



Published in final edited form as:

J Fam Psychol. 2019 June ; 33(4): 453–464. doi:10.1037/fam0000520.

Behind Bars but Connected to Family: Evidence for the Benefits of Family Contact During Incarceration

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Abstract

Incarceration separates individuals from their families and communities, strictly limiting and controlling contact with the outside world. Despite these barriers, those who maintain contact with their families during incarceration tend to function more adaptively post-release. Within a longitudinal framework, the current study examines mechanisms (i.e., family connectedness, post-release planning) by which contact with family during incarceration may impact post-release functioning (i.e., recidivism, substance misuse, mental illness, community functioning), considering differences between type of contact (visits, phone calls, letters) and whether it occurred in a jail or prison setting. Participants included 507 adults incarcerated in a local jail ($M_{age} = 32$ years, $SD = 10$ years; 70% male; 44.3% Black, 36.4% White; 59.5% parents). Structural equation modeling results demonstrated having more frequent contact with family during incarceration predicts increases in family connectedness, which in turn predicts better mental health during the first year post-release. Although not related to frequency of contact, making plans for post-release predicted adaptive community functioning during the first year post-release. There were no differences in the overall model based on type of contact or incarceration in a jail versus prison setting. These findings suggest maintaining contact with family during incarceration can facilitate more psychologically healthy adjustment during the stressful process of re-entering society. Furthermore, incarcerated individuals should be encouraged to make plans for post-release while still incarcerated either independently or in collaboration with family.

Keywords

community adjustment; family separation; incarceration; mental health

Incarceration separates individuals from their families and communities, strictly controlling, monitoring, and limiting contact with the outside world. Research demonstrates predominately beneficial effects of family contact during incarceration, but the existing body of evidence is small, lacks consistency in operational definitions of contact and outcomes, lacks exploration of explanatory mechanisms, and relies predominately on single sex and

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These results have not been previously disseminated in any form.

prison samples. Within a longitudinal framework, the current study examines mechanisms by which family contact during incarceration impacts post-release functioning, considering differences between type of contact and correctional setting.

Contact with Family during Incarceration

Research suggests maintaining family ties during incarceration facilitates positive post-release functioning. Individuals who have family contact during incarceration are less likely to recidivate (Bales & Mears, 2008; Barrick, Lattimore, & Visher, 2014; De Claire & Dixon, 2015; Duwe & Clark, 2013; Mears, Cochran, Siennick, & Bales, 2012), more likely to have and secure opportunities for post-release employment (Liu et al., 2016; Visher, Bakken, & Gunter, 2013), less likely to be depressed (De Claire & Dixon, 2015), and more likely to be involved with their children post-release, which is related to less depression (Visher, 2013) and substance use (Visher et al., 2013). But these beneficial effects are not universal. Some evidence suggests differential effects for different forms of contact (e.g., visits, phone call, letter) and contexts (e.g, jail, prison); the nature of the contact may be qualitatively different and impacted by different barriers, resulting in differential effects on psychological and behavioral outcomes.

Visitation.

Most research has focused on in-person visits (De Claire & Dixon, 2015) and suggests a strong relationship between visitation and positive post-release outcomes. Of note, in a study of 7,000 individuals incarcerated in state prison for at least 12 months, receiving visits from a significant other, relative, or friend significantly reduced the odds of recidivism within the first two years of release; conversely, receiving more visits from one's children predicted an increased risk of recidivism during the first two years post-release (Bales & Mears, 2008). The odds of recidivism were 30.7% lower for those visited at least once during the year before release compared to those not visited, and increased frequency of visitation reduced the odds of recidivism (Bales & Mears, 2008).

Visitation also protects against attenuation of social ties and increases the likelihood of having post-release employment opportunities. In a study of 414 males incarcerated in state prison, those who received more frequent visits and visits by more people perceived less weakening in their bonds with family and friends during incarceration; those who received more visits by children and other family were more likely to report having a post-release employment opportunity (Liu et al., 2016). It is possible visits with family help incarcerated individuals feel more connected and enhance their confidence in capitalizing on employment opportunities, which family members may facilitate.

Although these findings support the notion that contact improves post-release outcomes, these studies did not evaluate contact other than visits, so it is unclear whether contact through phone or letters produces similar effects. In addition, data were collected concurrently (not longitudinally) and did not allow for examination of changes in social bonds and their association with post-release functioning.

Different effects based on type of contact.

Few studies have considered the impact of different forms of contact on post-release outcomes. A study of 319 men incarcerated in prison considered the impact of receiving visits or mail from one's children on post-release recidivism, substance use, depression, and employment (Visher et al., 2013). Receiving visits or letters during incarceration (examined as a single categorical variable) predicted more father-child involvement immediately following release, which predicted working more hours at one's job per week, and marginally less criminal activity and less substance use; there was no effect of involvement on post-release depression. Thus, visitation and mail contact may positively impact post-release experiences. Other research has examined phone contact. In a study of 255 high-risk incarcerated women, more frequent family contact during incarceration via phone was associated with a reduced likelihood of reincarceration within five years post-release (Barrick et al., 2014); receiving visits and mail contact were unrelated to recidivism.

Different effects of contact in jail versus prison.

To the authors' knowledge, research on how family contact during incarceration impacts post-release outcomes has been conducted solely in prisons. Whereas prisons typically hold individuals with sentences longer than one year and are operated at the state or federal level, jails are locally operated facilities that hold individuals awaiting trial or sentencing or sentenced to one year or less. Research on contact in jails has focused on the experience of visitation and how contact affects children of incarcerated parents (Poehlmann, Dallaire, Loper, & Shear, 2010).

It is possible that in jails, different barriers may alter the impact of contact on post-release outcomes. Of note, jails are typically located close to incarcerated persons' families, but prisons are often more than 100 miles away (Poehlmann, et al., 2010); visiting prison therefore requires additional resources such as time, money, and transportation, which may result in less frequent visitation or may make visitation less viable for families with limited financial resources. As such, having fewer visits from family members while incarcerated in prison may not reflect an incarcerated individual's connection with family, but rather whether the family has the resources (e.g., transportation, child care, schedule flexibility) to make the trip to the prison. Whether relationships between types of contact with family and post-release outcomes generalize between prison and jail settings remains an open question.

In sum, most evidence suggests maintaining contact with one's family during incarceration in prison facilitates positive adjustment post-release. But does the impact of contact with family on post-release outcomes generalize to jails? And why is contact beneficial? We consider two possible mediating factors between contact and post-release outcomes: family connectedness and making post-release plans.

