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Effective Interventions for Self-Harming Behaviors and Suicide within the Detained Offender Population: A Systematic Review

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Significance: Suicide, the leading cause of offender death in United States' jails from 2000 to 2013, accounts for 34% of all jail deaths in 2013. Offender self-harm, particularly among males was associated with repeated intentional self-harming behaviors, younger age, mental illness and solitary confinement.

Methods: Inclusion criteria include: published in peer review journals; sample include any gender and age; and English language or English translation articles. Five databases were examined. Ten systematic or integrative literature reviews were evaluated by two researchers independently for quality using the Revised Version of a Measurement Tool to Assess Systematic Reviews (R-AMSTAR).

Results: Four reviews were retained for synthesis. Five of 32 studies found within these reviews note statistically significant decreases in self-harming and/or suicidal behaviors in detained offender participants. Three interventions/treatments emerged as efficacious: staff training, Cognitive Behavioral Therapy, and Dialectical Behavioral Therapy.

Conclusion: There was an emphasis on preventing self-harming behaviors among offenders with personality disorder. Evidence was provided that female offenders diagnosed with Bi-polar Disorder showed greater reduction in self-harming behavior than male counterparts. Insufficient information was available for examination of age effect.

Effective Interventions for Self-Harming Behaviors and Suicide within the Detained

Offender Population: An Integrative Review

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Introduction

Multiple contributing factors such as shock of confinement (Chammah & Meagher, 2015), harsh sentencing practices, overcrowding (Huey & McNulty, 2005), time spent locked up, conditions of housing and sanitation, levels of stress (Liebling, 2006) and limited access to basic health or mental health services are known to contribute to suicide and self-harming behaviors among incarcerated populations. While the combination of broad factors that interact to place an individual at higher risk of suicide (socio-cultural factors, psychiatric conditions, biology, genetics, and social stress) and self-harming behaviors are not well understood- they have been used to identify specific high-risk groups. Populations that often commit suicide at higher-than-average rates are of special concern and include: young males (ages 15-49), elderly people (especially elderly males), indigenous people, persons with mental illness, persons with alcohol and/or substance abuse, persons having made a previous suicide attempt, *and persons in custody* (WHO & IASP, 2007).

Purpose

This integrative review of the literature seeks to describe efficacious treatment interventions for incarcerated persons demonstrating intentional self-harming and/or suicidal behaviors. The paper will define types of behaviors; and present available data regarding prevalence and severity of self-harm and suicidal behaviors among this population. This study is referred to as an “integrative review” as its intent is to present a synthesis of available knowledge and applicability of results of significant studies to practice, but does not provide a meta-analysis (de Sousa, da Silva & de Carvalho, 2010). For the purposes of this discussion, self-harm is inclusive of non-life threatening behavior, parasuicide, and intentional self-injury defined as

intentional self-destructive physical assault upon oneself- cutting, burning, slashing, stabbing, and bashing oneself.

Rationale

Intentional self-injury can be divided into two distinct, but related, concepts: non-suicidal self-injury (NSSI), defined as “the socially unacceptable, direct, deliberate destruction of one’s own tissue in the absence of suicidal intent” (Nock & Favazza, 2009); and, suicidal attempts defined as harming oneself with the intent to take one’s own life. The most prominent difference between people who perform NSSI and individuals who engage in suicidal behaviors is that suicidal behaviors include the intent to end one’s life while NSSI behaviors do not.

Community Samples

Although individuals who commonly display NSSI behaviors are not intent on ending their lives, accidental deaths do occur from NSSI. Perhaps more importantly, NSSI appears to be related to suicidal ideations and attempts. In fact, researchers Nock, Joiner, Gordon, Lloyd-Richardson and Prinstein (2006) compared reported lifetime suicide attempts with a community-based sample of adolescents who engage in NSSI and found that 70% (n= 62) who reported NSSI also reported at least one suicide attempt. Of the total 89 participants, 55 (61.8%) participants reported two or more suicide attempts in their lifetimes. Although, the exact direction of the relationship between suicide and NSSI behaviors is unknown, Zlotnick, Donaldson, Spirito, and Pearlstein (1997) found that adolescents within an inpatient hospital unit who reported a suicide attempt, and who also exhibited affect dysregulation within the past year used different methods of NSSI compared to those who reported only suicidal ideation with no recent suicide attempts.

The Centers for Disease Control and Prevention (CDC) reports that suicide ranked as the number two cause of death in the year 2014 for individuals in the community who are in the following age groups: 10 to 14 years of age, 15 to 24 years of age, and 25 through 34 years of age. After 34 years of age, death by suicide begins to lessen. The CDC reports that suicide does not rank in the top 10 causes of death for people who are 65 or older (Centers for Disease Control and Prevention [CDC], 2014). These statistics are interesting when considering the findings by Hawton and Harriss (2008) who note that the ratio of deliberate self-harm to attempted suicide was highest in teenagers and the lowest in people aged 60 years and older who present to a hospital with symptoms of deliberate self-harm. In addition, the ratio of deliberate self-harm to suicide attempts was five times higher for females than males (Hawton & Harriss, 2008). These findings of deliberate self-harm and suicide attempts are comparable with the statistics gathered from the CDC regarding suicide rates by age group. Therefore, it appears as if teenagers and young adults are most at risk for self-harming behaviors and attempted suicide whereas older adults are the least at risk for self-harming behaviors and attempted suicide.

Similar to the findings by Zlotnick et al (1997), researchers Turner, Layden, Butler, and Chapman (2013) also found an association between various types of NSSI, suicide attempts, and depression in their community sample of 142 participants who were between 16 to 54 years of age. These authors found those that report severe symptoms of depression with multiple types of NSSI behaviors, such as engaging in a combination of burning and cutting, were more at risk for suicide attempts than those who only report multiple types of NSSI without depression. The researchers suggest that multiple types of NSSI in the absence of severe depression may not be enough to influence a suicide attempt (Turner et al, 2013). Therefore, it appears that multiple

forms of NSSI behavior, severe depression, and suicide attempts have a similar relationship in adults as it does in adolescents.

Jail and Prison Samples

As shown from the statistics discussed, there is an extremely high rate of suicidal behaviors displayed by individuals within the community, especially those people under 34 years of age (CDC, 2014). Various types of NSSI, along with symptoms of depression, are found to increase the number of suicide attempts in both adults and juveniles residing in the community as well as in a hospital environment (Turner, Layden, Butler, & Chapman, 2013; Zlotnick, Donaldson, Spirito, & Pearlstein, 1997). When considering these statistics regarding community and hospital suicide, and NSSI rates, it is no surprise that suicide attempts, and NSSI, also pervade jails and prisons in the United States as well as other countries.

Data collected in 2005 showed that both jail and state prisoner suicide in the United States declined since 1983; but it is also important to note that offenders in jail continue to have suicide rates that are three times higher than state prisoners. The United States Department of Justice (USDOJ) reports that jail suicide rates showed a steady decline from 129 offenders per 100,000 in the year of 1983 to 47 per 100,000 offenders in the year of 2002 (Mumola, 2005). However, a recent report from the USDOJ states that suicide was the leading cause of offender death in United States' jails from the year 2000 to the year 2013 (Noonan, Rohloff, & Ginder, 2015). This report suggests that suicide accounted for 34 percent of all jail deaths in 2013. More specifically, the suicide rate increased from 35 per 100,000 offenders incarcerated in jails in 2009 to 43 per 100,000 offenders incarcerated in jails in 2013 (Mumola, 2005; Noonan, Rohloff, & Ginder, 2015). Newcomen (2015) also states that offender death by suicide rose 64 percent in 2013/2014 compared to the previous year. Interestingly, male jail detainees (N = 43) were 1.5

times more likely to die from suicidal behaviors than female jail detainees ($N = 28$) between the years 2000 to 2013; thereby, indicating a disparity between suicide completion and gender (Noonan, Rohloff, & Ginder, 2015).

Along with the high rate of offender suicidal behaviors, there is also an extremely high rate of NSSI among incarcerated individuals. In fact, the Ministry of Justice reported that 23,158 prisoners located in England and Wales engaged in self-harming behaviors during the year of 2012. Interestingly, when comparing self-harm rates by gender, the amount of incarcerated females who self-harmed in 2012 showed a decrease. Specifically, the rate of self-harm for females in 2012 was 264 per 1,000 prisoners; while the rate of self-harm in 2009 was 377 per 1,000 prisoners. However, the amount of self-harm among male prisoners in England and Wales is on the rise. In 2011, the rate of self-harm incidents was 194 per 1,000 prisoners; but in 2012 this rate increased to 377 per 1,000 prisoners. Even more alarming is the rate of self-inflicted deaths while in custody; 60 per 192 deaths in 2012 were brought upon by the offenders' own actions, regardless if they were intentionally trying to end their life or engaging in NSSI behaviors. This type of prisoner death has increased by five percent since the year 2007. The amount of self-inflicted offender deaths was only bested by death caused by homicide or natural causes (Ministry of Justice, 2013).

Similarly to the high rates of offender self-harming incidents found in the United Kingdom, the United States must also grapple with the high rates of offender self-harm, and attempt to understand the complex nature of offender self-harm in order to intervene. Kaba and researchers (2014) found that there were 2,182 acts of self-harm within the New York City Jail System out of the 244,699 incarcerations analyzed. Perhaps more important is that the 2,182 acts of self-harm were committed per 1,303 incarcerations; thus, offenders were committing multiple

acts of self-harm. Also, seven self-harming incidents resulted in death regardless of intent to commit suicide. Although the risk to commit fatally self-harming acts is the same for male and female offenders in this population, 17.6% of male offenders self-harm while less than one percent of female offenders self-harm. Therefore, female offenders in the United States and the United Kingdom were found by these authors to self-harm less than male offenders in both countries (Ministry of Justice, 2013; Kaba, 2014).

Kaba and researchers (2014) found that offender self-harm was associated with solitary confinement. Out of 15,658,050 incarcerations, there were 1,303 acts of self-harm. A high proportion (n=695; 53%) of acts occurred within 10,466 of the 134,188 (7.3%) total offenders who experienced solitary confinement. Higher rates of self-harm were also correlated with serious mental illness, offenders younger than 18 years of age, and Latino and White ethnicities regardless of gender within the New York City Jail System in the United States.

Due to the prominence of NSSI behaviors in prisoners, the disproportionate amount of NSSI behaviors found between male and female offenders, the high rate of self-inflicted death found in prisoners, and the association between NSSI and suicide, it is extremely important that successful interventions targeting both offender suicide and self-harm be examined. Correctional systems and their staff find it difficult to manage these populations given the custody environments, minimal treatment staff and philosophical approaches supported publically for management of offending behavior.

