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Relationships Between Social Bonds and Non-Reoffender Status Among Female Offenders

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Abstract

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by

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MS, Walden University, 2015

BS, Ashford University, 2014

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

The purpose of this quantitative longitudinal correlational study was to examine whether positive social bonds with caring, supportive family, prosocial peers, and spouses/partners were significantly predictive of non-reoffender status using archival data from a sample of female offenders who were under community supervision in the state of Michigan during the years 2011–2014. The study had three interval predictor variables: positive social bonds with family, prosocial peers, and spouse/partner. The dichotomous criterion variable was recidivism (i.e., reoffending within a three-year period). The study sample was 325 female offenders on probation or parole in Michigan during the years of 2011–2014. Most of the participants (76.3%) were on probation, and the sample was mostly White (46.5%) and Black (33.5%) and averaged 33.40 years of age. The majority (80.6%) of participants did not reoffend three years' post-releases. Binomial logistic regression findings showed that stronger family, peer, and spouse/partner bonds were all significantly predictive of non-reoffender status. The null hypotheses for the three research questions failed to be retained. The study findings may promote positive social change by increasing awareness of the needs of women offenders, which can lead to prison reform and criminal justice efforts.

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Dedication

To GOD, who is the head of my life. He has blessed me more than I deserve, and all praises goes to HIM. Thank you, GOD. I never would have made it without you.

To my children: J'nai (God's gift), and you are a gift from GOD. Words cannot express how grateful I am to have you as my daughter. I had you when I was just a child myself. Daughter, you are more beautiful than a flower and stronger than a mountain. Rakim (to be kind), you are a kind and gentle giant. I closed my eyes for a second and suddenly a man stood in front of me. Thank both of you for patience and tolerance, and for believing and trusting in me, and allowing me to give you something to be proud of. WE DID IT.

Special thanks to Darcella Jennings, thank you for the many years of tears, encouragement, and defiantly PRAYERS! Alazar Tesfamariam: your kindness and understanding, when I took your class in 2008 (A.A Degree). Unbeknownst to you at the time, I was trying to reintegrate back into society after being incarcerated in prison for the fifth time. I was struggling with life, finding employment, and staying free of negative behaviors, and people. I missed your class more than the allotted time. You did not drop me. You allowed me to make-up the work and pass the final. You do not know how close I was to giving up on that day. Had you dropped me, I would have lost hope, and probably….no more than likely ended up back in prison. You threw me a lifeboat that day. I just want to say THANK YOU, because of you, I have completed a Ph.D. in Psychology, and now can be called Dr. Beard. THANK YOU, Laura P, I REALLY appreciate you for helping me through my rough spots. Redmond THANK YOU!

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Chapter 1: Introduction to the Study

Topic of Study

As a result of increasingly expansive law enforcement efforts, stiffer sentencing laws for drug and property crimes, and numerous post-conviction barriers to reintegration, there are over 1.2 million women currently involved in the American criminal justice system (Kajstura, 2019; The Sentencing Project, 2020). Of these 1.2 million women, 75% receive community supervision through probation or parole (The Sentencing Project, 2020; United States Sentencing Commission. 2020). Women under supervision are at risk for recidivism, defined as repeat offending, or committing additional criminal acts after release from prison/jail within a specific time frame, usually one to three years post-release (United States Sentencing Commission, 2020). Over 35% of female offenders recidivate within the first year, and by five years' post-release, the percentage of women who reoffend and are rearrested increases to 60% (Alper & Durose, 2018; Kajstura, 2019). That more than over a third of women reoffend within the first year after release is indicative of the multiple obstacles and problems women face once they re-enter society and restart their lives (McKendy & Ricciardelli, 2019; Zettler, 2019) and the lack of gender-congruent programs aimed at enhancing female offenders' reintegration success (Farmer, 2019; Jones et al., 2019).

In response to the dramatic upsurge in the number of females involved in the criminal justice system, scholars have called for an increased empirical understanding of the gendered pathways to recidivism (Steiner et al., 2020; Walters, 2020). Criminological theories, such as Hirschi's (1969) social bonds/social control theory and Laub and

Sampson's (1993) social control theory, have long posited that positive social ties may help to reduce recidivism (Barrick et al., 2014). However, most of the studies examining social ties and recidivism have been conducted with men (Zettler, 2019). It was not until the mid-2010s that gendered pathways to recidivism research began to emerge in the literature, with scholars arguing that strong social ties with family, prosocial peers, and one's spouse/partner are more pertinent influences of female offenders' desistance than they are of male offenders (Farmer, 2019; McKendy & Ricciardelli, 2019; Olson et al., 2016). The problem addressed in this study was that few studies with women offenders have taken a strengths-based perspective to understand whether social bonds with family, prosocial peers, and spouses/partners help to reduce recidivism among women offenders.

Background

Since 1980, the United States has experienced an "imprisonment binge" among females (National Resource Center on Justice Involved Women, 2018, p. 1), a result of increasingly stringent laws, especially regarding drug offences, and targeted arrests and higher numbers of arrests in ethnic minority and low-income communities (Breyer et al., 2019; Kajstura, 2019). In fact, America has been identified as "one of the top incarcerators of women in the world" (Kajstura, 2019, para. 1). The number of women incarcerated at state and federal penal institutions increased over 750% since 1980, growing from 26,378 to 225,060 in 2017 (The Sentencing Project, 2020, p. 1). As of 2019, the incarceration rate for women has exceeded the rate for men by 50% (National Resource Center on Justice Involved Women, 2018), and women comprise between 7% and 12.3% of the local, state, and federal incarcerated population (Kajstura, 2019;

National Resource Center on Justice Involved Women, 2018; United States Sentencing Commission, 2019). However, incarcerated women comprised only 25% of the approximately 1.2 million women involved in criminal justice system; the remaining 75% of justice-involved women are under probation or parole (United States Sentencing Commission, 2020).

Women under community supervision face numerous "gender-specific barriers" that make desistance to crime difficult (Liu et al., 2020, p. 4). According to the gendered pathways to crime and recidivism scholars, adverse and traumatic experiences in childhood impair women's ability to develop healthy adult relationships and utilize effective coping mechanisms, including seeking social support, which in turn contribute to criminal behavior in adulthood and subsequent recidivism (Farmer, 2019; Gehring, 2018; Liu et al., 2020). Indeed, according to Farmer (2019), "relationships are women's most prevalent criminogenic need," and the qualities of the relationships "directly affect the likelihood that [the woman] will reoffend" (p. 7). Women reintegrating back into the community often lack social and human capital, or support and resources from family members, friends, spouse/partner, and from the community justice system itself, especially concerning assistance with employment and housing (Liu et al., 2020; Morash et al., 2017). Risk for recidivism is compounded among women with existing mental health and substance abuse issues (Griffin et al., 2020) and those with parenting responsibilities (Stone & Rydberg, 2019), as between 60% to 80% of female offenders have children under the age of 18 (Liu et al., 2020). The lack of trusting relationships and

support for women offenders upon release place them at increased risk for recidivism (Farmer et al., 2019; Liu et al., 2020).

Problem Statement

This study will address whether social bonds with family, prosocial peers, and spouses/partners were significantly predictive of three -year recidivism rates among women offenders. Of the 1 million criminal justice-involved women under community supervision (probation or parole), almost half will recidivate within one year (Kajstura, 2019; The Sentencing Project, 2020). As a woman's sense of self, identity, and esteem are largely influenced by her relationships (Farmer, 2019), supportive and trusting relationships with her family, peers, and spouse/partner are critical to her post-release success (Zettler, 2019). The limited body of gendered pathways to recidivism literature has documented that family support is a primary protective factor for successful reintegration for women (Wesely & Dewey, 2018; Zettler, 2019), and that women offenders, especially those living in neighborhoods where there is more opportunity for criminal activity (Jones et al., 2019), understand the protective benefits of being around prosocial peers (Mueller et al., 2021; Walters, 2020) and having a supportive spouse/partner (Bell et al., 2019; Houser & McCord, 2017). However, there has yet to be a study examining the collective effects of social bonds with family, prosocial peers, and spouse/partner on recidivism rates among female offenders.

Purpose of the Study

In this study, using Morash et al.'s (2015) archival data sets of female offenders in Michigan, I examined whether positive social bonds with caring and supportive family,

prosocial peers, and spouses/partners were significantly associated with non-reoffender status in a sample of female offenders. There were three interval predictor variables: positive social bonds with family, prosocial peers, and spouse/partner. The criterion variable was recidivism, operationalized as reoffending within a three -year period (yes or no), a dichotomous variable. This study addressed the noted gap in the literature regarding the relationships between social bonds with family, prosocial peers, and spouse/partner and recidivism among women offenders (McKendy & Ricciardelli, 2019; Staton et al., 2019; Steiner et al., 2020; Walters, 2020).

Research Questions and Hypotheses

In this quantitative longitudinal correlational study, I examined whether stronger social bonds with family, prosocial peers, and spouse/partner, using Wave 1 (2011) data, significantly predict recidivism at three years' post-release, using Wave 3 (2014) data. This study had the following three research questions, each having null and alternative hypotheses:

RQ1. Is there a significant relationship between stronger social bonds with family and non-reoffender status in a sample of female offenders?

***H*1$_o$.** There is not a significant relationship between stronger social bonds with family and non-reoffender status in a sample of female offenders.

***H*1$_a$.** There is a significant relationship between stronger social bonds with family and non-reoffender status in a sample of female offenders.

RQ2. Is there a significant relationship between stronger social bonds with prosocial peers and non-reoffender status in a sample of female offenders?

***H*2$_o$.** There is not a significant relationship between stronger social bonds with prosocial peers and non-reoffender status in a sample of female offenders.

***H*2$_a$.** There is a significant relationship between stronger social bonds with prosocial peers and non-reoffender status in a sample of female offenders.

RQ3. Is there a significant relationship between stronger social bonds with a spouse/partner and non-reoffender status in a sample of female offenders?

***H*3$_o$.** There is not a significant relationship between stronger social bonds with spouse/partner and non-reoffender status in a sample of female offenders.

***H*3$_a$.** There is a significant relationship between stronger social bonds with spouse/partner and non-reoffender status in a sample of female offenders.

The quantitative longitudinal correlational research design was the most appropriate approach for this study. Per the requirements of quantitative methodology (Gray, 2013), this study employed the scientific method. In alignment with the longitudinal correlational design, I conducted a binomial logistic regression to examine whether positive social bonds with family, prosocial peers, and spouse/partner were significantly predictive of a lower likelihood of reoffending three years after release. Logistic regression results (significant at $p < .05$) determined the decision to reject or fail to reject the study null hypotheses.

Theoretical Framework

The framework for this dissertation study was Hirschi's (1969) social bond/social control theory. Hirschi countered the prevailing criminological theories of the time by positing that criminality was inherent in all humans: that is, all humans have a natural tendency – "a hedonistic drive" – to behave in aggressive ways (p. 133). However, the social bonds and attachments that the individual has to others and to society acts to control their potentially aggressive and deviant behavior. Hirschi posited four dimensions of social bonds: (a) *attachment*, the emotional component of social control that signifies the connections and bonds one has with others; (b) *commitment*, which is the cognitive component of social control and refers to the person's valuing the social relationships one has with others; (c) *involvement*, the behavioral component of social control that concerns the act of engaging in prosocial behavior; and (d) *belief*, or the attitudinal component of social control that denotes adherence to values associated with prosocial behavior. According to Hirschi, these four social bonds dimensions coalesce to positively influence a person's behavior. In summary, the social bonds/social control theory posits that the stronger the ties a person has with others (i.e., the more a person cares about others and feels that someone cares about them), the more the person values others' opinions and does not want others to disapprove of the behavior in which they engage; as such, the individual is more likely to behave in a prosocial manner (Hirschi, 1969).

Nature of the Study

This was a quantitative longitudinal correlational research design study. The defining element of the longitudinal design is its use of "time as a variable via repeated

measurements" (Wright & Markon, 2016, p. 4). A longitudinal design is used when data are collected at two or more timepoints, with the researcher following a cohort of participants (Collins, 2006; Wright & Markon, 2016). Longitudinal data were not collected for this dissertation study; instead, I utilized Wave 1–Wave 3 archival data sets from Morash et al.'s (2015) *Probation/Parole Officer Interactions with Women Offenders, Michigan, 2011-2014*. In addition, I took the "variable-centered" (Wright & Markon, 2016, p. 4) perspective of a longitudinal design by "identifying patterns" (Wright & Markon, 2016, p. 4) in the relationships among variables.

A longitudinal design can be experimental or nonexperimental, with nonexperimental designs further delineated into comparative or correlational (Wright & Markon, 2016). This study did not have conditions (e.g., intervention and control), and thus a longitudinal experimental approach was not fitting for the study. The intent of the longitudinal correlational design is to examine the strength and direction of the relationship of one or more predictors at one timepoint and one or more criterion variables at another timepoint (Wright & Markon, 2016). The longitudinal correlation design fit with the purpose of this study, which was to examine whether social bonds with family, prosocial peers, and a spouse/partner are significantly predictive of non-reoffending status three years' post-release among Michigan female offenders. In longitudinal correlational study, the independent variable is termed the predictor while the dependent variable is called the criterion variable (Wright & Markon, 2016). This study had three predictor variables: social bonds with family, prosocial peers, and a spouse/partner. The study had one criterion variable: recidivism, operationalized as non-

reoffending status three years after release. Longitudinal correlational designs establish temporal precedence, that is, that an attitude or behavior 'came before' another attitude or behavior (Wright & Markon, 2016); as such, it can be stated that this study examined if social bonds significantly predicted the likelihood that female offenders would recidivate by 3 years' post-release. A longitudinal correlational design was appropriate for this study.

Definitions

Recidivism: Recidivism refers to criminal behavior resulting in a re-arrest, reconviction, and/or re-incarceration within a specific time frame, usually one, two, or three years after release from a penal institution (Alper & Durose, 2018). In this study, recidivism was the criterion variable and was operationalized as being charged with a new arrest or conviction 3 years' post-release.

Social bonds with family: The definition of social bonds with family is a healthy, trusting, and functioning relationship with family members, including parents and siblings (van Voorhis et al., 2010). The predictor variable of social bonds with family was measured using the Family Support scale of the Women's Risk and Needs Assessment (WRNA; van Voorhis et al., 2010). The Family Support scale measures if the female offender (a) has contact and communication with her parents and family; (b) receives emotional assistance and encouragement from family members; and (c) has family members without substance abuse (van Voorhis et al., 2010). A higher score on the Family Support scale is indicative of a higher degree of social bonds with family (van Voorhis et al., 2010).

Social bonds with prosocial peers: Social bonds with prosocial peers are adaptive, collaborative, and supportive networks with peers who engage in activities that enhance their wellbeing and that of others (van Voorhis et al., 2010). The predictor variable of social bonds with prosocial peers was measured using the Antisocial Friends scale of the WRNA (van Voorhis et al., 2010). The Antisocial Friends scale has items that inquire whether the female offender has friends who are involved in crime and/or drugs, on probation or parole, or incarcerated as well as whether the offender has associations with prosocial and supportive friends (van Voorhis et al., 2010). As a higher score denotes a higher degree of association with antisocial peers, a lower score on the Antisocial Friends scale indicates a higher level of social bonds with prosocial peers (van Voorhis et al., 2010).

Social bonds with spouse/partner: Social bonds with a spouse/partner is defined as a supportive and loving relationship with a significant other, male or female (van Voorhis et al., 2010). The predictor variable of social bonds with spouse/partner was assessed using the Social Network Support scale on the WRNA (van Voorhis et al., 2010). The Social Network Support scale assesses whether the spouse or partner (a) talks with the offender when the offender is upset, (b) cares about the offender, (c) socializes with the offender, (d) offers financial help to the offender, and (e) helps the offender with work and daily activities (van Voorhis et al., 2010). A higher score on the Social Network Support scale denotes a higher level of positive social bonds with a spouse/partner (van Voorhis et al., 2010).

Assumptions

Study assumptions are evident truths that anchor the study (Leedy & Ormord, 2015). Assumptions for this study were considered within the context of utilizing an existing archival data set, where Morash et al. (2015) selected the study sample, methodology, and instruments. There were also assumptions specific to the current investigation.

Some assumptions were a result of using Morash et al.'s (2015) archival data sets. There was an assumption that Morash et al. followed ethical procedures for research with human subjects, treating the women offenders as special populations, with respect and dignity, and protecting their rights and privileges. The clear and detailed information provided by Morash et al. and the dissemination of their data to the public domain attests to their use of ethical research practices. There was an assumption that the study participants understood the questions asked of them and provided honest and truthful responses on the instruments used in Morash et al.'s study. Morash et al. required that women be recruited through their parole or probation officers (POs). However, POs were not involved with the data collection activities; a female researcher met and interviewed each woman, reading the instrument items, in private (Morash et al., 2015). Participant responses were not shared with authorities unless the women noted an immediate threat to self or others (Morash et al., 2015).

There were theoretical and instrument assumptions specific to this study. It was assumed that Hirschi's (1969) social bonds theory provides a sound theoretical rationale that positive social bonds with family, peers, and spouse/partner help to reduce

recidivism among women, an argument supported in the gendered pathways to recidivism literature (Liu et al., 2020; McNeeley, 2021; Zettler, 2019). In alignment, it was assumed that the respective scales on the WRNA instrument are valid and reliable measures of positive social bonds with family, peers, and partner/ spouse, an argument supported by the literature (Geraghty & Woodhams, 2015; Kreis et al., 2014, 2016; Morash et al., 2015; van Voorhis et al., 2010).

Scope and Delimitations

A research study must have a scope, that is, be bound within a specific context, setting, and structure; and delimitations "arise from" the study scope (Simon & Goes, 2013, p. 3). As the scope of a study is bound by the researcher, the delimitations of the study "are in essence the limitations consciously set by" that researcher (Theofanidis & Fountouki, 2018, p. 157). The scope of this study was bound to the exploration of the relationship between positive social bonds with family, peers, and spouse/partner and three -year reoffending status among women offenders who participated in Morash et al. (2015)'s longitudinal study conducted with Michigan female offenders.

There were delimitations that emerged from the study scope. Due to the study use of Morash et al.'s (2015) archival data sets, the study sample was delimited to female offenders who were under probation or parole supervision in Michigan between 2011 and 2014. The study design was delimited to the examination of the effects of social bonds with family, prosocial peers, and spouse/partner on three -year reoffending rates among Michigan female offenders. I did not examine two-year reoffending rates, nor were numerous assessments of social bonds assessed in the study. The binomial logistic

analysis did not account for potential confound variables, or variables that have a relationship with the predictor and criterion variable (Field, 2013). It was beyond the scope of this study to include the numerous other intrapersonal, interpersonal, and societal factors that likely played a role in reoffending status among female offenders. Finally, the operationalization of social bonds with family, prosocial peers, and spouse/partner was delimited to the instruments utilized to assess each respective construct in Morash et al.'s (2015) study.

Limitations

Limitations are constraints or "imposed restrictions" of a study that are outside the researcher's control (Theofanidis & Fountouki, 2018, p. 157). Most limitations are associated with the selected methodology, design, sample, and/or analysis; as such, limitations can limit the generalizability, or external validity, of a quantitative study (Leedy & Ormrod, 2015). This study had some limitations. The use of Morash et al.'s (2015) archival data set limited the sample to Michigan female offenders who were on probation and parole between 2011 and 2014. Study findings cannot be generalized to Michigan female offenders currently under probation or parole or any other American female offenders. The use of a longitudinal research design limited the interpretation of study findings: correlation, and not causation, could only be determined in this study. This study did not have an experimental design, and as such, results could not be stated in causal terms. I utilized WRNA instruments in Morash et al.'s data set to operationalize the study variables measuring social bonds with family, prosocial peers, and

spouse/partner and 3-year reoffending status. Findings in this study may differ from other studies where social bonds and/or recidivism was operationalized in a different manner.

