Measuring Drug Court Structure and Operations : Key Components and Beyond

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MEASURING DRUG COURT STRUCTURE AND OPERATIONS

Key Components and Beyond

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In the past 20 years, drug courts have become a common part of criminal justice systems' responses to drug-related crime. However, systematic national research has been limited on how drug courts are specifically organized, limiting the ability of staff at individual programs to compare the structure and operations of their program to those from a nationally representative data set. Therefore, as a part of the eCourt project, a national sample of drug court coordinators was asked to rate the extent to which a set of guidelines, the "10 key components," was implemented using a 43-item self-administered questionnaire. Psychometric analyses indicated that a seven-factor solution (with 27 items) provided the best and most interpretable fit. Composite indices included eligibility and program components, therapeutic and individualized jurisprudence, team collaboration and communication, community support, data-driven program development, graduated sanctions, and defense and prosecution collaboration. Suggested uses for the findings are discussed.

Keywords: Drug Court Components Questionnaire, national survey, coordinator, measurement

In response to large drug-related caseloads, the perceived impact of illicit drugs on public safety, and grassroots efforts to develop more treatment-focused responses to drug crime, the first drug treatment court was established in Dade County in Miami, Florida, in 1989 (Goldkamp, 1994; Goldkamp & Weiland, 1993). The Miami program became a model for other jurisdictions, and in the past 20 years, drug courts have become a common part of local criminal justice systems' responses to drug-related crime (General Accounting Office, 2005; Huddleston, Marlowe, & Casebolt, 2008). Federal funding for planning, implementation, and enhancement of drug courts was first provided under the Violent Crime Control and Law Enforcement Act of 1994, which also created the Drug Courts Program Office (DCPO) in the Office of Justice Programs (OJP) to administer these grants. This federal funding and policy focus helped spur the rapid spread of drug courts, focusing on adults, juveniles, and families, as well as several subsequent adaptations collectively labeled problem-solving courts for addressing other issues (e.g., domestic violence, driving under the influence,

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mental health, and veterans courts). By the end of 2007, 2,147 drug courts had been implemented in the United States (Huddleston et al., 2008).

Since their inception, a number of studies of drug courts, including several randomized trials of individual programs and meta-analyses that have quantitatively summarized the results of these primary studies, indicate that drug courts reduce drug use and criminal behavior during program participation and reduce postprogram recidivism for at least 1 to 3 years (Belenko, 1998, 1999, 2001; General Accounting Office, 2005; Gottfredson, Najaka, Kearley, & Rocha, 2006; Henggeler, Halliday-Boykins, Cunningham, Randall, & Shapiro, 2006; Lowenkamp, Holsinger, & Latessa, 2005; Wilson, Mitchell, & MacKenzie, 2006). However, the operational components of drug courts and how these affect participant outcomes remain largely unknown. However, a number of characteristics are considered distinctive of drug courts. These include an emphasis on therapeutic rather than traditional jurisprudence (Hora, Schma, & Rosenthal, 1999; Saum & Gray, 2008), use of a courtroom-based team approach to case processing that incorporates a central role for the judge, a significant role for substance abuse treatment providers, the assumption of cooperative rather than adversarial roles by prosecution and defense, and a recognition that noncompliance with court conditions is expected and should not necessarily result in the immediate application of traditional dispositions, such as revocation and/or imposition of regular adjudication and sentences (Belenko, 2002; Goldkamp, White, & Robinson, 2001; Marlowe, Festinger, Dugosh, & Lee, 2005; Taxman, 1999).

These distinctive components are summarized in a widely disseminated monograph, *Defining Drug Courts: The Key Components* (OJP, 1997/2004). This publication was the product of the Drug Court Standards Committee convened by the National Association of Drug Court Professionals through funding provided by the now-defunct DCPO.[1] This expert panel comprised drug court professionals, researchers, and federal administrators who, on the basis of their experience, distilled "the basic elements that define drug courts" (OJP, 1997/2004, p. 4).

