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A Matched-Samples Comparison of Pre-Arrest and Post-Booking Diversion Programs in Florida’s Second Judicial District

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ABSTRACT
Pre-arrest diversion programs have the potential to reform the front-end of the criminal justice system and reduce the stigma associated with a low-level arrest, but little evaluation work has been conducted in this area. The current study was designed with two objectives: 1) to examine within-program indicators of completion and post-program arrest between the Adult Civil Citation (ACC) pre-arrest and the Pre-Trial Intervention (PTI) post-booking program in Florida’s second judicial district, and 2) to conduct a matched samples comparison of subsequent arrest between the two programs. A prospective longitudinal evaluation was conducted from 2010–2017 to assess within-program indicators of successful completion in addition to a between-program comparison of follow-up arrest. Propensity score matching was used to compare post-program arrest rates between 7,410 adults who entered the PTI program and 1,279 adults who participated in the ACC program. Demographic background, offense type, and completion status were collected within the respective programs while follow-up arrest data was drawn from statewide records. Successful program completion and post-program arrest were associated with participants’ sex, racial background, and offense type. Although participants in both programs experienced similar post-program arrest rates, further research is needed on additional program features, including qualitative differences between programs.

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Adult; diversion; intervention; pre-arrest; pre-trial; recidivism

Introduction
There is rapidly growing interest in effective ways to reform the front-end of the criminal justice system, with a special focus devoted to low-level offenses. One of the primary factors supporting this movement is the sheer number of offenses that are processed in any given period of time. To put this into perspective, some estimates put the national number of misdemeanor cases in excess of 10 million in a single year (Boruchowitz, Brink, & Dimino, 2009). Recent state-level examinations of case volume have shown that the number of misdemeanor arrests accounted for 72% of all arrests.
made statewide in California and 71% of all arrests in New York (California Department of Justice, 2015; Chauhan, Fera, Welsh, Balazon, & Misshula, 2014). Low-level offenses clearly command a significant amount of criminal justice resources, and formally processing these cases can have many consequences for the adults who are charged.

It has been estimated that nearly one-third of the general population in the United States has been arrested by the age of 23 (Brame, Turner, Paternoster, & Bushway, 2012) and these arrests have a substantial impact on one’s life. A formal arrest for any offense, including a first-time misdemeanor such as disorderly conduct or mischief, can restrict employment opportunities through the permanent disqualification of state licensures (The Council of State Governments, 2018). Research on this topic has firmly established the association between criminal records and employment with evidence demonstrating most employers would avoid hiring someone with a criminal record, regardless of conviction status (Pager, 2003). There are also collateral effects of a criminal record, which include the public availability of records that are easily accessible to anyone who is interested in looking for them (Stuckey, 2008). These practices have prompted the development of the National Inventory of the Collateral Consequences of Conviction to serve as a registry of sanctions that can be used to inform practitioners, the public, and researchers about these previously overlooked penalties (Berson, 2013).

The impact of a criminal record has also been observed in many areas of social life. A formal conviction, not necessarily resulting in incarceration, has been linked to family conflict and instability, especially among members who depend on the person with the criminal record to provide food and housing (Logan, 2013). These consequences of an arrest are especially pronounced among young adults, who experience detrimental effects related to educational attainment and increased likelihood of future criminality due to this significant life event (Sweeten, 2006). An arrest creates a substantial amount of unavoidable stigma, which can be deleterious for extended periods of time and last well after someone has been processed through the criminal justice system (Uggen, Vuolo, Lageson, Ruhland, & Whitham, 2014).

The disproportionate consequences linked to an arrest for a misdemeanor offense are contributing to the support and expansion of pre-arrest diversion programs. Federal guidelines have indicated, “Law enforcement agencies should consider adopting preferences for seeking “least harm” resolutions, such as diversion programs or warnings and citations in lieu of arrest for minor infractions” (President’s Task Force on 21st Century Policing, 2015, p. 92). States have also contributed to the growth and expansion of these programs by recent endorsement of formal legislation mandating their use (Florida S. B. 1392, 2018; Georgia H.B. 716, 2018; Illinois S. B. 3023, 2018). Although many law enforcement agencies heeded this call and have implemented some form of diversionary program, they are more likely to be operating in larger jurisdictions and few have been evaluated (e.g., Tallon, Labriola, & Spadafore, 2016).

It is also important to distinguish between the various types of diversionary programs operating across the nation because the term “diversion” is applied to many types of programs marked by significant differences. These programs primarily deviate from each other in terms of the point in the criminal justice process where the
diversion actually occurs. One group involves diversion at the pre-arrest stage, or the point of law enforcement contact. These programs are classified as pre-arrest because the individual could be charged with a crime, but they are not formally arrested. Instead of being arrested and processed into the criminal justice system, the person who may be charged with an eligible offense has the opportunity to complete certain conditions which will result in the avoidance of an official arrest record. In other words, the program operates on a pre-charge basis where the arrest is not entered into an official database and the person does not receive a formal criminal record.

Another type of program involves diversion after formal charges have been issued and an arrest has been recorded. These programs are usually referred to as post-booking or post-filing programs and they are among the most prevalent in the country (Camilletti, 2010; Lowry & Kerodal, 2019). Although these programs are utilized for an array of offenses, from misdemeanors to felonies and simple drug possession to sex offenses, for the cases involving misdemeanor offenses, many of these programs simply involve a financial penalty (i.e., fines and court costs) with some requiring the completion of additional conditions such as community service or restitution. This type of program is typically categorized as a pre-trial diversion or pre-trial intervention program and begins after an arrest has been made and charges have been filed.

These diversion programs have many similarities, but they also diverge from one another in several important ways. Given their impending expansion and the appeal for their broad implementation, it is important to examine them more closely to determine how they operate and what impact they may have.

**Contemporary research on diversion programs**

The current interest in diversion can be traced back to the recommendation made by the National Advisory Commission on Criminal Justice Standards and Goals (1973) for jurisdictions to adopt programs concentrating on the pretrial phase of the court process. These programs were appealing for their potential to reduce the stigma associated with a criminal conviction while also emphasizing rehabilitation. At the time, diversion programs were largely informally operated, and they expanded into primarily urban jurisdictions rather quickly throughout the 1970s (Kirby & Pryor, 1982). Tougher crime control policies overshadowed these initiatives for some time, but there has been a resurgent amount of attention given their increased efficiency in the form of reduced caseloads and more economical approaches to case processing.

Many of these diversion practices occur after an arrest has been made and most are supervised by prosecutors who decide eligibility criteria. Some of them are reserved exclusively for misdemeanor offenses, some for specific types of felony offenses, and others take a mixed model approach offering participation to adults on an individually evaluated basis. There is a fair amount of variation in how these programs are administered and the contents of each one, but many of their goals seem to converge on increased efficiency, reduction in the number of cases processed by prosecutors, holding participants accountable for their behavior, and a reduction in rearrest (Lowry & Kerodal, 2019).
Reducing recidivism may be the most consistent goal recognized among criminal justice initiatives, including prosecutor-led diversion programs, and recent work has generally demonstrated a positive impact on rates of reoffending among adults who participate. A study of adult arrestees with mental health and substance use needs who were diverted to a community-based program demonstrated lower rates of offending following their participation (Alarid & Rubin, 2018). Although this trend has generally been observed among adults who participate in diversion programs, reoffending tends to vary according to the target population and specific characteristics of the program (e.g., Helfgott, Parkin, & Fisher, 2019; Hiday, Wales, & Ray, 2013).