Social Relationships and Post-Release Functioning

Social connections "influence the type of people we are, the things we do, the attitudes and values we hold, and the way we perceive and react to people around us" (Hogg, 2003, p. 462). In community samples, social connectedness is related to desirable emotional

outcomes such as less trait anxiety (Lee & Robbins, 2000), perceived stress in daily life (Lee, Keough, & Sexton, 2002), and psychological distress (Cohen & Wills, 1985). Social connectedness is also related to less dysfunctional interpersonal behaviors such as being domineering and standoffish (Lee, Draper, & Lee, 2001) and to substance use (Sale, Sambrano, Springer, & Turner, 2003). It is likely these effects generalize to incarcerated individuals.

Theories in criminology (social bond; Hirschi, 1969) and psychology (e.g., self-expansion; c.f. Aron, Lewandowski, Mashek, & Aron, 2013) suggest prosocial conforming behavior (e.g., desistance from criminal activity) results from attachment to conventional others. For example, relationships with conventional others can provide social and economic support during the reintegration process (Petersilia, 2003; Visher & Travis, 2011); these relationships impose social obligations, time constraints, and informal supervision (Sampson & Laub, 1990), and help incarcerated individuals maintain optimism about life and their ability to secure opportunities upon release (Visher & O'Connell, 2012). Furthermore, the self-expansion model asserts that connectedness leads individuals to adopt the resources, perspectives, and identities of others (Aron et al., 2013). By extension, connectedness with conventional others promotes adaptive post-release functioning (Folk, Mashek, Tangney, Stuewig, & Moore, 2016).

Family Connectedness

Families are a key source of support for many incarcerated individuals (Luther, Reichert, Holloway, Roth, & Aalsma, 2011) and strong family relationships can prevent criminal behavior (Sampson & Laub, 2003). Family support is related to less recidivism (Brown, St. Amand, & Zamble, 2009; Shinkfield & Graffam, 2009) and substance use (Staton-Tindall, Royse, & Leukefeld, 2007). Given the impact of family connectedness on post-release functioning, it is important to understand factors that enhance family connectedness, including family contact through various mediums.

It is important to consider that initial level of family connectedness may impact how frequently family contact occurs during incarceration. Individuals who are more connected to their family at the start of incarceration may have more frequent family contact than those who are less connected. Although incarceration may serve as a time to reestablish connections with one's family, it seems less likely an individual who completely disconnected from family prior to incarceration will receive frequent contact.

Planning for Post-Release

On a practical level, families may facilitate proactive post-release planning. The re-entry experience is a key transition, yet it is often fraught with uncertainty. Many individuals on the verge of release do not know where they will be living (McLean, Robarge, & Sherman, 2006), working, or how they will financially support themselves. Making plans prior to release may facilitate reentry and set offenders on a path to conventional living at the onset of re-entry.

Families may act as facilitators of successful reentry, assisting with housing, employment, and finances. Individuals incarcerated in prison often rely heavily on family support during reentry (Naser & La Vigne, 2006). In a study of 413 men interviewed 2-3 months after release from state prison, 86% reported they were currently living with at least one family member and 73% of those who looked for a job talked to family as a means of finding employment (Naser & La Vigne, 2006).

Maintaining contact with one's family during incarceration may facilitate post-release planning. It is challenging to explore opportunities during incarceration due to limited contact with the outside world, and, depending upon one's charges, returning to prior living situations and jobs may not be possible. Contact provide opportunities for family members to facilitate efforts toward post-release planning.

Current Study

The primary aims of the current longitudinal study are to determine whether: 1) having contact with one's family during incarceration increases family connectedness; 2) family connectedness and/or post-release planning mediate the relationship between contact and both adaptive (i.e., community functioning) and maladaptive (i.e., recidivism, substance misuse, mental illness) post-release outcomes; 3) these relationships differ based on whether one is incarcerated in jail or prison; and 4) these relationships differ based on type of contact.

Having more family contact during incarceration is hypothesized to promote adaptive functioning post-release. Specifically, in accordance with the literature, higher levels of contact are expected to predict lower rates of recidivism, fewer symptoms of substance dependence and mental illness, and higher levels of community adjustment (e.g., legal employment, residential stability). Full mediation of these effects by pre-release family connectedness and post-release planning is expected. Based upon literature on social connectedness in community populations (e.g., Lee & Robbins, 2000; Sale et al., 2003), higher levels of family connectedness just prior to release are anticipated to mediate the effects of contact on post-release outcomes. Further, higher levels of family connectedness at the onset of incarceration are expected to predict more family contact during incarceration, which in turn is expected to predict increased family connectedness. Regarding post-release plans, individuals who have more contact with family are expected to make more plans for post-release housing, employment, and continued education; having such plans is expected to mediate the effect of contact on post-release outcomes.

The generalizability of models to both jail and prison incarceration, as well as across different types of contact, will be examined. The authors are unaware of research on this subject focusing on individuals in jail; the current sample includes individuals in a local suburban jail, some of who were transferred to prison. It is possible different types of contact (visits, phone calls, letters) will differentially impact post-release outcomes through these mediators. Each form of contact presents unique challenges (Folk, Nichols, Dallaire, & Loper, 2012), as well as opportunities (e.g., letter writing allows time to think before responding, potentially inhibiting emotional reactivity and allowing for thoughtful planning).

Of note, since phone contact can typically occur any day and multiple times per week, it may be more strongly related to these mediators because incarcerated individuals can be more involved in the day-to-day functioning of the family, compared with the non-real time interactions through letter writing.

The current study adds to the literature in several ways. Most research has studied single-sex samples of individuals incarcerated in prison and considered only one type of contact; this limits the generalizability of results and ignores the potential for different effects based upon the type of contact (e.g., Barrick et al., 2014). The current sample includes men and women incarcerated in both jail and prison assesses contact through visits, phone calls, and letters. Secondary analyses include examination of gender and race differences in the model.

Method

Participants and Procedure

Participants were 507 pre- and post-trial individuals held on felony charges in a suburban county jail who participated in a larger longitudinal study (Tangney, Mashek, & Stuewig, 2007). The primary goal of the parent study was to examine the implications of moral emotions and cognitions for post-release recidivism, substance misuse, and HIV risk behavior. At enrollment, participants were on average 32 years old ($SD = 10$, range 18 to 69), male (70%), had completed 11.77 years of education ($SD = 2.25$, range 0 to 19), and were diverse in race and ethnicity (44.3% Black, 36.4% White, 8.7% Hispanic, 3.0% Asian, 4.1% “Mixed,” and 3.4% “Other”). Most participants had never been married (57.6%), were divorced or separated (23.3%), or were legally married (13.8%). Over half of participants (59.5%) had children (range = 0 to 7 children; age range = <1 to 50 years old), and 52.5% had minor age children.

Participants were recruited for baseline assessment shortly after assignment to the jail’s medium and maximum security “general population” (Time 1). Because a key interest of the parent project was the effectiveness of short-term interventions with relatively serious offenders, selection criteria were developed to identify incoming individuals likely to serve at least four months (i.e., long enough to complete the 4-6 session baseline assessment and have the opportunity to request and engage in jail programs and services). Individuals fitting this profile were sentenced to 4 months or more or arrested and held on at least one felony charge other than a probation violation, with no bond or >\$7,000 bond.