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TABLE 1: Key Components of Drug Court

1. Drug courts integrate alcohol and other drug treatment services with justice system case processing.
2. Using a nonadversarial approach, prosecution and defense counsel promote public safety while protecting participants' rehabilitation needs.
3. Eligible participants are identified early and promptly placed in the drug court program.
4. Drug courts provide access to a continuum of alcohol, drug, and other related treatment and rehabilitation services.
5. Abstinence is monitored by frequent alcohol and other drug testing.
6. A coordinated strategy governs drug court responses to participants' compliance.
7. Ongoing judicial interaction with each drug court participant is essential.
8. Monitoring and evaluation measure the achievement of program goals and gauge effectiveness.
9. Continuing interdisciplinary education promotes effective drug court planning, implementation, and operations.
10. Forging partnerships among drug courts, public agencies, and community-based organizations generates local support and enhances drug court effectiveness.

SOURCE: Office of Justice Programs (1997/2004).

As a consensus statement about how a drug court should operate and what components should be included, the above monograph was originally intended to provide guidance to jurisdictions interested in implementing drug courts. The 10 key components (see Table 1) represented broad ideas about how a drug court was operationally and conceptually different from traditional criminal courts. For example, one marked departure (and perhaps the most controversial; Hora et al., 1999; Nolan, 2001) is captured by the second key component, which ascribes the need for a nonadversarial approach as prosecution and defense counsel work together as a team to address both the safety of the general public and the rehabilitation needs of individual participants in the program. In addition to simply specifying the key components, the monograph also detailed the rationale behind each as well as specific performance benchmarks whereby a court could determine to what extent it had realized each ideal. For example, with respect to the first key component (integration of substance abuse treatment services with court case processing), performance benchmarks included, among others, being planned and implemented by a team of individuals representing key actors in the court system, local service providers, and other stakeholders; documentation of mutually agreed-on goals, eligibility criteria, operating procedures and performance measures; and articulation of both abstinence and law-abiding behavior as participant goals.

Although, as noted above, the original intent of *The Key Components* was simply to provide guidance for implementing a new drug court, its use has expanded beyond this. Currently, the monograph is used as a standard whereby funders, policy makers, and researchers gauge the extent to which a drug court is in fact a drug court. This is evident in the research literature that uses *The Key Components* as a reference point against which to compare the actual implementation of a drug court with the ideal represented in these components (Carey, Finigan, & Pukstas, 2008; Hiller et al., 2010). The monograph's influence also is evident in the decisions about which programs receive federal funding (Bureau of Justice Assistance [BJA], 2005a, 2005b). For example, a recent solicitation for proposals for implementation funding unequivocally states,

> Drug courts funded through the Bureau of Justice Assistance's (BJA) Drug Court Discretionary Grant Program are required to target nonviolent offenders and must implement an adult drug court based on the BJA and National Association of Drug Court Professionals' publication: *Defining Drug Courts: The Key Components*. (BJA, 2007, pp. 1-2)

The limited available research suggests that the key components are not uniformly implemented across programs and that variations in the implementation of specific components, such as the drug court review hearing, is related to program effectiveness (see Marlowe et al., 2003; Marlowe, Festinger, Lee, Dugosh, & Benasutti, 2006). To illustrate, the first and fourth key components of the drug court model envision the integration of assessment, substance abuse treatment, and court services (OJP, 1997/2004), an approach cited as an evidence-based practice by the National Institute on Drug Abuse (2006) in the monograph *Principles of Drug Abuse Treatment for Criminal Justice Populations*. However, there is some research that shows that treatment delivery in drug courts can be less than ideal. In a 1999 survey of 263 drug courts, Peyton and Gossweiler (2001) found a number of service gaps. For example, many drug courts did not appropriately use screening and assessment instruments for placement decisions; many drug courts had difficulty retaining clients because of lack of treatment motivation or poor "treatment attitude," and relationships with treatment providers were not well structured. Common reasons for early termination in drug courts included failure to engage in treatment, missing too many treatment appointments, poor attitude, and "lack of motivation" (Peters & Murrin, 2000; Peyton & Gossweiler, 2001). More recently, in a study of treatment services in four drug courts, Taxman and Bouffard (2002) found that on average, only 22% of observed treatment sessions contained any discussion of cognitive-behavioral issues or strategies, and only 16% of treatment time was spent on cognitive-behavioral components. In addition, information on basic concepts and vocabulary of addiction and treatment were relatively rarely delivered (32% of sessions), and treatment did not seem to adequately reflect the drug use habits of the clients (Taxman, 1999). Overall, Taxman and Bouffard (2002, 2005) found that much of the time in clinical sessions was devoted to administrative tasks and support services. Finally, in our own work, we have found that 77% of drug courts in a national sample had a formal agreement or contract with a treatment provider, and only 48% of programs allowed the treatment provider a role in decisions to admit clients to the drug court (Belenko, Hiller, Taxman, Young, & Perdoni, 2009).