Recent work has also sought to assess post-program reoffending between prosecutor-led diversion program participants and comparison groups of adults who were not diverted. A recent National Institute of Justice (NIJ)-funded multisite study matched diversion program participants with a respective control group selected from the same jurisdiction to assess program impact on rearrest within two years of program participation (Rempel et al., 2018). The Cook County Illinois Misdemeanor Deferred Prosecution Program was one site included in the study and this post-filing initiative was designated for nonviolent misdemeanor cases. Diversion program participants were matched according to demographic background and offense characteristics to a sample of adults who were prosecuted and did not participate in the program. The results demonstrated similar post-program rearrest rates between the diverted (38%) and non-diverted (34%) samples, but the comparison group was significantly more likely to be rearrested for a felony offense or a drug offense and exhibited shorter periods to rearrest relative to diversion program participants (Rempel et al., 2018).

The same multisite study also examined the Chittenden County Vermont Rapid Intervention Community Court (RICC), which was established as a pre- and post-filing program available to misdemeanor or felony offenders without a history of sex offenses, violent offenses, gang-related offenses, or drug sales (Johnson, Davis, Labriola, Rempel, & Reich, 2020). Similar matching procedures were conducted to generate a comparison group of adults who were prosecuted outside of the RICC to assess the potential impact of program participation on subsequent criminal justice contact. The results show both groups had two-year rearrest rates above 40% and the diverted sample exhibited a slightly higher, yet not statistically significant rearrest rate relative to the non-diverted sample. In addition, the diverted sample was no more or less likely to experience an arrest for a felony, misdemeanor, or drug offense. However, among those who were arrested, the comparison group experienced a shorter average time-to-rearrest relative to RICC participants (Rempel et al., 2018).

This pattern of mixed results has been observed across a wide variety of other specialty diversion programs as well. A study of Connecticut’s Advanced Supervision and Intervention Support Team (ASIST), for example, found that high risk defendants who received mental health treatment and support services were equally as likely to be rearrested compared to a matched sample of adults who were not diverted into the program (Frisman, Lin, Rodis, Grzelak, & Aiello, 2017). A group of adult sex offenders who was diverted to a program that provided an array of therapeutic approaches was also equally as likely to reoffend as a matched group of adults who attended traditional court and sentencing procedures (Butler, Goodman-Delahunty, & Lulham, 2012).
This preliminary evidence suggests prosecutor-led post-booking diversion program participation may not necessarily contribute to a significant reduction in recidivism relative to case processing-as usual, but pre-arrest programs have been developed to initiate the diversion process as soon as possible, and this may have a marked impact on further involvement in the system.

The strengthening interest in diversion programs has contributed to the further development and expansion of law enforcement led practices to divert adults away from being processed too deeply into the criminal justice system, which has led to coining of the term “deflection” to recognize the early stage at which the diversion takes place (Charlier, 2017). These police interventions have also been described as “off-ramps,” (Tallon et al., 2016) given their portrayal as steering adults away from prosecutorial processes at the point of first intercept (Munetz & Griffin, 2006). A recent survey of law enforcement agencies highlights the prevalence of these programs showing the vast majority utilize opportunities to divert adults away from the traditional prosecutorial process, especially for low-level non-violent offenses (International Association of Chiefs of Police, 2016).

Most of the recent work concentrating on pre-arrest diversion programs is based on descriptive information and few published reports have documented post-program rearrest rates. Among the select number that have recorded reoffending among participants is the Eau Claire County Pre-Charge Diversion Program in Wisconsin, which followed participants for three years and found 21% of diverted adults received a subsequent charge during the observation period (Callister & Braaten, 2016). A similar cursory assessment of a pre-arrest diversion program in Leon County, Florida found 18% of participants were arrested during the follow-up period (Kopak, 2019). These initial results drawn from this growing area of inquiry provide a few preliminary conclusions with the primary finding that this type of pre-arrest diversion program seems to produce relatively low rearrest rates.

One of the most high-profile programs, which was specifically designated for drug offenders, is the Law Enforcement Assisted Diversion (LEAD) program. Initiated in King County (Seattle) Washington in 2011, the LEAD program was designed primarily to address persistent offending among adults with severe substance use disorders or those who were engaged in prostitution. Since its inception, LEAD has expanded to more than 30 jurisdictions across the United States (LEAD National Support Bureau, 2020). The program is based on a case management approach to address underlying issues related to chronic offending, such as homelessness, employment, and behavioral health needs. A recent evaluation of the program compared 203 adults who were referred to LEAD and 115 who were prosecuted. LEAD participants had 60% lower odds of arrest in the six-month period following program initiation, but there were no differences between the LEAD and control groups with regard to the number of total charges received or the number of felony charges issued (Collins, Lonczak, & Clifasefi, 2017). A follow-up assessment of the program revealed one of the most significant factors associated with the reduction in post-program rearrest was the increased contact with case managers during participation in the LEAD program, which contributed to an increased likelihood in obtaining stable housing (Clifasefi, Lonczak, & Collins, 2017). Like many prosecutor-led programs, post-program recidivism
results from the LEAD program were dubious, providing inconclusive evidence regarding the impact of pre-arrest diversion programs, especially across jurisdictions.

The Post-Booking, Pre-Trial Intervention and Pre-Arrest, Adult Civil Citation programs in the Second District

The two programs serving as the basis for the current study benefit from Florida’s consistent support of front-end diversion programs. Specifically, the Adult Civil Citation (ACC) program was established on the same premise as the juvenile program, which is to limit the processing of relatively minor cases into the criminal justice system, with the exception being that this approach has become available to adults who are accused for the first time of a misdemeanor offense. Participation in the ACC program is initiated at the first point of law enforcement contact after an officer establishes probable cause for the commission of a pre-approved set of misdemeanor offenses, including disorderly conduct, possession of less than 20 grams of marijuana, possession of drug paraphernalia, petit theft, non-domestic simple battery, non-domestic simple assault, underage possession of alcohol, criminal mischief, or trespass. A detailed summary of the program’s process is outlined in Figure 1.

Eligibility criteria for the ACC program require adults to have no previous arrests or convictions for any offenses. Once an officer has determined these criteria are met, a citation is issued and the participant is required to report to a local non-profit behavioral health provider. Participants undergo a comprehensive behavioral health assessment and drug screen, which are used to create an individualized intervention plan. Participants have 90 days to complete the conditions, which typically include counseling sessions, an educational intervention, 25 hours of community service, remaining
drug free, and payment of behavioral health service fees. In cases where participants have successfully completed the program requirements, the case manager contacts the law enforcement agency and the original criminal charges are not filed and no arrest is recorded. Cases involving unsuccessful completion result in formal filing of the original charges, an arrest warrant, and prosecution by the State Attorney's Office.

The post-booking Pre-Trial Intervention (PTI) program operates according to a state statute mandating the diversion of adults who were charged for the first time for low-level misdemeanor or third degree felony offenses. The program's caseload is managed by the State's Attorney's Office, which is similar to many post-booking programs and the step-by-step process is also presented in Figure 1. After an individual receives a notice-to-appear (NTA) in court from a law enforcement officer, the PTI program administrator evaluates the case to determine eligibility. These criteria require, 1) that the individual be previously convicted of no more than one nonviolent misdemeanor offense, 2) approval of the judge who presides over the first appearance, 3) administrative approval from the program coordinator, and 4) consent of the victim (if applicable). Eligible adults who enroll in the program are granted a 90-day continuation of the final disposition to allow them to complete the agreed upon terms and conditions. These conditions typically consist of payment of fines, court costs, and completion of community service, which are notably less involved than the services delivered through the ACC program. If at any point during the 90-day period the program administrator finds that the participant has been rearrested, or has failed to comply with the conditions of the program, the pending criminal charges are prosecuted accordingly. Successful completion of the program requirements results in dismissal of the original charges. It is important to note that a primary difference between the ACC and PTI programs is that the initial receipt of the NTA which prompted participation in the program is recorded as an arrest in the state's official database, regardless of completion status.