Objectives

This integrative literature review will synthesize the findings of prior reviews that focus on effective interventions for incarcerated persons demonstrating intentional self-harming and/or suicidal behaviors with intent to apply the evidence to practice. More specifically, this paper

will address the following questions: *What efficacious treatment interventions are reported in the literature for incarcerated persons demonstrating intentional self-harming and/or suicidal behaviors?* And, secondly, *What are differences between intentional self-harming and suicidal behaviors?*

Methods

Although there were numerous studies and literature reviews published at the time this paper was written, there were no attempts to synthesize across the literature to focus on effective interventions for suicide and self-harm behaviors in the incarcerated population. The aim of this integrative review, then, is to combine evidence across all types of reviews (Whittemore & Knafl, 2005) to clarify terms, identifying effective treatments for self-harming and suicidal behaviors in adult and juveniles housed in jails, state or federal prisons, or forensic hospitals. This paper will describe the types of behaviors, effective interventions, the prevalence and severity of those behaviors, and examine available literature clarifying the differences between suicide and self-harming behaviors by age and gender within the incarcerated population. The current integrative review will also examine the literature for evidence regarding the relationship between self-harm and suicide attempts in this population.

Sample Inclusion Criteria

Definition of terms needed to be addressed as it was noted that the term self-harm has many synonyms including non-suicidal self-harm (NSSI), parasuicide, and intentional self-injury. Intentional self-harm can further be defined by the method used to self-harm, such as cutting or burning.

For the purposes of the current integrative literature review, intentional self-harm includes both intentional self-destruction without intent to end ones' own life; and also self-

destruction with the intent to kill oneself. For simplicity, intent to end ones' life will be henceforth referred to as suicide or suicidal behaviors. The following terms will be used interchangeably to refer to self-harming behaviors that do not include the intent to kill oneself, regardless if dying is the final outcome of the self-harming behavior: non-suicidal self-harm (NSSI), parasuicide, intentional self-injury, and self-harm.

Although chemical addictions, process addictions, compulsive behaviors, and reckless behaviors are often described as self-harming in the literature, the current literature review does not include addictive, or otherwise, reckless behaviors in the definition of self-harm. Instead, self-harm is defined as “the socially unacceptable, direct, deliberate destruction of one’s own tissue in the absence of suicidal intent” (Nock & Favazza, 2009). With this definition in mind, for the current literature review, self-harm is limited to cutting, burning, slashing, stabbing, and bashing oneself.

The current integrative literature review examines peer reviewed and published literature reviews to discover what interventions are effective in reducing self-harm and suicidal behaviors among incarcerated individuals. This review will synthesize the findings regarding self-harm, suicide, and the relationship between the two constructs, by examining both male and female adults and juveniles who are incarcerated in federal prisons, state prisons, jails, and forensic hospitals. This information is significant for application to practice because juveniles and young adults in the community have a higher rate of both self-harming and suicide behaviors than older adults in the community (CDC, 2014). If this age disparity is the same in detention facilities and prisons as it is in the community, it is probable that the most effective interventions for self-harming and suicidal behaviors for juvenile prisoners will be different than the effective interventions for self-harming and suicidal behaviors for adult prisoners.

While research on the gender disparity for self-harm and suicide behaviors in the incarcerated population is central to treatment, conflicting reports regarding the relationship between gender and efficacious treatment for application to practice is the intent. Due to this gender disparity noted by Hawton and Harriss (2008) and a report by the Ministry of Justice (2013), there may be differences in response to treatment among detained male and female persons.

Eligibility Criteria

The current review set four criteria for inclusion:

1. Only integrative/systematic reviews published in peer review journals are included;
2. Any gender can be included; gender differences must be noted in the results or discussion section of the review;
3. Both juvenile and adult detainee samples can be included; age differences must be noted in the results or discussion sections of the review;
4. Articles in the English language or have an English translation readily available for use; any country of origin is acceptable.

Information Sources

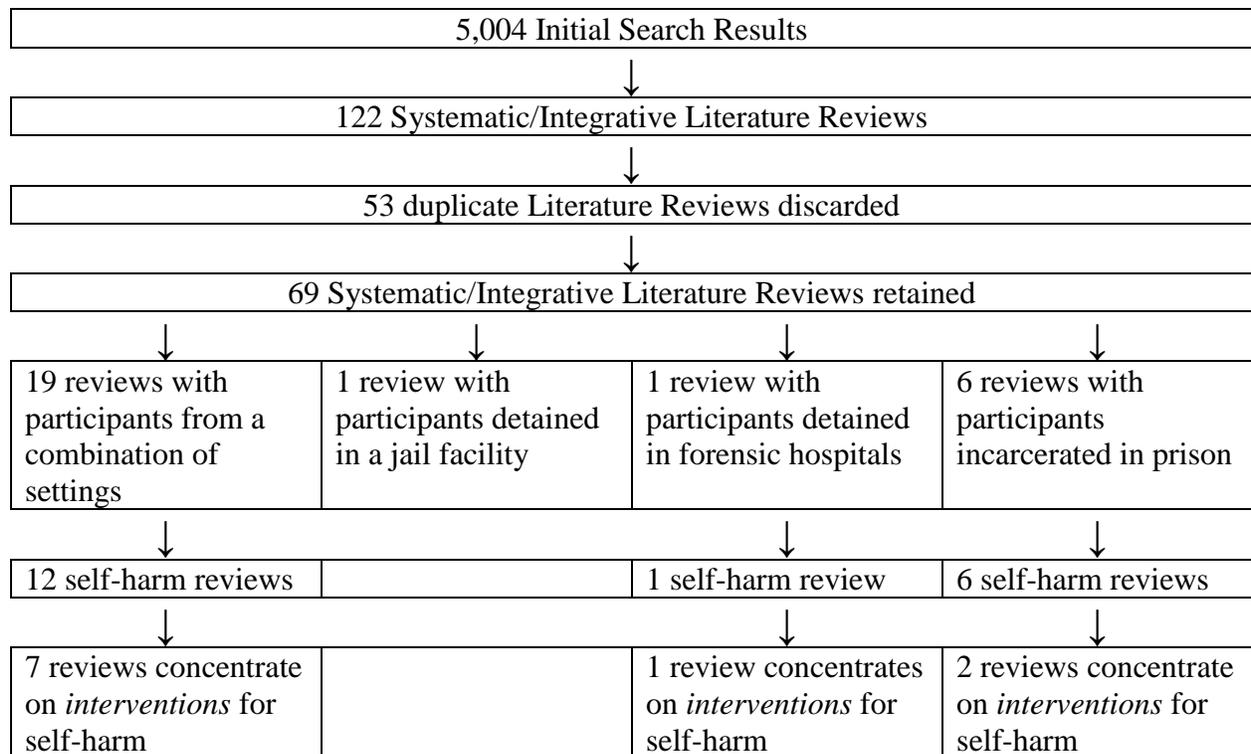
Five electronic databases were used to find the prior systematic and integrative literature reviews that were included in the current review. Databases included are: CINHAL Plus with Full Text; Cochrane Database of Integrative reviews; Psychology and Behavioral Sciences Collection; PsycINFO; and, PubMed. The following four databases were searched using a combination of Keyword and Subject Heading clusters: CINHAL Plus with full text, Psychology and Behavioral Sciences Collection, PsycINFO, and PubMed. Although the researchers attempted to use subject headings to search for relevant reviews in the Cochrane

Database of Integrative reviews, no relevant results were found. Therefore, all of the results from the Cochrane Database of Integrative reviews were found using keywords and no subject heading clusters were included for this database. Our review strategy was reviewed by our research librarian. For a complete list of the search terms used in CINHALL Plus with Full Text, Cochrane Database of Integrative reviews, Psychology and Behavioral Sciences Collection, PsycINFO, and PubMed, please see Appendix 1, Appendix 2, Appendix 3, Appendix 4, and Appendix 5 respectively.

Search

As the result of the original database search, 5,004 articles were found and titles and abstracts were examined to assure the articles were specific to the study topic. A flow chart of the extraction process can be found in Fig 1 followed by a description of the process.

Figure 1. Search Results



Of the 5,004 initial results found, 122 systematic and integrative literature reviews were located and examined for duplicates. Fifty-three duplicate articles were discarded. Of the 69 reviews remaining, 27 reviews included participants incarcerated in a prison (N = 6) or jail (N = 1), residing in forensic hospital units (N = 1) or a combination of various correctional settings (N = 19). From these 27 reviews sampling detained individuals, 19 focused on self-harm and/or suicide behaviors for individuals in forensic hospitals (N = 1); prisons (N = 6) and a combination of many correctional environments (12). However, only 10 of 19 reviews focused on ‘interventions’ for self-harm and/or suicidal actions. Seven of these reviews include studies conducted in multiple correctional settings (N = 7). Two reviews focused on interventions for self-harm and/or suicidal behaviors with prisoners (N = 2); and, one review focused on interventions for self-harm and/or suicidal behaviors with forensic hospital patients. The remaining reviews (N = 10) were retained for an analysis of methodological quality prior to a decision as to what would be done with the data. The process of elimination of studies was validated by a second researcher for accuracy.

Risk of Bias

The systematic and integrative literature reviews were evaluated for standards of methodological quality using the *Revised Version of a Measurement Tool to Assess Integrative Reviews* (R-AMSTAR). This assessment tool was originally created by Shea and colleagues in 2007, and revised and validated in 2010 by Kung, Chiappelli, Cajulis, Avezova, Kossan, Chew & Maida in 2010, is a reliable and valid tool for the accurate assessment across literature reviews (Shea et al, 2009). The R-AMSTAR checklist assesses the quality of integrative literature reviews through 10 item checklist assessing inclusion/exclusion criteria, researcher bias, selection bias, and reporting. Each of the 10 items receive a score of 1 through 4, with 1

denoting weakness with the construct that the question represents, and 4 denoting excellence with the construct that the question represents. Thus, an integrative literature review can obtain a total minimum quality rating of 10 and a total maximum quality rating of 40 with the R-AMSTAR. It is suggested that a literature review must meet, or exceed, a total score of 22 to be of adequate methodological quality (Kung et al., 2010).

Kung et al (2010) further recommend an examination of marginal means and standard deviations to assess the relative strength of that review for the domain under study. These authors note that when the reports within the review are uniformly strong (or weak), a Friedman analysis of tabulated scores will reveal no significance. This test for violations of assumptions, may denote biases that may not be evident through publication, or act to alert the reader to differences between groups.

The ten remaining systematic and integrative literature reviews were scored using R-AMSTAR independently by two researchers and results compared. Differences in opinion were discussed and a determination was made as to final scoring. Six reviews that had a total score of 22, or above, when assessed by the R-AMSTAR were retained and four reviews with a score below 22 when assessed by the R-AMSTAR were discarded as suggested by Kung and colleagues (2010). The primary difficulty eliminated reviews had with regard to quality appears to be related to how they are reported or potentially limitations imposed editorially. For example, limited pages or words per article, or splitting the intervention into one article and the outcomes into another article. They either did not provide the information or variables sought, or were not sufficiently clear regarding all components of analyses.