Participants were arrested for a broad range of felony offenses and incarcerated for an average of 10.5 months ($SD = 10.9$ months) at the county jail, with 205 participants serving additional time at other facilities ($M = 17.2$ months, $SD = 19.0$ months), typically state prisons. Participants were re-interviewed prior to release from the host jail or prior to release following transfer to another facility (Time 2) and approximately one year following release (Time 3). Participants received honoraria of \$15-18 at baseline (Time 1), \$25 at pre-release and post-transfer pre-release (Time 2), and \$50 at the one-year follow-up (Time 3). All procedures were approved by the George Mason University Institutional Review Board.

Of the 508 participants originally enrolled in the longitudinal study, one participant did not have valid data on any construct of interest for the current study, leaving a sample of 507. Data on Time 1 (T1) variables of interest are available for 449 participants; the rest are missing due to validity concerns and incomplete interviews. At Time 2 (T2), we re-interviewed 163 of the 220 (74%) individuals eligible for a pre-release interview and 123 of the 190 (65%) eligible for a post-transfer-pre-release interview. At Time 3 (T3), we re-interviewed 370 of 478 (77%) eligible for one year post release interview. Attrition analyses compared eligible individuals who were re-interviewed vs. those who were not (not found, refused, withdrew) across demographics, mental health, psychological, criminality, and substance dependence. There were few differences at $p < .05$ on 34 background variables tested at each timepoint. Missed individuals tended to be younger (T2 and T3), Spanish-only speakers (T3), and reported more symptoms of paranoia (T2). Using a Benjamini-Hochberg (B-H; 1995) correction to control for the false discovery rate, no significant differences were found for the time points analyzed in the current study.

Measures

Onset of incarceration (Time 1).

Demographics.: Participants self-reported a wide range of demographic characteristics including sex, age, race, and educational attainment.

Family connectedness.: Connectedness to ones' family was measured using the Inclusion of Community in Self (ICS) scale (Mashek, Cannaday, & Tangney, 2007; supplemental material), a single-pictorial measure consisting of six pairs of overlapping circles, with each pair of same-sized circles overlapping slightly more than the preceding pair. For this administration, participants were asked about their relationships to various targets, including the community at large, the criminal community, and their current family. For the family item, participants were told the circle on the left of each pair represented themselves, while the circle on the right represented their "current family." The directions asked participants to "circle the picture that best describes your relationship with your current." The instructions also included a phrase indicating that current family referred to "everyone in your family now, like your spouse or your kids, as well as your other living relatives (for example, parents and siblings)." Responses were coded on a scale from 1 (the circles with no overlap) to 6 (the circles with substantial overlap). The ICS is an explicit derivation of the Inclusion of Other in Self (IOS) Scale (Aron, Aron, & Smollan, 1992), which demonstrates test-retest, discriminant, predictive, and convergent validity. The family connectedness item has yet to be used in published research, but other ICS items have demonstrated test-retest, discriminant, predictive, and convergent validity (Folk et al., 2016; Mashek et al., 2007).

Pre-release or post-transfer pre-release (Time 2).—Family connectedness was assessed using the ICS (Mashek et al., 2007), as described above.

Contact with family.: Participants reported how often they had contact with various family members (spouse/significant other, parent(s), children under the age of 18, children 18 years and older, other/extended family members) during the current incarceration and the type of contact (in person visitation, phone calls, letters) that occurred. For those transferred to

prison, contact reflects that which occurred in the transfer facility. Responses were rated on a 7-point scale: 0 (*never*), 1 (*once*), 2 (*less than once per month*), 3 (*once per month*), 4 (*two or three times per month*), 5 (*once per week*), 6 (*a few times per week*), and 7 (*every day*) and collapsed across family members to create an average frequency of in person visits ($M = 1.30$, $SD = 1.29$), phone contact ($M = 2.72$, $SD = 1.62$), and letter contact ($M = 1.87$, $SD = 1.35$). The mean of these three variables was used to represent overall frequency of contact.

Post-release plans.: Participants reported whether they had plans following release by responding to the following questions: “Do you know where you are going to live after your release?,” “Do you have a plan for supporting yourself after release?,” “Do you have a job lined up?,” and “Do you have any plans for continued education after your release?” Response options were 0 (*no*), 1 (*yes*). The mean of these four items was used to represent post-release plans.

One year post-release (Time 3).—Recidivism was assessed using self-report and official records. Participants reported whether they were arrested for any of 16 types of crime (i.e., theft, robbery, assault, murder, domestic violence, weapons offenses, major driving offenses, prostitution, drug offenses, sex offenses, fraud, kidnapping, arson, resisting arrest, miscellaneous, other) during the first year post-release. To assess undetected offenses, participants reported whether they had committed, but were not caught for, any of the same 16 types of crime. Official National Crime Information Center records of arrests in the first year post-release were also collected; 119 charge codes found on official records were categorized into the 16 crime types used for the self-report variables. To capture criminal versatility in these three sources, three variables were created to reflect the number of types of crimes (0-16) people were arrested for (official and self-reported arrests) and reported committing (self-reported offenses). Versatility - the number of different types of crimes - was employed rather than frequency of arrest/offense because type of crime is confounded with frequency (e.g., illegal substance use vs. violent offenses). Also, versatility indices exhibit higher reliability than frequency scales, have a higher correlation with official reports of delinquency than other measures formed from self-reports (Hindelang et al., 1979, 1981), and have greater predictive validity than frequency and weighted frequency scales (Farrington, 1973). Technical violations (e.g., violations of the conditions of probation or parole) were not included in the versatility variables because they represent infractions such as missed appointments, failed drug tests, etc.

Mental health symptoms.: A shortened version of the Personality Assessment Inventory (PAI; Morey, 1991) was used to assess depression, anxiety, stress, and borderline personality disorder symptoms. Responses ranged from 1 (*false, not at all true*) to 4 (*very true*). The PAI uses T-scores (standardized scores with M of 50 and SD of 10) based on a census-based normative sample; alphas were .85 for depression (24 items), .89 for anxiety (24 items), .74 for stress (8 items), and .88 for borderline features (24 items).