There are many similarities between the ACC and PTI programs, including a period of supervision to complete program conditions and the payment of financial penalties, but there are also several notable differences. Where the PTI program requires minimal conditions be completed as part of the program (i.e., fines and community service), the ACC program implements a behavioral health intervention designed to identify factors which may have contributed to the criminal activity for which participants were originally charged. Both programs are also aimed at minimizing the degree to which adults are processed into the criminal justice system, but the ACC program affords the opportunity to avoid a formal arrest from being recorded. Meanwhile, participation in the PTI program maintains the arrest with an opportunity to avoid conviction. True to the primary objective of most diversion programs, both the ACC and PTI programs are designed to limit the impact of the criminal justice system on adults accused of low-level offenses while maintaining public safety with the aim of reducing the likelihood of future criminal activity.

Considering the prior research on prosecutor-led, post-booking, or post-filing diversion programs and the limited information available regarding police-initiated pre-arrest or deflection programs, the current study was designed to meet several objectives. One of these objectives was to identify factors associated with successful
completion and subsequent arrest in a pre-arrest program (ACC) and a post-booking program (PTI) operating in the same judicial district. Based on the early stage of research that has examined both of these types of programs, this was a logical first step in determining whether certain participants are more or less likely to complete each of the programs. This approach also contributes to the assessment of whether participants are equally exposed to the programmatic features designed to reduce the future likelihood of arrest.

Building on the growing evaluation work utilizing a quasi-experimental design to match program participants with a comparison group who was not exposed to the same services, the second objective of this study was to compare adults involved in the two programs to determine if participants in one program demonstrated a lower probability of subsequent arrest. If lower rearrest rates were observed among one of the programs, this might represent an optimal approach to recidivism reduction with the least possible criminal justice impact. Overall, the current study addresses these considerations while also providing new information that can be used to refine existing programs and support the implementation of new initiatives.

**Methods**

Both programs operate in Florida’s Second Judicial District, which includes a population of approximately 330,000 residents distributed throughout six counties. According to the National Center for Health Statistics classification scheme, four of the counties are considered rural without cities of a population of 10,000 or more, and two are considered small metropolitan counties with a population that does not exceed 250,000 (Ingram & Franco, 2014). The median household income in the area fell just short of $50,000 during the most recent Census and the racial composition consists primarily of White (62%) residents, with Black (32%) residents and Hispanic (6%) residents representing the largest minority groups.

**Sample and participant selection**

The longitudinal prospective data serving as the basis for the current study were drawn from several sources and selected according to specific criteria. Regarding the ACC program, law enforcement agencies in the judicial district provided pertinent information relating to each issued citation, which represented a program referral. This information served as the basis for the development of a case management plan with behavioral health records and individualized indicators of response to the program were added throughout the period of supervision. All participants who entered the program immediately following its inception through the current data collection period (March 2013 – April 2017) were eligible for inclusion (N = 1,319). An initial review indicated all participants received citations for eligible offenses, and all participants also entered the program on only one occasion. Further inspection revealed some observations were missing data on key measures and were therefore excluded from the study. Specifically, the largest proportion (2%, n = 29) were missing all key information because they did not report to the program after receiving the citation.
These cases were labeled ‘failure to appear,’ marked as unsuccessful completers, and arrest warrants were issued. One entry \( (n = 1, < 0.1\%) \) was missing data related to the offense for which the citation was issued and was omitted. Eight cases \( (n = 8, 0.6\%) \) were missing key demographic background information related to age, race, or biological sex and these were also excluded. Two participants \( (n = 2, 0.2\%) \) were over 65 years of age at the time they entered the program and were also removed, making the final sample comprised of 1,279 adults.

Information regarding participation in the misdemeanor PTI program was collected from official records recorded by the State Attorney’s Office ranging from October 2010 through December 2015. This amounted to a total of 13,614 participants, but not all of these met eligibility criteria. The largest proportion \( (42\%, n = 5,669) \) of excluded cases were those charged with offenses that would have also been ineligible for the civil citation program, which were status offenses \( (15\%, n = 2,010) \), such as violations of probation, and motor vehicle-related offenses \( (27\%, n = 3,659) \). Unlike the ACC program, which allows only one opportunity, guidelines for the PTI program allow for multiple participations in the program. This approach makes it possible for adults to complete the program for one arrest, with an open-ended possibility to re-enter the program in the future for an unrelated arrest. To maintain consistency between the programs, participants who had previously entered the PTI program or entered on multiple occasions for unrelated charges were excluded from the current study \( (4\%, n = 498) \). The final exclusionary criterion was participants’ age. The ACC program is restricted to adults over the age of 18 years of age, and the sample for the current study was limited to a maximum of 65 years of age. Thus, the small number of PTI participants under 18 \( (< 0.1\%, n = 9) \) and over 65 years of age \( (< 0.1\%, n = 28) \) were removed from the current study. None of the remaining participants were missing data on the key study variables, making the remaining 7,410 adults the entirety of the sample.

Records from the ACC and PTI programs were also merged with arrest records drawn from the Florida Department of Law Enforcement’s (FDLE) official statewide database. Analysts from the state’s Statistical Analysis Center queried official state records to determine if participants had been arrested following the date on which the citation was issued (ACC program) or the arrest was made prompting entry into the PTI program. The arrest measure included any formally documented arrest that was entered into the state’s official arrest record by a law enforcement agency. These data collection and management procedures were reviewed and approved by the Institutional Review Board at Western Carolina University (project #1197348-1).

**Measures**

In preparation for the analytical procedures, identical measures were drawn from ACC and PTI program records. Participant age at the time of program entry was included as a continuous variable measured in years. A dichotomous indicator of participant biological sex, and a categorical measure of race or ethnicity was also included. Based on the racial and demographic distribution of participants, three groups were created with one containing White participants, another comprised of Black participants, and a
third consisting of participants of other racial or ethnic backgrounds. The offense for which participants entered the program was also recorded with a categorical indicator containing six groups: petit theft, simple assault or battery, possession of marijuana or drug paraphernalia, minor in possession of alcohol under the age of 21, criminal mischief, and a category consisting of all other offenses (e.g., disorderly conduct, trespassing, house party). Program completion status was assessed with a dichotomous measure placing participants who successfully completed the respective program into one group and those who failed to complete the program into a second group.

Participants entered the ACC and PTI programs at various points spanning the period from 2010–2017. This arrangement introduced variability in the amount of time between program initiation and the period available for future arrest. A participant who exited the program in 2010 had a significantly longer period of time available to make law enforcement contact relative to a participant who recently exited the program in 2017, for example. Given this timing variability, a measure of time-since-program-initiation was also included to account for exposure to the possibility of subsequent arrest in manner similar to prior work (e.g., Broner, Mayrl, & Landsberg, 2005; Mauricio et al., 2009; Meade, Steiner, Makarios, & Travis, 2013). This variable was calculated by taking the date of the initial citation (ACC) or arrest (PTI) and subtracting it from the date of the statewide arrest database query. The result is an indicator of the number of months between program participation and potential rearrest.

