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Accessing Behavioral Health Services and the Justice-Involved: The Significance of Ecological Considerations

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Knowledge and understanding of reentry challenges, reentry programming, and reentry evaluations is primarily limited to formerly incarcerated persons (FIPs) who return to urban areas despite the structural and contextual differences between urban and non-urban locales. These differences may be especially salient when it comes to access to services for behavioral health needs that, if left untreated, increase the likelihood of recidivism. Reentry planning prior to release has been found to be beneficial, as well as providing direct linkages to services post-release. However, barriers or competing priorities may keep FIPs from accessing needed behavioral health services after release. To increase the probability for more successful post-release transitions, studies need to determine and understand soon-to-be-released inmates' likelihood of utilizing these services. Thus, the purpose of this research was to examine the importance of demographic characteristics, ecological factors, and utilization of treatment services for drugs, alcohol, mental health, and anger management prior to release to FIPs' intent to receive these services after their release. Data was collected from 173 individuals incarcerated in either a prison or a community-based correctional facility (CBCF) and analyzed via logistic regressions. Results suggest that being female and utilization of services while incarcerated predicted intent to use drug and mental health services after release; not surprisingly, crime type and type of facility was predictive of intent to utilize anger management services post release; type of facility, and interaction of housing and concentrated disadvantage was predictive of intent to take advantage of alcohol treatment services. These findings have micro, mezzo, and macro implications and are especially relevant given the limitations of resource availability and accessibility in urban and non-urban areas. Streamlining these services to FIPs' needs and building community capacity to meet specific needs identified by FIPs is more likely to engage them and increase their likelihood to improve reentry outcomes.

Keywords: Formerly incarcerated persons, Non-urban areas, Self-determination, Social ecology, Behavioral health services

INTRODUCTION

Most incarcerated persons return to society after serving an average prison sentence of 2.6 years (Kaeble, 2018), with approximately 600,000 formerly incarcerated persons (FIPs) released every year (Petrich et al., 2022). Adjusting to life outside of prison presents FIPs with many challenges. More likely than not, FIPs return to society without a job, possess few job skills, lack adequate housing, and often present with a complex set of physical, mental, and behavioral health needs (Begun et al., 2016; Couloute & Kopf, 2018; Jones et al., 2020; Nally et al., 2014).

These mental and behavioral health needs have been linked to risk of recidivism. For instance, substance use has been identified as a risk factor for incarceration (Garcia-Grossman et al., 2022). Mental health issues are also associated with increased crime and recidivism (Link et al., 2019). Furthermore, anger has also been identified as a risk factor for violence (Novaco, 2011).

Unless these mental and behavioral health needs and other post-release challenges are appropriately addressed, FIPs' chances for a successful transition to the community are adversely affected (Begun et al., 2016; Durose et al., 2014; Durose & Mumola, 2004; Garland et al., 2010; Nelson et al., 1999; Shinkfield et al., 2009). For many FIPs, this is a common occurrence. Additionally, a lack of necessary skill sets and/or support systems increases their likelihood of reoffending and reincarceration, especially during the first few months' post-discharge (Durose et al., 2014, Fontaine et al., 2012; Hartwell, 2010; Lurigio et al., 2004). In recognition of these issues, improving reentry outcomes has become a key priority in recent years. The key to reducing recidivism rates is to understand the nuances of reentry and deliver appropriate quality reentry programs and services (Burns et al., 2022; Mellow & Christian, 2008; Visher & Travis, 2003) that keep FIPs motivated to take advantage of assistance and thereby enhance their capacity to reintegrate successfully into their communities.

Understanding Reentry: Background Information

In the mid-1900s (1930s – 1970s) indeterminate sentencing was practiced in every jurisdiction in America (Clear & Cole, 1977); what it meant was that sentencing was done for a time range, for instance 10-15 years, and parole boards determined the release date of prisoners. Indeterminate sentencing incentivized good behavior and participation in programs. To prepare FIPs to return to their communities many formal programs were provided while they were in the prison system, with emphasis on rehabilitation and reintegration. After release, intense supervision was provided, with individuals being sent to halfway houses if the need was identified (Seiter & Kadela, 2003). The difficulty with indeterminate sentencing was that parole board members could discriminate against inmates without any recourse.

In the 1980s there was a shift from rehabilitation to punishment, deterrence, and surveillance. Zero tolerance policies were introduced, and indeterminate sentencing and parole boards were removed in many states. With these changes in policies and structure, it eroded the system that was established for preparation and planning of inmates for release. Tough sentencing, changes in parole board and determinate sentencing led to an increased prison population; by the turn of the century state and federal prison populations went from 330,000 to 1.32 million in 1999 (Furniss, 1996; Raphel, 2011; Seiter & Kadela, 2003, as cited in Camp & Camp, 1999). This issue of increasing prison populations and heightened recidivism rates called for legislative changes and the Second Chance Act of 2007 was passed. The purpose of the Second Chance Act was to reduce recidivism; to that end, there was an increasing effort to develop structured programs.