Substance dependence.: The Texas Christian University: Correctional Residential Treatment Form, Initial Assessment (TCU-CRTF; Simpson & Knight, 1998) was used to assess symptoms of dependency on alcohol (17 items), marijuana (8 items), cocaine (14

items), and opiates (18 items) during the first year post-release. Participants rated the frequency with which they experienced symptoms of substance dependence on each substance in the domains specified by the DSM-IV-TR (American Psychiatric Association, 2000). Item responses ranged from 0 (*never*) to 4 (*7 or more times*). For domains with multiple items (e.g., different withdrawal symptoms), responses were averaged within that domain and a total score was computed by taking the mean across the seven domains (six in the case of marijuana because withdrawal is not considered part of the criteria). Each scale had acceptable reliability (alcohol, $\alpha = .93$; marijuana, $\alpha = .87$; opiates, $\alpha = .98$; cocaine, $\alpha = .98$). Given the similarities between cocaine and opiates (illegal, highly addictive) and the low rate of opiate use in our sample, opiates and cocaine were combined into a category of “hard drugs.” Frequency of dependence symptoms related to cocaine/opiate use was defined as the higher of the two ratings for either cocaine or opiates.

Employment.: Participants self-reported whether they were unemployed, or had odd jobs, part-time, or full-time employment; if employed, follow-up questions assessed length of employment. Of those who reported employment status ($n = 332$), the majority (67.8%) had full-time employment during the year after release. A continuous variable (*total hours employed*) was created to represent the amount of employment in the first year post-release. Based on the typical workweek for an average individual living in the U.S., the response “yes, held full-time jobs (35 hours or more per week)” was coded as 40 hours. The response “yes, held part-time jobs (35 hours or less per week)” was coded as 20 hours. The response “yes, did odd jobs (occasional or irregular work)*” was coded as 5 hours. Number of hours employed per week was multiplied by the number of weeks employed during the year after release to determine *total hours employed*.

Community functioning.: A community functioning index was created to assess the degree to which participants were functioning in, and contributing to, the community adaptively. We were specifically interested in identifying prosocial forms of community functioning, which is not merely the opposite of poor outcomes such as re-arrest and reincarceration; it represents a distinct source of variance (Moore, Stuewig, & Tangney, 2016). Eight items were selected from a detailed demographic questionnaire completed at one-year post-release, with each coded as adaptive (1) or non-adaptive (0). Coding was based on prior theory and research, not value judgments, and this index has been used in prior research (Folk et al., 2016; Moore et al., 2016). Items include: 1) residential stability, 2) homeownership, 3) current marital status, 4) largest source of support, 5) valid driver’s license, 6) financial support of children, 7) educational and vocational upgrades, and 8) volunteerism in the community. Scores were averaged across the eight dichotomous indicators to create a total functioning index. Cronbach’s alpha was not calculated because this is a formative construct.

Results

Descriptive statistics and bivariate correlations are presented in Table 1. In line with our hypotheses and previous literature, family contact predicted fewer self-reported offenses and official records of arrest, symptoms of alcohol dependence, depression, stress, and borderline personality disorder, and more hours employed and adaptive community

functioning. As hypothesized, family contact was positively related to each of the mediators – family connectedness prior to release and post-release planning. T2 family connectedness was positively related to self-reported arrests and official records of arrest, and negatively related to all mental health indicators. Post-release plans in contrast, were related to official records of arrest, hours employed, and community functioning. Few gender and race differences were found in the primary study variables. After a B-H correction, men disclosed significantly more self-reported arrests ($t(277.14) = -3.41, p < .001$), and symptoms of alcohol ($t(277.14) = -4.22, p < .001$) and marijuana ($t(322.75) = -3.84, p < .001$) dependence than women; Blacks were significantly more connected to their families at baseline ($t(335.06) = -4.80, p < .001$) and had more frequent phone contact with families during incarceration ($t(177) = -3.84, p < .001$) than Whites.

Measurement Model for Post-Release Adjustment

Mplus statistical software was used to create four latent dependent variables (indicated with capital letters throughout the manuscript): Recidivism, Substance Dependence, Mental Health Symptoms, and Community Adjustment. Recidivism was composed of self-reported and official records of arrests and self-reported offenses; Substance Dependence of hard drug dependence, alcohol dependence, and marijuana dependence symptoms; Mental Health Symptoms of depression, anxiety, stress, and borderline personality disorder features; and Community Adjustment of total hours employed and community functioning. Missing data were handled using Full Information Maximum Likelihood (FIML; Graham, 2009; Muthén & Muthén, 1998-2012; Schafer & Graham, 2002).¹

A confirmatory factor analysis using maximum likelihood estimation was conducted for the four latent variables, including intercorrelations among all latent variables and a correlated residual for self-reported arrests and official records of arrest (Folk et al., 2016; Moore et al., 2016). This model fit the data acceptably ($\chi^2(47) = 102.44, p < .001$; $RMSEA = .05$ with 95% CI .04 to .06, $CFI = 0.96$, $SRMR = .05$). Factor loadings were all significant and standardized estimates ranged from .48 to .88. On Recidivism, Substance Dependence, and Mental Health Symptoms, higher scores indicated worse functioning; higher scores indicated more adaptive functioning on the Community Adjustment latent variable (see Figure 1).

Structural Model: Family Contact, Connectedness, Planning, and Post-Release Outcomes

The structural model depicted in Figure 2 fit the data acceptably ($\chi^2(89) = 178.67, p < .001$; $RMSEA = .05$ with 95% CI .04 to .05, $CFI = 0.93$, $SRMR = .06$) using maximum likelihood estimation. Results indicate family connectedness at the onset of incarceration is positively related to having contact with one's family and pre-release family connectedness. Further, pre-release family connectedness mediates the relationship between having contact with one's family during incarceration and Mental Health Symptoms during the first year post-release. The indirect effect from T1 family connectedness to Mental Health Symptoms

¹FIML uses all data available about a participant, including other measures at that time point and outcome measures, to determine the model parameters. Data values are not imputed; model parameters are estimated using all available information. This technique is widely accepted (Little, Jorgensen, Lang, & Moore, 2014; Schafer & Graham, 2002), especially in longitudinal research where people sometimes miss an entire wave of data collection, and provides more reliable results than Listwise deletion (Schafer & Graham, 2002).

through T2 family connectedness was significant, $\beta = -.16$, $p < .001$, as was the indirect effect from contact to Mental Health symptoms through T 2 family connectedness, $\beta = -.06$, $p < .05$. The indirect effect from T1 family connectedness to Mental Health Symptoms through contact with family and T2 family connectedness was also significant, $\beta = -.02$, $p < .05$. Those who are more connected to their family at the onset of incarceration tend to have more contact with their family during incarceration. This in turn predicts increased family connectedness prior to release, which predicts having fewer symptoms of mental illness during the first year post-release. Family contact did not influence post-release planning, but having more post-release plans was significantly related to Community Adjustment. Those who made post-release plans tended to function more adaptively in the community during the first year post-release. No other structural pathways were significant.

Type of family contact.—To evaluate whether type of contact influences the structural relationships, the mean family contact variable was substituted by each mode of contact (Table 2). We employed this method rather than entering all forms of contact at once to avoid partialling of variance, which makes interpretation and real world applicability challenging.