### Table 1. Descriptive statistics among participants in the diversion programs.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre-arrest civil citation (ACC) ( n = 1,279 )</th>
<th>Post-booking pretrial (PTI) ( n = 7,410 )</th>
<th>Test statistic ( (p) )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>23.3(7.6)</td>
<td>22.9(7.8)</td>
<td>1.69 (.09)</td>
</tr>
<tr>
<td>Female</td>
<td>49.7</td>
<td>41.8</td>
<td>27.35 (&lt;.001)</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>51.7</td>
<td>26.5</td>
<td>388.62 (&lt;.001)</td>
</tr>
<tr>
<td>White</td>
<td>42.8</td>
<td>70.9</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>5.5</td>
<td>2.6</td>
<td></td>
</tr>
<tr>
<td>Offense type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Petit theft</td>
<td>51.1</td>
<td>38.8</td>
<td></td>
</tr>
<tr>
<td>Simple assault/battery</td>
<td>4.3</td>
<td>4.5</td>
<td></td>
</tr>
<tr>
<td>Possession</td>
<td>30.6</td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td>Alcohol under 21</td>
<td>8.8</td>
<td>37.8</td>
<td></td>
</tr>
<tr>
<td>Criminal mischief</td>
<td>1.6</td>
<td>2.4</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>3.6</td>
<td>13.5</td>
<td></td>
</tr>
<tr>
<td>Time since program initiation (in months)</td>
<td>30.7(14.3)</td>
<td>68.6(20.7)</td>
<td>62.08 (&lt;.001)</td>
</tr>
<tr>
<td>Successful completion</td>
<td>83.5</td>
<td>94.1</td>
<td>178.28 (&lt;.001)</td>
</tr>
<tr>
<td>Rearrest</td>
<td>17.4</td>
<td>15.0</td>
<td>4.95 (.026)</td>
</tr>
</tbody>
</table>

1This tripartite coding scheme was adopted to account for limitations in the available data. Participants in the PTI program were not coded according to Hispanic background, so that information was not available and could not be used to match to ACC participants. The ACC participants’ ethnic background did include a Hispanic indicator, but it was decided to collapse this group into an “other” group for two empirically oriented reasons. When compared to the other ethnic groups, Hispanic ACC participants were no more likely to complete the conditions of the program \( \chi^2 (2) = 3.75, p = .44 \), Cramer’s \( r = .054 \). In addition, the Hispanic group was comprised of 48 participants or 3.8\% of the sample. Distributing this group across offense types, completion status, and rearrest yielded unstable multivariate results with large standard errors.
arrest, a quadratic term was also calculated according to previously established meth-
ods (Cohen, Cohen, West, & Aiken, 2003).

Two post-program arrest measures were utilized in the study. Analyses conducted
within programs utilized overall rearrest rates drawn from all eligible participants who
had complete state records. An equivalent observation period was also created
between the two programs to facilitate accurate comparisons by assessing post-pro-
gram arrest in the two-and-a-half-year (i.e., 30-month) period following initiation of
either program.

**Sample descriptions**

Demographic background characteristics of the ACC and PTI samples are presented
in Table 1. Participants in both programs were, on average, in their early 20’s with ACC
participants being slightly older ($t(8,687) = 1.69$, $p = .092$) than those who entered
the PTI program. Nearly half of the ACC program consisted of female participants while
slightly more than four out of ten PTI participants identified as female, which represented
a significant difference ($\chi^2 (1) = 27.35$, $p < .001$, Cramér’s = .056). Participants in both pro-
grams were also disproportionately distributed across racial and ethnic backgrounds ($\chi^2
(2) = 388.62$, $p < .001$, Cramér’s = .212). Over half of ACC participants identified as Black,
for instance, while approximately one-quarter of PTI participants fell into the same cat-
egory. Comparatively, four out of ten ACC participants identified as White while seven
out of ten PTI participants were classified in a similar manner.

Descriptive information regarding offense patterns are also presented in Table 1. Offense types were unequally distributed across programs ($\chi^2 (1) = 1,600.00$, $p < .001$
, Cramér’s = .426) with the largest proportion of ACC participants receiving a citation for
petit theft, possession of marijuana or drug paraphernalia ranking second, and possession
of alcohol under the age of 21 in third. Although the largest proportion of PTI partici-
pants was arrested for petit theft, the pattern deviated with possession of alcohol under
the age of 21 coming in second, and other offense types in third. A summary of the
measure of time shows an average of approximately 30 months, on average, had lapsed
since the time of program initiation for ACC participants and 68 months had passed since
PTI participants had entered the program while ($t(8,687) = 62.08$, $p < .001$).

In terms of program completion rates, 84% ACC participants successfully completed
the program while 94% of PTI participants were similarly successful ($\chi^2 (1) = 178.28
$, $p < .001$, Cramér’s = .143), which may have been due in part to the more stringent
requirements established by the ACC program. It is worth noting assessments of other
PTI programs have shown similarly high completion rates (Lepage & May, 2017).
The overall rearrest rate for participants who entered the ACC program was over
17% while 15% of PTI participants experienced rearrest following program entry
($\chi^2 (1) = 4.95$, $p = .026$, Cramér’s = .024). A closer examination of rearrest within
similar observation periods demonstrated a slightly higher proportion (7%) of ACC
participants was rearrested in the 12-months following program initiation relative to
PTI participants (5%), and a similar difference in rearrest rates was observed at the
conclusion of the 30-month observation period (ACC: 15% and PTI: 12%).
**Analysis Methods**

Two data analysis approaches were required to meet the primary goals of the current study. The first involved the examination of within program indicators of the two program-related measures of interest: completion status and arrest following program entry. The ACC and PTI programs were analyzed separately in this phase of the study utilizing appropriate bivariate statistics (i.e., t-tests and chi-square) depending on the measurement scale of the variables. These results were followed with multivariate logistic regression analyses to answer the question, “Which factors are associated with successful program completion and subsequent arrest within each program while controlling for potentially confounding effects of variables associated with these outcomes?”

As is the case in many evaluations conducted within the purview of the criminal justice system, statistical matching procedures were used to foster comparisons between participants in the ACC and PTI programs by identifying an individual in one group who resembled an individual in the other group. Traditionally, this approach has been conducted in a treatment context with one group representing the experimental group and the second serving as the control, or untreated group. The current study followed previous research on diversion programs that have utilized similar methods (e.g., Rempel et al., 2018), by labeling the ACC participants as the treatment group given its novel approach based on a behavioral health intervention while the PTI group was identified as the untreated group based on its minimal requirements for completion.

The preferred procedures, most commonly known as propensity score matching, are appealing for their ability estimate treatment effects under one condition relative to another. In this case, these methods were used to match ACC participants to PTI participants on a number of key variables to estimate the effect of program participation as it related to post-program arrest following generally recommended procedures (Apel & Sweeten, 2010). This process was used to address any potentially confounding effects introduced by differences between participants in the two programs. Ultimately, this matching approach provided a precise answer to the question, “What is the impact of ACC program participation on subsequent arrest relative to PTI program participation?”

The matching process commenced with a nearest neighbor propensity score matching approach without replacement. There are many different types of matching techniques, and it is important to note that the literature does not clearly identify a superior technique, but the tendency is to utilize nearest neighbor with one-to-one matching with relatively large sample sizes due to the bias inherent in generating many-to-one matches (Baser, 2006). This approach involves generating the closest possible exact match, which is the best method to reduce bias when accounting for variables that may influence results (Nagin, Cullen, & Jonson, 2009). One of the disadvantages of the nearest neighbor without replacement approach, is that some participants in the PTI group may not fall within certain bounds of similarity with ACC participants, but the fairly large sample available for the current study allowed for the use of this technique despite the generally understood risk of leaving some participants unmatched (West et al., 2014).

A series of tests was conducted to establish the smallest tolerance for mismatches while also limiting the number of unmatched participants. Striking this balance is bound to result in the loss of some data, and in this case the lowest possible tolerance (.03) that was able to provide the highest number of close matches generated a
solution including 183 unmatched participants. Thus, the final matched samples were comprised of 1,093 ACC participants and an equal number of PTI participants.

This matching approach can be conducted in many different software systems. Stata 16 (StataCorp, 2019) was utilized for the current study based on its capacity to estimate treatment effects from observational data with a binary (rearrest v. no rearrest) outcome. This process was executed using the `teffects ra` command, which utilized a regression adjustment to contrast the average of the treatment-specific predicted likelihood of rearrest between the ACC and PTI programs.