Although these studies provide important glimpses into the metaphorical "black box" of drug courts (Bouffard & Taxman, 2004; Goldkamp et al., 2001; Hiller et al., 2010), it is difficult to know to what extent these findings may generalize to the many programs in operation nationally, because they focus on only a single or a small number of drug court programs. In fact, there are very few studies of drug courts with nationally representative samples that report data against which local drug court programs may compare themselves, and none of these provides systematic descriptions of the implementation of the 10 key components. Absent nationally representative data against which to compare themselves, programs have little option but to interpret, without any meaningful means of comparison, whether they have adequately met the performance benchmarks associated with each key component.

Not having a means for systematically quantifying the level to which individual programs adhere to the key components also hinders organizational studies that may shed light on how variations in their implementation affect program effectiveness. Following the example of a multisite study reported in the drug abuse treatment literature, the Drug Abuse Treatment Outcomes Studies (Hubbard, Craddock, Flynn, Anderson, & Etheridge, 1997; Simpson et al., 1997), multilevel models could be constructed to estimate the impact of

individual characteristics as well as program-level variations on participant outcomes. For example, Hiller, Knight, Broome, and Simpson (1998) showed that community-based programs with greater proportions of clients under criminal justice supervision (viewed as a proxy of how interconnected the program was with the local criminal justice system) showed a significantly stronger association between legal pressure and retention in the program. Similar analyses could be done in multisite, multilevel studies of drug courts where variations in the extent to which the key components are expressed in local programs could be examined for their relative impact on participant outcomes. Identifying which variations in key components were related to individual outcomes would provide important insight into which of these are the "active ingredients" in drug court programs.

Therefore, the overarching goal of the current study was to develop the Drug Court Components Questionnaire. To accomplish this, we had the following objectives: (a) Create an item pool that tied the operationalization of each component to its specific performance benchmarks (see OJP, 1997/2004), (b) collect data on these from a nationally representative sample of drug courts, and (c) establish the measurement properties for composite measures identified via principal components analysis. We expected that analyses would identify a set of psychometrically sound subscales that may be used as data against which other programs may compare themselves as well as an objective measure for use in multisite, multilevel studies of the impact of the key components on individual outcomes.

METHOD

SURVEY SAMPLE AND RESPONSE RATES

The drug courts targeted for the survey were drawn from two samples. The first included all adult drug courts located in the 72 counties that composed the county sampling frame for the National Criminal Justice Treatment Practices (NCJTP) survey (Taxman, Cropsey, & Young, 2007). This nationally representative sample of counties was drawn from the 3,143 counties or county equivalents listed in the 2000 census through regional stratification and sample selection by probabilities proportional to size without replacement (further details on the NCJTP sample are in Taxman et al., 2007). Active adult drug courts in these counties were identified through web searches and queries of state court administrators. The other sample frame included all adult drug courts listed by the OJP as receiving federal implementation or enhancement grants in 2002 or later that were not included in the NCJTP sample. The resulting total of 237 drug courts was reduced to a target sample of 208 after those subsequently identified as no longer operating or found to be DUI/DWI courts were eliminated. Of the 208 courts, 76 were from the NCJTP sample and 132 were from the OJP funding list.

Separate surveys were constructed for the drug court coordinator and for staff of treatment programs used by each of the sample courts. Survey instruments, consent forms, and introductory letters from the director of the National Drug Court Institute and the principal investigator were mailed along with a stamped return envelope to drug court coordinators and treatment staff. We employed the Dillman (2000) method of survey follow-up, sending reminder postcards 1 week following the initial mailing, making reminder phone calls 2 weeks after mailing, sending e-mails at the 4-week mark, and mailing a second copy of the

survey 5 weeks after the first mailing. This process generated responses from 141 drug court coordinators, or 68% of the total sample. Surveys were mailed out in August 2007, and data collection concluded in February 2008. The current study uses data only from the drug court coordinator survey, because these individuals are the most knowledgeable about the overall structure of the drug court.