The model for visits fit the data acceptably ($\chi^2 = 168.70$, $p < .001$; RMSEA = .04 with 95% CI .03 to .05; CFI = .94; SRMR = .06). Apart from visits not significantly predicting T2 family connectedness, the pattern of direct effects paralleled the initial model. There was a significant indirect effect from T1 family connectedness to Mental Health Symptoms through T2 family connectedness ($\beta = -.16$, $p < .001$).

The model for phone contact fit the data acceptably ($\chi^2 = 180.93$, $p < .001$; RMSEA = .05 with 95% CI .04 to .06; CFI = .93; SRMR = .06). The pattern of direct effects paralleled the initial model. There was a significant indirect effect from T1 family connectedness to Mental Health Symptoms through T2 family connectedness ($\beta = -.09$, $p < .001$) and from phone contact to mental illness through T2 family connectedness ($\beta = -.04$, $p = .02$); the indirect effect from T1 family connectedness to mental illness through phone contact and T2 family connectedness was marginally significant ($\beta = -.01$, $p = .068$).

The model for letters fit the data acceptably ($\chi^2 = 174.81$, $p < .001$; RMSEA = .04 with 95% CI .03 to .05; CFI = .94; SRMR = .07). The pattern of direct effects paralleled the initial model. There was a significant indirect effect from T1 family connectedness to Mental Health Symptoms through T2 family connectedness ($\beta = -.16$, $p < .001$) and from letters to Mental Health Symptoms through T2 family connectedness ($\beta = -.05$, $p = .031$); the indirect effect from T1 family connectedness to Mental Health Symptoms through letters and T2 family connectedness was marginally significant ($\beta = -.01$, $p = .072$).

Contrary to hypotheses, family contact was unrelated to post-release planning, regardless of the type of contact being considered. Further, as in the full model, neither family connectedness nor post-release plans were related to Recidivism and Substance Dependence.

Multiple-group Analyses

Multiple-group analysis was used to examine differences between individuals released from jail and those transferred to and released from prison. These analyses were conducted with frequency of contact aggregated across type since there were few differences when considering type of contact.

Measurement invariance.—A series of nested multiple-group models were tested to determine whether factorial invariance existed in the measurement of the outcome variables between individuals who were and were not transferred prior to release. Chi-square difference tests were computed to compare the models. In the fully unconstrained model, a Heywood case emerged in the transfer group due to negative residual variance in the community functioning indicator. Since the confidence interval for this residual contained 0, it is likely due to sampling error (Dillon, Kumar, & Mulani, 1987) and was therefore fixed to 0. As shown in Table 3, scalar invariance was achieved (i.e., loadings and intercepts are constrained to be equal across groups). This implies the meaning of the construct (i.e., factor loadings) and the levels of the underlying items (i.e., intercepts) are equal across groups. In other words, the two groups are comparable on their scores on the latent variables.

Full uniqueness measurement invariance was not achieved; as the model fit significantly worse when the residuals were constrained to be equal. Without full uniqueness measurement invariance, groups can still be compared on the latent variable, but they are measured with different amounts of error between groups (Van de Schoot, Lugtig, & Hox, 2012). As such, we use the model where factor loadings and intercepts, and the correlation between the latent variables, are constrained to be equal across groups.

Structural invariance.—Two models were tested and compared to determine whether structural invariance was present. In the unconstrained model ($\chi^2(200) = 319.46, p < .001$; $RMSEA = .05$ with 90% CI .04 to .06, $CFI = 0.91$, $SRMR = .09$), all structural paths were allowed to be freely estimated for each group; in the constrained model ($\chi^2(213) = 332.21, p < .001$; $RMSEA = .05$ with 90% CI .04 to .06, $CFI = 0.92$, $SRMR = .10$), all structural paths were set to be equal across the two groups. The two models were not significantly different from one another ($\chi^2(13) = 12.75, p > .05$)², so we accept the constrained model as the more parsimonious one. This suggests individuals who were released directly from the jail and those who were transferred prior to release do not differ in the model overall (except for the differences in residuals at the CFA level).

Secondary Analyses of Gender and Race Differences

Multiple-group analysis was used to examine differences in the structural model based on gender and race. Regarding gender, the unconstrained model where structural paths were allowed to be freely estimated for each group the model fit the data well ($\chi^2(200) = 328.23, p < .001$; $RMSEA = .05$ with 90% CI .04 to .06, $CFI = 0.91$, $SRMR = .10$). The fully constrained model, however, ($\chi^2(213) = 357.48, p < .001$; $RMSEA = .05$ with 90% CI .04

²Although there were 12 structural paths, we also constrained the mean of the exogenous variable, T1 family connectedness, in the fully constrained model; this results in the 13 degree of freedom difference. The mean of T1 family connectedness was specified in the model to include all participants with available data (“Why is,” n.d.).

to .06, $CFI = 0.90$, $SRMR = .12$) was significantly different from the unconstrained model ($\chi^2(13) = 29.25$, $p < .05$). An examination of the residuals and modifications indices suggested the pathway between contact with family and post-release plans was significant for females ($\beta = .60$, $p < .001$) but not for males ($\beta = -.15$, $p = .13$) ($\chi^2(212) = 336.32$, $p < .001$; $RMSEA = .05$ with 90% CI .04 to .06, $CFI = 0.91$, $SRMR = .11$).

Regarding race (comparing Blacks vs. White), the unconstrained model where structural paths were allowed to be freely estimated for each group the model fit the data satisfactorily ($\chi^2(200) = 346.02$, $p < .001$; $RMSEA = .06$ with 90% CI .05 to .07, $CFI = 0.89$, $SRMR = .11$). The fully constrained model, however, ($\chi^2(213) = 371.10$, $p < .001$; $RMSEA = .06$ with 90% CI .05 to .07, $CFI = 0.88$, $SRMR = .13$) was significantly different from the unconstrained model ($\chi^2(13) = 25.08$, $p < .05$). An examination of the residuals and modifications indices suggested the pathway between contact with family and post-release plans was significant for Whites ($\beta = .34$, $p < .01$) but not for Blacks ($\beta = -.04$, $p = .77$) ($\chi^2(212) = 365.93$, $p < .001$; $RMSEA = .06$ with 90% CI .05 to .07, $CFI = 0.88$, $SRMR = .13$).

Discussion

Results of this longitudinal study of incarcerated individuals confirm having contact with family during incarceration is beneficial to post-release functioning; specifically, increased contact with family during incarceration facilitates family connectedness, which in turn promotes better post-release mental health. On the bivariate level, we also replicated and extended prior research by documenting a link between family contact and lower rates of recidivism, alcohol dependence, and mental health symptoms, as well as more adaptive aspects of community functioning.