There have been many programs introduced in communities to address various prisoner reentry needs, for instance substance abuse treatment, sex offender treatment, vocational programs, life skills, basic needs, etc. (Please see Seiter & Kadela, 2003 for more detailed explanation of these programs). Some of the most commonly identified needs of FIPs are employment, housing, food, clothing, transportation, treatment for substance abuse, mental health, and medical needs, social support and relationships with family and

friends, separation from illegal behavior and risky environments, and sanction and parole conditions (Begun et al., 2016; Mellow & Christian, 2008; O'Brien, 2001; O'Brien & Leem, 2007; Parsons & Warner-Robinson, 2002). To increase the probability of successful transitions from prison to communities, reentry initiatives should help FIPs meet these needs and provide support (Taxman et al., 2002; La Vigne, et al., 2008). The framework of these programs was based on the various models of reentry. Some of these models are discussed below.

Risks and Needs: A Popular Model for Reentry Planning

The Risk-Need-Responsivity (RNR) Model, a commonly used reentry framework (Turner & Petersilia, 2012), utilizes a continuum of care approach. Andrews and Bonta (2010) identified eight primary individual risk factors associated with recidivism, namely antisocial personality and behaviors, pro-criminal attitudes, antisocial peers, family/marital relationships, school/work, prosocial recreational activities, and substance use. Some of these risk factors are dynamic or changeable and are identified as "criminogenic needs." Other non-criminogenic minor needs identified are self-esteem, personal distress, major mental health disorder, and physical health (Bonta, & Andrews, 2007). In this model, risks for reoffending are identified, and categorized as major, moderate, and minor (Bonta et al., 1998). In addition, criminogenic needs are assessed, and an intervention to which the incarcerated person is most likely to be responsive is planned. The intervention starts in the pre-release phase, when the soon-to-be released incarcerated persons are connected with needed community resources so that they can use these resources post-release (Seiter & Kadela, 2003), thus decreasing the likelihood of recidivism (Lipsey & Cullen, 2007) and reincarceration, and continues in the community.

The risk assessment model has evolved over the years and is divided into four generations of assessment tools as it became more sophisticated and responsive. First-generation instruments were unstructured and based on professional judgement. Second generation instruments were empirically based but factors measured were static and atheoretical. It was not until the third generation instruments where theoretically informed assessments addressed both dynamic risk and needs factors. The fourth-generation assessment tools build on previous instruments, guiding service and supervision from intake to when the case is closed (Andrews et al., 2006; Bonta & Andrews, 2007). A meta-analysis of correctional treatment programs utilizing the RNR framework among diverse populations in various settings (Andrews et al., 2006, Dowden, & Andrews, 2000; Pinals et al., 2021, Rojas & Peters, 2016) demonstrated the effectiveness of these programs in reducing recidivism rates. In an effort to examine the impact of identifying risk factors on treatment program outcomes, Andrew and Dowden (2006) conducted a meta-analysis and found moderate support for utilizing and examining risk factors to match appropriate treatment approaches in order to enhance the effectiveness of treatment for the general prison population and among females and juveniles in the prison system.

To examine vocational guidance and assistance programs, Harrison and Schehr (2004) reviewed the literature on programs for young adults who committed repeat offenses. The results suggest that these programs are more effective as compared to imprisonment, but also require intensive follow-up to be successful. Research also indicates that drug rehabilitation programs, halfway houses, and sex and violent offender programs are effective in reducing recidivism rates (Seiter & Kadela, 2003). They used the Maryland Scale of Scientific Method to create effectiveness categories of all the programs examined and found that more than three-fourths of the violations were technical violations rather than new crime. Furthermore, less availability of programs in the communities where FIPs were going also increased their recidivism rates. Characteristics of program delivery (Rojas & Perers, 2016) which addresses various needs of FIPs, including cognitive behavioral and social learning treatment approaches, increase the likelihood to reduce recidivism (Andrews et al., 2006). Hence, it is important that support services are available and accessible in communities and neighborhoods where FIPs are returning after release. The RNR model has practical utility and application, and it can be strengthened by addressing varied layers and nuances of reentry (Bazemore & Boba, 2007).

Reentry in Ecological Context

The social ecological context is important to successful reentry in a number of ways. For instance, three studies examined social ecological factors intrinsic to the neighborhoods in which FIPs lived after reentry (Hipp et al., 2010; Kubrin & Stewart, 2006; Mears et al., 2008). The researchers found that a number of factors – poverty, unemployment, utilization of public assistance, median family income, availability of bars and liquor stores, residential stability, and racial segregation – served collectively as a concentrated disadvantage experienced by people living in the neighborhood. Furthermore, this concentrated disadvantage contributed significantly to FIPs' rearrests, recidivism, and/or return to correctional supervision.