During this process, two additional reviews were eliminated. The review by Leenarts, Diehle, Doreleijers, Jansma, Lindauer (2013) did not examine self-harm as a separate construct,

which made it difficult to measure the actual reduction in self-harming behaviors and the effectiveness of the intervention studied; thus, this review was rejected. Although Bennett and Dyson (2014) synthesized the available literature to find qualities that hinder and improve self-harming intervention outcomes for incarcerated individuals, the researchers did not evaluate self-harming interventions. Instead, the researchers coded the aspects found into six themes related to self-harming intervention outcomes for prisoners. This information could potentially be important to improving treatment protocols for prisoner self-harm. However, in order to keep our research tightly focused on effective interventions for self-harm, this literature review was discarded.

To summarize, four literature reviews were determined to meet criteria for this integrative literature review (Table 2). These four literature reviews focus most specifically upon efficacious treatment for legally detained offenders of any age or gender. The results of these reviews were classified by location (hospital or prison) and treatment type and reported for juvenile and adult detained offenders for assessment of age-sensitive interventions. Once the reviews were examined for quality and rejected (Table 1) or retained (Table 2), an integration across studies yielded a table outlining the effects of the three interventions discussed within the reviews (Table 3).

Table 1: Deleted Studies from Quality Review

Authors and Date	Quality Rating	Reason for Rejection
1. Bennett & Dyson, 2014	Overall Quality Score: 24/44 Rejected: Yes	The review does not focus on interventions for self-harming behaviors in prisoners. Instead, the study identifies aspects that hinder or assist intervention protocols in prisons; outside of the scope of the inclusion criteria for this literature review.

<p>2. James, Duncan, & Bowers, 2012</p>	<p>Overall Quality Score: 21/44</p> <p>Rejected: Yes</p>	<p>Important details about included studies were not reported, such as the number of participants in each study, or the total number of participants included in the review; poor assessment of the quality of the included studies; possible publication bias was not recognized; did not fully explain the interventions used; unable to determine which studies included forensic hospitalized patients verses non-forensic patients when examining intervention and treatment outcomes for self-harming and suicide.</p>
<p>3. Townsend et al., 2010b</p>	<p>Overall Quality Score: Not assessed for quality because this is a protocol for another review that is included in the current paper. This is not a complete literature review, but is meant to state the quality of the complete, included review.</p> <p>Rejected: Yes, but used to evaluate the quality of the completed literature review by Townsend, Walker, Sargeant, Vostanis, Hawton, Stocker, & Sithole (2010a).</p>	<p>This is a statement of protocol for the following study that is included in the current review: Integrative review and meta-analysis of interventions relevant for young offenders with mood disorders, anxiety disorders, or self-harm (Townsend, Walker, Sargeant, Vostanis, Hawton, Stocker, & Sithole, 2010a).</p>
<p>4. Leenarts, Diehle, Doreleijers, Jansma, Lindauer, 2013</p>	<p>Overall Quality Score: 33/44</p> <p>Rejected: Yes</p>	<p>This review does not report on self-harm or suicidal behaviors as a stand-alone measure. Rather, this review reported on PTSD scores, which does not necessarily include self-harm or suicidal behaviors. Thus, there was no way to know if a reduction in self-harm or suicidal behaviors occurred by</p>

		examining the reported results.
5. Gough, 2005	Overall Quality Score: Not assessed for quality because it was clear that it did not focus on self-harming interventions. Rejected: Yes	This review did not research interventions for self-harming behaviors. Instead, it focused on developing guidelines for staff to better manage the self-harming behaviors of offenders.
6. Gunnell, Bennewith, Hawton, Simkin, Kapur, 2005	Overall Quality Score: Not assessed for quality because it was clear that it did not focus on self-harming interventions. Rejected: Yes	This review did not research interventions for self-harming behaviors. Instead, it concentrates on the statistics, and merging trends, for prisoner and jail detainee suicide by hanging.

Note: The 6 discarded studies are marked with a # in the reference section.

Table 2: Characteristics of Included Studies

Author and Year	Population	Intervention	Comparison Intervention	Measures of Self-Harm and/or Suicide	Quality of the Review (R-AMSTAR)
1. Barker, Kőlves, & De Leo, 2014	People who were incarcerated in an adult prison who were 18 years of age or older.	Suicide and self-harm prevention programs, including multiple types of therapy (CBT-teaches coping skills and management of suicidal ideations; peer-focused person centered therapy, and general psychological support), training for staff, risk-assessment protocols for offenders, and the use of "safe-cells."	Pre/post intervention data	Changes in offender suicide rates; interviews from participants; assessments from prisoners and staff; and pre-post test data.	Score:26/44 Strengths: A comprehensive literature search was preformed; the authors identified studies that were of poor quality and excluded them; the scientific rigor of each study was considered before analysis. Limitations: The authors did not state how they reconciled disagreements about the inclusion or exclusion of studies and there is no mention of the data extraction

<p>2. Townsend, et al., 2010a</p>	<p>Male or female juvenile offenders who are incarcerated or in the community who are 19 years of age or younger. Participants must be diagnosed with a mood, anxiety disorder, or conduct disorder (CD), or be deliberately engaging in self-harming behaviors.</p>	<p>Cognitive Behavioral Therapy (CBT); group therapy, individual therapy; family therapy; and psychotropic medications.</p>	<p>Waitlist; no treatment, various psychological therapies including different types of group psychotherapies; and various types of psychotropic medications or placebo medications.</p>	<p>The majority of the included studies (N = 7) used self-report questionnaires, interview data, or a combination of both. The authors did not specify the measures used for 3 of the included studies.</p>	<p>process; possible researcher bias. <i>Score:</i> 41/44 Strengths: The review clearly listed the research protocol; the research methods included a defined research question under PICO standards; the inclusion criteria were clearly stated; a comprehensive literature search was performed. The methodological quality of the studies was examined; and characteristics, and results, of the studies were described. Limitations: There were no significant limitations in the methodological quality of this review, but only one study focused on suicidal ideations for detained juvenile offenders.</p>
<p>3. Dixon-Gordon, Harrison, & Roesch, 2012</p>	<p>Male and female, juvenile and adult, forensic psychiatric patients, or incarcerated individuals, who have engaged in Non-suicidal self-injury (NSSI) while detained, in prison, or a forensic hospital, and staff who work with offenders who engage in NSSI.</p>	<p>Restriction: Seclusion, isolation, physical restraint, observation, or “safe-cells,” Mental health therapy: Dialectical Behavioral Therapy (DBT), Cognitive-Behavioral Therapy (CBT); Problem-Solving Therapy (PST); Emotion Regulation Group</p>	<p>Multiple (not specified)</p>	<p>Offender suicide rates, assessments from staff, and pre-post test data.</p>	<p><i>Score:</i> 26/44 Strengths: The review clearly listed the inclusion criteria; reported the databases searched; described characteristics of the included studies; and the authors considered the quality of the studies in the analysis.</p>

		<p>Therapy (ERGT); physical activity</p> <p>Psychotropic medications: Antipsychotics; selective serotonin reuptake inhibitors; mood stabilizers.</p> <p>Staff attitudes regarding NSSI</p>			<p>Limitations: The literature review did not use an instrument to assess the quality of the included studies. The review only included studies that were published from 1980 to 2012, denoting a possible publication bias; there may also be a possibility of researcher bias.</p>
<p>4. Duncan, Nicol, Ager, & Dalgleish, 2006</p>	<p>Male and female, offenders detained in secure hospitals in Britain, Canada, and the United States.</p>	<p>This review included 20 studies: Seven studies focused on problem-solving skills training; four studies focused on anger and aggression management; seven studies were not assigned to a category; and two studies focused on deliberate self-harm interventions. Both of these studies used Dialectical Behavioral Therapy (DBT) to reduce Borderline Personality Disorder (BPD) and intentional self-harming behaviors (Evershed, Tennant, Boomer, Rees, & Watson, 2003; Low, Jones, Duggan, Power, & Macleod, 2001).</p>	<p>Two studies analyzed for effect size of DBT intervention using pre-post test data</p>	<p>Interviews; self-report questionnaires; and observation.</p>	<p><i>Score:</i> 33/44</p> <p>Strengths: The review clearly listed the research protocol; the research methods included a defined research question under PICO standards; the inclusion criteria were clearly stated; a comprehensive literature search was performed. The methodological quality of the studies was examined</p> <p>Limitations: There may be a possible publication bias; the author did not list the reason for exclusion; the methods for the exclusion of studies cannot be retraced.</p>

Note: The 4 included studies are marked with a * in the reference section.

Table 3: Effective interventions reported by integrative reviews

Author and Year	Intervention and Comparison Intervention	Total Number of Participants Included in the Studies	Measures of self-harm and/or suicide	Review Results	Statistically Significant Interventions
1. Barker, Kőlves, & De Leo, 2014	<p>Suicide and self-harm prevention programs, including multiple types of therapy, training for staff, risk-assessment protocols for offenders, and the use of “safe-cells”</p> <p>Most (N = 11) studies used pre/post intervention data to measure change.</p>	<p>12 studies</p> <p>The literature review was unclear about the total number of participants in each study</p>	<p>Depression Anxiety and Stress Scale (DASS; Lovibond & Lovibond, 1995); multiple questionnaires; and pre/post data analysis of suicide rates.</p>	<p>The included studies (N = 12) were placed within the following three themes:</p> <ol style="list-style-type: none"> 1. Multi-Factored Suicide Prevention Programs; 2. Peer-focused prevention activities; 3. Policy change studies. <p>Conclusions: Only 3 of 12 studies demonstrated statistically significant results as stated by the authors of the review (Hayes, 1995; Junker, Beeler, and Bates, 2005; Shaw & Humber, 2007).</p> <p>Three studies reported decreases in offender suicide rates (Freeman & Alaimo, 2001; Kovasznay, Miraglia, Beer et al., 2004; Shaw & Humber, 2007).</p> <p>Four studies exhibited changes in suicide numbers (Cox & Morschauer, 1997; Felthous, 1994; Hayes, 1997; Hall & Gabor, 2004).</p> <p>Limitations: Limited comparison groups/baseline data for some studies; confounding factors due to the prison environment; results may be hard to generalize among prison systems. The studies did not distinguish between suicide and non-suicidal self-harming interventions.</p>	<p>Hayes, 1995</p> <ol style="list-style-type: none"> 1. Suicide Prevention Plan (SPP)- Staff Training; intake assessment; proper housing of suicidal offenders; appropriate supervision from prison staff by level of suicide risk; novel intervention procedures; post-review after an offender suicide. 2. Junker, Beeler, and Bates, (2005). Offender Observer Program to reduce the negative effects of isolation in the prison system. Offenders with PD had significantly fewer suicide watches after program implemented. 3. Shaw & Humber, (2007). A UK study on staff referral of offender for MH assessment and care. <p>Result: significant reduction in suicide rates</p>
2. Townsend et al., 2010a	<p>1. Group CBT compared to waitlist, no treatment, various psychological therapies, psychotropic medications, or various types of group therapies.</p>	<p>10 studies</p> <p>1,397 participants: 1,343 Male and 54 female)</p>	<p>Two assessments were used to measure suicidality: (1) Current suicidal ideations and lifetime suicide attempts were assessed by a 5 item self-report</p>	<p>10 studies reviewed</p> <p>Rohde et al., (2004) was the only study to focus on suicide ideation/behavior for 76 male juvenile offenders incarcerated in the United States. This study compared the CBT</p>	<p>Rhode et al. (2004) CBT more effective than TAU in reduction of suicidal ideation/behavior. <i>CBT Intervention:</i> 0.8 = Mean; 2.2 = SD; N = 46; <i>Care as Usual:</i></p>