The link between pre-release family connectedness and better post-release mental health is consistent with prior literature documenting the strong association between perceived social support and mental health (e.g., Kawachi & Berkman, 2001; Thoits, 1995). In accordance with the stress buffering hypothesis, perceived social support buffers against stress when support meets the demands of the stressor (e.g., Cohen & Wills, 1985). One way to meet needs associated with the stress of incarceration is through maintaining contact with loved ones. The current study suggests having contact with family promotes increased feelings of family connectedness, which in turn predicts better post-release mental health.

Contrary to our hypotheses, family connectedness was unrelated to recidivism, substance misuse, or community adjustment - the more behavioral outcomes. It may be perceived support from family is not sufficient to promote behavioral change. Other factors such as one's ability to obtain tangible support may be stronger predictors, as ex-prisoners frequently rely on family for support with housing and employment (Naser & La Vigne, 2006); unfortunately, tangible support was not assessed.

Post-release plans, on the other hand, were related to adaptive community functioning during the first year post-release. Those who made plans for where they would live and work, and whether they would pursue further education, seemed more likely to execute these plans and function adaptively in the community. Surprisingly, frequency of contact with

family was unrelated to the number of plans incarcerated individuals made. When examining gender and racial differences, however, this pathway was significant for females and Whites, but not males and Blacks. It is unclear why this relation would differ based on one's gender or race. One possibility is that females and Whites have contact with different types of family members than males and Blacks. For example, age of family member may matter. Incarcerated people may be more inclined to discuss post-release employment with adult family members than with minor age children who would be unable to facilitate employment opportunities. Exploration of differences based on who contact is with is an important avenue for future research.

There were no differences in the structural model based on whether individuals were incarcerated in jail or prison. The similarity in structural models was surprising given the differences in average length of incarceration, barriers to contact, and rules surrounding visitation in jail compared to prison environments. This study is the first, to our knowledge, to compare the implications of family contact for individuals incarcerated in jail and prison.

Results further suggest in-person visits, phone calls, and letters have roughly equivalent effects on family connectedness and mental health during the first year post-release. The direction and magnitude of effects were similar across the three models. Although visitation was not significantly related to changes in family connectedness, the effect was positive. Visits may have a weaker relation to changes in family connectedness because visits are restricted to occur less frequently and entail multiple logistical barriers (e.g., distance, expenses). It is also possible effects of visitation on family connectedness differ as a function of who is visiting. Some evidence suggests receiving visits from one's children during incarceration is related to higher risk of recidivism (Bales & Mears, 2008) and rule-breaking behavior in prison (Jiang, Fisher-Giorlando, & Mo, 2005). Future investigations are needed to determine whether receiving visits from different family members has different implications for these processes.

Limitations and Future Directions

Although the results of this study hold implications for understanding how contact with family during incarceration impacts post-release functioning, there are several limitations. First, family connectedness was assessed using a one-item measure. We were unable to examine the impact of different forms of social support, which may differentially impact post-release functioning. Future studies should consider assessing the ways incarcerated individuals feel supported by their families (e.g., emotional support, tangible support). Second, contact with family included visits, phone calls, and letters received, but not letters sent or video contact. Frequency of writing letters likely contributes to the amount of contact received; future studies should assess both letters sent and received. Relatedly, with technological advances, video visitation and email are becoming increasingly common in correctional facilities; differences in outcomes based on technology-based forms of contact should also be explored.

Also, quality of the contact and who contact is with likely predicts whether it benefits functioning. For example, family contact involving conflict may be less likely to increase family connectedness and post-release planning. Relatedly, the effects of contact may differ

based on whether contact is with adult family or their minor age children. Children are unlikely to be able to facilitate planning for employment, housing, etc. There is some research suggesting having contact with one's children during incarceration may have iatrogenic effects. For example, incarcerated individuals who receive visits from children during incarceration are more likely to engage in drug and property rule-breaking behavior ($N=14,000$; Jiang, et al., 2005), and incarcerated mothers who receive visits from or write to and receive letters from children are more likely to be written up for rule-breaking behavior than mothers who do not receive visits or write to or receive letters from the children ($N=751$; Benning & Lahm, 2016). Future research should explore differences in outcomes based on both who contact is with and the quality of the contact.

Furthermore, much of the existing research on how contact impacts post-release functioning has been conducted with single sex samples. It is possible these effects differ based on the incarcerated individual's gender, particularly when considering contact between incarcerated parents and their children where gender roles may be more salient and pronounced. Future research should consider gender differences in these relations.

Finally, as with any non-experimental design, there are limitations to our ability to make causal claims. To strengthen our understanding about directionality of effects, we evaluated family connectedness at the start and end of incarceration, which allowed us to look at predictors of change in this construct. Although there are no doubt unmeasured variables, the mediating role of family connectedness between contact and post-release mental health makes it unlikely the relationship between contact and mental health is a spurious one.

Applied Implications

Allowing families to connect during incarceration can positively impact post-release functioning, particularly in regard to mental health. Results of the current study suggest form of contact does not matter, but the frequency with which families communicate is influential. There are numerous barriers to maintaining contact. Regarding in-person visitation, distance, lack of transportation, and the cost of traveling to correctional facilities are often prohibitive. Literacy, both of the incarcerated individual and of the family member, can impede communication through letters. The cost of phone calls, which cannot be returned if the family member misses it due to being unavailable, is often extremely limiting. And, due to the screening of communication by correctional officers, concerns regarding privacy and general discomfort with the spaces and procedures may inhibit families' ability to connect during contact. Given these barriers, it is encouraging that family contact regardless of form is predictive of post-release outcomes, as different forms of contact will be more feasible for some families than others.

Additional resources and macro-level changes are needed to make contact more feasible. Actions such as the Federal Communications Commission's 2013 caps on the cost of making phone calls from correctional facilities (and proposed 2015 caps, which were stayed by court order) are an important step to ensuring families can afford to maintain contact, but for many this is not enough. It still costs 21 cents per minute to make a debit interstate call and 25 cents per minute for a collect interstate call from a correctional facility, compared to

typical commercial rates of 4 cents per minute; this does not include the exorbitant fees charged to add money to an account to make calls.

Facilities should also take steps to allow for higher quality contact. Visits can be stressful due to long wait times, invasive searches, and the lack of child-friendly spaces. These conditions can undermine the benefits of family contact and as such need to be addressed (Poehlmann et al., 2010). Interventions which combine family-focused contact (e.g., not through Plexiglas, ability to play with and hold children) and programming like parenting interventions (e.g., Grayson, 2007) may be most useful in promoting high quality contact, although systematic evaluations of such programs are still needed. It is possible to be both behind bars and connected to family; modifications to practices and policies can make this so.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

This research was supported by the National Institute on Drug Abuse grants RO1DA14694 and F31DA039620.

Many thanks to the members of the Human Emotions Research Lab for their assistance with this research.