In addition to the concentrated disadvantage of the immediate neighborhood, another element of social ecological context that is salient to reentry is whether the person returns to an urban or non-urban area. The reentry process in urban areas has been well-documented (c.f. Berg & Huebner, 2011; Mears & Cochran, 2014; Vishner et al., 2010). In urban areas, there are typically many choices and options for services, whereas non-urban areas are more limited in their offerings. Having more options, however, does not guarantee availability, nor does geographical closeness guarantee access. If FIPs are not appropriately connected to providers that best meet their individual needs, they may not know what is available and where they can access services. Furthermore, even if FIPs are linked to the resources, timely access may not be possible due to high demand for assistance in urban areas (Hipp et al., 2010; Wodahl, 2006).

Although fewer studies have focused on non-urban reentry to date, it is clear that access to services is challenging for different reasons for FIPs returning to non-urban areas (Wodahl, 2006). Though there are typically fewer services available, the lower demand for services means that FIPs may be able to schedule appointments immediately. However, FIPs are more likely to face transportation challenges in accessing providers.

Additional socio-cultural pressures can also affect reentry success for non-urban FIPs. These communities often are characterized by decreased privacy and may exhibit strong cultural beliefs that incarcerated person are responsible for their criminal acts and are not redeemable (Leverentz, 2011), which can present additional challenges for reentry efforts. Due to the added stigma and embarrassment sometimes felt post-release, FIPs returning to non-urban areas may not want to be seen accessing resources and services, particularly for behavioral health.

We can glean from the above discussion that FIPs often face any number of environmental obstacles (i.e., whether returning to urban or non-urban areas) that may further attenuate their ability to meet their transition needs (La Vigne et al., 2008). Since people are embedded in their surroundings, one possible way to minimize the impact of location-based challenges is to identify the programs that might serve the mutual interests of the FIPs and communities for successful post-release. If we have a better understanding of the characteristics, individual or environmental, that affect the probability of FIPs' participating in reentry programming and services, providers could more adequately allocate resources to meet their transition needs. Asking FIPs to identify or self-determine the programs or services with which they are more likely to engage in during the crucial transition phase from prison to the community may be especially relevant. Therefore, an argument is made for more inclusive interventions in which incarcerated person are empowered by self-identifying their needs (Ward & Marshall, 2007) and the emphasis is shifted from liabilities to assets, strengths or resources (Maloney et al., 2001).

Considering Self-Determination in Reentry

This emphasis on FIP self-determination is supported by Bottoms and McWilliams' classic (1979) work. They noted that, though casework best-practices stressed client self-determination, the reality of probation practice with FIPs was that probation caseworkers were identified as experts in choosing treatment

for FIPs. They argued for a more inclusive, collaborative model in which people in the prison were allowed to make choices in their treatment efforts.

Client self-determination and empowerment is an important framework to consider in motivating and encouraging FIPs during the reentry process (Johnson, 2013; Ryan & Deci, 2008). That is, FIPs' motivation is vital to their use of resources during post-release transition (Belenko, 2006). When FIPs' reentry plans include self-identified needs, they are more likely to utilize these services and successfully reintegrate into communities (Johnson, 2013).

In one example of this practice, Morani et al. (2011) studied 122 FIPs about to be released from Missouri Department of Corrections. Nearly all said that they would need bus passes, and about 95%, 93%, and 90% of them said that they would need clothing, food, and housing, respectively. After release all FIPs who participated in the program were provided with funding to meet their needs, and they reported how they used the funds. Participants used some of their funding towards food (all), transportation (98%), clothing or household items (67%), housing (65%), and other necessities (18%). Participants' use of funding post-release was consistent with their anticipated needs. Moreover, after six months of participation in the program, 64% of the participants were employed and nearly all had secured housing.

This demonstrates a link between pre-release anticipated needs and the likelihood of post-release participation in those services. Given the significant inverse relationship between recidivism and service utilization for employment, stable housing, transportation, social support, behavioral and physical health found in several reentry studies over the past decade (Berg & Huebner, 2011; La Vigne et al., 2008; Morenoff & Harding, 2011; Solomon et al., 2004; Tindall et al., 2011; Zweig et al., 2011), the interrelationship between self-determined client needs and enhancement of their capacity for successful reintegration for future outcomes merits attention in the context of FIPS' social ecology.

Research Questions

Given the preceding review of previous studies, this study expands upon the reentry literature to further explore how self-determined needs affect intent to receive behavioral treatment services that are positively correlated with reentry success. Specifically, the purpose of this study is to understand soon-to-be FIPs' intent to use mental health services, drug treatment, alcohol treatment, and anger management after release. Informed by the tenets of social ecology, we will determine the relative importance of demographic information, need for services (as determined by utilization of those services while incarcerated), and environmental characteristics of the intended residential location post-release, while controlling for common post-release priorities and barriers. More specifically following research questions are addressed in this study:
Research question 1: Can intent to receive drug treatment be predicted by need for services, demographic variables, crime and incarceration, environmental variables, barriers to receive services, and intent to receive help for these barriers?
Research question 2: Can intent to receive alcohol treatment be predicted by need for services, demographic variables, crime and incarceration, environmental variables, barriers to receive services, and intent to receive help for these barriers?
Research question 3: Can intent to receive mental health treatment be predicted by need for services, demographic variables, crime and incarceration, environmental variables, barriers to receive services, and intent to receive help for these barriers?
Research question 4: Can intent to receive anger management treatment be predicted by need for services, demographic variables, crime and incarceration, environmental variables, barriers to receive services, and intent to receive help for these barriers?