	<p>2. Group psychotherapy compared to waitlist, individual psychotherapy, medication, or no treatment.</p> <p>3. Antidepressant medication compared to other medication or placebo.</p> <p>4. Individual psychotherapy compared to waitlist, no treatment, other psychological treatment, psychotropic medication, or group psychotherapy.</p>		<p>questionnaire; and</p> <p>(2) The Life Attitude Schedule Short-Form (LAS-SF) is a self-report questionnaire that consists of 24 items intended to measure life-extending and life-threatening thoughts (Rohde, Lewinsohn, Seeley, & Langhinrichsen-Rohling, 1996).</p>	<p>based intervention (N = 46) to care as usual (N = 30).</p> <p>Conclusions: Participants involved in the CBT based intervention were less likely than those that received care as usual to have suicidal ideation/behavior (Rohde, Jorgensen, Seeley, & Mace, 2004).</p> <p>Limitations: One randomized-controlled trial focused on self-harm or suicidal behaviors limiting the ability to draw conclusions. Studies included in the review by Townsend et al. (2010a) used self-report measures.</p>	<p>1.5 = Mean; 3.0 = SD; N = 30 P = 0.254</p>
<p>3. Dixon-Gordon, Harrison & Roesch, 2012</p>	<p>Restriction: Seclusion, isolation, physical restraint, observation, or “safe-cells” compared to individuals who did not display NSSI behaviors.</p> <p>Mental health therapy: Dialectical Behavioral Therapy (DBT), Cognitive-Behavioral Therapy (CBT); Problem-Solving Therapy (PST); Emotion Regulation Group Therapy (ERGT); physical activity These studies used multiple comparison interventions, including treatment as usual and pre-post data.</p> <p>Psychotropic Medications: Antipsychotics; selective serotonin reuptake inhibitors; mood stabilizers. A comparison</p>	<p>17 studies focusing on treatment and/or interventions for NSSI with detained offender populations (around 5,636 male and female participants). *One study was unclear about the number of included participants.</p>	<p>Pre-post data analysis of suicide rates; and multiple self-report questionnaires and assessments.</p>	<p>The findings of this literature review can be broken down into the following four categories:</p> <ol style="list-style-type: none"> 1. Restriction; 2. Mental health therapy; 3. Psychotropic medications; 4. Staff attitudes regarding NSSI <p>Conclusions: DBT was found to be the most effective, and empirically tested, treatment for NSSI (Evershed et al. 2003). Restriction is the most often used intervention for NSSI for detained offenders. Restriction has demonstrated mixed efficacy for detained offenders.</p> <p>Limitations: Many studies were excluded from the current literature review because they made no distinction between NSSI and suicidal behaviors; potential researcher bias; self-report data was used which can lead to inaccurate measurements; small</p>	<p>DBT and the preliminary study of ERGT were said to have statistically significant, positive results for NSSI with detained offenders; however, no statistical calculations were reported for any of the 17 studies that focused on treatment in the literature review by Dixon-Gordon, Harrison, and Roesch (2012).</p>

	<p>intervention for psychotropic medication as a treatment for NSSI was not specified.</p> <p>Staff attitudes regarding NSSI: Pre-post assessment data regarding staff attitudes about NSSI.</p>			sample sizes of many studies.	
4. Duncan, Nicol, Ager, & Dalglish, 2006	<p>Deliberate self-harm interventions: Dialectical Behavioral Therapy (DBT) for Borderline Personality Disorder (BPD) and intentional self-harming behaviors; pre-posttests (Evershed, Tennant, Boomer, Rees, & Watson, 2003; Low, Jones, Duggan, Power, and Macleod (2001). Evershed et al (2003) also used comparison group of 9 male forensic patients receiving Treatment as Usual (TAU).</p>	<p>20 studies (276 participants)</p> <p>Two deliberate self-harm studies: 27 total participants;</p> <p>10 female participants Low et al. (2001);</p> <p>8 male participants receiving the DBT compared to 9 male participants receiving TAU, Evershed et al. (2003)</p>	<p>Repeated measures for suicidal ideation assessed Beck Scale for Suicide Ideation (BSI; Beck, Kovacks, Weissman, 1979); Positive thoughts regarding living-Reasons for Living Inventory (RFL; Linehan, Goodstein, Neilson, and Chiles, 1983); Hostility and aggression -Buss-Durkee Hostility Inventory (BDHI-D; Lange et al., 1995); State-Trait Anger Expression Inventory (SAXI; Spielberger, 1996); Novaco Anger Scale (NAS; Novaco, 1980). Suicidal behaviors were measured by observational methods.</p>	<p>Two (Evershed et al. (2003) and Low et al. (2001) of 20 studies in the literature review focus on interventions for self-harming behaviors. Low et al (2001): repeated measures to assess the effectiveness of DBT with 10 female adult forensic hospital patients. Evershed et al (2003): pre-post data analysis and comparison group TAU=9; DBT = 8 adult male offenders in a forensic hospital with self-harming behaviors</p> <p>Conclusions: The mean pooled effect for the two self-harm studies is positive for decreasing self-harming behaviors: $M = 0.78$, $SD = 0.80$. DBT appears to be effective in reducing self-harm for men and women adult offenders detained in a forensic hospital.</p> <p>Limitations: Small samples, convenience sampling methods, one self-harm intervention study lacking a comparison group, and a large standard deviation, especially for the self-harm interventions.</p>	<p>At end of treatment, (18 months) positive thoughts regarding living significantly increased ($M = 4.3$, $SD = 1.4$) from baseline data ($M = 2.1$, $SD = 1.3$), $p < 0.1$.</p> <p>Suicidal ideation was significantly lower post-tx ($M = 4.2$, $SD = 6.8$) compared to pre-tx ($M = 13.5$, $SD = 7.9$), $P < 0.5$.</p> <p>Self-harming/suicide behaviors (ns)</p>

Results

The four systematic and integrative literature reviews (see Table 2) examined in this paper provided a combined total of 59 individual studies, of which 32 of these studies concentrated on interventions and/or treatments for self-harming behaviors with detained offenders. Of these 32 studies from within reviews, only seven studies specifically targeted reduction of self-harming and/or suicidal behaviors in the detained offender participants. These studies are reported in this synthesis of the literature.

Although most reviews examined multiple treatment types for self-harming behaviors, three types of interventions/treatments emerged as efficacious through this review of reviews: staff training to build competency to intervene with deliberate self-harm and suicide behaviors; Cognitive Behavioral Therapy; and, Dialectical Behavioral Therapy. Two reviews included prisoners/jail detainees, one included a mix of prisoners and detained forensic hospital patients, and one focused exclusively on forensic inpatients.

Training

Baker, Kőlves, and De Leo (2014) evaluated 12 studies for effective interventions to prevent prisoner suicide. Combined, the 12 studies examined multiple types of therapy (CBT, peer-focused person centered therapy, and general psychological support), training for staff, and the use of “safe cells.” This review identified three studies with statistically significant findings as assessed by outcomes of improved management of suicidal behaviors. Staff training, proper intake assessment, and proper observation of offenders deemed to be suicidal upon assessment significantly decreased suicide rates at the prison facility (Hayes, 1995).

Studies evaluated by Baker, Kõlves, and De Leo (2014) report evidence that proper observation of suicidal offenders and making appropriate referrals to mental health staff were identified as important for preventing offender suicide (Hayes, 1995; Junker, Beeler, and Bates, 2005; Shaw & Humber, 2007). This review suggests staff knowledge regarding offender self-harm may affect the ability to make appropriate referrals of suicidal offenders to mental health personnel. Negative attitude towards self-harming behaviors, such as viewing self-harming as inappropriate attention seeking behavior, may affect observation practices, which are important for preventing offender suicide attempts.

Within this review, Shaw & Humber (2007) report a significant reduction in suicidal incidents from 127 per 100,000 in 2004 to 90 per 100,000 in 2006 associated with proper referral of suicidal offenders to mental health personnel (specifically a case manager) by any prison staff member. It should be noted that these findings assume quality assessment measures for suicidal behaviors among incarcerated persons that can be utilized by front line staff that may not have psychiatric or mental health training or experience.

A second study by Junker, Beeler, and Bates (2005) reported a significant reduction in suicide rates for previously suicidal offenders diagnosed with personality disorders who were observed by trained offenders and staff after implementing the Offender Observer Program (IOP). Thirty-seven individuals diagnosed personality disorders who were placed on suicide watch over a 24-week study period were found to have significantly fewer suicide watches ($t(71.55) = 2.14, p = 0.036$); a finding that was not found for offenders without personality disorders. While the reason for this effect was not reported, peer observers or monitors are a common practice in prisons and jails. It calls to question if offender peers understand better the

rigid and unhealthy pattern of thinking, functioning and behaving that occurs in prisons and jails and the factors that initiate this behavior in the setting.

A third study by Hayes (1995) examined six components of suicide precaution programming, one of which was staff training and the others included: intake screening and assessment, appropriate housing of suicidal inmates, appropriate levels of supervision according to active suicide risk, intervention procedures in the event of an attempt (staff first aid and availability of an ambulance for transportation to hospital) and administrative review following a suicide. Although that state's suicide rates dropped from a rate of 23.1 per 100,000 between 1984 and 1992 to 12.4 per 100,000 inmates during 1993, it is difficult to separate out the effect of staff training from other programmatic components that were implemented.