Demographically, coordinators were predominantly female (65%) and between the ages of 36 and 55 (65%). The majority (54%) had supervised the operations of their drug court for at least 3 years (median 3.7 years); 12% had been coordinator for less than 1 year. Analysis of professional characteristics showed that 88% had at least a bachelor's degree (44% had an advanced academic or professional degree) and received their highest degree in criminal justice, psychology, or counseling (each with 13.6%) or social work (12.1%).

DEVELOPMENT OF THE DRUG COURT COMPONENTS QUESTIONNAIRE

An initial pool of 73 items was generated to operationalize the performance benchmarks associated with each of the 10 key components (OJP, 1997/2004). For example, for the fifth key component, "Abstinence is monitored by frequent alcohol and drug testing," a number of statements were created, such as "Participants are frequently tested for recent drug use," "Drug test results are quickly communicated to the team," "Alcohol testing is used in conjunction with illicit drug testing," and "Sustained abstinence from illicit drugs is required before a participant completes the program." For the sixth component, "A coordinated strategy governs drug court responses to participants' compliance," initial items included "The drug court uses a graduated system of sanctions to address noncompliant behavior," "Sanctions are consistently applied to noncompliant behavior," "The drug court rewards participant progress in the program," and "Sanctions are effective for influencing participant compliance."

The original item pool was pilot-tested with the judge, coordinator, prosecutor, defense attorney, and treatment provider in each of three drug court programs. Feedback provided during this pilot focused specifically on item wording, whereby respondents highlighted items difficult to understand or viewed as unnecessary because of having a high degree of redundancy with other existing items. Using this information, changes focused on eliminating items judged to be of limited relevance or too difficult to understand. Then, multiple statements that expressed similar ideas were collapsed into a single item to reduce the total number of items in the questionnaire. In addition, wording was changed on several items to make the meaning of the statements more precise. This process resulted in a final total of 43 statements (about 4 per component; see appendix) rated on a 5-point Likert-type scale where 1 was *strongly disagree* and 5 was *strongly agree*. A value of 3 represented the neutral response (i.e., *neither disagree nor agree*). Items were scrambled on the final questionnaire to limit the potential for question order effects.

ANALYSIS

Because the current study represents the first examination of the Drug Court Components Questionnaire, a series of exploratory principal components analyses was performed using varimax rotation. The overall goal was to identify the fewest number of independent, interpretable factors underlying the 43 items on the survey. One a priori expectation was that up to 10 factors (1 for each component) should emerge from the analysis of the survey responses.

However, because the source of the key components was a consensus statement reflecting the practices and structure of the early drug courts and was not specifically based on theory or empirical research, it was unclear exactly how many factors would represent the most independent and interpretable solution.

When the putative factor structure underlying a questionnaire is not known, it is customary to use objective approaches, such as the eigenvalue rule (Kaiser, 1960) and the scree test (Cattell, 1966), along with subjective judgments about how interpretable factors are, as guidance for determining how many factors should be retained (DeVellis, 2003). Generally, it also is desirable to account for the largest amount of item covariance possible while determining which solution has the highest level of interpretability with at least 50% of the variance explained (Costello & Osbourne, 2005). Application of the eigenvalue rule suggests that factors that have an eigenvalue greater than 1 should be retained, because aggregating the items in the factor would provide more information than a single item alone. With the scree test, it is suggested that the factors included in the vertical, left portion of the scree plot (representing large eigenvalues) be retained, whereas those that occur at or after the "bend" leading to the horizontal right portion of the plot (representing small eigenvalues relative to those on the left side of the plot) should be discarded. An alternative to using only the eigenvalue rule (which can lead to a large number of factors, many of which have only two items) or only the scree test (which favors factors that have a large number of items, often making interpretation of the factor difficult) is to calculate a series of exploratory factor analyses using the number of factors suggested by the scree test as the smallest number of possible factors and another criterion (such as how many factors were expected a priori) as the largest number of possible factors. Successive solutions between these two boundaries can then be examined to determine which yields the fewest number of interpretable factors (Costello & Osbourne, 2005).