### Results

#### Within program indicators of completion status

Descriptive information for participants within the ACC and PTI programs are presented in Table 2 according to completion status. Beginning with the ACC program, few differences were observed between successful and unsuccessful completers. For instance, successful ACC participants were similar in age as unsuccessful participants ($t(1,277) = 1.40, p = .162$). Female ACC participants represented a larger proportion of successful cases ($\chi^2(1) = 17.49, p < .001$, Cramér’s $r = .117$), but participants were evenly distributed across program completion according to racial and ethnic background ($\chi^2(2) = 3.43, p = .180$, Cramér’s $r = .052$). ACC participants were also equally as likely to be successful based on the offense for which they entered the program ($\chi^2(5) = 4.76, p = .574$, Cramér’s $r = .059$). There was no association observed between time since program entry and completion status ($t(t(1,277) = 1.18, p = .239$).

Among PTI program participants, those who were unsuccessful were significantly older ($t(7,408) = 13.31, p < .001$) compared to those who successfully completed the program. Female participants comprised a slightly larger proportion of unsuccessful PTI

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre-arrest civil citation (ACC)</th>
<th>Post-booking pretrial (PTI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Successful ($n = 1,070$)</td>
<td>Successful ($n = 6,974$)</td>
</tr>
<tr>
<td>Age</td>
<td>23.5(7.8) M(SD)/ %</td>
<td>22.6(7.4) M(SD)/ %</td>
</tr>
<tr>
<td></td>
<td>22.7(6.4) M(SD)/ %</td>
<td>27.7(11.0) M(SD)/ %</td>
</tr>
<tr>
<td></td>
<td>Test statistic(1.40 (.162)</td>
<td>13.31 (&lt;.001)</td>
</tr>
<tr>
<td>Female</td>
<td>52.3 M(SD)/ %</td>
<td>41.5 M(SD)/ %</td>
</tr>
<tr>
<td></td>
<td>36.4 M(SD)/ %</td>
<td>46.1 M(SD)/ %</td>
</tr>
<tr>
<td></td>
<td>17.49 (.&lt;.001)</td>
<td>3.51 (.061)</td>
</tr>
<tr>
<td>Race</td>
<td>Black</td>
<td>Black</td>
</tr>
<tr>
<td></td>
<td>50.6 M(SD)/ %</td>
<td>25.0 M(SD)/ %</td>
</tr>
<tr>
<td></td>
<td>57.4 M(SD)/ %</td>
<td>50.2 M(SD)/ %</td>
</tr>
<tr>
<td></td>
<td>Test statistic(1.43 (.180)</td>
<td>134.62 (&lt;.001)</td>
</tr>
<tr>
<td></td>
<td>Offense type</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Petit theft</td>
<td>39.5 M(SD)/ %</td>
</tr>
<tr>
<td></td>
<td>50.6 M(SD)/ %</td>
<td>28.2 M(SD)/ %</td>
</tr>
<tr>
<td></td>
<td>Simple assault/battery</td>
<td>39.5 M(SD)/ %</td>
</tr>
<tr>
<td></td>
<td>Possession</td>
<td>2.9 M(SD)/ %</td>
</tr>
<tr>
<td></td>
<td>30.8 M(SD)/ %</td>
<td>30.3 M(SD)/ %</td>
</tr>
<tr>
<td></td>
<td>Alcohol under 21</td>
<td>2.9 M(SD)/ %</td>
</tr>
<tr>
<td></td>
<td>9.4 M(SD)/ %</td>
<td>4.6 M(SD)/ %</td>
</tr>
<tr>
<td></td>
<td>Criminal mischief</td>
<td>39.5 M(SD)/ %</td>
</tr>
<tr>
<td></td>
<td>1.6 M(SD)/ %</td>
<td>10.1 M(SD)/ %</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>2.2 M(SD)/ %</td>
</tr>
<tr>
<td></td>
<td>3.5 M(SD)/ %</td>
<td>5.9 M(SD)/ %</td>
</tr>
<tr>
<td></td>
<td>Time since program initiation</td>
<td>13.0 M(SD)/ %</td>
</tr>
<tr>
<td></td>
<td>(in months)</td>
<td>20.9 M(SD)/ %</td>
</tr>
<tr>
<td></td>
<td>30.5(14.2) M(SD)/ %</td>
<td>68.3(20.7) M(SD)/ %</td>
</tr>
<tr>
<td></td>
<td>31.8(14.7) M(SD)/ %</td>
<td>64.7(20.3) M(SD)/ %</td>
</tr>
<tr>
<td></td>
<td>1.18 (.239)</td>
<td>3.54 (&lt;.001)</td>
</tr>
</tbody>
</table>

Note: $t$-values are reported for continuous measures and chi-square values are reported for categorical measures.

Table 2. Demographic background and offense information within ACC and PTI programs by completion status.
cases, but this difference fell just outside the generally accepted level of significance ($\chi^2(1) = 3.51, p = .061, \text{Cramér's} = .022$). PTI participants were unequally distributed according to racial and ethnic background across program completion status, with White participants representing almost three quarters of successful cases and Black participants comprising half of unsuccessful cases ($\chi^2(2) = 134.62, p < .001, \text{Cramér's} = .135$). A similar pattern was observed regarding offense type ($\chi^2(5) = 834.97, p < .001, \text{Cramér's} = .336$). A significantly larger proportion of PTI participants arrested for possession of alcohol under 21 years of age successfully completed the program relative to those arrested for the same charge who did not complete the program. Additionally, a disproportionate number of PTI participants who were arrested for simple assault or battery were unsuccessful compared to the smaller number of successful participants who were charged with the same offense. Differences in the amount of time that lapsed between program entry and the collection of rearrest data were also observed among PTI participants. A significantly longer period of time had passed for successful participants compared to those who were unsuccessful ($t(7,408) = 3.54, p < .001$).

**Within program predictors of completion status**

The multivariate logistic regression results predicting program completion status among ACC participants are presented in Table 3. One variable was significantly associated with program completion. Female participants were slightly more than two times as likely as male participants ($\text{OR} = 2.02, 95\% \text{ CI} = 1.47–2.78$) to successfully complete the program. Participants who entered the program for possession of alcohol under 21 years of age were nearly two times as likely ($\text{OR} = 1.94, 95\% \text{ CI} = 0.99–3.78$) to be successful compared to participants who received a citation for petit theft, but this association did not achieve the generally accepted level of significance.

Multivariate logistic regression estimates of the association between these key variables and program completion status within the PTI group are presented in Table 4. All of the estimates were significant, except for two: biological sex and other racial or ethnic background. The odds of successful program completion among PTI participants decreased according to age ($\text{OR} = 0.97, 95\% \text{ CI} = 0.96–0.98$) and Black
participants were less likely (OR = 0.48, 95% CI = 0.38–0.60) to successfully complete the PTI program compared to White participants.

Participants who entered the program for petit theft were treated as the reference group and those who were arrested for simple assault or simple battery were significantly less likely to be successful in the program relative to participants who entered for petit theft. This trend was also observed for participants who were arrested for possession of marijuana or drug paraphernalia, criminal mischief, and other offenses. A notable difference was observed with respect to participants who were arrested for possession of alcohol under 21 years of age. Participants in this group were more likely (OR = 1.87, 95% CI = 1.29–2.72) to successfully complete the program compared to those who entered the program for petit theft. Lastly, each month that passed between program entry and the collection of post-program arrest data for the current study was associated with a small, albeit statistically significant increase (OR = 1.01, 95% CI = 1.002–1.012) in the likelihood of successful program completion.

**Within program indicators of rearrest**

Descriptive information regarding participants’ rearrest following program initiation is presented in Table 5. ACC participants who were rearrested were disproportionately male ($\chi^2 (1) = 23.25, p < .001$, Cramér’s = .155), unequally distributed according to racial and ethnic background ($\chi^2 (2) = 6.38, p < .001$, Cramér’s = .071), and more likely to have entered the program for certain types of offenses ($\chi^2 (5) = 11.14, p = .049$, Cramér’s = .093). Rearrested participants were also significantly less likely to have successfully completed the ACC program ($\chi^2 (1) = 299.87, p < .001$, Cramér’s = .484), and to have had more time lapse between program involvement and the current study compared to those who were not rearrested ($t(1,277) = 6.83, p < .001$).