Cognitive Behavioral Group Intervention

Townsend, Walker, Sargeant, Vostanis, Hawton, Stocker and Sithole (2010a) examined 10 studies with 1,397 male ($N = 1,343$) or female ($N = 54$) young offenders with mood disorders, anxiety disorders, or self-harm. Only one of the 10 studies (Rohde, Jorgensen, Seeley & Mace, 2004) included in their review focused on self-harming behaviors with incarcerated young offenders. Seventy-six male adolescents incarcerated at a youth correctional facility were assessed by questionnaire and randomly assigned to the coping intervention ($n = 46$), treatment as usual (TAU) or control group located at a second facility ($n = 62$). Less suicidal behavior was measured at pre-test ($M=1.6$, $SD 2.8$) to post-test ($M= 0.8$, $SD 2.2$) as compared to TAU (pre-test $M=1.4$, $SD 2.9$ to post-test $M=1.5$, 3.0 ; $F= 1.32$, $p= .254$, $\eta^2= 0.02$) and the control group at the second facility (pre-test $M=1.6$, $SD 2.7$ to post-test $M= 2.3$, $SD 3.6$; $F=0.46$ $p= .501$, $\eta^2= 0.01$) where episodes of suicidal behavior increased. No effect was noted for age or ethnicity, but felt to be less effective with younger offenders.

The review by Townsend et al. (2010a) provided a limited number of studies focused on the suicidal ideation and associated behaviors of detained male young offenders limited the ability to compare results for self-harming interventions based on the age of offenders. Well-designed studies that systematically examine age by interventions and utilize rigorous designs including control groups are needed for youth as well as adults with outcomes specified.

Dialectical Behavioral Therapy (DBT)

Dialectical Behavioral Therapy (DBT) as an effective intervention for self-harming behaviors among detained offenders in prisons and forensic hospitals was noted in two separate literature reviews examined (Dixon-Gordon, Harrison & Roesch, 2012; Duncan, Nicol, Ager, & Dalglish, 2006). In the review by Dixon-Gordon, Harrison, and Roesch (2012), 17 studies which focused on treatment and/or interventions for NSSI behaviors among 5,636 detained juveniles and adults were examined. One, by Evershed, Tennant, Boomer, Rees, & Watson (2003) provided evidence for DBT as an effective intervention for NSSI behavior.

Evershed and colleagues (2003) studied the effectiveness of Dialectical Behavioral Therapy (DBT) by examining DBT treatment outcomes at three time points (pre, mid, post) with 17 male forensic hospital patients who had Borderline Personality Disorder (BPD). The treatment outcomes of patients who received DBT ($n = 8$) were compared to the treatment outcomes of patients ($n = 9$) who received Treatment as Usual (TAU). The DBT group engaged in less serious behavior ($F = 8.05, p < 0.00$) than the TAU group initially ($F = 6.45, p = 0.024$), at the mid-assessment phase ($F = 10.21, p = 0.0006$), and post treatment ($F = 43.99, p = 0.000$). The small sample sizes increase risk of Type 2 errors, but authors provided effect sizes (ES s) for measures and groups. ES s for the intervention group ranged from -0.05 (minimal increase in state anger) to -0.80 (large increase in anger control) vs the TAU group ranging from 0.19 (a

slight deterioration in anger control) to -1.13 (large increase in state anger) indicating a pattern of behavioral deterioration.

In the second literature review by Duncan, Nicol, Ager and Dalgleish (2006), 20 studies were examined on forensic hospital detainees in Britain, Canada, and the United States. Two studies from this review also focused on intervention and/or treatment for self-harming (Low et al., 2001; Evershed et al., 2003). Given that the study by Evershed et al., (2003) was a duplicate of the study noted in the review by Dixon (and discussed above), only one unique additional study contributed to this discussion from Dixon's review.

Low et al.(2001) found statistically significant results when using DBT as the treatment intervention with 10 adult female participants detained in a forensic hospital on positive thoughts regarding living (Pre-test: $M = 2.1$, $SD = 1.3$; Post-test: $M = 4.3$, $SD = 1.4$; $p < 0.1$). Suicidal ideation was significantly lower at post-treatment ($M = 4.2$, $SD = 6.8$) when compared to pre-treatment data ($M = 13.5$, $SD = 7.9$, $p < 0.5$).

Duncan and colleagues were unable to conduct a meta-analysis due to sample heterogeneity and lack of comparable data, but calculated effect sizes on all papers for groups of interventions with a similar focus. The mean pooled effect size for deliberate self-harm interventions were $M = 0.78$, $SD = 0$. The authors noted limitations in studies and cautioned on interpreting the results. DBT appears to be marginally effective in decreasing the self-harming behaviors in forensic inpatients who also have a diagnosis of BPD; however, these studies suggest that DBT may be more effective with females housed in a forensic hospital who have BPD than with males housed in a forensic hospital who have BPD. The reason for this gender-specific responding should be the target of future studies to identify applicable treatment options.

Summary

Due to the very small number of retained reviews ($N = 4$), and the few studies from within them targeting detained populations and meeting criteria regarding self-harming behaviors, it is difficult to identify with confidence sound treatment and/or intervention methods for specific populations of detained offenders. There is an emphasis on preventing self-harming behaviors with offenders who meet the criteria for a personality disorder, specifically, Borderline Personality Disorder (BPD). The focus on detained offenders with BPD who engage in self-harming is not surprising as one of the DSM-V criteria for BPD is “recurrent suicidal behaviors, gestures, or threats” (2013). Although the DSM-IV-TR (2000) states that BPD has a much higher rate in women than men, a large-scale community study found that 5.9% of the population has BPD; and unlike earlier thoughts, both men and women have similar rates of the disorder (Grant et al., 2008). The rate of BPD within the incarcerated population continues to remain much higher than in the community. Zlotnick (2008) and colleagues found that among 272 offenders, 8.3% of incarcerated males and 20.7% of incarcerated females suffer from BPD, rates that are higher than those noted for the community.

This integrative review of literature found some evidence for three treatment interventions utilized for offender populations, specifically: staff training to build competency to intervene with deliberate self-harm and suicide behaviors; Cognitive Behavioral Therapy; and, Dialectical Behavioral Therapy. Detained offenders with BPD were reported to show more of a reduction in self-harm than detained offenders without the disorder following intervention (Junker, Beeler, and Bates, 2005). There was some evidence of BPD females responding to Dialectical Behavioral Therapy (Low et al., 2001; Evershed et al., 2003). Published data on variables such as age, gender and ethnicity continue to be limited and in need of attention. It is unclear if this is attributable to publication bias, or design limitations.

Limitations

A decision was made to examine this literature through a review of reviews due to the large amount of literature available. We were interested in determining what evidence could be translated, or had been translated to improve care for offender populations. Surprisingly, only four reviews met our criteria that included interventions and/or treatments for self-harming and/or suicidal behaviors with detained offenders. The reader is cautioned regarding the small number of reviews, and the even smaller number of studies within these reviews that actually targeted the offender population. Information regarding effective gender-specific treatments and effective age-sensitive treatments was difficult to discern.

Opportunities for Future Research:

The current integrative literature review found few systematic literature reviews ($N = 4$) with sufficient rigor that met criteria of self-harm and/or suicide interventions/treatments for detained offenders. Within these, only five distinct studies demonstrated evidence of effective interventions. The number of studies that did not show significant results speaks loudly for intervention research for incarcerated persons with suicide and/or self-harming behavior.

Challenges observed include the lack of distinction between NSSI and suicidal acts, and as previously mentioned, there is a need to address individual characteristics in the design of studies. Additionally, exploring the following research areas would contribute to the identification of effective interventions/treatments that target offender self-harm:

- Studies that compare treatment outcomes of specific interventions (CBT, DBT, and observation of offenders) between male and female participants in order to identify a difference in response to specific interventions;

- Studies that compare the effectiveness of various interventions between detained juvenile offenders and adult detained offenders to identify best practices related to age;
- Studies that compare the effectiveness of self-harming interventions in different settings to determine if settings (forensic hospitals, prisons, and jails) make a difference in treatment outcomes; and,
- Studies that compare treatment outcomes between NSSI and suicidal behaviors in detained offenders to determine the extent and direction of the relationship, and differences in effective interventions for the two behaviors.

This list does not include the many studies that could and should focus on staff, organizational, program and treatment processes, and treatment settings or effects of correctional environments.

Implications for Practice

The findings of this paper have the potential to inform policies within prisons, jails, and secure forensic hospitals regarding use of treatment and avoidance of seclusion/confinement.

The results of this integrative literature review may have practice implications for use of cognitive-behavioral strategies by front-line staff (nurses, counselors, and psychologists, psychiatrists, and corrections officers). Correction Officers are in need of more training on self-harm and suicidal behaviors, possible causes of the behaviors, and training on techniques to prevent the offender from further self-harm. As the first line of defense, opportunities for debriefing when incidents occur would strengthen the workforce.

Conclusions

Literature reviews focusing on detained offender self-harming were extremely limited. Moreover, very few studies within these reviews specifically focused on self-harming, and most do not make a distinction between NSSI behaviors and suicidal behaviors; thus, identifying

targeted effective treatments is problematic. Comparing characteristics of offenders who engage in NSSI to characteristics of offenders who engage in suicidal behaviors may be useful to understand the relationship between the two constructs to identify effective treatments for each.

