comparison across studies on the correlates and consequences of trauma and stress among older adults in the criminal justice system. Additionally, despite the use of standardized measures with validity for adult populations, the extent to how valid these measures are for older adults in prison settings is questionable.

Another major limitation is the use of self-report measures used across studies. Among the studies that collected data directly from subjects, there was possible low disclosure based on reporting fear or social desirability bias, which presented major barriers to collecting valid data and helping to treat and protect prisoners (Struckman-Johnson et al., 1996). The retrospective self-reported natures of the interviews are not easily verifiable and the retrospective surveys may be limited due to reduced accuracy of recalled events (Messina & Grella, 2006). Finally, the two studies that employed retrospective case record reviews could have potential retrieval reliability issues (Goetting, 1992; Haugebrook et al., 2010).

Methodological Limitations of the Current Review

The results and conclusions of this literature review should be interpreted cautiously due to several methodological limitations. First, although a comprehensive search of 59 library research databases was conducted, it

is possible that the search was not 100% exhaustive and failed to include every relevant peer reviewed publication.

Second, the review included a small sample size of articles ($n = 7$) that specifically focused on older prisoners. This limited scope makes these findings questionable. Of the 11 articles that used mixed samples of younger older prisoners, many were unclear as to what proportions of their samples were older adults and how the older prisoners might differ in their needs from the younger ones. As a result, any conclusions drawn for older prisoners on the basis of these articles might be biased.

Third, studies from different geographic regions other than the United States were included in the sample. Although these collective studies suggest that trauma and life events stressors are common among prisoners from diverse world regions, these findings should be interpreted cautiously for their relevance to United States older adult prison populations. The types of traumatic experiences may differ, such as violence due to a homeland war versus family physical abuse.

Fourth, although there was a high level of interrater reliability between coders, another group of researchers may have coded the articles differently, obtained different frequency distributions, and uncovered different categories and themes for the major findings. Fifth, this analysis was retrospective and not prospective. It is meant to take a reflective look and to illustrate the frequency counts and categories and themes of the past published works. Any discussion related to future literature trends is tempered by these limitations.

Despite these limitations, this review suggests important practice and policy implications for the growth of gerontological social work in the criminal justice system.

Implications and Future Directions

Overall, the results of this review underscore that trauma among older adults in the criminal justice system involved is a reality and a neglected area in the research, policy, and practice fields. The limited number of studies conducted in this area suggests that trauma and stress impact older adults in the criminal justice system and may compromise their overall health and well-being. In fact, issues related to trauma, stress, and aging in offenders span well beyond United States borders to include Australia, England, and Turkey. These consequences of trauma and stress also may not be readily recognized by others. Vega and Silverman (1988) found that older adults in prison tended to hide their stress and anger and 'fake' adjustment as a type of survival technique.

Because prison administrators generally respond only to overt issues, routine assessment procedures for older adults in the criminal justice system are warranted. Without such an ongoing screening mechanism, older adults'

problems and needs may continue to go undetected and untreated. Yet, even if older adults' trauma and stress may have gone unnoticed, the fiscal reality has not. The rising cost of housing the aging prison population raises a red flag to prison administrators and policy makers alike that this is a crisis issue in which immediate and long-term action is warranted.

There are many themes that have been discussed within the reviewed studies including the relationship of life course trauma and stress, well-being, and protective factors, such as coping resources. In light of these findings, the life course perspective may be particularly useful when we try to understand the influence of traumatic and stressful life experiences and other psychosocial characteristics on the pathways to prison among older adults.

The life course perspective, based on Elder's (1974) work, argues that significant life events (personal and historical), as well as social relationships and personal human agency, influence individual development and well-being. This perspective enables us to explore how significant life experiences influence the health and mental health of individuals across the life course. Perhaps what is most important is that in some instances, identifying and treating trauma can deter some individuals from engaging in a lifetime of crime and recidivism or becoming late onset offenders in older adulthood.