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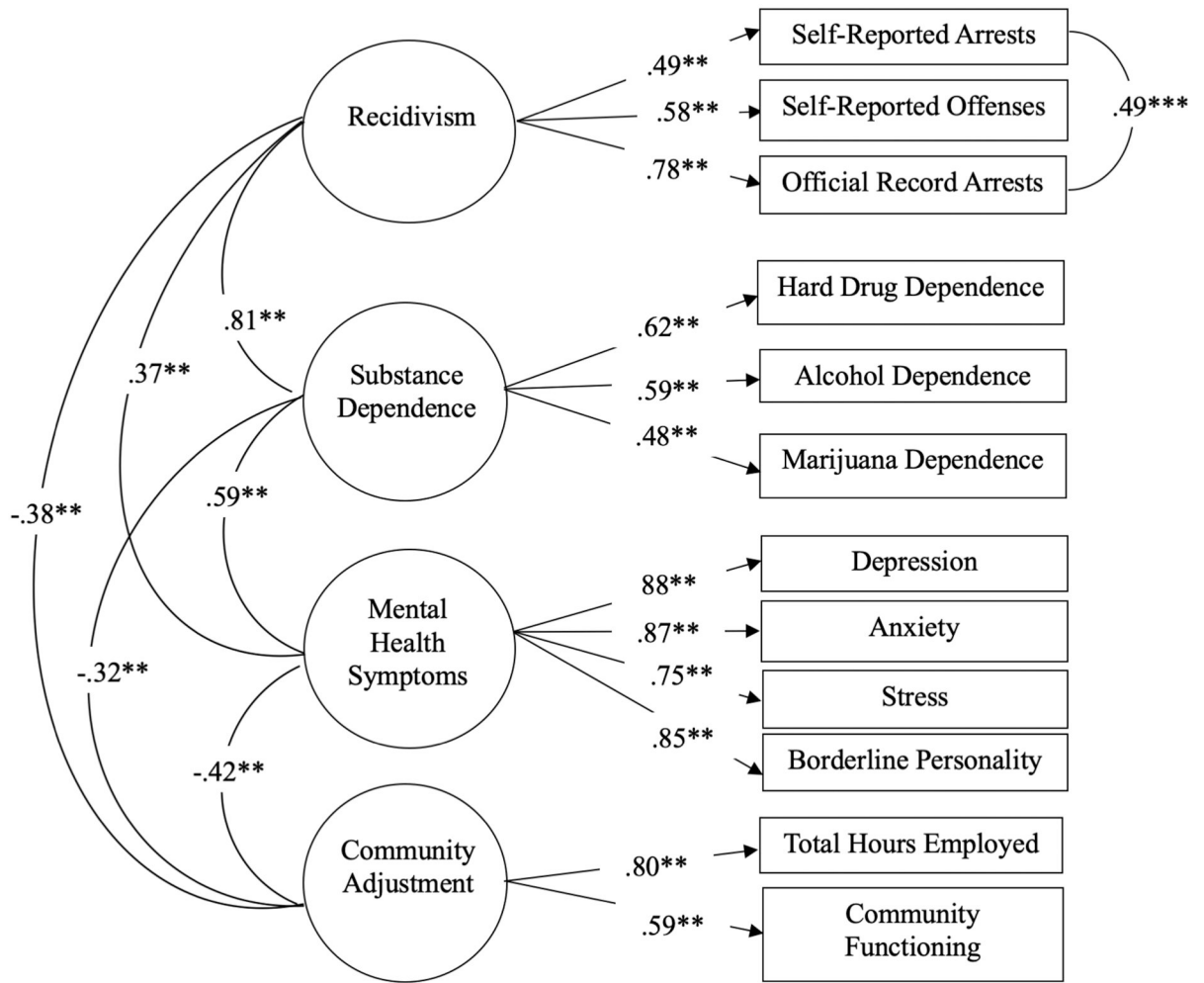


Figure 1. Measurement Model. All parameter estimates are standardized. ** $p < .001$; $\chi^2(47) = 102.44$, *** $p < .001$; $RMSEA = .05$ with 95% CI .04 to .06, $CFI = .96$, $SRMR = .05$