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Appendix 1

Keyword set one: "self-harm" OR "deliberate self harm" OR "deliberate self harming" OR "deliberate self-harming" OR "Intentional self-harming" OR "intentional self harming" OR "intentional self-harm" OR "intentional self harm" OR "self-injurious behavior" OR "self injurious behavior" OR "self-injurious behaviors" OR "self injurious behaviors" OR self-injury OR "self injury" OR cutting OR cut OR "self-harm behavior" OR "self-harm behaviors" OR "self harm behavior" or "self harm behaviors" OR "Nonsuicidal self-injury" OR "Nonsuicidal self injury" OR "self-destructive behavior" OR "self destructive behaviors" OR "self-destructive behaviors" OR "self destructive behaviors" OR "self-mutilation" OR "self mutilation" OR parasuicide OR "near-lethal self harm" OR "near lethal self harm" OR "near-lethal self-harm" OR Suicide OR "Suicidal behaviors" OR "suicide Behavior" OR "suicidal behaviors OR " "suicidal self injury" OR "suicidal self-injury"

AND

Keyword set two: prisons OR prison OR prisoners OR prisoner OR incarcerated OR incarceration OR incarcerate OR "incarcerated offenders" OR offender OR offenders OR imprisoned OR imprisonment OR "prisoner reentry" OR correctional OR "correctional facility" OR "correctional facilities" OR "prison offenders" OR "criminal activity" OR "criminal activities" OR penitentiary OR penitentiaries OR jail OR "jail offenders" OR jails OR jailed OR "penal institutions" OR "penal institution" OR convict OR convicts OR recidivism OR "criminal behavior" OR "delinquent behavior" OR "criminal convictions" OR "criminal offending" OR "criminal population" OR "criminal populations" OR "criminal rehabilitation" OR "criminal involvement" OR "criminal recidivism" OR "offender recidivism"

AND

Keyword set three: intervention OR interventions OR treatment OR treatments OR "treatment effectiveness" OR "treatment outcomes" OR "psychotherapeutic outcomes" OR "psychotherapeutic outcome" OR management OR "behavioral intervention" OR "behavioral interventions" OR "psychological treatment" OR "crises intervention" OR "crises interventions" OR pharmacological OR "Behavior Therapies" OR "Drug Therapy" OR "Drug Therapies" OR "Behavioral Modification" OR "Cognitive Techniques" OR "Cognitive Restructuring" OR "Cognitive Therapy" OR "Psychological Treatment" OR "Behavior Therapy" OR Desensitization OR "Relaxation Techniques" OR faith OR spirituality OR spiritual OR Psychotherapy OR "Group Psychotherapy" OR "Validation Therapy" OR religion OR religions OR religious OR "Human-pet Bonding" OR "Human Pet Bonding" OR "Pet Therapy" OR "Service Animals" OR Bibliotherapy OR "Creative Arts Therapy" OR "Art therapy" OR "Dance Therapy" OR "Music Therapy" OR "Poetry Therapy" OR "Recreational Therapy" OR "Milieu Therapy" OR "Multisystemic Therapy" OR "Multi-systemic Therapy" OR "Psychotherapeutic

Techniques" OR "Brief Relational Therapy" OR Cotherapy OR "Co-Therapy" OR "Empty Chair Technique" OR "Ericksonian Psychotherapy" OR "Guided Imagery" OR Mirroring OR "Motivational Interviewing" OR "Mutual Storytelling Technique" OR "Network Therapy" OR "Paradoxical Techniques" OR Psychodrama OR Psychotherapy OR "Adlerian Psychotherapy" OR "Analytical Psychotherapy" OR "Behavioral Therapy" OR "Brief Psychotherapy" OR "Brief Relational Therapy" OR "Client Centered Therapy" OR "Cognitive Behavior Therapy" OR "Conversion Therapy" OR "Eclectic Psychotherapy" OR "Emotional Focused Therapy" OR "Existential Therapy" OR "Experiential Psychotherapy" OR "Expressive Psychotherapy" OR "Eye Movement Desensitization Therapy" OR "Feminist Therapy" OR "Geriatric Psychotherapy" OR "Gestalt Therapy" OR "Humanistic Psychotherapy" OR Hypnotherapy OR "Individual Psychotherapy" OR "Insight Therapy" OR "Integrative Psychotherapy" OR "Interpersonal Psychotherapy" OR "Inter-personal Psychotherapy" OR "Narrative Therapy" OR "Persuasion Therapy" OR "Primal Therapy" OR Psychoanalysis OR "Psychodynamic Psychotherapy" OR "Psychotherapeutic Counseling" OR "Rational Emotive Behavioral Therapy" OR "Reality Therapy" OR "Solution Focused Therapy" OR "Supportive Psychotherapy" OR "Transactional Analysis" OR Counseling OR "Cross Cultural Counseling" OR "Educational Counseling" OR "Gerontological Counseling" OR "Group Counseling" OR Microcounseling OR "Micro-counseling" OR "Pastoral Counseling" OR "Peer Counseling" OR "Psychotherapeutic Counseling" OR "Rehabilitation Counseling" OR Psychoeducation OR "Relapse Prevention" OR "Self Help Techniques" OR "Self-Help Techniques" OR "Self Management" OR "Self-Management" OR "Stress Management" OR Yoga OR "Dialectical Behavior Therapy" OR medication

Subject Term Search

Subject terms set one: MM "Self-Injurious Behavior" OR MM "Injuries, Self-Inflicted" OR MH "Suicide" OR MH "Suicidal Ideation"

AND

Subject terms set two: MH "Prisoners" OR MH "Correctional Facilities" OR MH "Forensic Psychiatry+" OR MH "Correctional Health Nursing" OR MH "Correctional Health Services"

AND

Subject terms set three: MH "Treatment Outcomes" OR MM "Cognitive Therapy" OR MH "Mental Health Services" OR MH "Suicide Prevention and Control" OR MM "Crisis Intervention" OR MM "Risk Management" OR MM "Problem Solving" OR MM "Psychotherapy, Group" OR MH "Counseling" OR MH "Support, Psychosocial" OR MH "Depression Therapy" OR MM "Psychology" OR MH "Program Evaluation" OR MM "Harm Reduction" OR MM "Self-Injurious Behavior Rehabilitation" OR MH "Behavior Therapy" OR MM "Art Therapy" OR MM "Psychiatric Nursing"

Appendix 2

Keyword set one: "self-harm" OR "deliberate self harm" OR "deliberate self harming" OR "deliberate self-harming" OR "Intentional self-harming" OR "intentional self harming" OR "intentional self-harm" OR "intentional self harm" OR "self-injurious behavior" OR "self injurious behavior" OR "self-injurious behaviors" OR "self injurious behaviors" OR "self-injury" OR "self injury" OR cutting OR cut OR "self-harm behavior" OR "self-harm behaviors" OR "self harm behavior" or "self harm behaviors" OR "Nonsuicidal self-injury" OR "Nonsuicidal self injury" OR "self-destructive behavior" OR "self destructive behaviors" OR "self-destructive behaviors" OR "self destructive behaviors" OR "self-mutilation" OR "self mutilation" OR parasuicide OR Suicide OR "Suicidal behaviors" OR "Suicide Behavior" OR "Suicidal behaviors OR "Suicidal self injury" OR "Suicidal self-injury"

AND

Keyword set two: prisoner OR prisoners OR prison OR prisons OR "prison offenders" OR incarcerated OR "incarcerated offenders" OR incarceration OR incarcerate OR offender OR offenders OR imprisoned OR imprisonment OR "correctional health" OR "correctional health care" OR "correctional healthcare" OR correctional OR "correctional facility" OR "correctional facilities" OR penitentiary OR penitentiaries OR jail OR jails OR jailed OR offender OR offenders OR felon OR felons OR "jail offenders" OR "criminal recidivism" OR "offender recidivism" OR recidivism OR reentry OR "prisoner re-entry" OR "prisoner reentry" OR "re-entry" OR "criminal activity" OR "criminal activities" OR "criminal behavior" OR "delinquent behavior" OR "criminal involvement" OR "criminal convictions" OR "criminal offending" OR "criminal population" OR "criminal populations" OR "criminal rehabilitation" OR convict OR convicts OR "penal institutions" OR "penal institutions" OR "corrective prison" OR "corrective prisons"

AND

Keyword set three: treatment OR treatments OR intervention OR interventions OR "psychological therapy" OR "psychological therapies" OR psychotherapy OR prevention OR preventions OR management OR "psychotherapeutic outcomes" OR "psychotherapeutic outcome" OR "psychological treatment" OR "psychological treatments" OR "Behavioral Modification" OR "Cognitive Techniques" OR "Cognitive Restructuring" OR "Cognitive Therapy" OR "crises intervention" OR "crises interventions" OR pharmacological OR "Behavior Therapy" OR "Behavior Therapies" OR "Drug Therapy" OR "Drug Therapies" OR Desensitization OR "Relaxation Techniques" OR Psychotherapy OR "Group Psychotherapy" OR "Validation Therapy" OR religion OR religions OR religious OR "religious beliefs" OR faith OR spirituality OR spiritual OR "Human-pet Bonding" OR "Human Pet Bonding" OR "Pet Therapy" OR "Animal Assisted Therapy" OR "Service Animals" OR Bibliotherapy OR "Creative Arts Therapy" OR "Art therapy" OR "Dance Therapy" OR "Music Therapy" OR "Poetry Therapy" OR "Recreational Therapy" OR "Milieu Therapy" OR "Multisystemic Therapy" OR "Multi-

Systemic Therapy" OR "Psychotherapeutic Techniques" OR "Brief Relational Therapy" OR Cotherapy OR "Co-Therapy" OR "Empty Chair Technique" OR "Ericksonian Psychotherapy" OR "Guided Imagery" OR Mirroring OR "Motivational Interviewing" OR "Mutual Storytelling Technique" OR "Network Therapy" OR "Paradoxical Techniques" OR Psychodrama OR Psychotherapy OR "Adlerian Psychotherapy" OR "Analytical Psychotherapy" OR "Behavioral Therapy" OR "Brief Psychotherapy" OR "Brief Relational Therapy" OR "Client Centered Therapy" OR "Cognitive Behavior Therapy" OR "Conversion Therapy" OR "Eclectic Psychotherapy" OR "Emotional Focused Therapy" OR "Existential Therapy" OR "Experiential Psychotherapy" OR "Expressive Psychotherapy" OR "Eye Movement Desensitization Therapy" OR "Feminist Therapy" OR "Geriatric Psychotherapy" OR "Gestalt Therapy" OR "Humanistic Psychotherapy" OR Hypnotherapy OR "Individual Psychotherapy" OR "Insight Therapy" OR "Integrative Psychotherapy" OR "Interpersonal Psychotherapy" OR "Inter-personal Psychotherapy" OR "Narrative Therapy" OR "Persuasion Therapy" OR "Primal Therapy" OR Psychoanalysis OR "Psychodynamic Psychotherapy" OR "Psychotherapeutic Counseling" OR "Rational Emotive Behavioral Therapy" OR "Reality Therapy" OR "Solution Focused Therapy" OR "Supportive Psychotherapy" OR "Transactional Analysis" OR Counseling OR "Cross Cultural Counseling" OR "Educational Counseling" OR "Gerontological Counseling" OR "Group Counseling" OR Microcounseling OR "Micro-counseling" OR "Pastoral Counseling" OR "Peer Counseling" OR "Psychotherapeutic Counseling" OR "Rehabilitation Counseling" OR Psychoeducation OR "Relapse Prevention" OR "Self Help Techniques" OR "Self-Help Techniques" OR "Self Management" OR "Self-Management" OR "Stress Management" OR Yoga OR Medication

Appendix 3

Keyword set one: "self-harm" OR "deliberate self harm" OR "deliberate self harming" OR "deliberate self-harming" OR "Intentional self-harming" OR "intentional self harming" OR "intentional self-harm" OR "intentional self harm" OR "self-injurious behavior" OR "self injurious behavior" OR "self-injurious behaviors" OR "self injurious behaviors" OR self-injury OR "self injury" OR cutting OR cut OR "self-harm behavior" OR "self-harm behaviors" OR "self harm behavior" OR "self harm behaviors" OR "Nonsuicidal self-injury" OR "Nonsuicidal self injury" OR "self-destructive behavior" OR "self destructive behaviors" OR "self-destructive behaviors" OR "self destructive behaviors" OR "self-mutilation" OR "self mutilation" OR parasuicide OR Suicide OR "Suicidal behaviors" OR "suicide Behavior" OR "suicidal behaviors" OR "suicidal self injury" OR "suicidal self-injury" OR "suicidal ideation" OR "suicidal ideations"