The findings related to coping resources during the life course also are useful for practitioners and researchers. For example, social support and cognitive restructuring are potential areas for preventive assessment and intervention strategies to improve well-being among older adults under criminal justice supervision in prison, probation, or parole. Using informal supports, such as family members and peers in prison and in the community, may be fruitful intervention areas.

The Need for a Gero-Informed Social Work Response in Criminal Justice System

Currently, the experiences of prisoners are generally viewed through a criminal justice lens. Social work's emphasis on enhancing well-being, people's strengths, and social justice and human rights offers an important perspective. Despite the fact that many of these individuals in the criminal justice system have committed crimes, some of them heinous, the core social work values of social justice, service, and respecting the inherent dignity and worth of the person, make it imperative to respond to the rapidly growing crisis of the *aging-in* prisoner population (NASW, 1999). Unfortunately, the correctional care system is not yet prepared to adequately address the specific needs of older adult prisoners, in part because of insufficient information about this population. The results of the literature review can be

used to help gain a better understanding of where social work can begin to make additional contributions in this area.

Policy debates may arise as to whether older adult offenders should receive these scarcely available treatment resources when law abiding older adults with trauma histories also need them. Because it is inevitable that many older adults in prison will return to the community, the improved provision of services while incarcerated will likely greatly reduce their burden of care upon release. Social workers can provide the discharge planning that can assist with a smooth prison to community transition with reentry services to help prevent or ameliorate adverse health, mental health, and criminal justice outcomes among older adults.

Proposed policy and practice reform efforts should address older adults' cost containment issues while in prison, as well as the costs associated with their successful transition to the community. As this literature review indicates, older prisoners' physical, social and psychological needs are complex. This complexity creates the need for informed and targeted services for older adults during any point of criminal justice contact from arrest, court, probation, prison, and parole (Snyder et. al., 2009). The \$60 billion in reentry costs to American taxpayers could likely be significantly reduced with the adoption of effective strategies for prison and reentry services, especially with older adults with diverse needs (Nunez-Neto, 2008).

For example, secure care in prison or after-care services upon prison release may provide environmental modifications, such as designated areas for physical exercise for older adults in the prison or community, with activities they are more physically likely to enjoy (i.e., shuffleboard rather than basketball) to increase physical activity and reduce fear and anxiety (Snyder et al., 2009). Moreover, older adults in prison often are not encouraged to participate in activities (Snyder et al., 2009). Without policy changes or programmatic enhancements, older adult prisoners will continue to participate less often in activities than their younger counterparts. Counseling program staff would be most effective if they were trained to address older adults in prison facing different life-span issues and age-related stressors, which may differ when compared to those of a younger inmate (Aday, 2003). These types of services should also be available for older adults released from prison. Evidence suggests that when community supports are in place, prisoners released to the community are more likely to successfully reintegrate (Kerbs, 2000; Travis, 2005).

TRAUMA INFORMED RESPONSE

As noted in this review, older adults experience trauma and stress before, during, and after incarceration. Based on information garnered from this study, policies, programs, and interventions can be proposed to positively affect the impact of trauma and life events stressors on older adults involved

in the criminal justice system. Additionally, Reimer (2008) indicated that midlife issues, as well as the social and psychological effects of retirement, often precipitate crises leading to criminal behavior with possible incarceration.

Fostering coping resources is another important consideration for age-sensitive trauma informed care. Research consistently shows that influence of internal and external resources, such as positive self-image and social support are linked to improved health, mental health, and behavioral outcomes (Aday, 2006; Haslam & Reicher, 2006; Jacoby & Kozie-Peak, 1997; Marting & Hammer; 2004). The development or improvement of assessment and intervention strategies with older adults would assist with improving the health and well-being of older adults serving time in the criminal justice system. Effective assessment techniques for older adults prior can prevent first time or repeat offending among older adults in the community.

AN INTERDISCIPLINARY RESPONSE

Developing appropriate policy is critical as states struggle with the increasing expense of caring for older adults in the criminal justice system, many of whom suffer from an array of traumatic experiences and mental and physical health problems. Therefore, coordination among the different service systems, such as health, mental health, social services, and criminal justice and interdisciplinary collaboration are important intervention areas to reform (Aday, 2006; Gaydon & Miller, 2007).