Once a "reasonable" factor solution was selected, the next analytic step was to calculate the internal consistency reliability (Cronbach's alpha coefficient) of each composite factor (DeVellis, 2003). Alphas were maximized by eliminating items from a composite that had an item-to-total correlation less than .3. Nunnally (1978) indicates that alphas greater than .7 are needed, but others suggest that values greater than .6 are useful when a scale is newly developed and tested (DeVellis, 2003).

RESULTS

EXPLORATORY FACTOR ANALYSIS

As noted above, a series of exploratory factor analyses was computed to identify the most parsimonious number of independent and interpretable factors. The first was a principal components analysis (with varimax rotation) of all 43 items with no expectation of how many factors would emerge in this solution. This analysis yielded a solution with 14 factors that had an eigenvalue that exceeded 1 and explained 69% of the total variance. However, the majority of these factors each accounted for less than 4% of the total variance explained, had fewer than 3 items, and were difficult to interpret.

Because the first solution, based solely on the eigenvalue rule, was less than optimal, the next step focused on using the scree test to determine how many factors should be retained. Examination of the scree plot (see Figure 1) showed that four factors were included in the left vertical portion of the plot (and thus had large eigenvalues) and that the plot line began

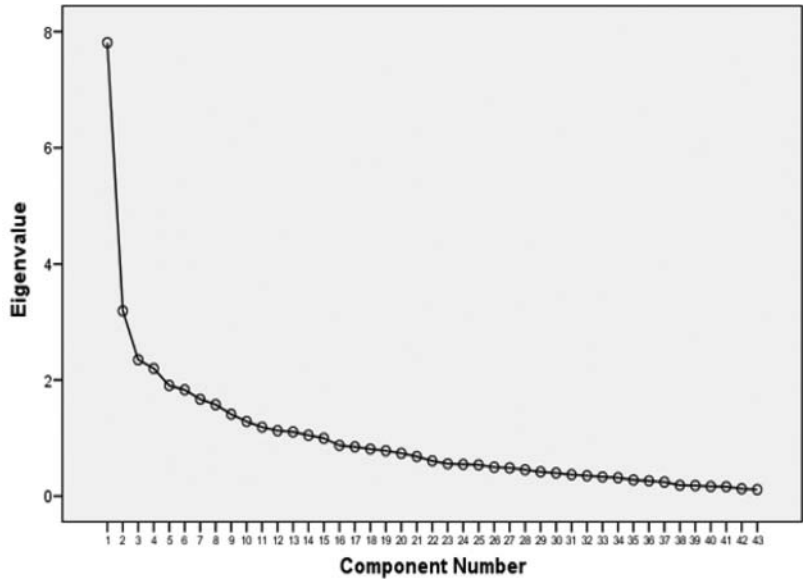

Figure 1: Scree Plot of Rotated Factor Solution for Survey Items

to level at the fifth factor, with each successive factor explaining relatively small amounts of the total variance compared to the first four factors. However, although four factors clearly had larger eigenvalues relative to the remaining factors, together they explained a small amount of total variance (36.2%). Forcing the items into a four-factor solution did not improve the amount of variance explained and provided three "superfactors" that were difficult to interpret. The first factor comprised 18 items, the second included 10 items, and the third had 9 items. The fourth factor, which had 5 items, was the only one that had a relatively clear interpretation, with many items related to sanctions and rewards for drug court participants.

Because neither the eigenvalue rule nor the scree test provided optimal solutions, the next steps focused on calculating a series of factor analyses using the results of the scree test and the hypothetical number of factors (i.e., 10, one for each component) to set the range of factors calculated (i.e., 4 to 9 factors). This resulted in six different solutions ranging from 4 factors to 9 factors. Review of these analyses showed that the 9-factor solution yielded 3 factors with two or fewer items, whereas the 7- and 8-factor solutions had only 1 factor with two items. Also, as the number of factors decreased from 6 to 4, the interpretability of factors also diminished. Therefore, because the 7-factor solution initially included only a single two-item factor, explained nearly 50% of the total variance, and was more parsimonious and judged to be as interpretable as the 8-factor solution (which explained 52% of the total variance), it was retained and subjected to additional analyses to determine the internal consistency reliability for each composite.