Information related to rearrest status among PTI participants is also presented in Table 5. With the exception of age, PTI participants who were rearrested were significantly different on all observed measures compared to those who were not charged with another offense following their initial involvement in the program. Notably, the group of participants that was rearrested was disproportionately comprised

<table>
<thead>
<tr>
<th>Variable</th>
<th>$\hat{\beta}$ (SE)</th>
<th>Wald’s $\chi^2$</th>
<th>$p$</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>3.72 (.25)</td>
<td>–</td>
<td>–</td>
<td>41.52</td>
<td>25.63</td>
</tr>
<tr>
<td>Age</td>
<td>–.03 (.01)</td>
<td>31.36</td>
<td>&lt;.001</td>
<td>0.97</td>
<td>0.96–0.98</td>
</tr>
<tr>
<td>Female</td>
<td>–.13 (.11)</td>
<td>1.41</td>
<td>.235</td>
<td>0.88</td>
<td>0.71–1.09</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>–.73 (.12)</td>
<td>40.34</td>
<td>&lt;.001</td>
<td>0.48</td>
<td>0.38–0.60</td>
</tr>
<tr>
<td>Other</td>
<td>–.07 (.37)</td>
<td>0.04</td>
<td>.850</td>
<td>1.07</td>
<td>0.52–2.20</td>
</tr>
<tr>
<td>Offense type</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simple assault/battery</td>
<td>–2.49 (.15)</td>
<td>272.92</td>
<td>&lt;.001</td>
<td>0.08</td>
<td>0.06–0.11</td>
</tr>
<tr>
<td>Possession</td>
<td>–.82 (.26)</td>
<td>10.44</td>
<td>.001</td>
<td>0.44</td>
<td>0.27–0.72</td>
</tr>
<tr>
<td>Alcohol under 21</td>
<td>–.63 (.19)</td>
<td>10.89</td>
<td>.001</td>
<td>1.87</td>
<td>1.29–2.72</td>
</tr>
<tr>
<td>Criminal mischief</td>
<td>–1.51 (.24)</td>
<td>40.64</td>
<td>&lt;.001</td>
<td>0.22</td>
<td>0.14–0.35</td>
</tr>
<tr>
<td>Other</td>
<td>–.78 (.15)</td>
<td>28.58</td>
<td>&lt;.001</td>
<td>0.46</td>
<td>0.34–0.61</td>
</tr>
<tr>
<td>Time since program initiation</td>
<td>–.01 (.002)</td>
<td>8.24</td>
<td>.004</td>
<td>1.01</td>
<td>1.002–1.012</td>
</tr>
</tbody>
</table>

---

**Table 4.** Logistic regression predicting completion status for post-booking pretrial (PTI) program ($N = 7,410$).
of male participants ($\chi^2 (1) = 77.98$, $p < .001$, Cramér’s $=.103$), Black participants ($\chi^2 (2) = 144.98$, $p < .001$, Cramér’s $=.140$), and participants who were charged with petit theft ($\chi^2 (5) = 230.95$, $p < .001$, Cramér’s $=.177$) compared to participants who were not rearrested. More time had lapsed between program involvement and data collection for the participants who were rearrested ($t(7,408) = 7.84$, $p < .001$) compared to those who were not rearrested. Lastly, a larger proportion of participants who failed to complete the program were rearrested compared to those who were not rearrested ($\chi^2 (1) = 114.97$, $p < .001$, Cramér’s $=.125$).

**Within program predictors of rearrest**

A multivariate logistic regression model was also estimated for ACC participants to assess the likelihood of rearrest while controlling for potential confounding influences between observed measures and these results are presented in Table 6. Female ACC participants were less likely than male participants (OR = 0.56, 95% CI = 0.39–0.80) to be rearrested and those who entered the program for possession of alcohol under 21 years of age were also less likely to be rearrested (OR = 0.45, 95% CI = 0.21–0.96) relative to participants who entered the program for petit theft. Post hoc analyses of these gender differences by offense categories demonstrated female participants were consistently less likely to be subsequently arrested relative to their male counterparts. In terms of petit theft cases, one quarter (25%) of male participants were arrested while a significantly smaller (17%) proportion of female participants ($\chi^2 (1) = 6.37$, $p = .012$, Cramér’s $=.104$) were similarly classified. A similar difference was observed among possession cases, with 23% of male participants subsequently arrested compared to 11% of female participants. A larger disparity emerged with regard
to possession of alcohol cases. Over one quarter (27%) of male participants accused of alcohol possession were subsequently arrested compared to only 3% of female participants. In addition, participants who successfully completed the program were significantly less likely (OR $= 0.07$, 95% CI $= 0.05–0.10$) to be rearrested relative to those who failed to complete the program, after controlling for the significant association between time since program involvement and the probability of rearrest.

A multivariate logistic regression model was estimated to examine the likelihood of rearrest among PTI participants and the findings were consistent with the bivariate results (Table 7). Age was the exception to this pattern, with a lower probability of rearrest as age increased (OR $= 0.98$, 95% CI $= 0.98–0.99$). Female participants were less likely (OR $= 0.55$, 95% CI $= 0.47–0.63$) to fall into the rearrest group compared to male participants, and Black participants were more likely than White participants (OR $= 1.50$, 95% CI $= 1.30–1.74$) to be rearrested. In terms of offense type, participants who entered the PTI program for possession of alcohol under 21 years of age (OR $= 0.39$, 95% CI $= 0.32–0.47$), criminal mischief (OR $= 0.64$, 95% CI $= 0.41–0.99$), or other types of offenses (OR $= 0.81$, 95% CI $= 0.67–0.98$) were significantly less likely to be rearrested compared to participants who initially entered the program for petit theft. Participants who successfully completed the PTI program were less likely to be rearrested (OR $= 0.34$, 95% CI $= 0.27–0.43$) compared to those who failed to complete the program, controlling for the significant association between the amount of time that lapsed between program initiation and the likelihood of rearrest.

**Matched samples comparison and estimation of treatment effects**

Following the matching procedures, the two samples were examined to assess equivalence, and these results are presented in Table 8. Statistical tests demonstrated the matched ACC and PTI participants were similar in terms of age ($t(2,184) = 1.12, p = .264$), distribution across gender ($\chi^2 (1) = 0.02, p = .898$, Cramér’s $= .003$), racial groups ($\chi^2 (2) = 0.19, p = .908$, Cramér’s $= .009$), and offense type ($\chi^2 (5) = 8.73$,
Participants were also proportionally similar in terms of program completion status ($\chi^2 (1) = 0.01, p = .904, \text{Cramér’s} = .003$).

Analyses of post-program rearrest rates were also conducted with the measures drawn from equivalent follow-up periods. The pattern indicated a significantly larger proportion of ACC participants experienced rearrest in the 12-month ($\chi^2 (1) = 11.45, p < .001, \text{Cramér’s} = .072$) and 24-month periods ($\chi^2 (1) = 7.99, p = .005, \text{Cramér’s} = .061$) compared to PTI participants. A larger proportion of ACC participants (15%) was also rearrested 30-months following the program compared to PTI participants (12%), but this difference was not statistically significant ($\chi^2 (1) = 3.29, p = .069, \text{Cramér’s} = .072$).

Despite analyses based on excessively high tolerances for distal matches, PTI participants could not be matched to ACC participants in terms of the amount of time which lapsed between program involvement and the assessment of rearrest. This is due to the fact that some PTI participants were involved in the program three years before (i.e., 2010 versus 2013) the initiation of the ACC program. Specifically,
an average of 71 months had passed since PTI participants were involved in the program compared to an average of 31 months for ACC participants, which was equivalent to more than half the amount of time that had lapsed for PTI participants ($t(2,184) = 51.41, p < .001$).