METHODS

Data

The data for this study were originally collected for a study of imprisoned persons' reentry needs and challenges (Ojha et al., 2018) to assess the services utilized by people who were in the prison system and the services that they intend to use after their released (i.e., within 2 years).

Participants

Participants for this study were 173 adults who were incarcerated in one of 17 prisons (N = 130) or two community-based correctional facilities (CBCFs, N = 43) in Ohio, were scheduled for release within the next two years, and who intended to reside in northwest Ohio upon release. In Ohio, people may be sentenced to a CBCF if they meet crime severity and conviction length (<12 months) guidelines, but judges have discretion in the choice of CBCF versus prison. In addition, FIPs may be transferred to a CBCF from another facility for the last months of their sentence. This was the case among participants in this study in that half of CBCF participants reported sentence lengths of greater than 12 months, indicating they could not have been sentenced to the CBCF. Thus, the CBCF participants were a blended group.

Participants from the two groups were very similar: primarily male (prison 86.05%, CBCF 82.31%, p = .57), primarily white (prison 63.08%, CBCF 76.74%, p = .10), as was the prison population at that time, (Ohio Department of Rehabilitation and Correction,2015); and primarily convicted of driving under incarceration/property/drug crimes (prison 71.54%, CBCF 81.40%, p = .20), with only two demographic differences: those in CBCFs were about five years younger (M = 29.63, SD = 10.80) than those in prison (M = 35.30, SD = 10.47), $t(171) = 3.06$, p = .003, and more likely to plan to live in a non-urban place after release (CBCF 81.40%, prison 43.08% , p = .003).

There were also similarities in treatment experiences between the prison and CBCF groups. There were no differences between the two groups in their pre-incarceration treatment rates for any outcome (p = .37 - .80). While incarcerated, there was no difference between prison and CBCF participants on the use of mental health treatment (~43%) and anger management services (~42%). While CBCF participants were more likely to receive drug (88.10%) and/or alcohol treatment services (68.29%), nonetheless a substantial minority of prison participants (~47%) received each type of treatment while incarcerated. Due to the marked demographic and treatment history similarities between the prison and CBCF groups, and because the CBCF group is already a blended CBCF + other facilities group, participants from both types of facilities will be analyzed together as a group, while controlling for type of facility in the analysis.

Procedure

Two researchers (Co-PI) and four graduate assistants (GAs) collected the data. Research ethics training was completed by all, and GAs were given additional training to collect data. All study procedures were approved by the university Institutional Review Board [379210-4] and by Ohio Department of Rehabilitation and Correction (ODRC). The warden of each facility assisted with arranging date, time, and location to conduct interviews and ODRC assisted in identification of potential participants. Researchers met with potential participants (who self-selected to come to the meeting room and is identified as a sampling bias) reviewed the consent form, and after consent administered the survey via structured interview. A reentry resource guide was prepared prior to data collection and these resource guides were given as incentive to participate in this research. Recognizing the vulnerable population[1] in this study, accepted practices and procedures were followed. See Ojha et al. (2018) for additional procedural details.

Measures

The survey included questions about participant demographics (sex, 0=female, 1=male; age; and race/ethnicity 1=racial-ethnic minority, 0= white), criminal and incarceration history including treatment received while incarcerated, and post-release intentions. The crime for which participants had been incarcerated was dichotomized into a violent or sex crime, versus other (e.g., driving under the influence, property, or drug/alcohol). Type of facility in which they were incarcerated was either prison or CBCF. Participants indicated which treatment services they had received while incarcerated: mental health treatment, alcohol treatment, drug treatment, and/or anger management services.

Post-release intentions focused on housing, priorities, barriers, and services. One question asked participants to specify where they intended to live after release. These locations were dichotomized into urban or non-urban utilizing U.S. Department of Agriculture Beale Codes and the Ohio Department of Education school district typology (see Ojha et al., 2018). To determine the concentrated disadvantage (Hipp et al., 2010) of each location, we ran a principal components analysis using the percent of residents living in poverty, percent unemployed, percent of single-headed households, median income, and median home value. The first component score was the concentrated disadvantage for each location. This ranged from -3 to +3, with higher scores indicating more severe disadvantage. For instance, a neighborhood with a concentrated disadvantage score one point higher than a second neighborhood would be expected to average ~$15,000 less in annual income and be ~10% higher in poverty rate than the second neighborhood.