INTERNAL CONSISTENCY RELIABILITY OF FINAL FACTOR SOLUTIONS

In the next analytic step, Cronbach's alphas were calculated for each of the seven retained factors. These analyses showed that composite indices based on the factor analyses had

coefficients associated with acceptable levels of internal consistency reliability (DeVellis, 2003), exceeding .65 on all but two scales. In addition, computation of Cronbach coefficients also identified a number of items for which item-to-total correlations were less than .3. These items were omitted from the final scale to improve the alphas for their respective scales.

Table 2 presents the final analytic solution with item and scale descriptive statistics, alpha coefficients, and item-to-total correlations. The first composite, Eligibility and Program Components ($\alpha = .79$), was composed of eight items that focused on structural aspects of the program, including the initial assessment of the participant as well as referral to therapeutic resources (such as educational and vocational training) on the basis of specialized assessments. Items reflecting drug testing ("Participants are regularly tested for drug use") and review by the drug court judge ("Participants attend regular status/review hearings with the judge") also were part of this scale.

The second composite, which we term Therapeutic and Individualized Jurisprudence ($\alpha = .76$), included five items focused on aspects of the drug court linked to therapeutic jurisprudence ("The operations of the drug court reflect both court and treatment goals," "Traditional adversarial roles are set aside during the drug court process") as well as on activities that are uncharacteristic of traditional courts ("Rewards are matched to the level of compliance shown by the participant"). Team Collaboration and Communication ($\alpha = .66$) was composed of items focused on organizational dynamics, including collaboration and communication among team members. Items in this composite included "Court and treatment staff have a difficult time communicating with each other" (reverse scored) and "Major decisions are made collaboratively by the drug court team." This composite most closely paralleled the first key component, an integrated team-based approach to providing treatment and supervision to participants.

A fourth index, Community Support ($\alpha = .73$), was evocative of the 10th key component (OJP, 1997/2004). Items described the acceptance of the court in the local community (e.g., "The community supports the drug court's efforts") as well as active outreach by the drug court to encourage support for the program ("The drug court uses the news media to garner support"). Similar to the eighth key component, the fifth composite (Data-Driven Program Development; $\alpha = .64$) was focused on evaluation of the program.[2] Items included "The team regularly uses data to assess the operations of the program" and "Evaluation data have been used to make changes in the drug court."

Although composed of only two items (after two other items were eliminated because of low item-to-total correlations), Graduated Sanctions ($\alpha = .67$) closely followed the structure of the sixth key component with the items "The drug court uses a specific system of sanctions to address noncompliant behavior" and "A written policy links specific sanctions to the specific behaviors." The final composite, Defense and Prosecution Collaboration, represented a specific organizational aspect tied to the second key component. Although the internal consistency reliability was low ($\alpha = .61$), the two items were conceptually similar ("Defense and prosecution work together on addressing treatment issues for offenders" and "Prosecution and defense work together to identify offenders eligible for the court").

Inspection of the descriptive statistics for the scaled scores showed generally high levels of endorsement (i.e., 3.5 or greater on a 5-point scale) and relatively low amounts of variance in responses (i.e., standard deviations < 1.0). For example, for the Team Collaboration and Communication subscale, the mean response was 4.11 ($SD = .57$), and 80% of coordinators

TABLE 2: Descriptive Statistics for Scales and Items of the Drug Court Components Questionnaire