AND

Keyword set two: prisoner OR prisoners OR prison OR prisons OR "prison offenders" OR incarcerated OR "incarcerated offenders" OR incarceration OR incarcerate OR offender OR offenders OR imprisoned OR imprisonment OR "correctional health" OR "correctional health care" OR "correctional healthcare" OR correctional OR "correctional facility" OR "correctional facilities" OR penitentiary OR penitentiaries OR jail OR jails OR jailed OR offender OR offenders OR felon OR felons OR "jail offenders" OR "criminal recidivism" OR "offender recidivism" OR recidivism OR reentry OR "prisoner re-entry" OR "prisoner reentry" OR "re-entry" OR "criminal activity" OR "criminal activities" OR "criminal behavior" OR "delinquent behavior" OR "criminal involvement" OR "criminal convictions" OR criminals OR criminal OR "criminal offending" OR "criminal population" OR "criminal populations" OR "criminal rehabilitation" OR convict OR convicts OR "penal institutions" OR "penal institutions" OR "corrective prison" OR "corrective prisons"

AND

Keyword set three: treatment OR treatments OR intervention OR interventions OR "psychological therapy" OR "psychological therapies" OR psychotherapy OR prevention OR preventions OR management OR "psychotherapeutic outcomes" OR "psychotherapeutic outcome" OR "psychological treatment" OR "psychological treatments" OR "Behavioral Modification" OR "Cognitive Techniques" OR "Cognitive Restructuring" OR "Cognitive Therapy" OR "crises intervention" OR "crises interventions" OR pharmacological OR "Behavior Therapy" OR "Behavior Therapies" OR "Drug Therapy" OR "Drug Therapies" OR Desensitization OR "Relaxation Techniques" OR Psychotherapy OR "Group Psychotherapy" OR "Validation Therapy" OR religion OR religions OR religious OR "religious beliefs" OR faith OR spirituality OR spiritual OR "Human-pet Bonding" OR "Human Pet Bonding" OR "Pet Therapy" OR "Animal Assisted Therapy" OR "Service Animals" OR Bibliotherapy OR "Creative Arts"

Therapy" OR "Art therapy" OR "Dance Therapy" OR "Music Therapy" OR "Poetry Therapy" OR "Recreational Therapy" OR "Milieu Therapy" OR "Multisystemic Therapy" OR "Multi-Systemic Therapy" OR "Psychotherapeutic Techniques" OR "Brief Relational Therapy" OR Cotherapy OR "Co-Therapy" OR "Empty Chair Technique" OR "Ericksonian Psychotherapy" OR "Guided Imagery" OR Mirroring OR "Motivational Interviewing" OR "Mutual Storytelling Technique" OR "Network Therapy" OR "Paradoxical Techniques" OR Psychodrama OR Psychotherapy OR "Adlerian Psychotherapy" OR "Analytical Psychotherapy" OR "Behavioral Therapy" OR "Brief Psychotherapy" OR "Brief Relational Therapy" OR "Client Centered Therapy" OR "Cognitive Behavior Therapy" OR "Conversion Therapy" OR "Eclectic Psychotherapy" OR "Emotional Focused Therapy" OR "Existential Therapy" OR "Experiential Psychotherapy" OR "Expressive Psychotherapy" OR "Eye Movement Desensitization Therapy" OR "Feminist Therapy" OR "Geriatric Psychotherapy" OR "Gestalt Therapy" OR "Humanistic Psychotherapy" OR Hypnotherapy OR "Individual Psychotherapy" OR "Insight Therapy" OR "Integrative Psychotherapy" OR "Interpersonal Psychotherapy" OR "Inter-personal Psychotherapy" OR "Narrative Therapy" OR "Persuasion Therapy" OR "Primal Therapy" OR Psychoanalysis OR "Psychodynamic Psychotherapy" OR "Psychotherapeutic Counseling" OR "Rational Emotive Behavioral Therapy" OR "Reality Therapy" OR "Solution Focused Therapy" OR "Supportive Psychotherapy" OR "Transactional Analysis" OR Counseling OR "Cross Cultural Counseling" OR "Educational Counseling" OR "Gerontological Counseling" OR "Group Counseling" OR Microcounseling OR "Micro-counseling" OR "Pastoral Counseling" OR "Peer Counseling" OR "Psychotherapeutic Counseling" OR "Rehabilitation Counseling" OR Psychoeducation OR "Relapse Prevention" OR "Self Help Techniques" OR "Self-Help Techniques" OR "Self Management" OR "Self-Management" OR "Stress Management" OR Yoga OR Medication OR Medications OR "Pharmacological Interventions" OR Pharmacology OR "drug treatments" OR "drug treatment" OR "suicide prevention" OR "suicide prevention program" OR psychiatry

Subject Term Search:

Subject term set one: (DE "SUICIDAL ideation" OR DE "SUICIDE" OR DE "SELF-mutilation" OR DE "SUICIDAL behavior" OR DE "SELF-injurious behavior" OR DE "PARASUICIDE" OR DE "SELF-destructive behavior")

AND

Subject term set two: (DE "IMPRISONMENT" OR DE "CORRECTIONS (Criminal justice administration)" OR DE "DETENTION of persons" OR DE "PRISON system" OR DE "PRISONS") OR (DE "CORRECTIONAL institutions" OR DE "JAILS" OR DE "CRIME OR DE "PRISON reform" OR DE "REFORMATORIES" OR DE "DETENTION facilities" OR DE "CRIMINAL convictions" OR DE "CRIMINALS -- Rehabilitation")

AND

Subject term set three: (DE "MEDICAL care" OR DE "COGNITIVE therapy" OR DE "DOSE-response relationship (Biochemistry)" OR DE "EVIDENCE-based medicine" OR DE "CLIENT relations" OR DE "MENTAL health services" OR DE "DIALECTICAL behavior therapy" OR DE "BEHAVIOR therapy" OR DE "BEHAVIOR modification" OR DE "PRISON psychology" OR DE "MANAGEMENT" OR DE "COUNSELING" OR DE "HELP-seeking behavior" OR DE "THERAPEUTICS" OR DE "SUICIDE prevention" OR DE "INTERVIEWING" OR DE "PSYCHOLOGY" OR DE "PSYCHIATRY" OR DE "TREATMENT programs" OR DE "TREATMENT effectiveness")

Appendix 4

Keyword set one: "self-harm" OR "deliberate self harm" OR "deliberate self harming" OR "deliberate self-harming" OR "Intentional self-harming" OR "intentional self harming" OR "intentional self-harm" OR "intentional self harm" OR "self-injurious behavior" OR "self injurious behavior" OR "self-injurious behaviors" OR "self injurious behaviors" OR self-injury OR "self injury" OR cutting OR cut OR "self-harm behavior" OR "self-harm behaviors" OR "self harm behavior" OR "self harm behaviors" OR "Nonsuicidal self-injury" OR "Nonsuicidal self injury" OR "self-destructive behavior" OR "self destructive behaviors" OR "self-destructive behaviors" OR "self destructive behaviors" OR "self-mutilation" OR "self mutilation" OR parasuicide OR Suicide OR "Suicidal behaviors" OR "suicide Behavior" OR "suicidal behaviors" OR "suicidal self injury" OR "suicidal self-injury"

AND

Keyword set two: prisoner OR prisoners OR prison OR prisons OR "prison offenders" OR incarcerated OR "incarcerated offenders" OR incarceration OR incarcerate OR offender OR offenders OR imprisoned OR imprisonment OR "correctional health" OR "correctional health care" OR "correctional healthcare" OR correctional OR "correctional facility" OR "correctional facilities" OR penitentiary OR penitentiaries OR jail OR jails OR jailed OR offender OR offenders OR felon OR felons OR "jail offenders" OR "criminal recidivism" OR "offender recidivism" OR recidivism OR reentry OR "prisoner re-entry" OR "prisoner reentry" OR "re-entry" OR "criminal activity" OR "criminal activities" OR "criminal behavior" OR "delinquent behavior" OR "criminal involvement" OR "criminal convictions" OR criminals OR criminal OR "criminal offending" OR "criminal population" OR "criminal populations" OR "criminal rehabilitation" OR convict OR convicts OR "penal institutions" OR "penal institutions" OR "corrective prison" OR "corrective prisons"

AND

Keyword set three: treatment OR treatments OR intervention OR interventions OR "psychological therapy" OR "psychological therapies" OR psychotherapy OR prevention OR preventions OR management OR "psychotherapeutic outcomes" OR "psychotherapeutic outcome" OR "psychological treatment" OR "psychological treatments" OR "Behavioral Modification" OR "Cognitive Techniques" OR "Cognitive Restructuring" OR "Cognitive Therapy" OR "crises intervention" OR "crises interventions" OR pharmacological OR "Behavior Therapy" OR "Behavior Therapies" OR "Drug Therapy" OR "Drug Therapies" OR Desensitization OR "Relaxation Techniques" OR Psychotherapy OR "Group Psychotherapy" OR "Validation Therapy" OR religion OR religions OR religious OR "religious beliefs" OR faith OR spirituality OR spiritual OR "Human-pet Bonding" OR "Human Pet Bonding" OR "Pet Therapy" OR "Animal Assisted Therapy" OR "Service Animals" OR Bibliotherapy OR "Creative Arts Therapy" OR "Art therapy" OR "Dance Therapy" OR "Music Therapy" OR "Poetry Therapy"