Significance

This study had significance to the existing empirical literature on recidivism and women offenders, as it addressed the noted gap in the literature regarding the relationships between social bonds with family, prosocial peers, and spouse/partner and recidivism among women offenders (McKendy & Ricciardelli, 2019; Staton et al., 2019; Steiner et al., 2020; Taylor, 2015; Walters, 2020). This study also had implications for practice, as study findings can be used to inform the development and implementation of programs that promote and build social bonds between women offenders and persons to whom they are close. Programs and services that encourage and facilitate contact with supportive others may act as cost-effective measures to ensure positive post-release outcomes among women offenders (Farmer, 2019; Zettler, 2019, 2020). The findings from this study may also be used to promote positive social change by increasing awareness of the social relationship needs of women offenders, which can lead to prison reform and criminal justice efforts that may reduce recidivism among this population.

Summary

This quantitative longitudinal correlational study addressed the gap in the empirical literature on the effects of social bonds on recidivism among female offenders. The criminal justice system had experienced an “imprisonment binge” among females, the fastest-growing offender population in the U.S. criminal justice system (National Resource Center on Justice Involved Women, 2018, p. 1), and on average, over 35% of

women reoffend within the first year after release (Horowitz & Utada, 2018). As "relationships are women's most prevalent criminogenic need," and the qualities of the relationships "directly affect the likelihood that [the woman] will reoffend" (Farmer, 2019, p. 7), it was important to examine whether positive social bonds with caring and supportive family, prosocial peers, and spouses/partners were significantly associated with recidivism among female offenders, the purpose of the study.

The study problem was addressed by three research questions, informed by Hirschi's (1969) social bond/social control theory. This chapter included information on the nature of the study, which involved employing a longitudinal correlation design and definitions of terms pertinent to the study. The study assumptions, scope and delimitations, limitations, and significance were then noted. The following chapter provides a comprehensive review of the pertinent theoretical and empirical literature.

Chapter 2: Literature Review

Background

The number of women incarcerated at local jails and state and federal penal institutions increased 750% between 1980 and 2017, growing from 26,378 to 225,060 (The Sentencing Project, 2020, p. 1), outpacing the incarceration for men by 50% during that same period (Horowitz & Utada, 2018). The dramatic upsurge in the female offender population emphasizes the empirical importance of examining antecedents of recidivism among women (Horowitz & Utada, 2018). In its broadest terms, recidivism refers to *repeat offending*, or committing additional criminal acts after release from prison/jail within a specific time frame (e.g., one, two, or three years' post-release) (Olson et al., 2016; Saris et al., 2016). On average, over 35% of women reoffend within the first year (Horowitz & Utada, 2018); for women aged 39 or younger, the one-year recidivism rate increases to 45% (Pryor et al., 2017). That more than one third of women reoffend within the first year after release is indicative of the multiple obstacles and problems women face once they re-enter society and restart their lives (McKendy & Ricciardelli, 2019; Zettler, 2019).

The problem addressed in this study was the lack of strengths-based research examining whether social bonds with family, prosocial peers, and spouses/partners help to reduce recidivism among women offenders. This study aimed to address the gap in the empirical literature on the relationship between positive social ties and attachments and recidivism among female offenders. The purpose of this study, in which I utilized an archival (or secondary) data set, was to examine whether positive social bonds with

caring supportive family, prosocial peers, and spouses/partners are significantly associated with non-reoffender status in a sample of female offenders. In this study, there were three predictor variables: positive social bonds with family, prosocial peers, and spouse/partner. The criterion variable was recidivism, operationalized in this study as reoffending within a three -year period.

The purpose of Chapter two is to provide a comprehensive review of the pertinent literature, inclusive of theoretical works. The chapter opens with a discussion of the literature search strategy. Hirschi's (1969) social bonds/social control theory is the topic of the theoretical section. Most of the chapter focuses on the review of the pertinent literature, which is presented in subsections.

Literature Search Strategy

The goal of the literature review was to retrieve relevant scholarly articles published in peer-reviewed journals to allow the researcher to review and critically evaluate the body of work on female recidivism and the effects of social bonds with family, prosocial peers, and spouse/partner on recidivism. The literature search commenced in the late summer of 2020. The article search was initiated with the use of EbscoHost, with the search narrowed using the databases PsycARTICLES, PsycINFO, SocINDEX, and Academic Seach Premiere databases. The Google Scholar search engine was also utilized to retrieve articles. The searches primarily centered on peer-reviewed articles in journals on offender rehabilitation, forensic and other types of psychology (e.g., social, community), crime and delinquency, criminology, criminal justice, and sociology. The search terms, which were used singly and in combination were: *female*

offenders; *criminal*, *recidivism*, *reoffending*, *re-arrest*, *reconviction*; *relationships*, *social bonds*, *social control*, *social support*, *emotional support*, *attachment*; *family*, *parents*, *friends*, *peers*, *colleagues*, *intimate partner*, *partner*, and *spouse.*

The review focused on academic articles and resources published within the past 5 years, that is, between 2016 and 2021. Although the initial search yielded a number of relevant studies, I expanded the period of publication to the years 2010–2020 to allow for the inclusion of include seminal and key works on gender-specific assessments (Cobbina et al., 2012; Geraghty & Woodhams, 2015; Yesberg et al., 2015), gendered pathways to recidivism (Clone & DeHart, 2014; van Voorhis et al., 2010), and the links between social bonds with family, peers, and spouse/partners and recidivism (Barrick et al., 2014; Kreis et al., 2014; Cobbina et al., 2012; Stalans & Lurigio, 2015).

The initial search yielded over 90 articles, which were collated, organized, and reviewed. The review of these articles resulted in the culling of approximately 22 articles, the primary reasons being that the research (a) focused solely on male offenders; (b) included both male and female offenders in the sample, but the data were not analyzed separately by gender; or (c) included female offenders but focused on predictors not aligned with social bonds (e.g., highest level of education, type of offense, criminal history) and/or outcomes unrelated to recidivism (e.g., first-time offenses, post-release employment, drug use). The resultant number of studies discussed in the literature review was 68 peer-reviewed articles published between 2010 and 2021. Fifty-three (78%) studies were published between 2016 and 2021. Table 1 provides the number of articles presented in the literature review by publication year.

Table 1

Number of Articles Selected for the Literature Review by Publication Year

	2010–2015	2016	2017	2018	2019	2020	2021	2016–2021 total	Overall total
Number of articles	15	6	5	11	13	10	8	53	68

Theoretical Foundation

The framework for this dissertation study was Hirschi's (1969) social bonds/social control theory. Hirschi countered the prevailing criminological theories of the time that posited that "criminal behavior requires … the creation of criminal motivation" (p. 128). Positivist and individual trait theorists, for example, posited that the motivating factors toward criminal behaviors were inherently biological (e.g., genetic, intelligence) and psychological (e.g., sociopathy) deficiencies; in contrast, strain theorists argued that strains and stressors resulting from traumatic events, negative stimuli, and loss of positive stimuli motivate persons to commit crimes. Regardless of the motivating factors, classical criminological theories were based on the premise that criminal behavior was abnormal, a response to internal or external risk factors (x). In contrast, Hirschi argued that criminality was inherent in all humans: that is, all humans have a natural tendency – "a hedonistic drive" – to behave in aggressive and criminal ways (p. 133). Hirschi, referencing the philosophical work of Thomas Hobbes – infamous for his quote that life is "nasty, poor, brutish, and short" – argued that humans are inherently selfish and self-centered. As such, "the natural pursuit of self-interest will … result in …

criminal, delinquent, and deviant behavior" (Hirschi, 1969, p. 135). Criminality, according to Hirschi, was an inherent component of being human.

The perspective taken by Hirschi (1969) centered not on reasons why people commit crimes, but instead why they did not. If criminality was inherent to all individuals, what was it that prevented most people from committing crimes? According to Hirschi, it was the presence of prosocial values, people, and institutions, which acted as controls against deviant and criminal behavior. Hirschi argued that the presence or absence of the four dimensions of social bonds determined whether the individual engaged in socially conforming behavior or criminal behaviors. The four social bonds dimensions are attachment, commitment, belief, and involvement.

Social Bonds Dimension of Attachment

The first dimension is *attachment*, considered the emotional component of social control (Hirschi, 1969). Hirschi's (1969) defined attachment as the psychological affection – a sense of love – that an individual has for prosocial persons and institutions. Hirschi's concept shares conceptual overlap with the developmental psychology perspectives of attachment, which posit that a secure base, that is, a caregiver who is caring, sensitive, reliable, and responsive, is paramount to the healthy development of individuals (Aslan et al., 2019). The type of attachment formed in childhood, be it secure or insecure, shapes the person's attitudes toward prosocial norms and values and influence the relationships and connections formed with others in adulthood (Aslan et al., 2019). Indeed, Hirschi emphasized the importance of attachment to parents, as strong family social bonds not only help to the person to internalize prosocial cognitions and

attitudes but also contributed to the individuals' development of healthy relationships with prosocial peers in adulthood, thus likely avoiding criminal behavior. The general premise of the attachment dimension of social bonds theory is that individuals who are socially bonded to others will refrain from criminal behaviors as to do so would cause others' disappointment, anger, and sadness (Hirschi, 1969).

Social Bonds Dimension of Commitment

The second dimension is commitment, the cognitive component of social bonds, which refers to the individual's level of investment in prosocial behaviors and activities resulting from the attachments and bonds the person has with others (Hirschi, 1969). A person is committed if they have invested time, resources, and energy into setting and achieving educational, career, and personal prosocial goals. There is a negative relationship between the individual's level of commitment and their propensity for criminal behavior: low investment in achieving goals increases the likelihood that one will engage in criminal acts, while a high level of commitment to setting and meeting life goals reduces and may even prevent engagement in criminal behavior (Hirschi, 1969; Laub & Costello, 2020). In other words, commitment to goals is a form of self-control against criminal behavior. As stated by Pratt et al. (2014), referencing Hirschi's (1969) commitment dimension, "people are less likely to misbehave when they have something to lose" (p. 58).

Social Bonds Dimension of Belief

The third dimension is *belief*, or the attitudinal component of social bonds that denotes a person's internalization of and adherence to the moral and ethical values

associated with prosocial societal norms (Hirschi, 1969). As with commitment, belief is shaped by one's attachment to others, with those having secure and healthy relationships in childhood have internalized the prosocial and caring values and attitudes of which they were exposed (Aslan et al., 2019). Belief is likewise associated with commitment, in that "prosocial attitudes constraint" an individual from committing an offense (Pratt et al., 2014, p. 59). A strong belief system is likely to act as a control against engaging in criminal behavior.

Social Bonds Dimension of Involvement

The fourth dimension of social bonds is involvement, the behavioral component of social bonds that concerns the act of engaging in prosocial behavior and activities (Hirschi, 1969). A person with a high level of involvement in disciplined and structured behavior and activities that leave little time and desire to engage in criminal acts (Hirschi, 1969). Involvement is the behavioral result of attachment, the emotional component of social bonds; commitment, the cognitive element of social bonds; and belief, the attitudinal aspect of social bonds (Hirschi, 1969).

The social bond/social control theory posits that the four social bonds dimensions coalesce to influence a person's prosocial cognitions, attitudes, and behaviors (Hirschi, 1969). The stronger the ties a person has with others—that is, the more a person cares about others and feels that someone cares about them—the more the person values other's opinion and does not want other to disapprove of the behavior in which they engage. As such, the individual is more likely to adopt prosocial attitudes and behave in a prosocial manner (Hirschi, 1969). The underlying relational component of Hirschi's

(1969) social bond/social control theory has greatly informed the gendered pathways to crime and recidivism literature (Liu et al., 2020). In turn, the gendered pathways literature has provided consistent evidence that strong social bonds with family, peers, and spouse/partner tend to be more significantly predictive of lower recidivism rates for female as compared to male offenders (Liu et al., 2020; Zettler, 2020).

Review of the Literature

The intent of the literature review is to provide a comprehensive overview of the empirical literature that examine social bonds and their effects on recidivism among female offenders. The literature review is presented in subsections. The first topic discussed is gendered pathways to recidivism; included in this subsection is information of offending rates among women and the posed reasons for and subsequent concerns surrounding this growth. The subsection that follows pertains to the empirical literature on gender-responsive assessment instruments. The next subsection includes reviews of studies that have focused on one just social bonds domain (i.e., family, peer, or spouse/partner). The literature review then continues with summaries of the literature that has examined the collective effects of two or more social bonds on recidivism, with subsections on studies that have examined the effects of (a) family and peers; (b) family and spouse/partner; and (c) family, peers, and spouse/partner. The findings from the literature review are then summarized.

Gendered Pathways to Crime and Recidivism

Since 1980, the United States has experienced an “imprisonment binge” among females, the fastest-growing offender population in the United States criminal justice

system (National Resource Center on Justice Involved Women, 2018, p. 1). In fact, America is “one of the top incarcerators of women in the world” (Kajstura, 2019, para. 1). The number of women incarcerated at state and federal penal institutions increased over 750% since 1980, growing from 26,378 to 225,060 in 2017 (The Sentencing Project, 2020, p. 1). As of 2019, the incarceration rate for women has exceeded the rate for men by 50% (National Resource Center on Justice Involved Women, 2018), and women comprise between 7% and 12.3% of the local, state, and federal incarcerated population (United States Sentencing Commission, 2019).

Certain factors have contributed to the dramatic upsurge in the female offender population in the United States since 1980. One reason is harsher penalties for property offenses and drug-related crimes, which are the primary offenses committed by women (The Sentencing Project, 2020; Horowitz & Utada, 2018). approximately 60% of female offenders have a substance abuse problem (Horowitz & Utada, 2018). Moreover, women who have committed drug-related offenses comprise a quarter of all female offenders; in contrast, males who committed drug-related offenses comprise only 14% of the male offender population (The Sentencing Project, 2020). Substance abuse is a primary factor for criminal behavior and recidivism among females (Breyer et al., 2019).

Targeted arrests and higher numbers of arrests in ethnic minority and low-income communities are also contributing factors (National Resource Center on Justice Involved Women, 2018; United States Sentencing Commission, 2019). Imprisonment rates for African American and Hispanic women are from 1.3 to 2 times higher than they are for White women (The Sentencing Project, 2020). Indeed, 1 in 18 African American women

and 1 in 45 Hispanic women face a probability of imprisonment in their lifetimes as compared to 1 in 111 White women (The Sentencing Project, 2020). However, imprisonment rates have increased substantially among White women, from 35 per 100,000 persons in 2000 to 50 per 100,000 persons in 2017 (The Sentencing Project, 2020), suggesting that other factors are at play. An additional reason for the increases of women in the criminal justice system may pertain to the system itself: over a quarter of women in state and federal penal institutions and 60% of women in local jails have yet to be given a trial (National Resource Center on Justice Involved Women, 2018; United States Sentencing Commission, 2019).

Higher incarceration rates among women correspond to higher numbers of women under community supervision. The number of women on probation or parole has increased from 520,000 in 1990 to over 1 million in 2016 (The Sentencing Project, 2020), and women under community supervision comprise 75% of the women involved in the American correctional system (The Sentencing Project, 2020). Women under community supervision are at risk for recidivism, which refers to committing an offense, being arrested, and/or being convicted after release from prison/jail within a specific time frame (e.g., one, two, or three years' post-release; Olson et al., 2016; Saris et al., 2016). On average, 48% of women reoffend and 35% of women are rearrested within one year after release; by five years after release, 68% of female offenders are likely to be rearrested (Alper & Durose, 2018; Saris et al., 2016). That more than one third of women reoffend within the first year after release is indicative of the multiple obstacles and problems

women face once they re-enter society and restart their lives (McKendy & Ricciardelli, 2019; Nicholls et al., 2015).

In response to the increasing number of women involved in the American criminal justice system, there has been substantial growth in the empirical literature examining gendered pathways to crime and recidivism (Gehring, 2018; Farmer, 2019; Liu et al., 2020; Wesely & Dewey, 2018). The gendered pathways literature in criminal justice is informed by relational cultural theories that posit that the quality of social bonds and connections with others define women's sense of identity, esteem, and empowerment; women are defined in relation to others (Liu et al., 2020). According to the gendered pathways to crime and recidivism scholars, adverse and traumatic experiences in childhood impair women's ability to develop healthy adult relationships and utilize effective coping mechanisms, including seeking social support, which in turn contribute to criminal behavior in adulthood and subsequent recidivism (Farmer, 2019; Gehring, 2018; Liu et al., 2020; Wesely & Dewey, 2018). As stated by Farmer (2019),

> Relationships are women's most prevalent 'criminogenic need,' and issues around relationships directly affect [women's] likelihood of [offending and] reoffending. … A large proportion of female offenders have endured … abuse and trauma, [which] can profoundly impact their ability to develop and sustain healthy, trusting relationships … this abuse can be ongoing … and lead to [women's] offending [and reoffending]. (p. 7)

There is considerable empirical evidence that women involved in the criminal justice system often have adverse childhood experiences, especially family disruption and

violence, parental substance abuse/involvement in crime, and physical and sexual abuse, at rates higher than those seen in male offenders (Gehring, 2018; Liu et al., 2020; Wesely & Dewey, 2018). While exposure to family members, peers, and spouse with antisocial attitudes and behaviors, anger and hostility issues, and substance abuse problems, is linked to higher recidivism rates for both male and female offenders, such exposure tends to have more severe consequences for (Bell et al., 2019; Huebner & Pleggenkuhle, 2015; Zettler, 2020). Indeed, research has shown that between 70% to 90% of women offenders were victims of physical and sexual abuse during both childhood and adulthood (Liu et al., 2020). Trauma and abuse in childhood increases a female's risk for involvement in criminal behavior (Houser & McCord, 2017; Liu et al., 2020).

Gendered pathways scholars furth posit that women are often introduced to the criminal lifestyle through a romantic partner (Kreis et al., 2014, 2016), and, to a lesser extent, antisocial peers, and "engage in relationships that facilitate their criminal behavior" (Liu et al., 2020, p. 5). This is especially true in relation to drug-related offenses, as the partner may initiate and encourage drug use and subsequent drug-related criminal behaviors (DeHart, 2018; Houser & McCord, 2017; Liu et al., 2020). Women may also use drugs to cope with relationship issues, which in turn can contribute to committing drug-related crimes (Liu et al., 2020; Smith, 2017). As approximately 60% of female offenders meet the criteria for substance dependence (National Resource Center on Justice Involved Women, 2018), it is therefore not surprising that studies have found significant linkages between addiction and substance abuse among women offenders and

problematic court and prison behaviors (Jones et al., 2019; Kreis et al., 2014; Smith, 2017) and higher recidivism rates (Houser & McCord, 2017; Robertson et al., 2019).

The committing of crime tends to have a relational element for women: rarely do women commit comes alone and/or for individual purposes (DeHart, 2018). The five female offender typologies identified by DeHart (2018) all had a relational component. Aggressive career offenders, who commit crimes in partnership with a spouse or boyfriend, share commonalities with social capital offenders, whose crimes are committed as with criminal associates and friends (DeHart, 2018, p. 1461). The other typologies are (a) women whose self-defense actions, often related to domestic violence, resulted in an arrest; (b) women who abuse children, often in response to cumulative stressors and an inability to parent well; and (c) addicted women experiencing domestic and intimate partner violence who commit drug-related offenses (DeHart, 2018). Women's criminal offenses are often a result of impaired and dysfunctional relationship factors.