Participants' housing plans were dichotomized into having already secured housing (in their own home or with family/friends), versus needing to find a place to live after release. For post-release priorities, participants chose their top three priorities from a list (e.g., housing, job, family, education, health, drugs/alcohol, mental health, staying out of trouble, legal concerns, etc.). Next was a checklist of potential barriers to receipt of post-release services (e.g., housing, job, or family are more important, lack of money to pay for transportation, lack of childcare, etc.). Finally, participants indicated whether they intended to get mental health treatment, alcohol treatment, drug treatment, or anger management services after release, as well as assistance to overcome common barriers to receiving services (such as transportation issues).

Analyses

All analyses were conducted using IBM SPSS statistics (Version 25) predictive analytic software. We used logistic regressions to predict intent to receive drug treatment, alcohol treatment, mental health treatment, and anger management. For each outcome, our initial logistic regression model included four types of predictors: need for the service (as evidenced by receipt of that service while incarcerated), demographic variables including sex, age, race, type of crime, type of incarceration facility, and post-release housing plans, environmental variables including rural/urban and concentrated disadvantage, and common post-release priorities and barriers to intent to receive services. To choose appropriate barriers, we ran chi-square tests between the four most highly endorsed barriers (a steady job is more important, no money to pay for services, housing is more important, and transportation issues) and intent to receive services. Transportation and money to pay for services were associated with intent to receive services more often than the other two barriers, so we included these barriers in the regressions. We also controlled for these barriers by adding intent to accept help with transportation and intent to accept help finding a job. Finally, we added three exploratory interaction terms. Because transportation could be more problematic in rural areas given long distances, we included an interaction term between rural/urban and the barrier of money to pay for transportation. In addition, having securing housing (e.g. in their own home or with friends/family) may remove choices that participants may make based on preferred rural/urban environments, or based on concentrated disadvantage of the area, so we included housing type x rural/urban and housing type x concentrated disadvantage interaction terms as well.

Our analysis plan was to run initial models with all variables, and to remove variables in stages until we reached a parsimonious model (Menard, 2002; Zhang, 2016a, 2016b). At each stage we evaluated model fit using several fit indices. We tested the significance of -2 log likelihood change for nested models, with non-significant change indicating no preference for either model. We used the Akaike Information Criterion (AIC), 2nd order formula due to lower *N* (Glenn, 2022) in combination with the Bayesian Information Criterion (BIC, Kuha, 2004). For both AIC and BIC, a lower number indicates better model fit. They are used in combination because the BIC penalizes more complex models whereas the AIC does not. In stage two, we removed non-significant interaction terms (using $p = .05$ as our cut-off for significance) and re-ran the models. In stage three, we retained significant barriers and their controls but removed remaining barriers and controls. In stage four we removed non-significant environmental variables, except for those used in a significant interaction term. Stage five was run if model fit in stage four was poor and involved adding concentrated disadvantage back into the model. Exploratory removal or re-addition of additional variables did not improve fit of the models after stages four or five (if needed), so models four/five will be presented as the final models below.

RESULTS

Participants were 173 adults (144 males, 29 females) ages 20-70 ($M = 33.89$, $SD = 10.80$) who were incarcerated in one of 17 prisons ($N = 130$) and 2 CBCFs in the state ($N = 43$). Most participants were white (66.5%), 16.8% were African-American, 10.4% were Chicano/Latino/Hispanic and 6.3% reported other or multiple racial/ethnic backgrounds. Participants were incarcerated for violent or sex crimes (26.01%) or other offenses (73.99%). Receipt of treatment was fairly common during incarceration, with 60.69% receiving drug treatment, 50.87% receiving alcohol treatment, 42.20% receiving mental health treatment, and 40.46% receiving anger management.

After release, 47.40% of participants planned to live in an urban area whereas 52.60% planned to live in a non-urban area. About half expected to live in their own home or with friends/family (49.71%), with others needing to find housing. Participants' top priorities post-release were job/employment (71.09%) and housing (47.98%). Few participants endorsed dealing with drugs/alcohol (11.00%) or mental health (1.20%) as a top priority. However, some intended to receive treatment for drugs (52.05%), alcohol (43.79%), mental health (37.28%), and/or anger management (27.22%). It was common for participants to anticipate barriers to receipt of services, including a steady job being more important (68.21%), not having money to pay for services (56.65%), housing being more important (49.71%), and not having money to pay for transportation (41.04%). Finally, participants noted that they intended to accept help after release with locating a job (69.41%), getting transportation (51.48%), and/or finding housing (44.51%).

Intent to receive drug treatment was predicted by need, sex, and the barrier of lack of money for transportation (see Table 1 for final model and Table 2 for final model fit statistics). Participants were almost 15 times more likely to intend to receive drug treatment services if they received drug treatment while incarcerated. Males were only ¼ as likely to intend to receive drug treatment as females. Participants for whom money for transportation was a barrier were over three times more likely to intend to receive drug treatment services than those for whom money for treatment was not a barrier.