CONTINUUM OF CARE RESPONSE

The wide scale adoption of continuum of care policies that recognize alternative strategies that address health, cost, and safety issues for correctional and community care are warranted (Gaydon & Miller, 2007). For some older offenders, less restrictive alternatives to incarceration may be more appropriate. For older adult prisoners with terminal illness, compassionate release may be a feasible alternative to care within the prison system. Other alternatives include less restrictive and cost-efficient probation and/or postincarceration diversion programs (i.e., early parole) for nonviolent prisoners over the age of 65. As recidivism rates are often lower among older adult offenders, such policy initiatives become more viable. However, more conservative monitoring approaches, such as the use of ankle bracelets, allow the option of diversion from incarceration or the early release of older prisoners. Both diversion options are much less expensive than warehousing them in prison and may more easily address trauma, mental health, and health issues, greatly reducing the costs associated with caring for older inmates.

For more dangerous older adult populations, the establishment of geriatric units in which older adult prisoners in special units are separate from younger prisoners may better provide for their special needs; although it will be critical for correctional staff members who work with this population to receive specialized training to effectively provide care (Reimer, 2008).

Future Research Directions

There are a multitude of areas that can be explored in future research. Future studies that use longitudinal mixed methods designs and representative samples that explore issues of age, race/ethnicity, and gender would enable for the examination of disparities among this population.

Additionally, other factors that might impact cumulative disadvantage include the examination of education, income, and employment. More research is needed specifically to determine the salient needs /issues of this population with reliable and valid measures. The use of multiple informants, including family members and front line staff who can provide data from the ground up about the needs of older adults in prison and potentiation effective practice strategies, is also needed.

Future research that focuses exclusively on older offenders and explores key issues such as: the nature of family relationships, coping strategies in prison, the effects of long-term institutionalization, identifying the costs of long-term incarceration, the impact of special programming, and the breadth and effectiveness of resources currently available to released inmates would be useful (e.g., Aday, 2006; Krabill & Aday, 2005). Additionally, larger, national and international studies that allow for subgroup analyses would provide a clearer picture of the needs of this population. Longitudinal studies would also provide a way to measure the stress of incarceration over time (e.g., Hochstetler, Murphy, & Simons, 2004).

Finally, studies that find a way to incorporate temporal ordering of events will help to establish causality (e.g., Grella et al., 2005) between issues such as preincarceration influences (including trauma) and incarceration or in-prison trauma and the prison experience. Gaining a better understanding of social work practices with older adults at all stages of the criminal justice system can be used to develop best practice models. Additionally, exploring the public's perceptions of policies impacting older adults, such as alternative to incarceration programming, would be useful information for policy decision-making.

Potential research questions for both national and international research include: (a) What do older adults and other key community and correctional stakeholders report about the salient issues, problems, and needs of older adults in the criminal justice system, especially as it relates to history of trauma and stress and overall health and well-being? (b) What protective factors foster resilience (e.g., education, income, and employment)

among older adults in the criminal justice system? (c) What are the roles of coping resources in increasing well-being and reducing recidivism? (d) What is the impact of policy and practice initiative on the health and well-being of older adults in the system? (e) How do social workers assess and intervene with older adults in the criminal justice system? This includes: How do social workers advocate for older prisoners for palliative care for terminal illness and alternative sentencing for non-violent offenders? (f) What are the public perceptions of treatment alternative for older adults involved in the criminal justice system? The information gained from future studies can help guide future practice and policy that impact the health and well-being of older adults in the criminal justice system or at risk of involvement.

In conclusion, older adults involved in the criminal justice system are in need of attention in social work research and practice. Social workers can make a substantial and unique contribution to improving conditions for this all too often neglected population of older adults because of the dual mission of enhancing well-being and social justice outcomes. Gerontological social work has spearheaded other areas of social work, including workforce development, social work scholarship education, and end of life care; perhaps this uncharted territory is yet another one.

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