According to gendered pathways scholars, women also numerous "gender-specific barriers" when reintegrating back into society (Liu et al., 2020, p. 4). Women offenders are often released back into the same social environment that contributed to their criminal behavior and often lack supportive and trusting relationships that "are vital to reducing reoffending" (Farmer, 2019, p. 17). Indeed, Farmer (2019), who examined relationships as a criminogenic need study with male and female offenders in Britain, found that the 74% of all female offenders and 85% of female offenders with sentences less than one year lacked supportive and trusting relationships. Women furthermore lack

social and human capital, or support and resources from family members, friends, spouse/partner, and from the community justice system itself, especially concerning assistance with employment and housing (Liu et al., 2020; Morash et al., 2017). Indeed, unmet needs concerning employment and housing are often the primary factors for recidivism among women (Morash et al., 2015, 2017). Stressors associated with parenting often are especially of concern for female offenders (Stalans & Lurigio, 2015), as between 60% to 80% of female offenders have children under the age of 18 (Liu et al., 2020). The lack of trusting relationships and support for women offenders upon release place them at increased risk for recidivism.

Risk for recidivism is compounded among women with existing mental health issues, including a propensity for anger/hostility and antisocial attitudes, and substance abuse problems (Gehring, 2018; Tripodi et al., 2019). Gehring (2018) examined a gendered pathways model in a study with 103 women offenders in Ohio. Research findings showed that self-reported childhood abuse, both physical and sexual, was significantly associated with histories of mental illness and substance abuse, which in turn led to an increased probability for rearrests within six months (Gehring, 2018). Similar findings were reported in Tripodi et al.'s (2019) study with 230 female offenders in Florida and North Carolina. Research findings showed that experiences of childhood trauma contributed to depression, which in turn led to reincarceration within one year after release (Tripodi et al., 2019). Research findings from the studies by Gehring (2018) and Tripodi et al. (2019) indicated that adverse childhood experiences can contribute to

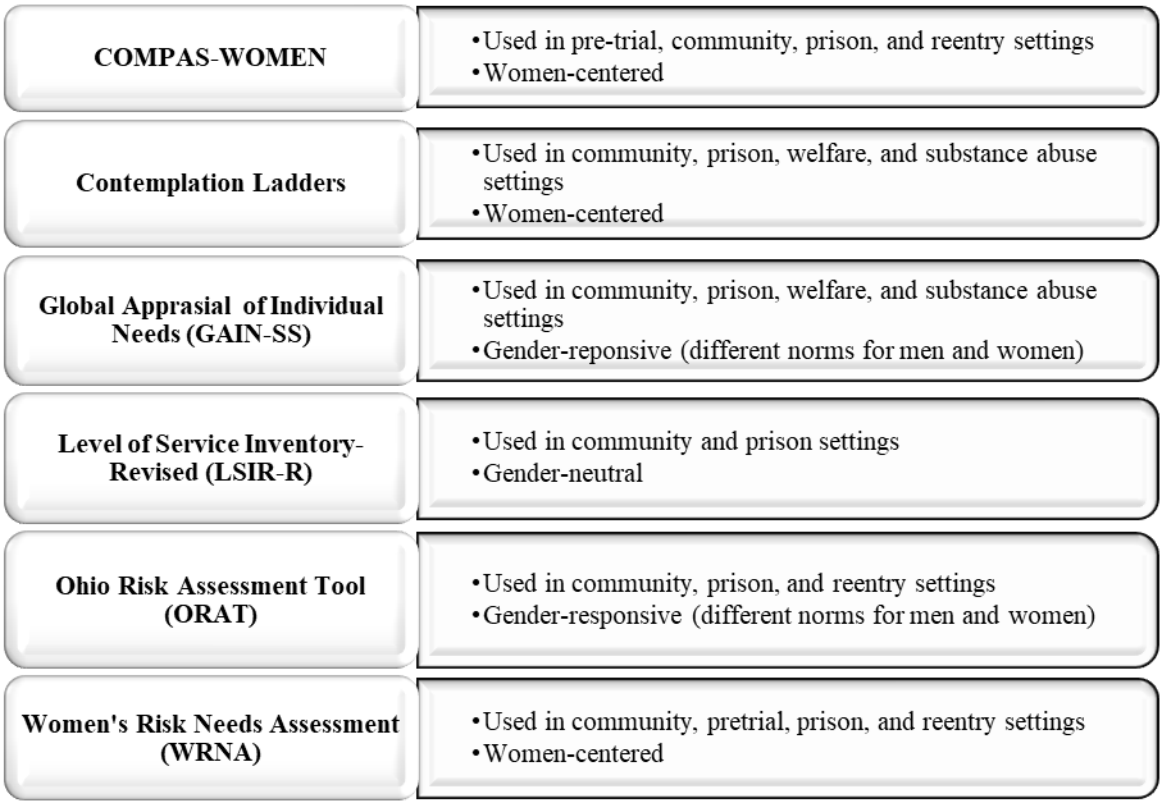
the development of mental health and substance abuse issues that in turn contribute to increased risk for recidivism among female offenders.

Gender-Responsive Risk and Needs Assessments

The gendered pathways literature has led to substantial evaluation and assessment work, especially concerning the validation of gender-responsive risk and needs assessments (McCoy & Miller, 2013; van Voorhis et al., 2010; Yesberg & Polaschek, 2015; Yesberg et al., 2014). These validation studies are based on the premise that factors that are relational in nature are most predictive of recidivism for female offenders (Scott et al., 2016; van Voorhis et al., 2010). While the assessment studies did not utilize specific measures of social bonds with family, peers, and spouse/partner, they did include a global assessment of gender-responsive protective/supportive factors (McCoy & Miller, 2013; Yesberg & Polaschek, 2015; Yesberg et al., 2014) or included numerous gender-neutral and/or gender-responsive predictor variables (Scott et al., 2016; van Voorhis et al., 2010), which were pertinent to this study. Figure 1 presents a list of the risk and needs assessments that have been used and validated in female offender samples, some of which are discussed in detail in the following sections.

Figure 1

Risk and Needs Assessment Instruments for Female Offenders



Note. Adapted from *Risk-Needs Assessments Appropriate for Women Offenders*, by Massachusetts Women's Justice Network, 2012. Wellesley Centers for Women (https://www.wcwonline.org/pdf/Fact%20sheet%202.pdf).

An extensively validated and utilized global assessment tools used to evaluate female offenders' risk factors is van Voorhis et al.'s (2010) WRNA. The validation study of the WRNA by van Voorhis et al. (2010) is a seminal work in the gender-responsive assessment literature (Boppre, 2019; Trejbalova & Stalisbury, 2020). Due to its empirical importance and the use of WRNA subscales in this study, van Voorhis et al.'s (2010) assessment study is reviewed despite it being published over ten years ago. In developing

the WRNA, van Voorhis et al. (2010) utilized theoretical and empirical work on adverse childhood experiences, attachment, family and relationship dynamics, and self-efficacy. The WRNA, which is used in over 30 jurisdictions in America, is a comprehensive risk assessment instrument that measures risk in 12 domains (van Voorhis, 2010).

According to van Voorhis et al. (2010), the risk factors of criminal history, association with antisocial peers, and substance abuse, education/employment and mental health contribute to negative outcomes for both female and male offenders but tend to have stronger negative influences on women offenders. As such, items measuring risk in these domains were restructured by van Voorhis et al. (2010, p. 268) "in a beneficial, more gender-responsive, manner. " The remaining risk factors of housing safety, abuse/trauma, relationships dysfunction, parental issues, anger/hostility, self-effacy and self-esteem, and family support were considered by van Voorhis et al. (2010) to be gender-specific risk factors due to their links to relationship dynamics and internal psychological states.

van Voorhis et al. (2010) conducted their WRNA validity study with three distinct samples, 626 female offenders in prison, 704 women offenders on probation, and 296 women offenders on parole, in the states of Colorado, Minnesota, and Missouri. The authors collected data on WRNA as well as prison misconduct and recidivism data approximately 17 months later (van Voorhis et al., 2010). Research findings showed that all risk factors were significantly associated with prison misconduct and recidivism 1 to 1 ½ years post-release. The strongest predictors of prison misconduct were antisocial associates, substance abuse, a history of child abuse, current relationship dysfunction, and

(lack of) family support, while substance abuse, housing safety, and anger/hostility were most predictive of recidivism (van Voorhis et al., 2010). The consistent and significant associations between scores in all WRNA domains and prison misconduct and recidivism provided evidence of the predictive validity of the WRNA.

The WRNA received additional validity testing in the study by Trejbalova and Stalisbury (2020), who utilized the WRNA is a sample of 148 female offenders in the Czech Republic. Trejbalova and Stalisbury (2020) examined if domain risk scores on the WRNA were significantly associated with prison misconduct. Study findings showed that most of the WRNA risk factors were significantly associated with prison misconduct, with the risk factors of antisocial friends, substance abuse (past and present), depression, and parental stress having the highest correlations with the number prison misconduct offenses (Trejbalova & Stalisbury, 2020). However, family support was not significantly associated with number prison misconduct offenses; the other risk factors found to not be associated with prison misconduct were anger/hostility and current physical abuse (Trejbalova & Stalisbury, 2020). It may be that certain risk factors are more pertinent to recidivism, a post-release factor, in comparison to prison misconduct. Nonetheless, Trejbalova and Stalisbury (2020) largely significant findings provided not only predictive validity but also cultural validity of the WRNA.

McCoy and Miller (2013) and Yesberg et al. (2015) tested the gender-specific qualities of existing standardized offender re-entry assessment tools, which provided more global information on potential protective and risk factors. The purpose of McCoy and Miller's (2013) study was to determine if gender differences were found concerning

the relationships between global measures of risk and protective factors and recidivism rates in a sample of 328 nonviolent offenders (164 women offenders and a matched sample of 164 male offenders) in Texas. The authors utilized the Inventory of Offender Risk, Needs, and Strengths (IORNS), which is has 130 true/false items and is comprised of three global assessments gauging offender's personal and contextual risks, needs, and protective strengths (McCoy & Miller, 2013). The Static Risk Index (SRI) of the IORNS is comprised of 12 items that capture factors known to be associated with increased risk for recidivism, including type and number of criminal offense and antisocial behavior (McCoy & Miller, 2013). The IORNS Dynamic Needs Index (DNI) has 79 items, which are group into six domains (i.e., criminal orientation, psychopathy, intra- and interpersonal issues, substance use problems, aggression, and associations with negative peers and colleagues) (McCoy & Miller, 2013). The Protective Strengths Index (PSI) of the IORNS is comprised of 26 items that are grouped into two larger categories: personal resources (i.e., cognitive, emotional, and behavioral stability/regulation, education) and environmental (i.e., family, peer, partner, community, employment) resources (McCoy & Miller, 2013). The DNI and PSI subscales of the IORNS capture elements associated with social bonds (both negative and protective) with family, peers, and partner as well as the larger community (McCoy & Miller, 2013), constructs pertinent to this study.

McCoy and Miller (2013) conducted descriptive statistics on the IORNS subscales and recidivism data, and they performed a series of logistic regressions to test the study hypotheses, with analyses conducted separately by gender. Recidivism was operationalized as any re-arrest at two years' post-release; descriptive findings showed

that similar percentages of males and females, 52% and 48% respectively, were re-arrested within two years after their release (McCoy & Miller, 2013). The logistic regression analyses included the three IORNS indexes as predictors of recidivism, with separate analyses conducted with the male versus female data (McCoy & Miller, 2013). The authors found that results differed for males and females: none of the three IORNS index measures of risks, needs, and protective strengths were significantly predictive of recidivism in male offenders, while only scores on the PSI, which assessed protective strengths, was significantly associated with lower rates of recidivism among female offenders (McCoy & Miller, 2013). Findings from McCoy and Miller (2013) align with theoretical arguments that protective and supportive bonds may play an important role in reducing recidivism rates among female offenders. As stated by the authors, "the greater the perceived prosocial support the female offenders reported, the less likely they were to recidivate" (p. 153).

Yesberg and colleagues (Yesberg & Polaschek, 2015; Yesberg et al., 2014) are recognized in the recidivism literature for their development and psychometric examination of the Dynamic Risk Assessment for Offender Re-entry (DRAOR) using a gendered lens (Zettler, 2020). The DRAOR was initially developed as a gender-neutral assessment tool; however, findings from studies (Scanlan et al., 2020; Yesberg & Polaschek, 2015; Yesberg et al., 2014) have suggested that the DRAOR is a sound assessment of risk and protective factors that are more pertinent to female offenders. The sound construct validity of the DRAOR for female offenders is likely a result of the concepts it measures (Yesberg & Polaschek, 2015). The DRAOR has three subscales that

capture specific relational elements (Yesberg & Polaschek, 2015; Yesberg et al., 2014). The DRAOR Stable subscale includes intrapersonal risk (i.e., negative attitudes toward authority, poor impulse control, poor problem-solving abilities, and a sense of entitlement) and interpersonal risk factors (i.e., criminal peer associations, poor attachment to others) (Yesberg & Polaschek, 2015; Yesberg et al., 2014). The DRAOR Acute Subscale measures risks associated with personal/emotional problems (i.e., substance abuse, anger, negative mood) as well as larger social issues, including access to victims, low or no employment, poor interpersonal relationships, and unstable living situation (Yesberg & Polaschek, 2015; Yesberg et al., 2014). The Protective Subscale of the DRAOR measures the protective factors associated with personal strengths (i.e., emotional responsiveness, prosocial identity, high personal expectations) and general social supports (Yesberg & Polaschek, 2015; Yesberg et al., 2014).

Yesberg et al. (2014) utilized a sample of 290 New Zealand offenders (145 female offenders and a matched group of 145 male offenders) in their initial validity study on the DRAOR. Preliminary analyses focused on gender differences on DRAOR total and subscale scores, and descriptive findings showed that females had a higher DRAOR score overall (Yesberg et al., 2014). Yesberg et al. (2014) operationalized recidivism as re-offending within 12 months' post-release. The authors found that a higher percentage of females (27%) re-offended within the first year as compared to men (17%). The predictive validity of the DRAOR was examined in a series of logistic regression analyses, with statistics conducted for females and males separately (Yesberg et al., 2014). Results from the logistic regressions showed that all three DRAOR subscales were

significant predictors of recidivism for females and males; however, the overall regression model chi-square was more strongly predictive for females ($\chi^2 = 18.63$, $p < .001$) than males ($\chi^2 = 9.73$, $p < .001$) (Yesberg et al., 2014).

Yesberg and Polaschek (2015) further examined the predictive validity of the DRAOR on recidivism rates in a study with 266 New Zealand offenders (133 women and a matched group of 133 men) released on parole. The authors operationalized recidivism as number of days before reconviction, with range of days being 1 to 400, slightly over a year (Yesberg & Polaschek, 2015). As in the study by Yesberg et al. (2014) with a different sample of offenders, Yesberg and Polaschek (2015) found that there was a significantly higher percentage of women (26%) as compared to men (16%) who were reconvicted within a year after release. The authors further reported gender differences on the DRAOR subscales, with female offenders having a higher overall DRAOR Scale score as well as higher DRAOR Stable and Acute Subscale scores and a lower DRAOR Protective Subscale scores (Yesberg & Polaschek, 2015), also seen in the study by Yesberg et al. (2014). A series of Cox regression survival analyses were conducted by the authors to determine if the three DRAOR Subscale scores were significantly predictive of recidivism for males and females (Yesberg & Polaschek, 2015). The Cox regression findings were significant for female but not male offenders (Yesberg & Polaschek, 2015). Of the three subscales, the DRAOR Acute Subscale displayed the strongest association with a fewer number of days until reconviction for women (Yesberg & Polaschek, 2015). Findings from Yesberg et al. (2014) and Yesberg and Polaschek (2015) studies suggest

that women offender may be especially sensitive to risk and protective factors that have relational elements.

While McCoy and Miller (2013), Yesberg et al. (2014), and Yesberg and Polaschek (2015) utilized global assessments of risk and protective factors in their recidivism studies, Scott et al. (2016) included in their study a total number of 55 predictors, 40 of which were identified as gender-responsive factors, on recidivism with an initial sample of 480 women released from the Illinois state prison system. The 40 gender-responsive variables included those examining (a) intrapersonal strengths (e.g., problem orientation, self-help attitudes); (b) criminal history (e.g., types and number of crimes, engaging in illegal behaviors); (c) trauma/abuse experiences/ history; (d) relationship and sexual history (e.g., relationship status, number of sexual partners); (e) environmental, community, family, and peer support; (f) family dynamics and structure, including being married, having children, and/or having custody of one's children; and (g) peer relationship (e.g., external pressure from peers to engage in criminal activity) (Scott et al., 2016). The goal of Scott et al.'s (2016) study was to identify the specific gender-responsive predictors that were most significantly predictive of recidivism among women offenders.

Scott et al.'s (2016) study was longitudinal in nature, with the researchers following the women for three years. The authors noted that 54% of the women had been rearrested within a year after release and 73% had been rearrested by three years' post-release (Scott et al., 2016). The authors conducted a series of Cox regression survival analyses, controlling for baseline information and criminological risk factors, to

determine which gender-responsive protective factors were most predictive of recidivism, measured as number of days before re-arrest/reconviction (Scott et al., 2016). The authors conducted a series of stepwise regression analyses, which allowed them to remove any variables that were found to be nonsignificant. Using stepwise regression analyses, the authors were able to reduce the number of predictors from 40 to 7 (Scott et al., 2016). One significant predictor was environmental support: the higher the level of perceived report from family, peers, and colleagues, the longer the duration from release to re-arrest (Scott et al., 2016). Living with their children, having fewer number of sexual partners, having lower exposure to trauma (including family and partner abuse), and receiving minimal pressure to engage in criminal activity were also significantly predictive of a higher number of days before re-arrest/reconviction (Scott et al., 2016). The two remaining significant predictors were self-help attitudes and support from the probation/parole officer (Scott et al., 2016).

The work by McCoy and Miller (2013), Yesberg et al. (2014), and Yesberg and Polaschek (2015) on global assessments measuring gender-responsive risk and protective factors and Scott et al.'s (2016) comprehensive analysis of 40 gender-based predictors was summarized in this subsection. Findings from these studies suggest that factors that are relational in nature may be "more predictive of recidivism for women offenders" (Scott et al., 2016, p. 1138). However, they did not focus on specific measures of social bonds with family, peers, and spouse/partner. The studies that have are discussed in the following subsections.

Social Bonds With Family and Female Recidivism

Of the social bonds, family social bonds, often operationalized as social support, has received most of the empirical attention in the recidivism literature on women offender (Kreis et al., 2014, 2016). The earlier studies on recidivism among female offenders (i.e., those published between 2000 and 2012) were summarized in Kreis et al.'s (2014) systematic review of the literature. Other studies were published between five and six years ago: two of these studies (Barrick et al., 2014; Doherty et al., 2014) utilized female-only samples, while Taylor et al. (2015) included both males and females in their study but conducted analyses separately by gender. In their systematic review of the literature on relational risk factors and recidivism among female offenders, Kreis et al. (2014) found only three relevant studies, all of which were published before 2013 (Rettinger & Andrews, 2010; Salisbury & van Voorhis, 2009; Taylor et al., 2012). Despite having participant and measurement differences, all three studies documented significant associations between family emotional and instrumental social support and decreased recidivism rates among female offenders (Rettinger & Andrews, 2010; Salisbury & Van Voorhis, 2009; Taylor et al., 2012). Kreis et al. (2014) also stated that Rettinger and Andrews (2010) examined the indirect effects of family emotional support and recidivism, findings that low family emotional support predicted personal financial problems which in turn led to reoffending status among female offenders.

Barrick et al. (2014) examined the relationships between in-prison and post-release family social support on recidivism among 255 high-risk female offenders. The predictor variables in the study were in-prison and post-release family emotional and

post-release instrumental social support; recidivism, the criterion variable, was based on whether the females were incarcerated within five years of release (Barrick et al., 2014). Using logistic regression analyses, the researchers found that post-release family emotional ($p < .05$) and instrumental support ($p < .05$) were significantly associated with a lower likelihood of incarceration within 5 years of release, after controlling for the control variables (Barrick et al., 2014). In-prison emotional support was not significantly associated with re-incarceration within 5 years of release (Barrick et al., 2014). Findings from Barrick et al.'s (2014) study suggest that family support is most critical after the female offender has been released.