Intent to receive alcohol treatment was predicted by need, sex, type of facility, intent to receive transportation help, and the interaction between intended housing and concentrated disadvantage (see Tables 1 & 2). Participants were over 135 times more likely to intend to receive alcohol treatment if they had received treatment while incarcerated and were over 10 times as likely to intend to receive treatment if they were incarcerated in a CBCF than if they were in a prison. However, males were only one-tenth as likely to intend to receive services as females, and those who indicated that they would accept transportation help were about one-quarter as likely to intend to receive alcohol treatment as those who would not accept transportation help. The interaction term between intended housing and concentrated disadvantage was in effect only for those who already had housing arranged (housing=1). For each one-unit increase in

concentrated disadvantage, participants would be nearly 10 times more likely to intend to receive alcohol treatment.

Intent to receive mental health treatment was predicted by need for services and sex (see Tables 1 & 2). Participants were over 23 times more likely to intend to receive mental health treatment if they had received treatment while incarcerated. Males were much less likely to intend to receive mental health treatment than females.

Intent to receive anger management was predicted by need, race, age, crime type, and type of facility (see Tables 1 & 2). Participants were 5.5 times more likely to intend to receive anger management if they had received it while incarcerated and over 3 times more likely if they had been convicted of a violent or sex crime than another kind of crime. However, participants were one-third as likely to intend to receive services if they were racial-ethnic minority (which included African American and other categories) as if they were white, one-tenth as likely if they were incarcerated in a CBCF than a prison, and slightly less likely to intend to receive services for each additional year of age.

Table 1: Final Models

		Drug treatment	**Alcohol treatment**	**Mental health treatment**	**Anger management**
Category	**Variable**	Exp (B) (95% CI)	Exp (B) (95% CI)	Exp (B) (95% CI)	Exp (B) (95% CI)
Need for services	**Receipt of services while incarcerated (1=received service, 0=did not receive)**	14.87*** (5.81, 38.07)	137.46*** (27.76, 670.81)	23.57*** (8.64, 64.29)	5.53*** (2.99, 13.39)
Demographics	**Sex (1=male, 0=female)**	0.25* (0.07, 0.84)	0.10** (0.02, 0.50)	0.13** (0.04, 0.48)	0.47 (0.16, 1.41)
	Race (1=Racial-ethnic minority, 0=white)	1.19 (0.44, 3.24)	1.44 (0.41, 5.06	1.15 (0.41, 3.28)	0.31* (0.12, 0.82
	Age	0.96 (0.92, 1.00)	1.03 (0.97, 1.09)	1.03 (0.98, 1.09)	0.95* (0.90, 0.99)
Crime & incarceration	**Crime type (1=violent/sex offense 0=other)**	1.09 (0.37, 3.25)	0.84 (0.21, 3.35)	1.02 (0.32, 3.19)	3.10* (1.12, 8.60)
	Where incarcerated (1=CBCF, 0=prison)	3.15 (0.84, 11.83)	10.83** (0.75, 67.19	2.21 (0.64, 64.29)	0.10** (0.02, 0.53)
Environmental variables	**Intended living location (1=urban, 0=non-urban)**	--	--	--	--
	Concentrated disadvantage	0.89 (0.54, 1.47)	0.36 (0.11, 1.19)	1.42 (0.80, 2.50)	0.83 (0.53, 1.31)

Barriers	**$ for transportation (1=barrier, 0=no barrier)**	3.32* (1.22, 9.02)	2.80 (0.84, 9.36)	--	--
	$ to pay for services (1=barrier, 0=no barrier)	--	--	--	--
Fixes for barriers	**Transportation help (1=will accept, 0=no)**	0.59 (0.22, 1.60)	0.27* (0.08, 0.97)	--	--
	Job locating help (1=will accept, 0=no)	--	--	--	--
	Intended housing (1=their own house or friend/family, 0=must find housing)	--	1.19 (0.39, 3.57)	--	--
Interaction terms	**$ for transportation x rural/urban**	--	--	--	--
	Intended housing x rural/urban	--	--	--	--
	Intended housing x Concentrated disadvantage	--	9.74** (1.99, 47.73)	--	--

Note: *"--" in a cell indicates that the variable or interaction term was dropped from the final model. For all variables, 0 denotes the reference group.*

* $p < .05$ ** $p < .01$ *** $p < .0001$

Table 2: Summary Model Fits for Final Models

	Drug treatment		**Alcohol treatment**		**Mental health treatment**		**Anger management**	
	Model 1	**Model 5**	**Model 1**	**Model 4**	**Model 1**	**Model 5**	**Model 1**	**Model 5**
-2 log likelihood	121.51	129.72	89.41	92.00	107.09	117.64	121.51	129.72
Likelihood ratio test with model 1		$p = .31$		$p = .76$		$p = .31$		$p = .31$
AIC	160.22	151.31	128.23	117.34	145.49	134.52	160.22	151.31
BIC	206.51	179.76	174.01	151.81	191.92	157.72	206.51	179.76
% correctly predicted with model	79.7%	80.5%	86.2%	87.0%	85.70%	82.0%	79.7%	80.5%