Given the importance of the amount of time available to come into subsequent contact with the criminal justice system, this variable was included in an overall assessment of the treatment effects observed for both sets of program participants. Similar to prior research examining non-linear relationships with offending (e.g., Buonanno, Fergusson, & Vargas, 2017), a polynomial function consisting of a quadratic term was also included to account for the association between the amount of time that lapsed between program participation and possible arrest. The final logistic regression was estimated to assess the average differences in 30-month arrest outcomes and these results are presented in Table 9. The results from this model indicated the probability of arrest for ACC participants was marginally lower ($OR = 0.89, 95\% CI = 0.63–1.24, p = .483$) than PTI participants, but this result was not statistically significant.

Post-hoc analyses between the two largest offense categories across diversion programs were also conducted to determine if there were any differences in subsequent 30-month arrest rates among participants who entered the programs for petit theft or possession. In both comparisons, ACC participants had lower arrest rates, but these did not achieve statistical significance. Specifically, 13% of ACC participants who entered the program for petit theft were subsequently arrested within 30-months of initiating the program while 16% of PTI participants who entered the program for the same offense were arrested ($\chi^2 (1) = 1.18, p = .278$, Cramér’s $= .031$). The proportions of participants who entered the programs for possession and were subsequently arrested were similar as well ($\chi^2 (1) = 0.334, p = .563$, Cramér’s $= .028$), with 16% of ACC participants and 14% of PTI participants who were charged with drug possession experiencing a subsequent arrest.

It is also possible to perform a post-estimation technique generating a comparison of two groups that can be interpreted as a treatment effect. Designating the ACC group as receiving the treatment, understanding that the PTI group could also be

### Table 9. Logistic regression estimating 30-month rearrest status among matched samples ($N = 2,186$).

<table>
<thead>
<tr>
<th>Variable</th>
<th>$\beta$(SE)</th>
<th>Wald’s $\chi^2$</th>
<th>$p$</th>
<th>OR</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1.08(.46)</td>
<td>–</td>
<td>–</td>
<td>2.18</td>
<td>0.85</td>
<td>3.57</td>
</tr>
<tr>
<td>Age</td>
<td>-.02(.01)</td>
<td>3.11</td>
<td>.078</td>
<td>0.96</td>
<td>0.96</td>
<td>1.00</td>
</tr>
<tr>
<td>Female</td>
<td>-.77(14)</td>
<td>26.41</td>
<td>.001</td>
<td>0.47</td>
<td>0.36</td>
<td>0.63</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>.25(.15)</td>
<td>2.96</td>
<td>.085</td>
<td>1.28</td>
<td>0.96</td>
<td>1.71</td>
</tr>
<tr>
<td>Other</td>
<td>-.52(.41)</td>
<td>1.35</td>
<td>.244</td>
<td>0.61</td>
<td>0.27</td>
<td>1.39</td>
</tr>
<tr>
<td>Offense type</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simple assault/battery</td>
<td>-.34(.28)</td>
<td>0.81</td>
<td>.369</td>
<td>0.78</td>
<td>0.45</td>
<td>1.35</td>
</tr>
<tr>
<td>Possession</td>
<td>-.07(.18)</td>
<td>0.00</td>
<td>.953</td>
<td>0.99</td>
<td>0.69</td>
<td>1.41</td>
</tr>
<tr>
<td>Alcohol under 21</td>
<td>-1.15 (.33)</td>
<td>12.73</td>
<td>.001</td>
<td>0.31</td>
<td>0.16</td>
<td>0.59</td>
</tr>
<tr>
<td>Criminal mischief</td>
<td>-.98(.56)</td>
<td>2.49</td>
<td>.115</td>
<td>0.41</td>
<td>0.14</td>
<td>1.24</td>
</tr>
<tr>
<td>Other</td>
<td>.13(.31)</td>
<td>0.31</td>
<td>.579</td>
<td>1.19</td>
<td>0.65</td>
<td>2.18</td>
</tr>
<tr>
<td>Time since program initiation (in months)</td>
<td>.03(.02)</td>
<td>4.96</td>
<td>.026</td>
<td>1.04</td>
<td>1.01</td>
<td>1.07</td>
</tr>
<tr>
<td>Time since program initiation (quadratic term)</td>
<td>&lt;.01(&gt;.01)</td>
<td>4.48</td>
<td>.034</td>
<td>0.99</td>
<td>0.99</td>
<td>0.99</td>
</tr>
<tr>
<td>Successful completion</td>
<td>-1.88(15)</td>
<td>157.93</td>
<td>&lt;.001</td>
<td>0.15</td>
<td>0.11</td>
<td>0.20</td>
</tr>
<tr>
<td>ACC program</td>
<td>-.12(17)</td>
<td>0.49</td>
<td>.483</td>
<td>0.89</td>
<td>0.63</td>
<td>1.24</td>
</tr>
</tbody>
</table>
receiving an intervention when compared to simple arrest and jail booking, the effect observed among the ACC participants (ATE) confirmed the statistically equivalent rearrest rate relative to PTI participants ($\beta = -0.04$, 95% CI = $-0.36$ to $-0.29$, $p = .808$).

Discussion

The sheer volume of low level offenses processed through the criminal justice system warrants attention, especially considering the potential negative impact of a formal arrest record attached to an arrest (Natapoff, 2012). The expansion of pre-arrest diversion programs that provide adults accused of low level offenses with the opportunity to avoid a criminal record represents one way to address this growing problem and participation in service-oriented diversion programs has been shown to enhance compliance, which can significantly reduce the likelihood of rearrest and limit the amount of time spent in jail (Broner et al., 2005).

One of the goals of this study was to assess factors associated with program completion, which were high among participants in both programs. The continued operation of both programs can be supported based on the simple indicator of completion rates, but there are important findings to consider to foster improvement. Looking more closely at factors associated with program completion generated several noteworthy findings, one of which involved the significantly higher success rates and lower rearrest rates observed among female participants. Research on pre-trial intervention and pre-arrest diversion programs is limited, but other work focused on criminal justice programming has also demonstrated female participants tend to be more successful than their male counterparts in completing drug court, substance use treatment during probation, prison reentry programs, and substance use treatment for parolees (Gray & Saum, 2005; Huebner & Cobbina, 2007; Johnson, Friedmann, Green, Harrington, & Taxman, 2011; Severeson, Veeh, Bruns, & Lee, 2012). There are a number of gendered differences that may explain these higher success rates, including stronger social relationships and family attachments generally observed among female relative to male participants in criminal justice programs (Huebner & Pleggenkuhle, 2015). Recent work has also shown that female adults who experience an arrest achieve employment readiness in shorter periods of time compared to male adult arrestees (Curcio, Pattavina, & Fisher, 2018), which is a meaningful part of reducing the likelihood of future criminal justice contact. This enhanced responsivity of female participants has been attributed to several factors, including social stability and increased social capital (Giordano, Cernkovich, & Rudolph, 2002; Salisbury & Van Voorhis, 2009).

The convergence between these findings highlights the need to develop methods to enhance program engagement among male participants, and while research has not been conducted explicitly on how to maximize pre-trial intervention or adult civil citation engagement, work conducted in other areas may help guide future practices. For instance, a study examining barriers to diagnosis and treatment of depression among male patients identified negative reactions and the sense that providers were failing to take action or communicating ambiguously about what could be done to readily address specific conditions (Rochlen et al., 2010). Thus, future work can address the role of ambivalence to meet the conditions required for successful program
completion among male ACC and PTI participants while program staff develop communication styles directed specifically toward male participants.