There is evidence from qualitative work that family support can impart benefits to women reintegrating back into the community after release from prison (Doherty et al., 2014). Doherty et al. (2014) explored conditions for successful reentry and reintegration into the community among 31 Canadian females released from federal prison. Doherty et al. (2014) utilized a grounded theory approach to develop their reintegration readiness theoretical framework, collecting data from semi-structured interviews and focus groups with the women. Results from Doherty et al.'s (2014) thematic analysis using the nVivo qualitative software helped the authors to develop their reintegration readiness framework, which they differentiated into person-specific protective factors (i.e., desire to change, high self-esteem, low risk for substance abuse) and context-specific protective factors. Family support emerged as one of the three primary protective factors for successful reintegration for women, the others being prison-based substance abuse treatment and prison-driven continuity of care (Doherty et al., 2014).

Taylor (2015) utilized data from almost 1,700 male and 350 female offenders gathered in the longitudinal Serious and Violent Offender Reentry Initiative (SVORI) study to examine the effects of emotional and instrumental (i.e., tangible) support from family on recidivism rates in a sample of male and female adult offenders in Illinois. SVORI data were gathered across four Waves, at 30 days prior to release (Wave 1) and three, nine, and 15-months post-release (Waves 2-4). Emotional and instrumental family support were assessed using a 10-item and four-item questionnaire, respectively, that were included as part of the SVORI dataset and measured at Waves 2 through 4 (Taylor, 2015).

Findings from a series of logistic regression analyses conducted by Taylor (2015) showed that family emotional support, measured at Wave 2 (i.e., three months' post-release) predicted lower rates of recidivism for both males and females at Waves 3 (i.e., nine months' post-release) and Wave 4 (i.e., 15-month post-release). These relationships were more pronounced for female offenders (Taylor, 2015). Logistic regression analysis results also showed that higher levels of family instrumental support, assessed at three months' post-release predicted lower rates of recidivism for female offenders but higher rates of recidivism for male offenders at nine and 15- months post-release (Taylor, 2015). These findings suggest that both emotional and instrumental social support from family may help to reduce recidivism among female offenders.

There has been minimal empirical examination of the effects of family relationships on recidivism rates among female offenders since 2015, with just one study published in 2021 (Liu & Vosher, 2021). Like Taylor (2015), Liu and Visher (2021)

utilized SVORI data, focusing the years 2004-2005 and using a sample of 357 female offenders. The authors examined the effects of general family support on 3-month recidivism rates, controlling for numerous demographic and criminal history covariates, conducting a series of logistic regressions. Findings showed that higher levels of family support were significantly associated with a decreased probability of recidivating at three months' post-release (Liu & Visher, 2021).

There is consistent evidence from quantitative studies by Barrick et al. (2014), Taylor (2015), and Liu and Visher (2021) that family social support imparts positive benefits on women offenders reentering the community. The qualitative work by Doherty et al. (2014) furthermore documented the importance of family support, finding that it emerged as one of the three primary protective factors for successful reintegration for women (Doherty et al., 2014). The more contemporary work by Barrick et al. (2014), Doherty et al. (2014), Taylor (2015), and Liu and Visher (2021) was reflective of findings found in earlier studies noted in the systematic review by Kreis et al., (2014). The effects of social bonds with peers is less consistent (Kreis et al., 2014), likely influenced by differences in construction and definition of variables, as noted in the following subsections.

Social Bonds With Peers and Female Recidivism

While there is considerable empirical evidence of the negative effects of antisocial peers and involvement with criminal associates on recidivism among male offenders (Katsiyannis et al., 2018; Shagufta, 2020), there has been less examination of the effects of peers on recidivism outcomes among female offenders (Staton et al., 2019).

The recidivism studies that do exist are best categorized into two groups: those focusing on the negative effects of socializing with criminal/antisocial peers (Bell et al., 2019; O'Hagan et al., 2018; Staton et al., 2019; Wilfong et al., 2020) and those examining the benefits of social bonds with prosocial peers (Cobbina et al., 2014; Patel et al., 2021). The following sub-sections provide summaries of the findings from the studies on the effects of social bonds with antisocial and prosocial peers and recidivism outcomes among female offenders.

Criminal/Antisocial Peers and Female Recidivism

There have been few studies that have examined the effects of social bonds with antisocial and/or criminal peers on recidivism rates among female offenders, both juveniles and adults (Bell et al., 2019; Kries et al., 2014; O'Hagan et al., 2018; Rivera et al., 2020; Staton et al., 2019). Kreis et al. (2014), in their systematic review of studies published between 2000 and 2012 that examined relational risk factors of recidivism among female offenders, found only two studies specific to bonds with antisocial friends. However, both studies reviewed by Kreis et al. (2014) showed that social bonds with criminal peers were significantly associated with both general recidivism (Benda, 2005) and violent offending recidivism (Rettinger & Andrews, 2010).

Some contemporary studies have examined social bonds with criminal peers and recidivism (Bell et al., 2019; O'Hagan et al., 2018; Rivera et al., 2020; Staton et al., 2019). The studies were divided into those utilizing samples of both male and female offenders, with analyses conducted separately by gender (Bell et al., 2019; O'Hagan et al., 2018) and those focusing exclusively on female offenders (Rivera et al., 2020; Staton

et al., 2019; Wilfong et al., 2020). O'Hagan et al. (2018) explored whether higher levels of associating with criminal peers significantly predicted recidivism rates three years' post-release among male (n = 200) and female (n = 100) Canadian juvenile offenders (M age of 16 years). The authors conducted logistic regression analyses separately by gender, and findings showed that a higher degree of association with criminal peers significantly predicted violent and general recidivism for both males and females (O'Hagan et al., 2018). Findings from O'Hagan et al. (2018) emphasized the negative effects of associating with criminal peers for both male and female juvenile offenders.

Similar results were reported by Bell et al. (2019), who assessed the effects of associating with criminal peers, operationalized as being in a gang, and re-incarceration two years' post-release in a study with 31,842 (83%) male and 6,674 (17%) female offenders. Conducting logistic regression analyses separately for gender groups, Bell et al. (2019) found that associating with criminal peers was significantly predictive of the likelihood of re-incarceration two years' post-release for both gender groups. However, the consequences of associating with criminal peers was more pronounced for female offenders: women with high levels of associations with criminal peers were nine times more likely to be re-incarcerated than were women with low levels of criminal peer associations (Bell et al., 2019).

The remaining three studies focused specifically on female juvenile and adult offenders under community supervision (Rivas et al., 2020; Staton et al., 2019; Wilfong et al., 2020). Staton et al. (2019) assessed the recidivism risks of associating with criminal peers on 12-month recidivism rates, controlling for pertinent demographic, drug

use, and criminal history variables, in a sample of 399 Appalachian women who had transitioned from the jail setting to the community. Findings from chi-square tests of independence revealed that a significantly higher percentage of re-incarcerated women (26%) associated with criminal peers than did women who were not re-incarcerated (20%) (Staton et al., 2019). Moreover, significantly higher percentages of re-incarcerated women reported living with friends (44%) and using alcohol and/or drugs with friends (58%) as compared to women who were not re-incarcerated (25% and 24%, respectively) (Staton et al., 2019). Logistic regression results further showed that associating with criminal peers was among the strongest predictors of 12-month re-incarceration status: women who associated with criminal peers were 96% more likely to be re-incarcerated at 12 months' post-release than women who did not (Staton et al., 2019).

The effects of associating with peers who used drugs on recidivism rates one-year post-release was examined in Wilfong et al.'s (2020) study with 406 female offenders under community supervision in Kentucky. Consistent with findings reported by Staton et al. (2019), Wilfong et al. (2020) found that women who recidivated within a year after release had a significant higher number of friends who used illicit drugs as compared to women who did not recidivate. The results from Staton et al. (2019) and Wilfong et al. (2020) showed that female offenders who associated with drug-using peers were at increased risk for recidivism as compared to those who did not associate with peers who used illicit drugs.

Rivas et al.'s (2021) qualitative phenomenological study provided a rich and detailed analysis of the numerous friendship and peer challenges that 10 female offenders

(*M* age of 30 years, 70% White and 30% Black) experienced while reintegrating back into society. The researchers conducted structured interviews with the 10 participants; they then conducted a thematic analysis of the transcribed interview data (Rivas et al., 2021). The thematic analysis revealed five overarching themes pertaining to women's relationships with friends and peers. The women described the societal stigma associated with being an offender, and they remarked that their probation status resulted in isolation and judgment from peers. The women also reported that their post-release development and empowerment was dependent on their avoidance of antisocial peers and involvement with prosocial peers. According to Rivas et al. (2021, p. 29), the women had to make "deliberate decisions" to distance themselves from "certain friendships," most notably those with drug-using peers. Results from Rivas et al.'s (2021) qualitative study showed that the women took "self-protective measures to prevent recidivism by severing maladaptive relationships."

Prosocial Peers and Female Recidivism

There has been less empirical examination on the protective benefits of associating with prosocial peers for female offenders under community supervision. The two studies, one using a mixed method design (Cobbina et al., 2014) and one utilizing a qualitative meta-analysis design (Patel et al., 2021), were nonetheless highly informative, providing rich and detailed information. Cobbina et al. (2014) conducted a mixed-method study with 256 racially diverse female offenders in Michigan. The qualitative component of the study explored the strategies that the women engaged in to avoid re-incarceration (Cobbina et al., 2014). The number one strategy to avoid re-incarceration, noted by 18%

of the women, was to avoid criminal peers; the fourth most popular strategy, reported by 10% of the women, was associating with prosocial people (the second strategy was to stay at home and the third was to avoid all people) (Cobbina et al., 2014). The quantitative component of the study was conducting a one-way ANOVA, the findings of which revealed that women residing in disadvantaged neighborhoods reported higher utilization of the strategy of being with prosocial peers than were women living in stable neighborhoods ($p < .05$) (Cobbina et al., 2014). The findings from Cobbina et al. (2014) suggested that women offenders, especially those living in high-risk neighborhoods, understood that their reintegration success was dependent upon avoiding antisocial peers and embracing prosocial peers.

Patel et al. (2021) conducted a comprehensive meta-analysis of the qualitative literature on friendships and women offender's risk for recidivism. Patel et al. (2021), using Hirschi's (1969) social bonds theory to frame their study, reviewed the findings from eight qualitative studies published between 2000 and 2020. Per the requirements of a qualitative meta-analysis, the authors extracted and synthesized the thematic findings from the eight studies, and their analysis resulted in five themes consistently found across studies. Patel et al. (2021) reported that friendships of female offenders helped to minimize the anxiety and low self-esteem build trust in others during the reintegration process. Moreover, consistent findings across studies documented that was that "social bonds" with friends "exert[ed] a helpful influence on reintegration outcomes, alleviating … stress" and provided to the female offenders "an effective means to cope" with post-release anxieties and concerns (Patel et al., 2021, p. 8).

Social Bonds With Spouse/Partner and Female Recidivism

There has been some examination of the effects of marital status and recidivism (Bell et al., 2019; Mastrorilli et al., 2016; Mueller et al., 2021). Much less empirical attention has been given to the qualities of the spouse/partner relationship and risk for recidivism among female offenders (Mannerfelt & Hakansson, 2018; McNeeley, 2021). This section of the chapter focuses on the studies examining marital status and the effects of spouse/partner support on recidivism rates among women offenders. Studies on the collective effects of family and/or peers and spouse/partner summarized and discussed more in detail later in the chapter.

Marital Status and Female Recidivism

Marital status and cohabitation with a partner and recidivism rates among female offenders has received some attention, with findings being equivocal across studies (Bell et al., 2019; Mastrorilli et al., 2016; Mueller et al., 2021; Olson et al., 2016). Olson et al. (2016) included marital status as a predictor of recidivism at 3.5 years' post-release in their retrospective study with 26,534 Illinois offenders, 3,014 (11.4%) of whom were female. Logistic regression findings showed that, while males who were married were significantly less likely to re-offend than were males who were not married ($p < .001$), marital status did not predict recidivism among female offenders (Olson et al., 2016). However, Olson et al. (2016) also examined the effects of domestic violence on recidivism, finding that female offenders who had a history of domestic violence were 31% more likely to reoffend than female without such a history.

Similar findings were reported in other studies (Bell et al., 2019; Mastrorilli et al., 2016; Mueller et al., 2021). Bell et al. (2019), in a study with over 37,000 offenders (17.3% female) found that being married predicted lower recidivism rates for male but not female offenders. Mastrorilli et al. (2016), in their study with 816 female offenders in Massachusetts, found no significant effects of marital status on reincarceration rates two years' post-release. Indeed, similar percentages of re-incarcerated and non-reincarcerated women were married, 72% and 71%, respectively (Mastrorilli et al., 2016). Mueller et al. (2021), in a study with 400 female offenders in Michigan, found no significant association between marital status and recidivism at 24 months' post-release. In consideration of the lack of significant findings reported by Bell et al. (2019), Mastrorilli et al. (2016), and Mueller et al. (2021), coupled with Olson et al.'s (2016) results linking domestic violence to recidivism, it may be that the status of being married is less important that the quality of the marriage regarding recidivism outcomes among women.

The duration of cohabitating with a partner may also place female offenders at risk for reoffending and rearrests (Marshall & Miller, 2020), although there is much less empirical documentation of cohabitation versus being married. Marshall and Miller (2020) explored the risk factors for recidivism in their study with 506 female sexual offenders. Findings from logistic regression analyses showed that cohabitating with a significant other for two or more years significantly predicted the women's likelihood of committing a new sexual offense (Marshall & Miller, 2020). When the literature on the effects of marital status on recidivism (Bell et al., 2019; Mastrorilli et al., 2016; Mueller et al., 2021; Olson et al., 2016) is considered as a whole, findings have suggested that

poor relationship quality and the duration of the women's relationships with a spouse/partner may place the offender at risk for recidivism.

Relationship with Spouse/Partner and Female Recidivism

There are a few studies that have examined characteristics of the spousal/partner relationship and their effects on recidivism among female offenders, with most studies focusing on the spouse's high-risk activities, including drug use and criminal behavior (Mannerfelt & Hakansson, 2018; McNeeley, 2021). Mannerfelt and Hakansson (2018) examined the effects of having a partner with a substance abuse problem and five-year recidivism rates, controlling for substance abuse and mental health history, in a sample of 822 female offenders and 6,263 male offenders in Sweden. The authors assessed differences in substance use and recidivism rates between female and male offenders and then conducted analyses separately by gender to determine the effects of spousal dug use on recidivism (Mannerfelt & Hakansson, 2018). Findings showed that 62% of female offenders recidivated within 5 years; moreover, having a partner with substance abuse was significantly predictive of recidivism at 5 years' post-release for female but not male offenders (Mannerfelt & Hakansson, 2018). Findings from Mannerfelt and Hakansson (2018) suggested that having a substance-abusing spouse placed women at risk for reoffending.

There is empirical evidence that co-offending with a spouse/partner increases the risk for recidivism for female but not male offenders, as noted in McNeeley's (2021) study with 200 males and 200 female non-violent offenders in Minnesota. Using data from 2014 to 2018, McNeeley (2021) examined differences between male and female

offenders on various demographic and criminal factors, followed by separate analyses examining predictors of recidivism at 52 months' post-release for the two offender groups. Findings showed that female offenders had significantly lower recidivism rates as compared to male offenders. However, female offenders were more likely than male offenders to have committed offenses with a spouse partner (McNeeley, 2021). Moreover, committing an offense with a spouse/partner was significantly predictive of recidivism for female but not male offenders (McNeeley, 2021). Indeed, a co-offense with a spouse/partner was one of only three predictors of recidivism for female offenders; the two other factors were older age and previous convictions (McNeeley, 2021). Findings from McNeeley (2021) emphasized the risks for women who engage in criminal activity with their spouse/partner.

A few studies have focused on the collective effects of spouse/partner support and support from family and/or peers on recidivism in female offender (Cobbina et al., 2012; Huebner & Pleggenkuhle, 2015; Van der Knaap, 2012). Findings from Cobbina et al. (2012) and van der Knaap (2012) noted the importance of positive bonds with a spouse/partner and lower rates of recidivism in female offenders. Findings from Huebner and Pleggenkuhle's (2015) study showed that partner support significantly predicted a lower likelihood of recidivism for women, and the strength of the relationship remained the same across all four time points (Huebner & Pleggenkuhle, 2015). These four studies are discussed in detail later in this chapter.

Collective Effects of Family, Peer, and/or Spouse/Partner Social Bonds on Recidivism

A substantial number of recidivism studies with women offenders have focused on least two of the predictors of social bonds with family, peers, and spouse/partner as predictors of recidivism. The analyses conducted in these studies included collective examinations of social bonds. As such, the following subsections are organized to discuss those recidivism studies that have examined the effects of women offenders' (a) social bonds with family and peers (Greiner et al., 2015; McKendy & Ricciardelli, 2019; Salinas-Saunders & Stacer, 2017; Van der Put, 2015; Vitopoulos et al., 2019; Walters, 2020); (b) social bonds with family and spouse/partner (Huebner & Pleggenkuhle, 2015; Steiner et al., 2020); and (c) social bonds with all three groups, family, peers, and spouse/partner (Clone & DeHart, 2014; Cobbina et al., 2012; van der Knaap et al., 2012).

Social Bonds With Family and Peers and Female Recidivism

A few studies have examined the effects of social bonds with family and peers on recidivism rates among female offenders. Greiner et al. (2015), in their longitudinal study with 497 Canadian female offenders, focused on the effects of positive social bonds with family and negative social bonds with criminal peers on recidivism, operationalized as the number of days from release to reconviction. The authors utilized the Community Inventory Scale (CIS), a structured evaluation tool, to assess the quality of social bonds with family and the degree of negative bonds with criminal associates (Greiner et al., 2015). The CIS also includes measures of risk related to lack of employment, presence of substance abuse, presence of community/neighborhood risk factors, lack of

personal/emotional resources, and presence of negative attitude (Greiner et al., 2015). Results from the Cox regression survival analyses showed that positive social bonds with family predicted more days to reconviction while negative bonds with criminal friends predicted fewer days to reconviction; indeed, criminal associates emerged as the strongest predictor of recidivism (Greiner et al., 2015).

Van der Put (2015) examined if protective social bonds to family and prosocial peers, as well as social bonds to school and a prosocial attitude, contributed to a reduced likelihood for recidivism risk in a sample of 438 adolescent females in the state of Washington. Van der Put (2015) examined pathways for two groups of offenders: females who committed a sexual offense (7% of total sample) and females who committed a violent non-sexual offense (93% of total sample). Van der Put (2015) did not examine recidivism per se, but instead assessed recidivism risk, using a recidivism risk assessment developed by the Washington state juvenile court. Van der Put (2015) conducted a series of point biserial correlations between the protective factors and recidivism, followed by Fishers' *z* tests to determine if the correlations were significantly different for the two female offender groups. The correlational findings showed that strong bonds to family and peers were both significantly related to a lower risk of recidivism for both sexual and violent nonsexual female offenders, with the effects more significant for sexual female offenders (Van der Put, 2015).