OR "Recreational Therapy" OR "Milieu Therapy" OR "Multisystemic Therapy" OR "Multi-Systemic Therapy" OR "Psychotherapeutic Techniques" OR "Brief Relational Therapy" OR Cotherapy OR "Co-Therapy" OR "Empty Chair Technique" OR "Ericksonian Psychotherapy" OR "Guided Imagery" OR Mirroring OR "Motivational Interviewing" OR "Mutual Storytelling Technique" OR "Network Therapy" OR "Paradoxical Techniques" OR Psychodrama OR Psychotherapy OR "Adlerian Psychotherapy" OR "Analytical Psychotherapy" OR "Behavioral Therapy" OR "Brief Psychotherapy" OR "Brief Relational Therapy" OR "Client Centered Therapy" OR "Cognitive Behavior Therapy" OR "Conversion Therapy" OR "Eclectic Psychotherapy" OR "Emotional Focused Therapy" OR "Existential Therapy" OR "Experiential Psychotherapy" OR "Expressive Psychotherapy" OR "Eye Movement Desensitization Therapy" OR "Feminist Therapy" OR "Geriatric Psychotherapy" OR "Gestalt Therapy" OR "Humanistic Psychotherapy" OR Hypnotherapy OR "Individual Psychotherapy" OR "Insight Therapy" OR "Integrative Psychotherapy" OR "Interpersonal Psychotherapy" OR "Inter-personal Psychotherapy" OR "Narrative Therapy" OR "Persuasion Therapy" OR "Primal Therapy" OR Psychoanalysis OR "Psychodynamic Psychotherapy" OR "Psychotherapeutic Counseling" OR "Rational Emotive Behavioral Therapy" OR "Reality Therapy" OR "Solution Focused Therapy" OR "Supportive Psychotherapy" OR "Transactional Analysis" OR Counseling OR "Cross Cultural Counseling" OR "Educational Counseling" OR "Gerontological Counseling" OR "Group Counseling" OR Microcounseling OR "Micro-counseling" OR "Pastoral Counseling" OR "Peer Counseling" OR "Psychotherapeutic Counseling" OR "Rehabilitation Counseling" OR Psychoeducation OR "Relapse Prevention" OR "Self Help Techniques" OR "Self-Help Techniques" OR "Self Management" OR "Self-Management" OR "Stress Management" OR Yoga OR Medication OR Medications OR "Pharmacological Interventions" OR "drug" OR "drugs" OR Pharmacology OR "drug treatments" OR "drug treatment" OR "suicide prevention" OR "suicide prevention program" OR psychiatry

Subject Term Search

Subject terms set one: DE "Suicidal Ideation" OR DE "Self Injurious Behavior" OR DE "Suicide" OR DE "Attempted Suicide"

AND

Subject terms set two: DE "Prisoners" OR DE "Prisons" OR DE "Criminals" OR DE "Criminal Behavior" OR DE "Incarceration" OR DE "Legal Detention" OR DE "Correctional Institutions"

AND

Subject terms set three: DE "Suicide Prevention" OR DE "Peer Counseling" OR DE "Criminal Rehabilitation" OR DE "Rehabilitation" OR DE "Social Support" OR DE "Psychiatry" OR DE "Intervention" OR DE "Problem Solving" OR DE "Cognitive Behavior Therapy" OR DE "Forensic Psychology" OR DE "Mental Health Services" OR DE "Crisis Intervention" OR DE "Peer Relations" OR DE "Treatment" OR DE "Help Seeking Behavior" OR DE "Psychotherapy"

OR DE "Program Evaluation" OR DE "Interdisciplinary Treatment Approach" OR DE "Coping Behavior" OR DE "Group Psychotherapy" OR DE "Psychoeducation" OR DE "Counseling" OR DE "Drug Therapy"

Appendix 5

Keyword set one: "self-harm" OR "deliberate self harm" OR "deliberate self harming" OR "deliberate self-harming" OR "Intentional self-harming" OR "intentional self harming" OR "intentional self-harm" OR "intentional self harm" OR "self-injurious behavior" OR "self injurious behavior" OR "self-injurious behaviors" OR "self injurious behaviors" OR self-injury OR "self injury" OR cutting OR cut OR "self-harm behavior" OR "self-harm behaviors" OR "self harm behavior" or "self harm behaviors" OR "Nonsuicidal self-injury" OR "Nonsuicidal self injury" OR "self-destructive behavior" OR "self destructive behaviors" OR "self-destructive behaviors" OR "self destructive behaviors" OR "self-mutilation" OR "self mutilation" OR parasuicide OR Suicide OR "Suicidal behaviors" OR "suicide Behavior" OR "suicidal behaviors" OR "suicidal self injury" OR "suicidal self-injury"

AND

Keyword set two: prisoner OR prisoners OR prison OR prisons OR "prison offenders" OR incarcerated OR "incarcerated offenders" OR incarceration OR incarcerate OR offender OR offenders OR imprisoned OR imprisonment OR "correctional health" OR "correctional health care" OR "correctional healthcare" OR correctional OR "correctional facility" OR "correctional facilities" OR penitentiary OR penitentiaries OR jail OR jails OR jailed OR offender OR offenders OR felon OR felons OR "jail offenders" OR "criminal recidivism" OR "offender recidivism" OR recidivism OR reentry OR "prisoner re-entry" OR "prisoner reentry" OR "re-entry" OR "criminal activity" OR "criminal activities" OR "criminal behavior" OR "delinquent behavior" OR "criminal involvement" OR "criminal convictions" OR "criminal offending" OR "criminal population" OR "criminal populations" OR "criminal rehabilitation" OR convict OR convicts OR "penal institutions" OR "penal institutions" OR "corrective prison" OR "corrective prisons"

AND

Keyword set three: treatment OR treatments OR intervention OR interventions OR "psychological therapy" OR "psychological therapies" OR psychotherapy OR prevention OR preventions OR management OR "psychotherapeutic outcomes" OR "psychotherapeutic outcome" OR "psychological treatment" OR "psychological treatments" OR "Behavioral Modification" OR "Cognitive Techniques" OR "Cognitive Restructuring" OR "Cognitive Therapy" OR "crises intervention" OR "crises interventions" OR pharmacological OR "Behavior Therapy" OR "Behavior Therapies" OR "Drug Therapy" OR "Drug Therapies" OR Desensitization OR "Relaxation Techniques" OR Psychotherapy OR "Group Psychotherapy" OR "Validation Therapy" OR religion OR religions OR religious OR "religious beliefs" OR faith OR spirituality OR spiritual OR "Human-pet Bonding" OR "Human Pet Bonding" OR "Pet Therapy" OR "Animal Assisted Therapy" OR "Service Animals" OR Bibliotherapy OR "Creative Arts Therapy" OR "Art therapy" OR "Dance Therapy" OR "Music Therapy" OR "Poetry Therapy"

OR "Recreational Therapy" OR "Milieu Therapy" OR "Multisystemic Therapy" OR "Multi-Systemic Therapy" OR "Psychotherapeutic Techniques" OR "Brief Relational Therapy" OR Cotherapy OR "Co-Therapy" OR "Empty Chair Technique" OR "Ericksonian Psychotherapy" OR "Guided Imagery" OR Mirroring OR "Motivational Interviewing" OR "Mutual Storytelling Technique" OR "Network Therapy" OR "Paradoxical Techniques" OR Psychodrama OR Psychotherapy OR "Adlerian Psychotherapy" OR "Analytical Psychotherapy" OR "Behavioral Therapy" OR "Brief Psychotherapy" OR "Brief Relational Therapy" OR "Client Centered Therapy" OR "Cognitive Behavior Therapy" OR "Conversion Therapy" OR "Eclectic Psychotherapy" OR "Emotional Focused Therapy" OR "Existential Therapy" OR "Experiential Psychotherapy" OR "Expressive Psychotherapy" OR "Eye Movement Desensitization Therapy" OR "Feminist Therapy" OR "Geriatric Psychotherapy" OR "Gestalt Therapy" OR "Humanistic Psychotherapy" OR Hypnotherapy OR "Individual Psychotherapy" OR "Insight Therapy" OR "Integrative Psychotherapy" OR "Interpersonal Psychotherapy" OR "Inter-personal Psychotherapy" OR "Narrative Therapy" OR "Persuasion Therapy" OR "Primal Therapy" OR Psychoanalysis OR "Psychodynamic Psychotherapy" OR "Psychotherapeutic Counseling" OR "Rational Emotive Behavioral Therapy" OR "Reality Therapy" OR "Solution Focused Therapy" OR "Supportive Psychotherapy" OR "Transactional Analysis" OR Counseling OR "Cross Cultural Counseling" OR "Educational Counseling" OR "Gerontological Counseling" OR "Group Counseling" OR Microcounseling OR "Micro-counseling" OR "Pastoral Counseling" OR "Peer Counseling" OR "Psychotherapeutic Counseling" OR "Rehabilitation Counseling" OR Psychoeducation OR "Relapse Prevention" OR "Self Help Techniques" OR "Self-Help Techniques" OR "Self Management" OR "Self-Management" OR "Stress Management" OR Yoga OR Medication OR Medications

Mesh Terms:

Mesh terms set 1: ("Self-Injurious Behavior"[Mesh] OR "Self Mutilation"[Mesh] OR "Suicide"[Mesh] OR "Suicide, Attempted"[Mesh] OR "Suicidal Ideation"[Mesh] OR "Suicide, Assisted"[Mesh])

AND

Mesh terms set 2: ("Prisoners"[Mesh] OR "Criminals"[Mesh] OR "Prisons"[Mesh] OR "Forensic Psychiatry"[Mesh]) OR "Criminal Behavior"[Mesh])

AND

Mesh terms set 3: ("Self-Injurious Behavior/drug therapy"[Mesh] OR "Self-Injurious Behavior/prevention and control"[Mesh] OR "Self-Injurious Behavior/therapy"[Mesh] OR "Mental Health Services"[Majr] OR "Crisis Intervention"[Majr] OR "Psychotherapy"[Mesh] OR "Psychotherapy, Multiple"[Mesh] OR "Psychotherapy, Brief"[Mesh] OR "Psychotherapy, Psychodynamic"[Mesh] OR "Imagery (Psychotherapy)"[Mesh] OR "Psychotherapy, Rational-

Emotive"[Mesh] OR "Psychotherapy, Group"[Mesh] OR "Equine-Assisted Therapy"[Mesh] OR "Cognitive Therapy"[Mesh] OR "Narrative Therapy"[Mesh] OR "Sensory Art Therapies"[Mesh] OR "Neurolinguistic Programming"[Mesh] OR "Acceptance and Commitment Therapy"[Mesh] OR "Millon Clinical Multiaxial Inventory"[Mesh] OR "Psychotherapeutic Processes"[Mesh] OR "Therapeutic Community"[Mesh] OR "Psychiatric Somatic Therapies"[Mesh] OR "Socioenvironmental Therapy"[Mesh] OR "Psychodrama"[Mesh] OR "Milieu Therapy"[Mesh] OR "Gestalt Therapy"[Mesh] OR "Bibliotherapy"[Mesh] OR "Autogenic Training"[Mesh]) OR "Abreaction"[Mesh] OR "Mindfulness"[Mesh] OR "Psychoanalysis"[Mesh] OR "Inhibition (Psychology)"[Mesh] OR "Social Support"[Mesh] OR "Peer Group"[Mesh] OR "Outcome and Process Assessment (Health Care)"[Mesh] OR "Treatment Outcome"[Mesh] OR "Professional-Patient Relations"[Mesh] OR "Nurse's Role"[Mesh] OR "Evidence-Based Medicine"[Mesh] OR "Evidence-Based Nursing"[Mesh])