AIC: Akaike Information Criterion, calculated via 2nd order formula

BIC: Bayesian Information Criterion

DISCUSSION

FIPs are at greater risk for adverse outcomes like unemployment, homelessness, physical and mental illness (Begun et al., 2016; Couloute, 2018; Jones et al., 2020; Nally et al., 2014) and mortality (Zlodre & Fazel, 2012) with overdose as the leading cause of death (Binswanger et al., 2013). However, effective interventions can improve post-release mental health, substance abuse, and health services utilization outcomes for FIPs (Kouyoumdjian et al., 2015). As discussed in detail previously, FIPs face many challenges and barriers to successfully reintegrate into communities (Mellow & Christian, 2008; O'Brien & Leem, 2007) and participate in services known to improve outcomes.

The primary purpose of this study was to examine the salience of demographic information, need for services (utilization of those services while incarcerated), and concentrated disadvantage of the intended residential post-release location, while controlling for common post-release priorities and barriers. To date, this is one of the first studies to consider the geographical differences related to incarcerated persons' resolve to participate in post-release programs and services, which could potentially increase their chances for positive behavioral health outcomes known to augment the likelihood for reentry success (Link et al., 2019).

Hipp and colleagues (2010) found that concentrated disadvantage - the reduced availability of social services and opportunities, and higher experience of neighborhood risk factors - was associated with increased risk of recidivism. While concentrated disadvantage was not directly predictive of intent to receive any type of services post-release in the current research, it interacted with housing plans in that it was predictive of intent to receive alcohol treatment post-release only for FIPs who had arranged housing (e.g. with family or friends) post-release. To the extent that these participants were already familiar with the level of concentrated disadvantage where they would live post-release, it is possible that their intent to receive alcohol treatment was a self-protective measure. That is, research suggests that low socioeconomic indicators are associated with alcohol-attributable diseases (Jones et al., 2015), creating the alcohol-harm paradox: individuals in lower SES are likely to experience increased alcohol-related harm compared to individuals in higher SES (Bloomfield, 2020). To the extent that their new neighborhood had concentrated disadvantage and risk factors for alcohol use, FIPs may have been more resolute in their decision to get treatment for alcohol problems.

Utilization of treatment services among participants while incarcerated was high, with a high percentage of participants stating that they would like to have access to these services after they are out in the community as well. These results are consistent with previous research, which indicates that health care services are typically available and likely to be used while incarcerated, as compared to prior to incarceration or post-release (Feron et al., 2005; Marshell et al., 2001).

The most common predictor of intent to receive services was need (receipt of services while incarcerated). For all outcomes (drug treatment, alcohol treatment, mental health treatment and anger management), service utilization while incarcerated was a significant predictor for intent to receive services, with 40-60% of participants receiving one or more services while incarcerated. These results are consistent with previous research in which pre-release services is associated with post release service utilization (Hamilton & Belenko, 2016). However, this was not the only predictor for any outcome.

Although during-incarceration service utilization of mental/behavioral health treatment was associated with the intent to use services post-release, the type of facility where FIPs were incarcerated (CBCF versus prison) did not predict their intent to utilize services. These results are consistent with results of the Begun et al. (2016), which found that pre-release individuals incarcerated in prisons and CBCFs were markedly similar on a number of factors, but both groups were different from pre-release individuals incarcerated in jails.

Sex was another common predictor across three outcomes, namely drug, alcohol, and mental health treatment. For all of these treatments, females were more likely to intend to access services post-release as compared to males. This is a promising result for female FIPs, as most experience high rates of risk factors associated with reincarceration after their release (Fedock et al, 2013; Miller, 2021). However, prior research indicates that there may be gender-specific barriers to service utilization for female FIPs. That is, Mahmood et al. (2013) found that female FIPs were 52% less likely to utilize substance abuse treatment and 51% less likely to use rehabilitation services. Cobbina (2010) further explored female FIPs post-release needs and found that key factors for service utilization included social support, assistance in connecting to services, and the availability of gender-specific services. This calls for a deeper understanding of factors that may facilitate or hinder translating female FIPs' intentions to receive services into action after they are released, as well as gender-responsive reentry programming.

Mental health and substance abuse disorders are experienced at a higher rate among justice-involved individuals than the general population (Winkelman et al., 2016). Under the Medicaid expansion program in Ohio, FIPs may be eligible to apply for Medicaid after their release, which removes one barrier to utilizing these behavioral health services. Availability of health insurance coverage is associated with increased health care utilization (Farrell & Gottlieb, 2020). Similarly, Winkelman et al. (2016) found that Medicaid availability was associated with increased receipt of treatment services for alcohol abuse, mental health, and substance use disorders, with the highest service usage rate for alcohol abuse treatment, followed by drug abuse treatment, and the lowest service usage rates for mental health treatment. In the current study, intentions to receive mental health services were also lower than for alcohol or drug treatment. The only significant predictors of intent to receive mental health services were need and sex, which is different from intent to receive alcohol or drug treatment, for which additional predictors were significant. It is unclear whether this is due to stigma for mental health problems, the low treatment rate during incarceration, or because of the stigma associated with mental health treatment (Martin et al., 2020).