Salinas-Saunders and Stacer (2017) approached their examination of parent and peer effects on recidivism somewhat differently in their study with a national sample of 14,500 offenders, 20% of whom were women. The authors focused on two parent risk

variables of parents ever incarcerated and parent(s) who use drug use and one peer risk factor of friends who use drugs. Recidivism was operationalized as number of reincarcerations (Salinas-Saunders & Stacer, 2017). Because of the operationalization of recidivism as a count variable, Salinas-Saunders and Stacer (2017) conducted a series of negative binomial regressions, with analyses conducted separately by gender, and controlling for numerous general strain (e.g., history of physical/sexual abuse, homelessness), personal strain (e.g., mental health issue, drug use, prior suicide attempt), and criminal history (e.g., violent offense, property offence) variables. Results showed that the two parent risk factors and the one peer risk factor significantly predicted number of incarcerations, over and above the strain and criminal history variables (Salinas-Saunders & Stacer, 2017). Indeed, women who had parents who had been incarcerated were 23% more likely to have repeat incarcerations than women whose parents had not been incarcerated; moreover, women whose parent's used drugs were 14% more likely to be incarcerated than women whose parents did not use drugs (Salinas-Saunders & Stacer, 2017). In addition, women whose had had friends who used drugs were 18% more likely to be incarcerated than those whose friends did not use drugs (Salinas-Saunders & Stacer, 2017).

The recidivism-related risks of family conflict and association with criminal peers (as well as individual mental health and substance abuse problems) were the topics of McKendy and Ricciardelli's (2019) *ex post facto* study with 43 Canadian women offenders. Categorizing the women into two groups (i.e., $n = 23$ who were incarcerated within 3 years' post-release and $n = 23$ who were not), the authors conducted a series of

chi-square analyses to determine on which factors the two groups differed (McKendy & Ricciardelli, 2019). The reincarcerated women more significantly more likely to report high (as compared to low) high family conflict and to associate with criminal peers than were the women who were not reincarcerated (McKendy & Ricciardelli, 2019). Reincarcerated women were also more significantly likely to have mental health and substance abuse problems as compared to those who were not (McKendy & Ricciardelli, 2019).

Findings from the study by Walters (2020) suggest that maternal closeness may play more of a role than associations with high-risk peers on recidivism, defined as reengagement in delinquent behaviors, among juvenile offenders. The focus of Walters' (2020) study with 3,370 (1,759 boys, 1,611 girls) juvenile delinquents was to determine if maternal closeness and unstructured time with high-risk peers and maternal closeness were significantly associated with reengagement in delinquent behaviors. Walters (2020) conducted linear regression analyses separately by gender. Results showed that spending unstructured time with high-risk peers was significantly related to increases in delinquent behaviors in boys, while a higher degree of maternal closeness was significantly associated with decreases in delinquent behaviors in girls (Walters, 2020). Results from Walters' (2020) study suggest that maternal closeness more may be a pertinent protective factor for delinquent girls.

There are a few studies in which non-significant findings concerning social bonds with family and friends were reported; both studies were conducted with juvenile offenders (Barnes-Lee & Campbell, 2020; Vitopolous et al., 2019). Vitopoulos et al.

(2019) explored the effects of family and peer relationship difficulties and two-year recidivism rates, controlling for demographic, education, personality, and substance abuse factors, in a sample of 100 Canadian violent and nonviolent juvenile delinquents (50% female). Findings from a logistic regression analysis conducted using the data from the 50 females showed that neither family nor peer relationship difficulties were significantly associated with recidivism (results were also non-significant for male offenders). Moreover, in a study with 278 Michigan juvenile offenders, 93 of whom were female, Barnes-Lee and Campbell (2020) found that positive social bonds with family and peers did not significantly predict recidivism among female offenders. These non-significant findings may have occurred for various reasons. One, the sample sizes were small, $n = 50$ (Vitopolous et al., 2019) and $n = 93$ (Barnes-Lee & Campbell, 2020) respectively; as such, there may not have been sufficient power to detect significance. In addition, the studies focus on juvenile delinquents; results may have differed had the samples been adult offenders. There may have also been cultural and/or institutional factors at play that influenced the results.

Social Bonds With Family and Spouse/Partner and Female Recidivism

Other studies have examined the effects of social bonds with family and partner on recidivism (Huebner & Pleggenkuhle, 2015; Steiner et al., 2020). Steiner et al. (2020) focused on the effects of family and spouse/partner bonds on in-prison rates of violent rule infractions, indicative of risk for recidivism. The authors examined if perceived social bonds with family, a protective factor, and relationship codependence, a risk factor, were significantly associated with prevalence and incidence rates of violent rule

infractions among 711 Midwest female offenders during their prison tenure. Results from logistic regression models showed that a higher level of family support was significantly associated with a lower incidence rate of violent rule infractions, while a higher degree of relationship codependence was significantly associated with a higher prevalence rate of violent rule infractions (Steiner et al., 2020). Results from Steiner et al. (2020) suggest that poor social bonds with a partner and family members may contribute to in-prison violent behavior among female offenders.

Huebner and Pleggenkuhle (2015) examined the how support from family and partner as well as offender factors (e.g., age, race, education, conviction, and crime history) played in reducing recidivism in a sample of 466 female and 3,395 male parolees in Missouri. Logistic regressions were conducted by gender group and across recidivism status at one, two, three, and four years after release (Huebner & Pleggenkuhle, 2015). Results differed across genders and time points. Family support contributed to a significantly lower likelihood of recidivism for both men and women at all four time points; however, the effects were stronger for women, especially at the three- and four-year time points (Huebner & Pleggenkuhle, 2015). Partner support significantly predicted a lower likelihood of recidivism for women, and the strength of the relationship remained the same across all four timepoints (Huebner & Pleggenkuhle, 2015). While partner support significantly predicted a lower likelihood of recidivism for men at the one- and two-year time points, this significance went away at three and four years' post-release (Huebner & Pleggenkuhle, 2015). Findings from Huebner and Pleggenkuhle (2015)

suggest that family and partner support are especially beneficial in reducing recidivism in women offenders.

Social Bonds With Family, Peers, and Spouse/partner and Female Recidivism

Few studies have examined the collective effects of social bonds with family, peer, and spouse/partner on recidivism rates among female offenders, and those that have are dated, being published prior to 2015 (Cobbina et al., 2012; Clone & DeHart, 2014; van der Knaap et al., 2012). Cobbina et al. (2012) examined the effects of relational ties with family, peers, and spouse/partner on days until rearrests in a sample of 570 offenders, 169 (30%) who were female, paroled from one Midwestern prison. Relational ties variables, all of which were single items specific to the offender's relationship with his/her parents, intimate partner, and peers, were constructed from information from the Level of Service Inventory-Revised (LSI-R), a recidivism risk assessment tool that the parole officer and offender complete as part of a structured release interview (Cobbina et al., 2012). Recidivism rates, operationalized as the number of days until post-release arrest, showed that female offenders averaged 748 number of days (approximately two years) until they were rearrested, a higher number than the average of 620 days for men (Cobbina et al., 2012).

Cobbina et al. (2012) conducted a series of Cox proportional hazards regressions for the two gender groups, the purpose of which was to examine the predictive effects of relational ties to family, peers, and spouse/partner on days until post-release arrest, controlling for demographic (i.e., age, ethnicity) and arrest history (e.g., type and number) factors. Findings showed that having strong social ties to parents and an intimate

partner offered protective benefits against rearrests for women; however, relational ties to peers did not have a significant effect on recidivism (Cobbina et al., 2012). Opposite findings were reported for male offenders: only relational ties to peers significantly predicted fewer days until post-release arrest (Cobbina et al., 2012). The differing findings by gender group suggested that relational ties to family and spouse/partner offered more protective benefits against recidivism for women as compared to men.

The predictive effects of positive relationships with family, friends, and partner on both general recidivism and violent recidivism were the focus of van der Knaap et al.'s (2012) quantitative study with 400 male and female offenders in the Netherlands. The author operationalized recidivism in two ways: whether the offender was reconvicted within a year (general recidivism) and whether the offender was reconvicted on a violent offense within a year (violent recidivism) (van der Knaap et al., 2012). Correlational and logistic regression analyses, conducted separately for males and females, showed that positive relationships with family, friends, and an intimate partner were significantly predictive of non-reoffending status for both male and female offenders (van der Knaap et al., 2012). In contrast to the non-significant findings reported by Cobbina et al. (2012) concerning social ties with friends, positive peer relationships emerged in van der Knaap et al.'s (2012) analysis as the strongest predictor of non-reoffending status for female offenders.

The last study to explore the relationships with family, friends, and an intimate partner was a qualitative study conducted by Clone and DeHart (2014). The authors, acknowledging the gender-specific importance of social bonds to female offenders,

utilized a qualitative descriptive design to examine women offenders' descriptions of their sources of social support, how these sources aided in their transition into society and contributed to desistance against criminal activity. A content analysis of transcribed semi-structured interview data yielded a total of 123 codes, which the authors then categorized into type and sources of support categories (Clone & DeHart, 2014). The most common type of support was emotional, identified in 63% of the 123 codes, and the primary source of emotional support, found in 44% of the 123 codes, was from family members (Clone & DeHart, 2014). Participants also reported that family members provided instrumental and informational support from family members (Clone & DeHart, 2014). The content analysis also showed that 10% of the 123 codes referenced emotional support from an intimate partner, while an additional 11% of the 123 codes referenced emotional support from prosocial peers as being crucial to women offender's reentry success (Clone & DeHart, 2014). Clone and DeHart's (2014) qualitative findings revealed that emotional, instrumental, and informational social support from family, friends, and spouse/partner were critical to the women's post-release success.

Summary and Conclusion

The intent of this chapter was to summarize the pertinent theoretical and empirical literature concerning the influence of social bonds with family, peers, and spouse/partner on recidivism rates among female offenders. This study is informed by Hirschi's (1969) social bonds theory. The perspective taken by Hirschi (1969) was that criminality was inherent to all individuals; as such, it was important to examine the factors that prevented most people from committing crimes. The factors that prevented criminal behaviors were,

according to Hirschi (1969), relational-based and centered on prosocial values. The primary argument of the social bonds theory is that the stronger the ties a person has with others, that is, the more a person cares about others and feels that someone cares about him/her, the more the person values other's opinion and does not want them to disapprove of the behavior in which he/she engages (Hirschi, 1969; Laub & Costello, 2020). As such, he/she is more likely to adopt prosocial attitudes and behave in a prosocial manner (Hirschi, 1969; Laub & Costello, 2020). The underlying relational component of Hirschi's (1969) social bond/social control theory has greatly informed the gendered pathways to crime and recidivism literature (Farmer, 2019; Liu et al., 2020; Walters, 2020). In turn, the gendered pathways to recidivism literature has advanced understanding of social bonds and their effects on lower recidivism rates among female offenders (Liu et al., 2020; Zettler, 2020).

The literature on social bonds and their effects on women offender's recidivism rates is relatively limited, with few studies having been published between 2017 and 2021. The quality of social bonds and relationships with family has received the most empirical attention. Studies have confirmed that a higher level of family emotional and instrumental social support contributes to post-release success and decreased recidivism rates among female offenders (Bell et al., 2019; Kreis et al., 2014; Taylor, 2015; Walters, 2020). In contrast, the literature on the effects of marital status on recidivism has largely been insignificant (Bell et al., 2019; Mastrorilli et al., 2016; Mueller et al., 2021; Olson et al., 2016), although here is some evidence that poor relationship quality and the duration

of the women's relationships with a spouse/partner may place the offender at risk for recidivism (Marshall & Miller, 2020; Olson et al., 2016).

The studies on social bonds with peers has tended toward an antisocial perspective, and study findings suggest that criminal/antisocial peers impart numerous negative effects on both juvenile and adult female offenders (Bell et al., 2019; O'Hagan et al., 2018; Staton et al., 2019; Wilfong et al., 2020). Moreover, findings from the quantitative studies by Staton et al. (2019) and Wilfong et al. (2020) indicated that female offenders who associated with drug-using peers were at increased risk for recidivism as compared to those who did not associate with peers who used illicit drugs. Other studies have noted the benefits of social bonds with prosocial peers, with positive relationships reducing women's risk for recidivism (Cobbina et al., 2014; Patel et al., 2021). Cobbina et al.'s (2014) findings suggested that women offenders, especially those living in neighborhoods where there is more opportunity for criminal activity, understood the protective benefits of being around prosocial peers. In addition, qualitative work has provided rich and detailed information on the numerous friendship and peer challenges that female offenders face (Rivas et al., 2021). In Rivas et al.'s (2021) qualitative study, the women noted that their post-release success was dependent on their avoidance of antisocial peers and involvement with prosocial peers. Qualitative research findings reviewed by Patel et al. (2021) further showed that healthy and supportive relationships with prosocial friends helped to empowered women offenders during their reintegration into society, providing "an effective means to cope" with post-release anxieties and concerns (Patel et al., 2021, p. 8).

Studies examining the effects of social bonds with spouse/partner on recidivism are notably lacking in the literature. There is empirical evidence that co-offending with a spouse/partner increases the risk for recidivism for female but not male offenders, as noted in McNeeley's (2021) study. Furthermore, Cobbina et al. (2012) and van der Knaap (2012) noted the importance of positive bonds with a partner/spouse and lower rates of recidivism in female offenders, and Huebner and Pleggenkuhle's (2015) study showed that partner support significantly predicted a lower likelihood of recidivism for women. However, there has yet to be a comprehensive examination of the social bonds with family, peers, and partner/spouse as collective predictors of recidivism status among female offenders.

This study has significance to the existing empirical literature on recidivism and women offenders. As indicated in the studies reviewed in this chapter, the body of literature on relationship factors and their role on female recidivism is lacking (Liu et al., 2020; Zettler, 2020). Moreover, the scholarly work that does exist is quickly becoming obsolete, with many studies having been published in 2015 or earlier. This study will address the noted gap in the literature regarding the relationships between social bonds with family, prosocial peers, and spouse/partner and recidivism among women offenders (McKendy & Ricciardelli, 2019; Staton et al., 2019; Steiner et al., 2020; Taylor, 2015; Walters, 2020). The purpose of Chapter 2 was to provide evidence of the gap in the empirical literature by providing a comprehensive and cohesive review of the published scholarly work on gendered pathways to recidivism that has examined the effects of social bonds with family, peers, and spouse/partner on recidivism in female offenders.

Chapter 3: Research Method

Aim of Study

Scholars have called for an increased empirical understanding of the gendered pathways to recidivism (Steiner et al., 2020; Walters, 2020), with some arguing that strong social ties with family and prosocial peers are more pertinent influences of female offenders' recidivism than they are of male offenders (McKendy & Ricciardelli, 2019). However, most studies examining social ties and recidivism have been conducted with men (McKendy & Ricciardelli, 2019; Taylor, 2015). The problem addressed in this study was that few studies with women offenders have taken a strengths-based perspective to understand whether social bonds with family, prosocial peers, and spouses/partners help to reduce recidivism among women offenders (Steiner et al., 2020; Taylor, 2015; Walters, 2020).

This study aimed to address the gap in the empirical literature that examined the relationship between positive social ties and attachments and recidivism among female offenders. The purpose of this study, for which I utilized an archival data set, was to examine whether positive social bonds with caring and supportive family, prosocial peers, and spouses/partners are significantly associated with non-reoffender status in a sample of female offenders. There were three predictor variables: positive social bonds with family, prosocial peers, and spouse/partner. The criterion variable was recidivism, operationalized in this study as reoffending within 3 years after release from a penal institution. Descriptive information was provided on participants' age, probation/parole status, and ethnicity.

Research Design and Rationale

This was a quantitative longitudinal correlational study that examined whether stronger social bonds with family, prosocial peers, and spouse/partner, using Wave 1 (2011) data, significantly predict recidivism at three years' post-release, using Wave 3 (2014) data. This study had three research questions, in this section, the study research questions are presented, followed by a discussion of the rationale for the use of a quantitative longitudinal correlational design.

RQ1. Is there a significant relationship between stronger social bonds with family and non-reoffender status in a sample of female offenders?

***H*1$_o$**. There is not a significant relationship between stronger social bonds with family and non-reoffender status in a sample of female offenders.

***H*1$_a$**. There is a significant relationship between stronger social bonds with family and non-reoffender status in a sample of female offenders.

RQ2. Is there a significant relationship between stronger social bonds with prosocial peers and non-reoffender status in a sample of female offenders?

***H*2$_o$**. There is not a significant relationship between stronger social bonds with prosocial peers and non-reoffender status in a sample of female offenders.

***H*2$_a$**. There is a significant relationship between stronger social bonds with prosocial peers and non-reoffender status in a sample of female offenders.

RQ3. Is there a significant relationship between stronger social bonds with a spouse/partner and non-reoffender status in a sample of female offenders?

***H*1$_o$.** There is not a significant relationship between stronger social bonds with spouse/partner and non-reoffender status in a sample of female offenders.

***H*1$_a$.** There is a significant relationship between stronger social bonds with spouse/partner and non-reoffender status in a sample of female offenders.

The longitudinal correlational design was most fitting for this study. The key feature of a longitudinal study is its emphasis on examining the direction and strength of relationships between two or more variables using data collected at two or more timepoints (Menard, 2007; Schaie, 1983). In this study, I examined whether perceived positive social bonds with family, prosocial peers, and spouse/partner using data collected at Wave 1 (2011) significantly predicted female offenders' non-reoffending status 3 years later using data collected at Wave 3 (2014). In a longitudinal study that has a correlation element, the independent variable is termed the *predictor* variable, whereas the dependent variable is called the *criterion* variable (Menard, 2007; Schaie, 1983). Variables used in longitudinal correlational research are typically continuous, measured as interval or ratio variables; however, the predictor and/or criterion variable can be nominal or categorical (Menard, 2007). In this study, the three predictor variables (i.e., social bonds with family, prosocial peers, and spouse/partner) were interval, whereas the criterion variable (i.e., non-reoffender status 3 years' post-release) was nominal, based on whether the female offender was convicted of a new offense since Wave 1 data collection. Studies having a nominal criterion variable require the use of nonparametric

correlational analyses and/or logistic regression (Field, 2013). In this study, I conducted one binomial logistic regression to test the study hypotheses.

Methodology

Population

In this study, the general population was female offenders under probation and parole in America. In 2019, 1.3 million female offenders were under supervision of the American justice system (The Sentencing Project. 2019). Because I used data on female offenders in Michigan collected by Morash et al. (2015), the target population was female offenders who had been released from a penal institution and were under community supervision for a minimum of approximately 3 months in Michigan during the years 2011–2014.

Sampling and Sampling Procedures

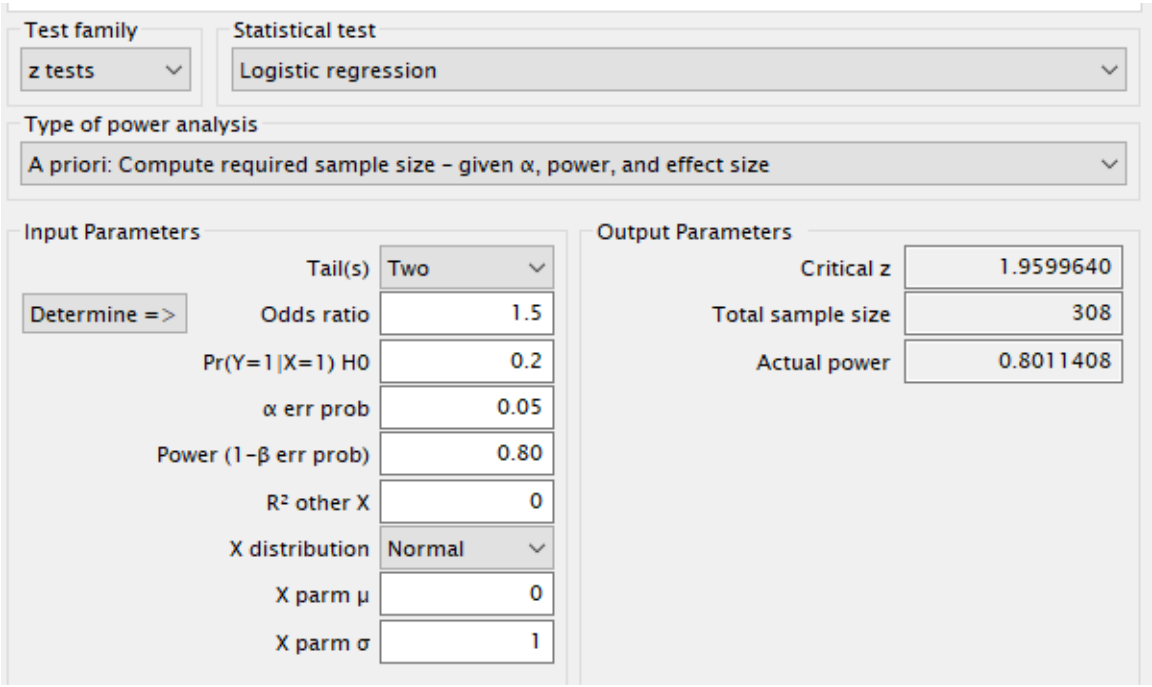
I utilized Wave 1 (2011) and Wave 3 (2014) archival data on Michigan female offenders on probation or parole collected by Morash et al. (2015) during the years 2011–2014. Morash et al. used convenience sampling to recruit female offenders who met the criteria of being under community supervision (i.e., probation and parole) in the state of Michigan during the years 2011–2014. Convenience sampling is a type of nonprobability(non-random) sampling where recruitment efforts focus on individuals who meet study criteria and are accessible, available, and willing to participate in the study (Etikan et al., 2016). For Morash et al.'s study, the women offenders must have (a) been released from a penal institution in Michigan for at least three months, (b) had a history of "substance involvement;" and (c) had committed a felony (p. 419). Discussions

concerning recruitment, participation, and data collection are discussed in the next section.