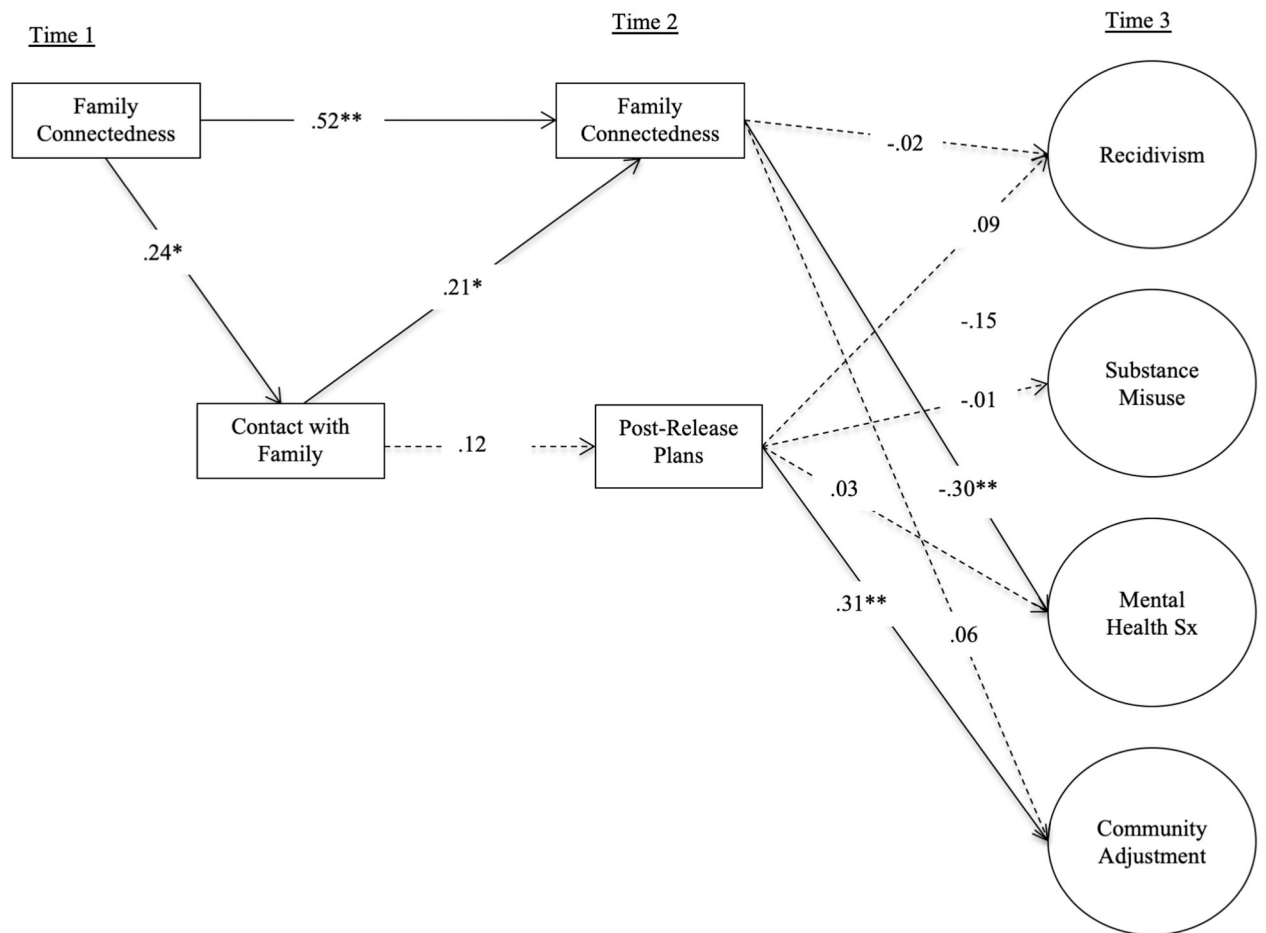


Figure 2.

Structural Model with Results. All parameter estimates are standardized. Although not depicted in the figure for ease of representation, disturbance terms for all latent variables are correlated. $p < .05^*$; $p < .01^{**}$; $\chi^2(89)=178.67$, $p < .001$; $RMSEA=.05$ with 95% CI .04 to .05, $CFI=0.93$, $SRMR=.06$. The indirect effect from Phase 1 family connectedness to mental health symptoms through contact with family and Phase 3 family connectedness was significant, $\beta = -.02$, $p < .05$.

Table 1

Bivariate Relations and Descriptive Statistics

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	M (SD)
<u>Time 1</u>																	
1. Family Connectedness	-	.55***	.23***	.09*	-.02	-.07	.02	-.08	-.09*	.07	-.21***	-.23***	-.22***	-.20***	-.02	.07	4.50 (1.65)
<u>Time 2</u>																	
2. Family Connectedness		-	.29***	.01	.15***	-.05	.17***	.00	-.21***	-.06	-.19***	-.24***	-.16***	-.24***	-.11*	.06	4.55 (1.75)
3. Family Contact			-	.10*	-.05	-.09*	-.18***	-.07	-.13**	.05	-.22***	-.06	-.20***	-.12**	.15***	.28***	1.96 (1.15)
4. Post-Release Plans				-	.07	.03	.09*	-.06	.01	.01	.04	.07	.05	.08	.25***	.20***	0.81 (0.19)
<u>Time 3</u>																	
5. Self-Reported Arrests						.46***	.63***	.28***	.26***	.11*	.09*	.14**	.16***	.16***	-.03	-.17***	0.48 (0.90)
6. Self-Reported Offenses						-	.36***	.42***	.31***	.23***	.22***	.27***	.39***	.39***	-.07	-.25***	1.01 (1.42)
7. Official Record Arrests							-	.25***	.24***	.12**	.10*	.20***	.15***	.15***	-.17***	-.23***	0.70 (1.18)
8. Hard Drug Dependence								-	.35***	.23***	.31***	.32***	.31***	.41***	-.09*	-.13**	0.66 (1.27)
9. Alcohol Dependence									-	.39***	.32***	.30***	.26***	.25***	-.11*	-.16***	0.53 (0.91)
10. Marijuana Dependence										-	.11*	.12**	.12**	.08	-.12**	-.14**	0.22 (0.57)
11. Depression											-	.78***	.67***	.70***	-.28***	-.28***	54.88 (11.00)
12. Anxiety												-	.61***	.76***	-.19***	-.18***	52.86 (10.90)
13. Stress													-	.65***	-.35***	-.30***	59.04 (11.70)
14. Borderline Personality														-	-.27***	-.32***	60.40 (11.90)
15. Total Hours Employed															-	.46***	1103.00 (750.00)
16. Community Functioning																-	0.39 (0.18)

Note.

*** $p < .001$;

** $p < .01$;

* $p < .05$; Correlations and descriptive statistics are drawn from Mplus, which uses FIML.

Table 2

Differences Based on Contact Type

	Visits		Phone Calls		Letters	
	<i>B</i> (<i>SE</i>)	β	<i>B</i> (<i>SE</i>)	β	<i>B</i> (<i>SE</i>)	β
Time 1 Family Connectedness→Contact	0.13 (0.06)	0.17*	0.19 (0.07)	0.20**	0.16 (0.06)	0.20**
Time 1 Family Connectedness →Time 2 Family Connectedness	0.59 (0.07)	0.55***	0.57 (0.07)	0.53***	0.57 (0.07)	0.53***
Contact→Time 2 Family Connectedness	0.15 (0.10)	0.11	0.22 (0.08)	0.20**	0.24 (0.09)	0.18**
Contact→Post-release Plans	0.01 (0.07)	0.08	0.02 (0.01)	0.15	0.01 (0.01)	0.04
Time 2 Family Connectedness→Recidivism	-0.01 (0.03)	-0.02	-0.01 (0.03)	-0.02	-0.01 (0.03)	-0.02
Time 2 Family Connectedness→Substance Misuse	-0.07 (0.04)	-0.15	-0.06 (0.04)	-0.14	-0.06 (0.04)	-0.14
Time 2 Family Connectedness Mental Illness	-0.16 (0.04)	-0.29***	-0.17 (0.04)	-0.30***	-0.16 (0.04)	-0.30***
Time 2 Family Connectedness→Community Adjustment	0.01 (0.01)	0.06	0.01 (0.01)	0.07	0.01 (0.01)	0.07
Post-release Plans→Recidivism	0.28 (0.31)	0.09	0.26 (0.30)	0.09	0.28 (0.31)	0.10
Post-release Plans→Substance Misuse	-0.06 (0.41)	-0.02	-0.03 (0.41)	-0.01	-0.05 (0.41)	-0.01
Post-release Plans→Mental Illness	0.18 (0.44)	0.04	0.15 (0.44)	0.03	0.21 (0.44)	0.04
Post-release Plans→Community Adjustment	0.23 (0.07)	0.31**	0.23 (0.07)	0.31**	0.22 (0.07)	0.31**

Note.

* $P<.05$;

** $P<.01$;

*** $P<.001$

Table 3

Measurement Invariance Models

Model	χ^2	df
Unconstrained	169.864	102
+Constrained community functioning residual in the transfer group ^a	170.227	103
+Constrained factor loadings and intercepts	192.096	115
+Constrained correlation between latent variables	196.113	121
+Constrained residuals	228.601 [*]	132

Note. The final model is denoted in bold.

⁺ Denotes constraints added to the prior best fitting model;

^a A Heywood case was present in the transfer group, so the residual for the community functioning variable was constrained to be 0 to correct this.

^{*} Denotes a model that is significantly worse fitting.