Another important finding related to the study’s first objective was that participants who entered these programs for certain types of offenses were more likely to be successful and less likely to be rearrested. Within both programs, participants in possession of alcohol under the age of 21 consistently demonstrated higher completion rates and lower rearrest rates after controlling for confounding factors. One of the underlying explanations for this result may be due to the types of behavior likely to attract the attention of police exhibited by young people under the influence of alcohol. Research has demonstrated a subtype of alcohol user, known as the ‘nuisance inebriate,’ who is likely to be involved in nonviolent, minor offenses resembling public disorder (Sevigny & Coontz, 2008). It is possible that participants entering the program for underage possession of alcohol simply demonstrated a lower likelihood of involvement in persistent offending than participants who were involved in other types of criminal activity. This result supports the use of both programs for these types of offenses given the low severity of the offense and the high probability for avoiding subsequent contact with the criminal justice system.

It is also worth noting the association between age and completion status, as well as the relationship between age and rearrest. Complimenting a wealth of research examining predictors of program success and recidivism, older participants were more likely to succeed and less likely to be subsequently arrested. This result has recently been observed in studies examining everything from violent recidivism (Piquero, Jennings, Diamond, & Reingle, 2015), to generic assessments of reincarceration (e.g., Webster, Dickson, Staton-Tindall, & Leukefeld, 2015), and even driving under the influence recidivism (Karjalainen, Blencowe, & Lillsunde, 2012). The age-offending relationship is complicated, but it can be explained, in part, according to the peak of risk factors that are likely to occur from late adolescence to early adulthood, which include drug use, relationship and economic instability, and possible emotional volatility (Spruit, van der Put, Gubbels, & Bindels, 2017). A sizable proportion of the ACC and PTI samples were within this potentially tumultuous life period and likely experienced many of these conditions.

Successful program completion was also a significant factor when considering the likelihood ACC and PTI participants were arrested following their program involvement. This finding converged with much of the research on successful completion of criminal justice programming and reduced rearrest rates, from restorative justice approaches (de Beus & Rodriguez, 2007), to post-booking diversion for juveniles (Dembo et al., 2008) and mental health courts (Dirks-Linhorst & Linhorst, 2012). This result could have had a slightly different impact on ACC participants given successful program completion was a proxy indicator for attendance to all mandated counseling sessions, negative drug tests for the duration of the program, payment of behavioral health services costs, and community service. On the other hand, successful completion for PTI participants represented full payment of fines and court costs, as well as completion of community service, if necessary. Additional work needs to be conducted to assess the qualitative differences in these programs before reaching any conclusions about the impact that the content of the respective programs may have had on
post-program arrest. Despite the differences in the conditions contained within the ACC program relative to the PTI program, program completion served as a cardinal indicator of the likelihood of future arrest.

In the larger context, a significant amount of work has shown the dramatic impact associated with program completion, especially among offenders enrolled in drug treatment programs. Successful completion rates average 73% with younger, unemployed, single marital status, and racial or ethnic minority group members were consistently less likely to successfully complete their respective programs (Olver, Stockdale, & Wormith, 2011). Although both the ACC and PTI programs demonstrated higher completion rates, the demographic characteristics of unsuccessful participants correspond with these prior results. The association between completion status and post-program arrest seems to suggest program participants at high risk for future criminal justice involvement who do not receive the full treatment or complete exposure to the full array of program features designed to ameliorate the reasons underlying the initial arrest will remain at elevated risk and be more likely to be rearrested. This relationship has been widely supported in the literature, with rearrest or reconviction rates ranging from 10–23% higher for program noncompleters relative to completers, which also garnered additional support in the current study (Olver et al., 2011).

To meet the second objective, the two programs were evaluated with matched samples, which generated statistically equivalent post-program arrest rates between ACC and PTI participants. In technical terms, the treatment effect associated with ACC program participation was not significant, which means this evidence does not favor the use of one program over the other. Despite the lack of adjusted post-program arrest rates, there are some important points to consider, especially in future evaluations of relevant indicators of success attributed to these types of diversion programs. For example, ACC participants undergo a comprehensive behavioral health assessment at the time of program initiation and most PTI participants are not given the opportunity to engage with a provider to assess possible behavioral health needs. Considering this was the first-time participants were formally charged with a criminal offense, obtaining a behavioral health assessment could provide long-term benefits not realized through the analysis of subsequent arrest following program initiation. In short, ACC participants may benefit from improvements in behavioral health while PTI participants were not afforded the same opportunity to address similar needs. Evaluation of the programs according to formal arrest also failed to capture the potential impact of avoiding a criminal arrest record for successful ACC participants relative to PTI participants, who despite successful completion and the dismissal of charges still received a criminal arrest. There is a compelling case to be made for the impact of a lifelong criminal record (Jacobs, 2015), making this an area that warrants much more attention, especially considering the ripple effects that arrest can have throughout many areas of adults’ lives. Rather than limiting our knowledge to arrest as the key measure of interest, employment status, income level, marital status, housing stability, and family cohesion are vital long-term measures of social status and well-being that can be associated with avoiding an arrest record.
Limitations and recommendations

This cursory comparison between two different types of diversion programs has added to our limited knowledge in this area, but there are important limitations to consider. First, post-program arrest data were drawn from the state’s database, which contains records of formal contact with law enforcement within Florida. Arrests which occurred outside the state and measures of self-reported criminal activity were not available for the current study. There were also limited measures collected by both programs to serve as the basis for matching procedures. Most of the demographic background characteristics included in the current study were significantly associated with program completion and follow-up arrest, but the inclusion of measures of employment, educational attainment, marital status, and program engagement would provide a more comprehensive match between program participants. There are also varying levels of discretion involved in determining program eligibility. Law enforcement officers assess who is eligible for the ACC program at the time of initial contact while the program administrator in the District Attorney’s office is responsible for reviewing cases and making this decision for PTI participants. These discretionary process measures were not available for the current study. Net-widening, or formally addressing low level offenses that would have otherwise resulted in a verbal warning or some other informal practice, has also been raised as significant concern. Evidence drawn from juvenile pre-arrest diversion programs has shown they can be implemented without drawing a larger segment of the population into the system (Nadel, Pesta, Blomberg, Bales, & Greenwald, 2018), but future work is needed to assess adult programs in the same manner.

Pre-arrest and post-booking diversion programs continue to grow in popularity as part of the nationwide effort to reform the front-end of the criminal justice system. This study has shown that certain participant characteristics were associated with program success and subsequent arrest, despite the similar post-program arrest rates. These programs have great potential to make the system more efficient and less harmful for adults charged with low-level offenses, but there is much more evaluation work to be done to determine which are optimal and for whom they work best.

Recommendations for additional inquiry can be categorized into three areas. One involves enhancement of the respective programs to increase participant engagement and reduce subsequent arrest. This should include an assessment of practices designed to appeal to younger, male participants with special attention devoted to maximizing the likelihood of program completion. Another area should be dedicated to isolating the ways in which ACC and PTI program content can influence the likelihood of subsequent arrest. For example, are ACC participants any more or less likely than PTI participants to actively avoid behavior that can result in arrest due specifically to the intervention content delivered? Additionally, are ACC participants more likely to avoid subsequent arrest compared to another comparison group who was arrested, booked into jail, and prosecuted (i.e., not diverted) for comparable offenses? The third area should concentrate on the impact of program participation on various social domains, such as housing stability, employment, and relationships to determine whether there are noticeable differences tied to program participation. A significant amount of research has shown criminal justice contact and the resulting formal
sanctions can enhance the likelihood of reoffense by stigmatizing adults (e.g., Bales & Piquero, 2012; Cochran, Mears, & Bales, 2014; Mitchell, Cochran, Mears, & Bales, 2017; Spohn & Holleran, 2002). This logic can be applied to ACC participants to assess whether this group is able to demonstrate more stability following participation, for instance, which may provide further evidence of a preferred programmatic option.

These programs are likely to proliferate, especially in Florida, given the recent state-wide mandate to utilize pre-arrest diversion programs. Continued evaluation efforts are the best way to monitor the performance of these programs, and the greater the variety of outcomes that can be observed, the more informed the policy decisions will be in the future.

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