An a priori power analysis using G*Power (Faul et al., 2007) was conducted for a binomial logistic regression to determine the necessary sample size needed to achieve power of .80. In the power analysis, the odds ratio was set to *OR* = 1.5, a small effect size (Kelly & Preacher, 2012), significance was set to $p < .05$ (two-tailed), and power was set to .80. Results from the power analysis (see Figure 2) indicated that a sample size of 308 was necessary to achieve power of .80. The final sample size of 325 exceeded this number, indicating that the sample size was large enough to detect power > .80.

Figure 2

*Power Analysis Results From G*Power (Faul et al., 2007)*



Procedures for Recruitment, Participation, and Data Collection

Because I used archival data from Morash et al. (2015), there was a need to discuss the recruitment and data collection procedures conducted by Morash et al. as well as the data retrieval process used in this study. The following subsections present information on the respective procedures.

Morash et al.'s (2015) Participant Recruitment and Data Collection Procedures

Morash et al. (2015) initiated their recruitment process by contacting 73 (96% female) Michigan POs who had specialized caseloads of female offenders. Once the POs agreed to be involved in the study, a principal investigator met with each of them to discuss the process of recruiting the offenders (Morash et al., 2015). The POs in turn assisted in the recruitment process by giving a flyer that outlined the purpose, structure, and activities of the study to their supervisees and then asking the women if they (the POs) could share their contact information with the researchers (Morash et al., 2015). Once the POs received agreement from the women, the POs then scheduled a meeting between the offender and researcher, where the researcher discussed the purpose and goals of the study and the data collection activities in which the offender would be involved (Morash et al., 2015). The researchers obtained informed consent from the women during this initial meeting, then scheduled a one-on-one meeting to collect the first set of data (Morash et al., 2015).

The researchers conducted one-on-one interviews for each data collection period, meeting the women at a mutually agreed-upon location, such as a restaurant or public library (Morash et al., 2015). During these interviews, the researchers read each

questionnaire item and asked the participants to provide a response to the question. The researchers kept the contact information of each of the women to contact them for interviews to collect subsequent data (Morash et al., 2015). Wave 1 data were collected between 3 to 6 months after the women had been released. Wave 2 data were collected between months 18 and 24 months (2 years), and Wave 3 data were collected between months 30 and 36 months (3 years). Women who provided informed consent were given $30 for their participation in the first (Wave 1) data collection and $50 for Wave 2 and Wave 3 data collection (Morash et al., 2015).

Study Data Collection Procedures

The data sets used in this study from *Probation/Parole Officer Interactions with Women Offenders, Michigan, 2011-2014* (Morash et al., 2015) were retrieved from the Inter-university Consortium for Political and Social Research (ICPSR) website (https://www.icpsr.umich.edu/web/ICPSR/studies/37074), which provides data sets for research use for university faculty and researchers. No formal process was required to retrieve and utilize the data sets. I downloaded the data sets directly into an SPSS 27.0 data file from the ICPSR site. Data were gathered from 402 women at Wave 1, 398 women at Wave 2, and 379 women at Wave 3. This study utilized data from the final sample of 379 female offenders in Michigan, which was reduced to 325 after the removal of cases with missing date and multivariate outliers.

Instrumentation and Operationalization of Constructs

Morash et al. (2015) utilized the WRNA (van Voorhis et al., 2010), considered the “gold standard” needs assessment inventory for female offenders (Boppre, 2019;

Geraghty & Woodhams, 2015; Kreis et al., 2014; Parker, 2019). The Cronbach's alpha for the WRNA instrument is .77, denoting sound inter-item reliability (van Voorhis et al., 2010). WRNA inventory scores have been significantly correlated with prison misconduct and antisocial behavior, indicative of criterion-related concurrent validity, and recidivism, suggestive of criterion-related predictive validity (Geraghty & Woodhams, 2015; Kreis et al., 2014; van Voorhis et al., 2010). As it is an assessment inventory, the WRNA comprised numerous scales that measure the female offender's criminal history, traumatic and adverse childhood experiences, mental health and substance use concerns, and various family, peer, and partner relationship social support characteristics (van Voorhis et al., 2010). Certain scales from the WRNA were used to measure the study variables.

Predictor Variable 1: Social Bonds with Family

The predictor variable of social bonds with family was measured using Family Support scale of the WRNA, comprised of seven items each having dichotomous coding (i.e., 0 = no, 1 = yes; van Voorhis et al., 2010). The scale items measure whether the female offender has contact and communication with her parents and family, receives emotional assistance and encouragement from family members, has family members without substance abuse problems, and has family members who are accepting of the offender (van Voorhis et al., 2010). The Family Support composite scale score is derived by summing the seven dichotomous-coded items. Scores on this scale can range from 0 to 7, with a higher score denoting higher levels of family support. Family support emerged as a distinct factor in exploratory factor analysis conducted by van Voorhis et al. (2010),

providing evidence of its construct validity. Scale scores have been significantly associated with prison misconduct, anger/hostility, antisocial attitudes, and recidivism, providing evidence of its criterion-related validity (Geraghty & Woodhams, 2015; Kreis et al., 2014; van Voorhis et al., 2010). The Family Support scale has sound inter-item reliability, with KR-20s ranging from .65 to .77 (Geraghty & Woodhams, 2015; Kreis et al., 2014).

Predictor Variable 2: Social Bonds with Prosocial Peers

The predictor variable of social bonds with prosocial peers was measured using Antisocial Friends scale of the WRNA, which has eight items with dichotomous coding (i.e., 0 = no, 1 = yes; van Voorhis et al., 2010). The Antisocial Friends scale measures whether the female offender has friends who are incarcerated, involved in criminal behaviors, are on probation or parole, and/or are active substance users; there are also items inquiring as to whether the offender has prosocial and supportive friends (van Voorhis et al., 2010). The Antisocial Friends composite scale score is derived by first reverse-coding the positive peer items and then summing the item scores. Scale scores can range from 0 to 8, with a higher score denoting *higher* levels of social bonds with *antisocial* friends. The Antisocial Friends scale was a distinct factor in an exploratory factor analysis conducted by van Voorhis et al., (2010), providing support for its construct validity. Scale scores have been significantly associated with prison misconduct, anger/hostility, and recidivism, providing evidence of the criterion-related validity of the Antisocial Friends scale (Geraghty & Woodhams, 2015; Kreis et al., 2014; van Voorhis et al., 2010). The inter-item reliability of the Antisocial Friends scale is

good, with KR-20s ranging in the low to high .70s (Geraghty & Woodhams, 2015; Kreis et al., 2014; van Voorhis et al., 2010).

Predictor Variable 3: Social Bonds with Spouse/Partner

The predictor variable of social bonds with spouse/partner was assessed using the five-item Social Network Support scale of the WRNA (van Voorhis et al., 2010). The Social Network Support scale is structured so that it can be answered numerous times to assess the quality of relationships with identified individuals, including friends, family members, and a spouse or partner (including a lesbian partner). Morash et al.'s (2015) data set included responses specific to the offender's partner, male or female. The Social Network Support scale has five dichotomous items, scored where 0 = no, 1 = yes, which assess whether the female offender's significant other talks with her when she is upset, cares about her, socializes with the offender, and offers the offender assistance with finances and work/daily activities (Morash et al., 2015). Item scores are summed to derive the composite scale score; scores can range from 0 to 5, and higher scores indicate higher levels of positive social bonds with a spouse/partner. The Social Network Support scale has excellent inter-item reliability, with KR-20s in the .90s (Morash et al., 2015, 2017). The Social Network Support scale has sound criterion-related concurrent validity, with higher scores found to be significantly associated increased relationship satisfaction and lower levels of psychological distress (Morash et al., 2015, 2017).

Criterion Variable 2: Non-Reoffender Status (Recidivism)

This study had one criterion variable, which was a measure of recidivism. One item from Morash et al.'s (2015) Wave 3 data was used to measure non-reoffender status

3 years' post-release. This item assessed whether the offender had been convicted of a new offense since Wave 1 data collection (approximately 3 years' post-release), coded as 0 = no and 1 = yes.

Descriptive Variable 1: Age

The researcher included descriptive information concerning the participant's age, gathered at Wave 1. Age was an interval variable and, based on Morash et al.'s (2015) Wave 1 data, the age could range from 18 to 60 years.

Descriptive Variable 2: Probation or Parole Status

The researcher included information on the number of participants who were on either probation or parole, or both. Probation or parole status was a nominal variable coded where 1 = probation, 2 = parole, and 3 = both probation and parole.

Descriptive Variable 3: Ethnicity

The last descriptive variable concerned the ethnicity of the participants. Ethnicity was a nominal variable coded where 1 = White only, 2 = Black only, 3 = Multiracial, inclusive of Hispanic, and 4 = other.

Data Analysis Plan

I utilized archival data from Morash et al. (2015), downloaded from the ICPSR website (https://www.icpsr.umich.edu/web/ICPSR/studies/37074) into an SPSS 27.0 data file. SPSS 27.0 was used for all statistical analyses. The data analysis plan followed a sequential process, with analyses conducted in steps.

Data Cleaning and Organization

The first step in the data analysis plan involved data cleaning and organization. I merged Wave 1 and Wave 3 data sets into one larger data set by matching case ID numbers. I then deleted the variables not used in the study from the new study dataset. I reviewed the data set for missing data using the missing value analysis functions in SPSS 26.0 and if needed, by running a Littles' MCAR test to determine if cases were missing not at random data (MNAR), missing at random (MAR), or missing completely at random (MCAR). Cases that have MNAR data were removed from the data set. Per recommendations by Field (2013), the missing data for any cases with 25% or less MAR or MCAR data were replaced using mean imputation methods. The testing for the assumption of no significant outliers occurred at the data cleaning and organization stage should any cases identified as outliers need to be removed from the data set. Finally, I computed Cronbach's alphas and created the composite scales for the WRNA instruments. For clarity in the interpretation of binomial logistic regression findings, the WRNA Antisocial Friends scale items were reversed-scored and the items summed to create the scale, which assessed social bonds with prosocial peers.

Computation of Descriptive Statistics

I calculated variable descriptive statistics. Descriptive information on participants' age, probation/parole status, and ethnicity were included in findings to provide a comprehensive picture of the sample. I computed and reported the mean, median, standard deviation, and minimum and maximum scores for the predictor variables and the descriptive variable of age. I also calculated and reported the

frequencies and percentages for the variable categories regarding the participants' ethnicity, probation/parole status, and reoffender statuas (recidivism) 3 years post-release.

Hypothesis Testing: Binomial Logistic Regression

The statistical test used in this study for hypothesis testing was one binomial logistic regression. The purpose of logistic regression is to assess the degree to which one or more predictor variables (that can be nominal or continuous) predict the odds or probability of being assigned to one of two categories that comprise the criterion variable (Field, 2013; Tabachnick & Fidell, 2013). By conducting one binomial regression, I was able to examine the collective predictive relationship of all three predictor variables concerning social bonds with family, prosocial peers, and spouse/partner on the criterion variable of non-reoffender status (coded as yes or no). The variable requirements for binomial logistic regression were established (i.e., there are three interval predictor variables and one dichotomous criterion variable).

Testing of Assumptions for Binomial Logistic Regression

Logistic regression has three key statistical assumptions of the data. The first assumption is that the interval predictor variables have no significant outliers (Field, 2013; Tabachnick & Fidell, 2013). Mahalanobis distances were computed to test for the assumption of lack of significant outliers. A Mahalanobis distance value, calculated for each case (participant), measures how far each cases' scores are from the average distribution of scores (Field, 2013; Tabachnick & Fidell, 2013). The critical value for the Mahalanobis distance is determined by a chi-square tabulation with the degrees of freedom corresponding to the number of predictors. For this study, the Mahalanobis

distance critical value is χ^2 (df = 3) > 16.27, p < .001 (Field, 2013). The sample size of the study was large enough so that any outlier cases (participants), as denoted by a Mahalanobis distance value greater than 16.27, could be removed from the data set without loss of power. The researcher identified 7 multivariate outliers and removed these cases from the data set.

The second assumption for logistic regression is of lack of multicollinearity, or exceedingly high correlations, among predictor variables (Field, 2013; Tabachnick & Fidell, 2013). The lack of multicollinearity assumption was tested by computing variance inflation factors (VIFs). In SPSS 27.0, VIFs are computed by conducting a multiple linear regression, with the predictor variables entered in the regression model as predictors of a randomly selected interval or ratio variable (Field, 2013; Tabachnick & Fidell, 2013). The assumption of lack of multicollinearity is met if the VIFs < 4.00 (Tabachnick & Fidell, 2013). The lack of multicollinearity assumption was met in this study.

The last statistical assumption for logistic regression is linearity between an interval/ratio predictor variable and the logit of the criterion variable (Field, 2013; Tabachnick & Fidell, 2013). The Box Tidwell procedure, a two-step process, was conducted to test for linearity (Field, 2013). First, an interaction variable was computed for each predictor variable by multiplying the interval predictor variable by its log. Second, the interaction variables were entered as predictors of the criterion variable in a logistic regression. The assumption of linearity is met if logistic regression results are nonsignificant (i.e., p > .05) for each predictor-criterion variable relationship (Field,

2013). The results from the Box-Tidwell regression were not significant, and as such, the assumption of linearity was met.

Binomial Logistic Regression Results

Results from logistic regression pertain to both model effects and each predictor-criterion variable relationship (Field, 2013; Tabachnick & Fidell, 2013). Both types of results were reported in this study. The overall model effect (i.e., the degree to which all predictors in the model are related to the criterion variable; Field, 2013) was determined by the binomial logistic regression model chi-square (χ^2), with significance set at $p < .05$. The chi-square (χ^2) model statistic result augmented by the results concerning the model Nagelkerke R^2, an indicator of effect size (Field, 2013; Tabachnick & Fidell, 2013) and the model classification table, which denoted the percentage of cases correctly classified into the non-reoffender/reoffender categories. The researcher also reported findings for each predictor-criterion relationship. Significance of each predictor-criterion variable relationship was determined by a significant ($p < .05$) Wald statistic, and the associated odds ratio (using a 95% confidence interval), per recommendations (Field, 2013; Tabachnick & Fidell, 2013).

Threats to Validity

Quantitative research must show evidence of its internal, external, and statistical conclusion validity. Internal validity in its truest sense concerns the degree to which a study shows a cause-and-effect relationship between variables (Gray, 2013). Internal validity for correlational research is defined within the context of the degree to which the relationships being tested are not influenced by other factors (Schaie, 1983). A study

should also have external validity, where study findings are generalizable to other samples, settings, and times (Gray, 2013), and statistical conclusion validity, where the findings are accurate and "justified … as far as statistical issues are concerned" (García-Pérez, 2012, p. 1). Internal, external, and statistical conclusion validity all have associated threats, aspects and factors of the study that can introduce bias and reduce the trustworthiness of study findings (Gray, 2013).

Threats to Internal Validity

The internal validity threats for a longitudinal study are the same as those found in pre-test/post-test experimental and quasi-experimental research; they are a result of "repeated [measurements of] the same individuals over time" (Schaie, 1983, p. 5). The internal threat validity threats most pertinent to longitudinal studies are testing, regression to the mean, and instrumentation (Menard, 2007; Schaie, 1983). The testing threat concerns changes in questionnaire scores due familiarity with questions resulting from repeated testing (Slack & Draugalis, 2001). Morash et al. (2015) collected data across 3 years, interviewing female offenders once a year. The long period of time between data collection periods minimized the threat of testing (Morash et al., 2015). Moreover, this study utilized Wave 1 data (for the predictor variables), which removed any threat due to testing. The use of Wave 1 data for the predictor variables and objective and verifiable recidivism data for the criterion variable at Wave 3 also eliminated the threats of regression to the mean (i.e., extreme scores moving closer to the mean in repeated testing; Schaie) and instrumentation (i.e., changes in scores due to use of different instruments or interviewer; Schaie, 1983).

Longitudinal studies also have internal validity threats of self-selection bias and attrition (Menard, 2007; Schaie, 1983). The self-selection bias is a result of selective study participation, where the participants qualitatively differ on critical demographic, personality, and social factors compared to the non-participants (Gray, 2013). Morash et al. (2015) utilized convenience sampling, where the female offenders were recruited via their POs, who then connected them to the researchers. As such, the female offenders in Morash et al.'s (2015) study may have differed from those who chose not to participate: they may have had a more trusting relationship with their PO and/or had fewer recidivism risk factors. Attrition, or loss of participants over time (Schaie, 1983), was not an issue for Morash et al. (2015). The Wave 3 data set included data from a total of 379 participants, 94% of the original sample of 402 female offenders.

An internal validity threat specific to correlational research is causal ambiguity (Asamoah, 2014). Causal ambiguity occurs when the researcher cannot determine temporal precedence, that is, show that the predictor variables preceded the criterion variable (Asamoah, 2014). Temporal precedence could be determined in this study, as Wave 1 data were used to predict a Wave 3 outcome. Causal ambiguity was not an internal validity threat for this study.

Threats to External Validity

External validity threats are factors of the study that reduce the ability to generalize study findings to other samples, settings, or times. The external validity threat of *threat of population validity* refers to the inability to apply study findings to the general population as well as other samples (Gray, 2013). The findings of this study were

not generalizable to the general population of female offenders on probation or parole in America or samples of such women. An additional external validity threat is the *threat of ecological validity*, or the inability to generalize findings to studies that are conducted in different settings and under different conditions (Gray, 2013). Morash et al. (2015) collected data through interviews conducted with the female offenders; as such, findings from this study may have differed from those found in studies that utilized different data collection methods. A related external validity threat is the *threat of temporal validity*, or the degree to which findings can be generalized to other time points (Gray, 2013). I utilized data collected in 2011 and 2014; as such, findings from this study may have differed from studies using more recent data.

Threats to Statistical Conclusion Validity

Threats to statistical conclusion validity are factors of the study that reduce the degree of accuracy "in revealing a link" (or lack thereof) between the predictor and criterion variables "as far as statistical issues are concerned" (Garcia-Pérez, 2012, p. 2). One threat to statistical conclusion validity is low statistical power (García-Pérez, 2012). Low power was not a concern in this study. A power analysis using G*Power (Faul et al., 2007) showed that a sample size of 308 was needed to achieve power of .80, and the actual sample size of 325 exceeded that number. The additional threats to statistical conclusion validity are violations of data assumptions and poor reliability of study instruments (Garcia-Perez, 2012). The testing of binomial logistic regression assumptions and subsequent adjustment of the data (if needed) helped to eliminate the threat of violations of statistical assumptions. The use of reliable instruments/measures, validated

by Morash et al. (2015), helped to eliminate the threat of poor instrument reliability. Computation and reporting of the KR-20s for the predictor variables provided evidence of instrument inter-item reliability.