Scale/Item	*Hypothesized Component No.*	M (SD)	*Item-Total Correlation*
Eligibility and Program Components (α = .79)		4.20 (0.40)	—
Abstinence from alcohol and drugs is required before a participant completes the program	5	4.61 (0.57)	.57
Participants are regularly tested for drug use	5	4.65 (0.48)	.55
Participants attend regular status/review hearings with the judge	7	4.49 (0.76)	.51
A participant may be referred to more intensive treatment if needed	4	4.49 (0.57)	.49
Treatment assessments are completed within 30 days of when participants begin the program	3	4.27 (0.76)	.48
Participants can participate in educational and vocational assessment and training	4	4.34 (0.66)	.47
A participant must meet explicit legal criteria to be eligible for the program	3	4.35 (0.66)	.50
The severity of the sanction is matched with the seriousness of the infraction	6	4.31 (0.69)	.49
Therapeutic and Individualized Jurisprudence (α = .76)		3.98 (0.59)	—
Rewards are matched to the level of compliance shown by the participant	6	3.91 (0.74)	.57
The drug court judge tends to individualize the rewards given to the participant	6	3.75 (0.98)	.59
The operations of the drug court reflect both court and treatment goals	4	4.27 (0.61)	.54
The drug court judge tends to individualize the sanctions given to the participant	6	3.99 (0.92)	.58
Traditional adversarial roles are set aside during the drug court process	2	4.01 (0.85)	.40
Team Collaboration and Communication (α = .66) (Key Component 1)		4.11 (0.57)	—
Court and treatment staff have a difficult time communicating with each other (reverse coded)	1	4.08 (0.84)	.48
The team has worked hard to understand each other's perspective	9	4.04 (0.75)	.45
Major decisions are made collaboratively by the drug court team	1	4.32 (0.76)	.43
Everyone feels like they are an important part of the drug court team	1	3.91 (0.81)	.45
Community Support (α = .73) (Key Component 10)		3.56 (0.67)	—
The community supports the drug court's efforts	10	3.82 (0.75)	.66
Team members make presentations about the drug court to local community groups	10	3.73 (0.94)	.52
Community agencies have a good understanding of the drug court program	10	3.40 (0.90)	.51
The drug court uses the news media to garner support	10	3.32 (1.04)	.44
Data-Driven Program Development (α = .64) (Key Component 8)		3.60 (0.82)	—
Evaluation data have been used to make changes in the drug court	8	3.80 (0.88)	.48
The team regularly uses data to assess the operations of the program	8	3.39 (1.02)	.48
Graduated Sanctions (α = .67) (Key Component 6)		3.57 (0.93)	—
The drug court uses a specific system of sanctions to address noncompliant behavior	6	3.78 (0.95)	.52
A written policy links specific sanctions to specific behaviors	6	3.36 (1.18)	.52
Defense and Prosecution Collaboration (α = .61) (Key Component 2)		3.47 (0.93)	
Defense and prosecution work together on addressing treatment issues for offenders	2	3.20 (1.18)	.43
Prosecution and defense work together to identify offenders eligible for court	2	3.75 (1.04)	.43

scored 3.5 or greater. The mean response on the Therapeutic and Individualized Jurisprudence scale was 3.98 (*SD* = .59), with 83% of coordinators providing a rating of 3.5 or more.

DISCUSSION

This article presents exploratory analyses of the Drug Court Components Questionnaire, which was developed to operationalize the 10 key components by linking them to the specific performance benchmarks laid out in the widely disseminated monograph *Defining Drug Courts: The Key Components* (OJP, 1997/2004). A total of 43 items were created, and after the original item pool had been subjected to a series of psychometric analyses, 27 of these were retained, representing seven subscales with acceptable to good measurement properties. These subscales tapped both organizational characteristics (communication and collaboration, monitoring of program data) and structural aspects of the court (sanctions, community support). Separate composite indices were scored: Eligibility and Program Components, Therapeutic and Individualized Jurisprudence, Team Collaboration and Communication, Community Support, Data-Driven Program Development, Graduated Sanctions, and Defense and Prosecution Collaboration subscales. Descriptive statistics showed generally high ratings (i.e., average score was near or exceeded 4 on a 5-point scale).

Many of these subscales closely paralleled the conceptualizations of several key components. In particular, the Team Collaboration and Communication subscale most clearly relates to Key Component 1, a part of which calls for a team-based integrated approach to providing services and supervision to participants. In addition, Components 2, 6, 8, and 10 also were represented in the Defense and Prosecution Collaboration, Graduated Sanctions, Data-Driven Program Development, and Community Support composites, respectively, even though not all items originally conceived for each component loaded cleanly into these composites. Thus, it appears that several subscales may be scored from the questionnaire to provide a multi-item composite score related to many of the key components.