Transportation issues were important to intent to receive both drug and alcohol treatment services post-release, but in different ways. For drug treatment services, acknowledging that transportation would be an issue was more predictive of intent to receive drug treatment but intentions to receive help with transportation was not predictive. However, for alcohol treatment the pattern was opposite: acknowledgement of transportation problems was not predictive whereas intent to receive transportation help *was* predictive of intent to receive alcohol treatment.

Predictors for anger management services were different than for other treatment services in that they included age, race and crime type. It was not surprising that the intent to receive anger management services was three times more likely if the crime was a violent or sex crime as increased violence is associated with increased feelings of anger and rage (Novaco, 2011). Participants who were racial-ethnic minority, were detained in a CBCF and who were older were less likely to say that they intend to receive these services. A plausible explanation for this could be that racial-ethnic minority participants are more likely to be non-trusting of systems and institutions (Pettit & Gutierrez, 2018); moreover, the stigma that is associated with perceptions of dangerous behaviors among racial-ethnic minority populations (Harris et al., 2011) may decrease the likelihood for them to utilize anger management services. Furthermore, improvement in anger regulations and coping mechanisms as individuals age could decrease the likelihood of participants' intention to use anger management services (Shelton et al., 2011).

Strengths, Limitations, and Future Research

The present study has strengths and limitations. One limitation is that, in this study, geographical locations were dichotomized to urban and non-urban communities. Urban, suburban, and rural communities may vary in context and challenges due to distinctive structural, economic and employment opportunities, as well as values and culture in these locales (Wodahl, 2006). Therefore, the needs identified, and resources availed by incarcerated people in rural areas may not have been adequately captured in this study. However,

we were able to calculate concentrated disadvantage for each participant's intended release location, and as such we were able to add predictive specificity into our model.

In addition, we categorized participants as being male or female in this study. While gender may be experienced as being more diverse than male or female, for purposes of this study we used this as a binary variable because it reflected the reality that each participant was incarcerated in either a men's or women's correctional facility. This is a limitation, and future research should explore nuances of gender in regards to this population.

Participants in this study self-selected themselves. As this study was supported by upper administration, these factors could have led to sampling bias as other influences like motivation, pressure to participate and approval of prison guards and administrators could have encouraged them to participate. Second, data was collected via structured interviews; this may have led to tactful responses to the questions and these responses were not corroborated in any other way. It is also recognized that small sample size limits the generalizability of these results to the population researched (FIPs). This may especially be a limitation for FIPs incarcerated in CBCFs, in that our sample was much smaller and consisted of both FIPs initially sentenced to CBCFs and those who transferred in from other facilities. It is not known whether the pattern of results might be different for FIPs initially sentenced to a CBCF, versus those transferring into a CBCF. Future research should include a replication of this study with special care taken to collect large samples of FIPs incarcerated in CBCFs via both entry mechanisms.

Another limitation is the cross-sectional nature of this study. We do not have follow-up data and thus cannot determine whether participants followed through on their intentions to receive services. In addition, this study is somewhat underpowered (Hosmer and Lemoshow, 2000), with the likely result that we were unable to detect all effects that truly exist. A strength of this study is that participants were recruited from different types of correctional institutions (prisons and CBCFs), albeit in one midwestern state. To test generalizability of results, future research should replicate this study with populations of prisoners in other parts of the county, especially using larger samples and longitudinal designs in order to track participant behavior after reentry.

CONCLUSION

Regardless of the limitations identified, this study is valuable and adds to our knowledge as it is the first study examining the FIPs' needs and their intent to use services, taking into consideration concentrated disadvantage; our results confirmed that there were some significant predictors of intent to receive services. Wherever the geographical locations in which inmates reside after incarceration, they need services for successful reintegration. The services should be personalized to meet the unique needs of FIPs, as one size does not fit all. Professionals providing services to this population should be given comprehensive training and sensitized to the needs and constraints inherent in the environment to which FIPs return. Future research should follow participants to see how intentions to receive services play out in the presence of priorities, barriers, and concentrated disadvantage.

The expanded knowledge into concentrated disadvantage to understand how it functions, and how or why the intentions to receive alcohol treatment are different than intentions to receive other kinds of treatment, will help to illuminate the nuances that contribute to this issue. Practitioners can also use this knowledge to help to provide better services to FIPs by taking into consideration social ecology that may affect and interact with their identified needs, priorities, barriers and services used post-release. Having a better understanding of what FIPs want, need, and would participate in should substantially improve reentry outcomes for the FIPs, their families, and the communities to where they return.

Notes

1. See Casper, n.d., "Securing Informed Consent From Less Educated Respondents: Results From the National Inmate Survey" https://www.fcsm.gov/assets/files/docs/2009FCSM_Caspar_VII-A.pdf

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