Ethical Procedures

There were certain ethical procedures that are not applicable to this study, due to the use of archival data from Morash et al. (2015). Informed consent procedures were already conducted by Morash et al., precluding the need to obtain informed consent. Due to the use of an archival data set, I had no access to identifying information as to who was recruited, ensuring participant anonymity and confidentiality. Moreover, there were no variables in the data sets that could be used to identify participants. However, ethical procedures concerning the use and storage of archival data were followed in this study. I first sought approval from the Walden University Instituitonal Review Board (IRB) to conduct this study. I downloaded the study data sets, saving them on in an SPSS 27.0 data set, which was saved on an encrypted and password-protected jump-drive. I will keep the jump-drive and any related study materials (e.g., codebooks, SPSS output) in my home office for 5 years after successfully defending the dissertation. After 5 years, I will dismantle the jump-drive and will shred paper materials.

Summary

After a presentation of the study the research questions were restated, and a rationale for using a quantitative longitudinal correlational design was iterated. The study methodology was then reviewed. Included in the methodology was information on the general population, which was female offenders under probation and parole in America,

and the target population, which was female offenders under probation and parole between 2011 of 2014 who participated in Morash et al.'s (2015) study. Morash et al. (2015) utilized convenience sampling to recruit study participants. While Morash et al.'s archival data set contained data from 379 participants (at Wave 3), the study utilized data from 325 participants after removing cases with missing data and outliers. Power analysis results determined that the sample size of $n = 325$ exceeded the necessary sample size (i.e., $n = 308$) needed to achieve power of .80.

The chapter included information on the recruitment and data collection procedures utilized by Morash et al. (2015) and the data retrieval process used in this study. As noted in the section on instrumentation, the social bonds predictor variables were measured using the Family Support scale, the Antisocial Friends scale, and the Social Network Support scale on the WRNA (van Voorhis et al., 2010), collected at Wave 1. The recidivism criterion variable was assessed using a single item on non-reoffender status collected at Wave 3. The data analysis plan provided an outline of the data analysis steps and included a review of binomial logistic regression, the statistic used for hypothesis testing. The final sections pertained to the internal, external, and statistical conclusion validity of the study and study ethical procedures.

Chapter 4: Results

Background and Research Questions

The number of women incarcerated at state and federal penal institutions increased by over 750%, growing from 26,378 in 1980 to 225,060 in 2017 (The Sentencing Project, 2020), and as of 2019, the incarceration rate for women exceeded that of men by 50% (National Resource Center on Justice Involved Women, 2018). However, incarcerated women comprise only 25% of the approximately 1.2 million women involved in criminal justice system; the remaining 75% of justice-involved women are under probation or parole (United States Sentencing Commission, 2020). Women under community supervision face numerous "gender-specific barriers" that make recidivism a likely outcome (Liu et al., 2020, p. 4). Indeed, over 60% of female offenders are rearrested or convicted for a new offense within 3 years of their release from a penal institution (United States Sentencing Commission, 2020).

According to the gendered pathways to crime and recidivism literature, "relationships are women's most prevalent criminogenic need," and the qualities of the relationships "directly affect the likelihood that [the woman] will reoffend" (Farmer, 2019, p. 7). A woman's identity and esteem are largely influenced by her relationships (Farmer, 2019). As such, supportive and trusting relationships with family, peers, and spouse/partner are critical to the female offender's post-release success (Zettler, 2019). The limited body of gendered pathways to recidivism literature has shown that social bonds with family, prosocial peers, and a spouse/partner act as protective factors against recidivism for women (Bell et al., 2019; Houser & McCord, 2017; Mueller et al., 2021;

Walters, 2020). However, prior to this study, researchers had not yet examined the collective effects of social bonds with family, prosocial peers, and spouse/partner on recidivism rates among female offenders.

The purpose of this study, for which I used Morash et al.'s (2015) archival data sets of female offenders in Michigan, was to examine whether stronger social bonds with family, prosocial peers, and spouse/partner, using Wave 1 (2011) data, significantly predicted recidivism at 3 years' post-release, using Wave 3 (2014) data. This study had the following three research questions and corresponding hypotheses:

RQ1. Is there a significant relationship between stronger social bonds with family and non-reoffender status in a sample of female offenders?

***H*1$_o$**. There is not a significant relationship between stronger social bonds with family and non-reoffender status in a sample of female offenders.

***H*1$_a$**. There is a significant relationship between stronger social bonds with family and non-reoffender status in a sample of female offenders.

RQ2. Is there a significant relationship between stronger social bonds with prosocial peers and non-reoffender status in a sample of female offenders?

***H*2$_o$**. There is not a significant relationship between stronger social bonds with prosocial peers and non-reoffender status in a sample of female offenders.

***H*2$_a$**. There is a significant relationship between stronger social bonds with prosocial peers and non-reoffender status in a sample of female offenders.

RQ3. Is there a significant relationship between stronger social bonds with a spouse/partner and non-reoffender status in a sample of female offenders?

***H*3$_o$**. There is not a significant relationship between stronger social bonds with spouse/partner and non-reoffender status in a sample of female offenders.

***H*3$_a$**. There is a significant relationship between stronger social bonds with spouse/partner and non-reoffender status in a sample of female offenders.

Data Collection

For this study, I used Wave 1 (2011) to Wave 3 (2014) archival data sets from Morash et al.'s (2015) *Probation/Parole Officer Interactions with Women Offenders, Michigan, 2011-2014* study. The data sets were downloaded from the Open ICPSR website (https://www.openicpsr.umich.edu). ICPSR is a repository of archival data sets for social science research, and permission to use the data sets is automatically granted by the original researchers. I downloaded the data sets from https://www.openicpsr.org/openicpsr/search/studies?start=0&ARCHIVE=openicpsr&sort=score%20desc%2CDATEUPDATED%20desc&rows=25&q=Morash and saved them as SPSS 27.0 data files on an encrypted and password-protected USB drive. I utilized the SPSS 27.0 software to conduct all data analyses. The data collection plan and analyses presented in Chapter 3 were followed as stated; no data collection or analysis changes were required.

Data Cleaning and Organization

Prior to conducting statistical tests, I cleaned and organized the study data. After merging the three (i.e., Wave 1-3) data sets into one SPSS 27.0 data file, I reviewed the merged data set and confirmed that data were transferred properly. The data set was then scrutinized for entry errors. I found two errors for the recidivism criterion variable where a 7 was entered instead of 1; these two errors were corrected. No other entry errors for study variables were found.

The study predictor variables of social bonds with family, peers, and partner/spouse were assessed using specific subscales from the WRNA. I calculated the Cronbach's alpha, an indicator of scale inter-item reliability, for each predictor variable. A Cronbach's alpha of .70 or higher is considered sound inter-item reliability (Field, 2013). The Cronbach's alphas for the three WRNA scales, presented in Table 2, were in the mid to high .90s, denoting excellent inter-item reliability. I then computed the WRNA composite subscale variables by summing the subscale items.

Table 2

Cronbach's Alphas: Wave 1 WRNA Subscales of Family Support, Antisocial Friends Support (Reverse-Scored), and Spouse/Partner Support (n = 325)

Variable	Cronbach's α
WRNA Family Support Subscale	.91
WRNA Antisocial Friends Support Subscale (Reverse Scored)	.94
WRNA Spouse/Partner Support Subscale	.96

The data cleaning and organization step ended with the identification and removal of cases with missing data and/or multivariate outlier cases for the merged data set that initially contained data from 379 participants. I first examined the data set for missing data. As 42 cases (i.e., participants) did not have a spouse or partner, they did not answer the spouse/partner support items. The 42 cases were removed from the data set, reducing the sample down to $n = 337$. Five cases were found to have missing recidivism data. The dichotomous coding of the recidivism variable precluded the ability to impute missing data; as such, the five cases missing recidivism responses were removed from the data set. The data set was reduced to $n = 332$ participants.

The next activity entailed the computation of Mahalanobis distance values for each case. A Mahalanobis distance value is a multivariate outlier indicator, measuring how far each cases' variable scores are from the average distribution of scores (Field, 2013; Tabachnick & Fidell, 2013). A case is considered a multivariate outlier if the Mahalanobis distance value exceeds the critical value (Field, 2013), which in this study, was χ^2 ($df = 3$) > 16.27, $p < .001$. I calculated the Mahalanobis distance values for each case by conducting a multiple linear regression, with the three social bonds variables entered as predictors of one randomly selected ratio variable (i.e., number of persons in the participants' social network at Wave 1). Seven cases had Mahalanobis distance values that exceeded the critical value of 16.27 ($p < .001$) and were removed from the data set. The final sample size was $n = 325$, 85.7% of the initial sample. A post hoc power analysis determined that the sample size of 325, with the odds ratio set to 1.5 and the

significance set to $p < .05$, resulted in power of .89. Table 3 summarizes the removal of cases and the final sample size.

Table 3

Removal of Cases

Reason for removal	*n* (%)	Sample size
		379
Missing 100% of spouse/partner support data	42	
		337
Missing recidivism data	5	
		332
Multivariate outlier	7	
		325
Total Cases Removed	54	
Final Sample Size		325

Descriptive Statistics: Participants

The next step in the data analysis plan was the computation of the descriptive statistics for the participants' probation or parole status, ethnicity, and age. Table 4 provides the frequencies and percentages for the participants' probation or parole status and ethnicity, both of which were nominal variables. Over three quarters (n = 257, 76.3%) of participants were on probation, 74 (22.8%) were on parole, and three (0.9%) participants were on both probation and parole. The sample was largely White (n = 151, 46.5%). Over a third (n = 109, 33.5%) of participants were Black, 60 (18.5%) were Hispanic, and five (1.5%) participants identified as 'other.'

Table 4

Descriptive Statistics: Participants' Probation or Parole Status and Ethnicity (n = 325)

Variable	*n*	%
Probation or Parole Status		
Probation	248	76.3
Parole	74	22.8
Both	3	0.9
Ethnicity		
White	151	46.5
Black	109	33.5
Hispanic	60	18.5
Other	5	1.5

I then calculated descriptive statistics, namely the mean, median, standard deviation, and minimum and maximum scores for the descriptive interval variable of age. The descriptive findings for participants' age are presented in Table 5. Participants had an average age of 33.40 years (*Md* = 32.00, *SD* = 10.54). Participants ranged in age from 18 to 60 years.

Table 5

Descriptive Statistics: Participants' Age (n = 325)

Variable	*M*	*Md*	*SD*	*Min*	*Max*
Age	33.35	31.00	10.51	18	60

Results

The Results section includes information on the descriptive findings for the predictor and criterion variables, the testing of assumptions for binomial logistic regression, and results of the binomial logistic regression conducted for hypothesis testing. The descriptive statistics for the three predictor variables and the recidivism criterion variable are first presented, followed by the results from the testing of assumptions for binomial logistic regression. The last section presents the results from the binomial logistic regression, the statistic used for hypothesis testing, with elucidation of the findings with respect to the three research questions and associated hypotheses.

Descriptive Statistics: Predictor and Criterion Variables

The three WRNA subscales used in this study were (a) the WRNA Family Support subscale, used to measure positive social bonds with family; (b) the WRNA Antisocial Friends subscale, a measure of social bonds with prosocial peers, which was reverse coded so that *higher* score denotes *higher* levels of social bonds with prosocial peers; and (c) the WRNA Social Support subscale specific to high social bonds with the participants' spouse or partner. The one criterion variable, recidivism, was measured as a new arrest or conviction three years' post-release. For ease of interpretation of the binomial logistic regression findings, the recidivism variable was coded where 0 = did recidivate 3 years' post-release and 1 = did not recidivate 3-year post-release.

Predictor Variables: Wave 1 Social Bonds With Family, Prosocial Peers, and Spouse/Partner

Table 6 provides the descriptive statistics for the three WRNA scales at Wave 1 (i.e., 2011). The Wave 1 WRNA Family Support scale had a mean of 2.46 (*Md* = 3.00, *SD* = 1.16, Min = 0.00, Max = 4.00), signifying average-to-high levels of positive social bonds with family among participants. The Wave 1 WRNA Antisocial Friends scale, used to measure the second predictor variable, was computed so that a *higher* score indicated *lower* levels of social bonds with prosocial peers (Morash et al., 2015). The Wave 1 WRNA Antisocial Friends scale had a mean of 3.23 (*Md* = 3.00, *SD* = 1.88, Min = 0.00, Max = 7.00), which indicated that participants had average levels of social bonds with prosocial peers. The Wave 1 WRNA Spouse/Partner Support scale had a mean of 2.82 (*Md* = 3.00, *SD* = 1.54, Min = 0.00, Max = 5.00); the participants had average levels of positive spouse/partner social bonds.

Table 6

Descriptive Statistics: Wave 1 WRNA Scales of Family Support, Antisocial Friends Support (Reverse-Scored), and Spouse/Partner Support (n = 325)

Variable	*M*	*Md*	*SD*	Min	Max
WRNA Family Support	2.46	3.00	1.16	0.00	4.00
WRNA Antisocial Friends Support (Reverse Scored)	3.23	3.00	1.88	0.00	7.00
WRNA Spouse/Partner Support	2.82	3.00	1.54	0.00	5.00

Criterion Variable: Non-Reoffender Status 3 Years Post-Release

Descriptive statistics (i.e., frequencies and percentages) were computed for the criterion variable of non-reoffender status, measured as not having a new arrest and/or conviction at Wave 3 (i.e., 2014, three years' post-release). The non-reoffender status variable was coded as 1 = No, no new arrest and/or conviction since Wave 1 and 0 = Yes, new arrest and/or conviction since Wave 1. As noted in Table 7, the majority (n = 262, 80.6%) of participants did not reoffend; however, almost one fifth (n = 63, 19.4%) did. The 19.4% recidivism percentage was nonetheless low, significantly lower than the average 3-year recidivism percentage of 60% as reported by Kajstura (2019), $\chi^2(1) = 57.55$, $p < .001$. However, it should be noted that Morash et al. (2015) had an original sample of 402 participants, which was reduced to 379 at Wave 3. Moreover, the data excluded participants who did not have a spouse/partner, had missing recidivism data, or were identified as multivariate outliers. It was likely some of the participants excluded from data analysis may have recidivated three years' post-release.

Table 7

*Descriptive Statistics: Non-Reoffender Status 3 Years Post-Release (*n *= 325)*

Variable	*n*	%
Recidivism		
No, no new arrest and/or conviction since Wave 1 (1)	262	80.6
Yes, arrest and/or conviction since Wave 1 (0)	63	19.4

Testing of Assumptions for Binomial Logistic Regression

The statistical test for hypothesis testing was one binomial logistic regression, which is used to assess the degree to which one or more categorical or continuous variables predict the odds or probability of being assigned to one of two categories that comprise the criterion variable (Field, 2013; Tabachnick & Fidell, 2013). Binomial logistic regression has three key data assumptions: (a) no significant outliers for interval/ratio variables; (b) lack of multicollinearity among predictor variables; and (c) linearity between the predictor variable and the log of the criterion variable (Hosmer et al., 2013). The results from the statistics computed for assumption testing are presented in the following sections.

Assumption 1: No Significant Outliers

The first data assumption for binomial logistic regression is no significant outliers (Hosmer et al., 2013). The multivariate outliers were addressed at the data cleaning and organization stage. Mahalanobis distance values were calculated for each participant by running a multiple linear regression with the three WRNA social bonds variables entered as predictors of one randomly selected ratio variable (i.e., number of persons in the participants' social network at Wave 1). The Mahalanobis distance critical value for three predictors is χ^2 (3) = 16.27, $p < .001$ (Field, 2013), and seven cases exceeded that value. The multivariate outlier cases were removed from the data set.

After the removal of the multivariate outlier cases, the WRNA variables were then examined for univariate outliers by computing $z_{skewness}$ values (i.e., variable skewness divided by the skewness standard error; Kim, 2013). The $z_{skewness}$ critical value for

samples exceeding 300 is +/-3.29, $p < .001$ (Kim, 2013). Table 8 presents the $z_{skewness}$ values for the three WRNA predictor variables. The WRNA Family Support subscale had a $z_{skewness}$ value of -2.55. The WRNA Antisocial Friends subscale (reverse-scored) had a $z_{skewness}$ value of 0.44, and the WRNA Spouse/Partner Support subscale had a $z_{skewness}$ value of -2.24. The assumption of no significant outliers was met.

Table 8

Testing for Univariate Outliers: Zskewness Values (n = 325)

Variable	$Z_{skewness}$
WRNA Family Support	-2.55
WRNA Antisocial Friends Support (Reverse Scored)	0.44
WRNA Spouse/Partner Support	-2.24

Assumption 2: Lack of Multicollinearity

The second assumption for binomial logistic regression is of lack of multicollinearity, or exceedingly high correlations among predictor variables (Field, 2013; Tabachnick & Fidell, 2013). Lack of multicollinearity is determined by the predictor variables' variance inflation factors (VIFs); the assumption of lack of multicollinearity is met if the VIFs < 4.00 (Tabachnick & Fidell, 2013). Using SPSS 28.0, VIFs were computed by conducting a multiple linear regression, with the WRNA predictor variables entered in the regression model as predictors of a randomly selected ratio variable, which was drug refusal self-efficacy at Wave 1. Table 9 provides information on the VIFs. The WRNA Family Support subscale had a VIF of 1.09. The WRNA Antisocial Friends subscale (reverse scored) had a VIF of 1.02, and the WRNA

Spouse/Partner Support subscale had a VIF of 1.08. As all variable VIFs were less than 4.00, the assumption of lack of multicollinearity was met.

Table 9

*Testing for Lack of Multicollinearity: Variance Inflation Factors (*n = *325)*

Variable	Variance inflation factors
WRNA Family Support	1.09
WRNA Antisocial Friends Support (Reverse Scored)	1.02
WRNA Spouse/Partner Support	1.08

Assumption 3: Linearity

The last statistical assumption for logistic regression is linearity between an interval/ratio predictor variable and the logit of the criterion variable (Field, 2013; Tabachnick & Fidell, 2013). The Box Tidwell procedure was conducted to test for linearity (Field, 2013). The Box-Tidwell test requires the computation of interaction variables followed a logistic regression (Field, 2013). The assumption of linearity is met if logistic regression results are nonsignificant (i.e., $p > .05$) for each predictor interaction variable-criterion variable relationship. The predictor interaction variables were computed by calculating the logs for each predictor variable and then multiplying the respective predictor variable by its log. I then conducted a logistic regression, entering the three predictor variables followed by the three interaction variables into the regression model, with non-reoffender status as the criterion variable. The overall logistic regression model results are presented in Appendix A. The family support interaction term was not

significantly predictive of non-reoffender status, Wald χ^2 (df = 1) = 0.12, p = .729. Neither the peer support interaction term nor the spouse/partner interaction term was significantly predictive of non-reoffender status, Wald χ^2 (df = 1) = 1.15, p = .285, and Wald χ^2 (df = 1) = 1.16, p = .282, respectively. The assumption of linearity was met.

Hypothesis Testing: Binomial Logistic Regression Findings

The three research questions were addressed by conducting one binomial logistic regression. The overall regression model was significant, χ^2 (df = 3) = 157.82, p < .001. The Nagelkerke R^2 was .61, a large effect size, and the classification table showed that 90.2% of the cases were correctly classified into the respective recidivism category. Table 10 provides the binomial logistic regression findings for each predictor-criterion relationship, all of which were significant. The findings are discussed in relation to the three research questions in the following sections.

Table 10

Binomial Logistic Regression: WRNA Family Support, Antisocial Friends Support

(Reverse Scored), and Spouse/Partner Support Predicting Non-Reoffender Status (n = 325)

	B	*SE B*	Wald χ^2	*p*	*OR*	*OR* 95% CI	
						Lower	Upper
WRNA Family Support	1.11	.21	29.55	<.001	3.04	2.04	4.54
WRNA Antisocial Friends Support (Reverse Scored)	0.30	.11	7.01	.008	1.35	1.08	1.68
WRNA Spouse/Partner Support	1.09	.16	48.04	<.001	3.00	2.19	4.06

Note. CI = confidence interval.

Research Question 1

The first research question was, "Is there a significant relationship between stronger social bonds with family and non-reoffender status in a sample of female offenders?" The binomial logistic regression results were significant, Wald χ^2 (df = 1) = 29.55, p < .001: stronger social bonds with family significantly predicted non-reoffender status at Wave 3. The results showed that stronger family social bonds were associated with 3.04 increased odds (95% CI: 2.04-4.54) of not reoffending three years' post-release. Due to the significant findings, the null hypothesis for the first research question, there is not a significant relationship between stronger social bonds with family and non-reoffender status in a sample of female offenders, failed to be retained.

Research Question 2

The second research question was, "Is there a significant relationship between stronger social bonds with prosocial peers and non-reoffender status in a sample of

female offenders?" The binomial logistic regression results were significant, Wald χ^2 (*df* = 1) = 7.01, *p* = .008, denoting a significant association between stronger prosocial peer bonds and non-reoffender status at Wave 3. The findings indicated that stronger social bonds with prosocial peers were predictive of a 35% increased probability (95% CI: 1.08-1.68) of not reoffending 3 years' post-release. Due to the significant findings, the null hypothesis for the second research question, there is not a significant relationship between stronger social bonds with prosocial peers and non-reoffender status in a sample of female offenders, failed to be retained.

Research Question 3

The third research question was, "Is there a significant relationship between stronger social bonds with a spouse/partner and non-reoffender status in a sample of female offenders?" The binomial logistic regression results were significant, Wald χ^2 (*df* = 1) = 48.04, *p* < .001, indicative of a significant relationship between stronger bonds with a spouse/partner and non-reoffender status at Wave 3. Results showed that participants' stronger bonds with their spouse/partner were significantly related to 3.00 increased odds (95% CI: 2.19-4.06) of not reoffending three years' post-release. As the results were significant, the null hypothesis for the third research question, there is not a significant relationship between stronger social bonds with a spouse/partner and non-reoffender status in a sample of female offenders, failed to be retained.

Summary

The purpose of this study, which utilized Morash et al.'s (2015) archival data sets of female offenders in Michigan, was to examine if stronger social bonds with family,

prosocial peers, and spouse/partner, using Wave 1 (2011) data, significantly predicted non-reoffender status three years' post-release, using Wave 3 (2014) data. The study sample was comprised of 325 female offenders on probation or parole in Michigan during the years of 2011-2014. Most of the participants (76.3%) were on probation, and the sample was mostly White (46.5%) and Black (33.5%). The participants were on average 33.40 years of age.

The study had three research questions that concerned the relationship between family, peer, and spouse/partner bonds at Wave 1 and non-reoffender status at Wave 3. Three WRNA subscales were used to assess the three predictor variables. Descriptive findings showed that participants had average-to-high levels of family support, average levels of prosocial peer support, and average levels of spouse/partner support. The majority of participants (80.6%) did not reoffend 3 years' post-release; almost one-fifth (19.4%) did. The 19.4% recidivism percentage was nonetheless low, significantly lower than the average three -year recidivism percentage of 60% reported by Kajstura (2019). The data met the assumptions for binomial logistic regression, the statistic conducted for hypothesis testing.

Binomial logistic regression findings showed that stronger family, peer, and spouse/partner bonds were all significantly predictive of non-reoffender status. Stronger family social bonds were associated with 3.04 increased odds of not reoffending 3 years' post-release, and stronger social bonds with prosocial peers were predictive of a 35% increased probability of not reoffending three years' post-release. Finally, participants' stronger bonds with their spouse/partner were significantly related to 3.00 increased odds

of not reoffending three years' post-release. Due to the significant findings, the associated null hypotheses for the three research questions failed to be retained.

The findings reported in this chapter are discussed in detail in the last chapter of the dissertation. In Chapter 5, I provide interpretations of the study findings in relation to prior research and the guiding theory, Hirschi's (1969) social bonds/social control theory. After discussing the limitations of the study, I present recommendations and implications for future research and practice. Chapter 5 concludes with a summary.

Chapter 5: Discussion, Conclusions, and Recommendations

Of the one million criminal-justice-involved women under community supervision (probation or parole), almost half will recidivate within one year (Kajstura, 2019; The Sentencing Project, 2020). As a woman's sense of self, identity, and esteem are largely influenced by her relationships (Farmer, 2019), supportive and trusting relationships with her family, prosocial peers, and spouse/partner are critical to her post-release success (Zettler, 2019). The limited body of literature on gendered pathways to recidivism has documented that family support is a primary protective factor for successful reintegration for women (Wesely & Dewey, 2018; Zettler, 2019) and that women offenders, especially those living in neighborhoods where there is more opportunity for criminal activity (Jones et al., 2019), understand the protective benefits of being around prosocial peers (Mueller et al., 2021; Walters, 2020) and having a supportive spouse/partner (Bell et al., 2019; Houser & McCord, 2017). However, prior to this study, researchers had not yet examined the collective effects of social bonds with family, prosocial peers, and spouse/partner on recidivism rates among female offenders.

The purpose of this study, for which I used Morash et al.'s (2015) archival data sets of female offenders in Michigan, was to examine whether positive social bonds with caring and supportive family, prosocial peers, and spouses/partners were significantly associated with non-reoffender status in a sample of female offenders. There were three interval predictor variables: positive social bonds with family, prosocial peers, and spouse/partner. The criterion variable was recidivism, operationalized in this study as reoffending within a three3-year period (yes or no), a dichotomous variable. This study

addressed the noted gap in the literature regarding the relationships between social bonds with family, prosocial peers, and spouse/partner and recidivism among women offenders.

Summary of Findings

In this study, I posed three research questions, which examined whether there were significant relationships between positive social bonds with family, prosocial peers, and spouse/partner bonds and recidivism. To address the research questions, I used Wave 1 (2011) and Wave 3 (2014) archival data sets from Morash et al.'s (2015) *Probation/Parole Officer Interactions with Women Offenders, Michigan, 2011-2014* study. The predictor variables of family, peer, and spouse/partner social bonds were assessed using scales on the WRNA, which were part of Morash et al.'s Wave 1 (2011) data set. Recidivism was operationalized as not offender status three years after release from a penal institution (Wave 3, 2014).

This study utilized data from 325 women (mean age of 33.35 years) who were under probation (76.3%), parole (22.9%), or both (0.9%). The sample was largely White (46.5%); over a third (33.5%) of participants were Black, 18.5% were Hispanic, and 1.5% participants identified as "other." Descriptive findings showed that participants had average-to-high levels of family support, average levels of prosocial peer support, and average levels of spouse/partner support. Most participants (80.6%) did not reoffend three years' post-release; almost one fifth (19.4%) did. The 19.4% recidivism percentage was nonetheless low, significantly lower than the average 3-year recidivism percentage of 60% reported by Kajstura (2019).

To address the three research questions, I conducted one binomial logistic regression, with the three social bonds variables entered as predictors of non-reoffender status. The data met the assumptions for binomial logistic regression, the statistic conducted for hypothesis testing. Results from the binomial logistic regression findings were significant, indicating that higher levels of family, prosocial peer, and spouse/partner social bonds significantly predicted non-reoffender status. Stronger family social bonds were associated with 3.04 increased odds of not reoffending three years' post-release, and stronger social bonds with prosocial peers were predictive of a 35% increased odds of not reoffending three years' post-release. Finally, participants' stronger bonds with their spouse/partner were significantly related to 3.00 increased odds of not reoffending 3 years' post-release. Due to the significant findings, the associated null hypotheses for the three research questions failed to be retained

Interpretations of the Findings

In response to the increasing number of women involved in the American criminal justice system, scholars have increasingly examined gendered pathways to crime and recidivism (Gehring, 2018; Farmer, 2019; Liu et al., 2020; Wesely & Dewey, 2018). The gendered pathways literature in criminal justice is informed by relational cultural theories that emphasize the importance of positive social bonds and connections with others, as relationships define women's sense of identity, esteem, and empowerment (Liu et al., 2020). Much of the literature on gendered pathways to recidivism has been informed by Hirschi's (1969) social bonds/social control theory, which posits that presence of prosocial values, people, and institutions act as controls against deviant and

criminal behavior. The results of this study are discussed in relation to previous empirical work and Hirschi's (1969) social bonds/social control theory.

Interpretation of Findings: Prior Empirical Research

There has been some examination of the effects of a female offenders' social bonds with family, prosocial peers, and spouse/partner on their recidivism. Of the three social bonds, the female offenders' social bonds with family have received most of the empirical attention in the recidivism literature on women offenders (Kreis et al., 2014, 2016). I found that the higher social bonds with family were significantly predictive of not recidivating, and align with those reported in previous studies (Barrick et al., 2014; Liu & Vosher, 2021; Taylor, 2015). There is consistent evidence from quantitative studies by Barrick et al. (2014), Liu and Visher (2021), and Taylor (2015) that family social support imparts positive benefits on women offenders reentering the community.

There has been less empirical examination on the relationship between prosocial peer bonds and recidivism; indeed, most studies have focused on the effects of antisocial and/or criminal peers on recidivism rates among female offenders (both juveniles and adults), with findings providing evidence that associations with criminal/antisocial peers impart negative consequences (Bell et al., 2019; O'Hagan et al., 2018; Rivera et al., 2020; Staton et al., 2019). However, there have been a few studies that, like this study, have found that social bonds with prosocial peers impart positive benefits on female offenders (Cobbina et al., 2014; Patel et al., 2021). For example, Patel et al. (2021) reported that social bonds with friends exerted "a helpful influence on reintegration outcomes, alleviating … stress" among female offenders under probation or parole (p. 8).

Although there has been some examination of the effects of marital status and recidivism (Bell et al., 2019; Mastrorilli et al., 2016; Mueller et al., 2021), little empirical attention has been given to social bonds with spouse/partner and risk for recidivism among female offenders (Mannerfelt & Hakansson, 2018; McNeeley, 2021). Moreover, the studies that have been done have focused on the recidivism consequences of female offenders' maladaptive relationships with a spouse/partner (Mannerfelt & Hakansson, 2018; McNeeley, 2021). Studies have shown that female offenders who had a partner with a substance abuse problem or who engaged in criminal behavior were significantly more likely to recidivate (Cobbina et al., 2021; Mannerfelt & Hakansson, 2018; McNeeley, 2021). However, the study focusing on positive social bonds with a spouse/partner have documented findings like those found in this study. Steiner et al. (2020) reported significant links between positive social bonds with a spouse partner and lower rates of post-release rule infractions while Huebner and Pleggenkuhle (2015) found that that partner support significantly predicted a lower likelihood of recidivism for women offenders.

Interpretation of Findings: Guiding Theory

Hirschi's (1969) social bonds/social control theory guided this study. In developing his social bonds/social control theory, Hirschi countered the prevailing criminological theories of the time that posited that "criminal behavior requires … the creation of criminal motivation" (p. 128). The perspective taken by Hirschi centered not on reasons why people commit crimes, but instead why they did not. If criminality was inherent to all individuals, what was it that prevented most people from committing

crimes? According to Hirschi, it was the presence of prosocial values, people, and institutions, which acted as controls against deviant and criminal behavior. Hirschi argued that criminal behavior is less likely to occur if an individual has (a) healthy and adaptive attachments to others; (b) a sense of commitment to engage in prosocial behaviors; (c) a strong ethical belief system; and (d) involving oneself in prosocial behavior. The social bond/social control theory posits that the four social bonds dimensions coalesce to influence a person's prosocial cognitions, attitudes, and behaviors, resulting in reduced tendencies to engage in criminal behavior (Hirschi, 1969). In summary, Hirschi posited that the stronger the social bonds a person has with others, the more the person values others' opinion and the more likely the person is to adopt prosocial attitudes and behave in a prosocial manner. The findings from this study provided theoretical support for Hirschi's social bonds/social control theory: positive social bonds with family, prosocial peers, and spouse/partner contributed to a lower likelihood of recidivism.

Limitations

As with all empirical work, this study had some limitations, or "imposed restrictions" of a study that are outside the researcher's control (Theofanidis & Fountouki, 2018, p. 157). Limitations can limit the generalizability, or external validity, of a quantitative study (Leedy & Ormrod, 2015). This study had some limitations. The study utilized Morash et al.'s (2015) archival data sets specific to Michigan female offenders on probation and parole between 2011 and 2014. As such, study findings cannot be generalized to Michigan female offenders under probation or parole between

the years of 2015 and 2022; findings can also not be generalized any other American female offenders under probation or parole regardless of year. I utilized a longitudinal correlational design, which is a non-experimental design, therefore the results cannot be causal. That is, it could not be said that higher levels of family, prosocial peer, and spouse/partner social bonds caused lower rates of recidivism, only that the predictor and criterion variables were correlated with one another. The study predictor variables were assessed by the WRNA instruments utilized by Morash et al., and the criterion variable was specific to recidivism 3 years' post-release. As such, study findings may differ from other studies where social bonds and/or recidivism are operationalized in a different manner.

Recommendations

There has been substantial growth in the empirical literature examining gendered pathways to recidivism (Gehring, 2018; Farmer, 2019; Liu et al., 2020; Wesely & Dewey, 2018), and this study contributed to the gendered pathways literature. There are, however, gaps in the gendered pathways literature, and the findings from this study can be used to inform future research. In consideration that women of color are more likely to face imprisonment as compared to White women (The Sentencing Project, 2020), there is a need to examine if the relationships between family, prosocial peer, and spouse/partner social bonds and recidivism differ for women of various ethnicities. Studies that examine social bonds-recidivism with other groups of women (e.g., with and without mental health issues or substance abuse; offense level) would add to the literature. There is also a need for longitudinal studies that examine the effects of social bonds on recidivism at

various time points (e.g., six months, one year, two years, three years), as such studies could help to identify the time period in which women under probation and parole are at most risk for recidivism. Finally, this study focused on social bonds with family, prosocial peers, and spouse/partner; it would be beneficial to examine if other social bonds sources (e.g., church community, probation or parole officer) help to reduce recidivism among women offenders.

Implications

The findings from this study offer numerous implications for positive social change. Findings from this study, which showed that family, prosocial peers, and spouse/partner social bonds reduced recidivism among the participants, can inform numerous types of criminal justice initiatives. There is a need for gender-responsive programs that focus on the unique needs of female offenders (Farmer, 2019). Findings can inform the development of in-prison programs that focus on the improving the women's relational awareness and coping skills, so that they may become more aware of and can cope with maladaptive relationships upon release. Study results suggest that the women may benefit from in-prison initiatives that involve frequent offender and family, peers, and spouse/partner interactions and comprehensive visits so that those relationship ties are sustained over the women's sentence. The study findings indicate a need for re-entry programs, including those that link the women to supportive communities and institutions to ensure that they have adequate emotional and tangible (e.g., housing, employment) support; and provide family, prosocial peers, and spouse/partners information and training that can help the women offender adjust to reintegration into

society. Finally, study findings suggest that women offenders would benefit from community-based programs that help them adapt after release.

Conclusion

The number of women on probation or parole has increased from 520,000 in 1990 to over 1 million in 2016 (The Sentencing Project, 2020), and women under community supervision comprise 75% of the women involved in the American correctional system (The Sentencing Project, 2020). Moreover, more than one third of women reoffend within the first year after release, which is indicative of the struggles experienced by women offenders as they re-enter society and restart their lives (McKendy & Ricciardelli, 2019). As noted in the gendered pathways to recidivism literature (Farmer, 2019; Liu et al., 2020), it is important to understand the reasons why women offender recidivate and to identify sources of support that may help reduce the risk for re-offending. Results in this study suggest that women offender would benefit from having and maintaining strong social ties with family, prosocial peers, as they may reduce the offenders' risk for re-offending, it is hoped that this study will prompt the development of initiatives that ensure women offenders sustain healthy, trusting relationships and successfully reintegrate into society.

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Appendix: SPSS Output

Probation or Parole

		Frequency	Percent
Valid	Probation	248	76.3
	Parole	74	22.8
	Both	3	.9
	Total	325	100.0

Ethnicity

		Frequency	Percent
Valid	White only	151	46.5
	Black only	109	33.5
	Hispanic only	60	18.5
	Other	5	1.5
	Total	325	100.0

Age

N	Valid	325
	Missing	0
Mean		33.35
Median		31.00
Std. Deviation		10.511
Minimum		18
Maximum		60

Descriptive Statistics: Study Variables

		WRNA Family Support Scale	WRNA Prosocial Peers	WRNA Support from Spouse/Partner Scale
N	Valid	325	325	325
	Missing	0	0	0
Mean		2.4615	3.3231	2.8215
Median		3.0000	3.0000	3.0000
Std. Deviation		1.15840	1.87666	1.53724
Minimum		.00	.00	.00
Maximum		4.00	7.00	5.00

Reoffender Status

		Frequency	Percent
Valid	Did recidivate	63	19.4
	Did NOT recidivate	262	80.6
	Total	325	100.0

Variance Inflation Factors

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	1.382	.061		22.511	<.001		
	WRNA Family Support Scale	-.039	.018	-.121	-2.145	.033	.918	1.089
	WRNA Prosocial Peers	.044	.011	.225	4.130	<.001	.984	1.016
	WRNA Support from Spouse/Partner Scale	.012	.013	.052	.922	.357	.929	1.076

a. Dependent Variable: MSelfEffWRNA_2013

Box-Tidwell Regression Test

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	WRNA Family Support Scale	-.899	.696	1.669	1	.196	.407
	WRNA Prosocial Peers	.546	.805	.460	1	.498	1.727
	WRNA Support from Spouse/Partner Scale	-1.580	.485	10.622	1	.001	.206
	Int_Family_Support	-.363	1.047	.120	1	.729	.696
	Int_Peer_Support	.888	.830	1.145	1	.285	2.430
	Int_Spouse_Support	.760	.707	1.157	1	.282	2.139
	Constant	-.619	4.798	.017	1	.897	.538

a. Variable(s) entered on step 1: WRNA Family Support Scale, WRNA Prosocial Peers , WRNA Support from Spouse/Partner Scale, Int_Family_Support, Int_Peer_Support, Int_Spouse_Support.

Binomial Logistic Regression

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	325	100.0
	Missing Cases	0	.0
	Total	325	100.0
Unselected Cases		0	.0
Total		325	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
Did recidivate	0
Did NOT recidivate	1

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	157.821	3	<.001
	Block	157.821	3	<.001
	Model	157.821	3	<.001

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	161.818[a]	.385	.614

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	11.015	8	.201

Classification Table[a]

			Predicted Recidivism Status		
	Observed		Did recidivate	Did NOT recidivate	Percentage Correct
Step 1	Recidivism Status	Did recidivate	43	20	68.3
		Did NOT recidivate	12	250	95.4
	Overall Percentage				90.2

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B) Lower	Upper
Step 1[a]	WRNA Family Support Scale	1.112	.205	29.553	1	<.001	3.040	2.036	4.540
	WRNA Prosocial Peers	.297	.112	7.009	1	.008	1.345	1.080	1.675
	WRNA Support from Spouse/Partner Scale	1.092	.158	48.042	1	<.001	2.979	2.188	4.057
	Constant	-4.096	.677	36.586	1	<.001	.017		

a. Variable(s) entered on step 1: WRNA Family Support Scale, WRNA Prosocial Peers , WRNA Support from Spouse/Partner Scale.