One defining characteristic of drug courts—the central, hands-on role played by the judge (Key Component 7; Goldkamp, 1994; Marlowe et al., 2006)—did not clearly emerge as a separate component in the current study. This was unexpected, given that one prior study found that drug court dropouts indicated that they would have liked to have more time with the judge, perhaps demonstrating that participants struggling in the program could have benefited from more judicial interactions (Butzin, Saum, & Scarpitti, 2002; Saum et al., 2002). Also, experimental research by Marlowe and colleagues has shown that participants with higher-risk profiles have better outcomes from higher levels of judicial supervision and those with moderate- to lower-risk profiles do better with less frequent reviews by the drug court judge (Festinger et al., 2002; Marlowe et al., 2005; Marlowe et al., 2006). Interpretation of this finding in relation to the relevance of the judicial role in drug courts is unclear, because the lack of a clear, separate factor for this may be attributable in part to limitations related to the design of the questionnaire or to the conceptualization of interactions with the judge. Most notably, only two items were included in the final version of the questionnaire that concretely operationalized this component. One of these items, "Participants attend status/review hearings with the judge," loaded on the first factor, and the second item, "Participants are required to watch the status/reviews of other participants," failed to load on any factor. Future research exploring other items, such as length

of time of interactions, frequency of interactions, or more operational features, should be considered if this maintains itself as a key construct of the drug court.

Also missing from the final factor solution was a subscale that clearly represented the inclusion of a treatment continuum that provides access to alcohol, drug, and other related treatment and rehabilitation services (Key Component 4). Although two items that operationalized the performance benchmarks for this component (OJP, 1997/2004) were retained in the final solution, they loaded on the first and perhaps least interpretable factor, Eligibility and Program Components. Other items either loaded somewhat weakly or cross-loaded on multiple factors, and they were ultimately discarded from the final solution. This finding is consistent with other analyses from this National Drug Court Survey indicating that drug treatment is not necessarily a routine part of the drug court; some courts have no formal agreements with local drug treatment providers, and some courts have only limited access to provider networks (Taxman, Perdoni, Young, Belenko, & Hiller, 2009). This further highlights a need for research and policy attention regarding the extent to which drug courts are adhering to principles of effective treatment in the criminal justice system (National Institute on Drug Abuse, 2006). Findings could inform the development of additional guidelines and training materials for helping drug courts more effectively integrate drug treatment into their programs. It also suggests that drug courts may need to pay more operational attention to the mechanisms to fund treatment slots, to develop treatment partnerships and linkages that increase the integration of drug abuse treatment within criminal justice case processing, or to operationalize the concept of continuum of care through an integrated service delivery mechanism (as envisioned in the first key component).

As the first attempt to operationalize the key components using an objective self-report instrument, our study contributes to understanding the operation of drug courts. In addition, the current analyses might represent normative data against which other drug court programs may be compared. For example, if programs self-administer the Drug Court Components Questionnaire and find that their scores are markedly different from the national sample, this would represent significant departures from a typical drug court and may represent drift and/or innovation related to specific, local influences. Such drift could raise concerns about how effective the program implementation has been (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005) or whether the drug court has embraced the theoretical concepts of a drug treatment court (Goldkamp et al., 2001), which could reduce the drug court's impact on its participants. Ongoing, careful attention to the implementation of the program using objective measures also could help programs to remain "truer" to the theoretical model of drug courts, represented in the 10 key components.

LIMITATIONS AND FUTURE RESEARCH

One general limitation of this study is the reliance on self-reported data from drug court coordinators. Thus, there is the possibility of inaccurate reporting of drug court activities, social desirability, or other response biases. Our survey response rate of 68%, although reasonable for mail surveys, suggests some caution in generalizing the survey results to all drug courts. This study examines the developmental process and findings from exploratory factor analyses for a new survey but does not address the external validity of the Drug Court Components Questionnaire.[3] This presents a limitation of the current study and is an important step needed in the development of a useful scale to advance the practice of drug

courts. To maximize value to the field—particularly to assess implementation progress, consistency with the theoretical model, or adherence to drug treatment concepts—there is a need to ensure that the instrument adequately meets psychometric properties that support both internal and external validity. Another related limitation of the survey stems from its use of relatively vague terms in several of the questions. For example, terms such as *frequently*, *recent*, and *quickly* may be interpreted in many different ways. One drug court might consider one treatment session per week to be frequent, but another may interpret this as infrequent. Further refinement of some of the questions is indicated to ensure that items convey a clear, uniform meaning to every person who completes the questionnaire.

The first step in the design and piloting of a new instrument, particularly with a difficult-to-access sample, such as the one used in the current study, is generally to assess the internal validity of the instrument. "EFA [exploratory factor analysis] is a complex procedure with few absolute guidelines and many options" (Costello & Osborne, 2005, p. 1). Unlike hypothesis testing, where a significant F ratio would indicate that the null hypothesis could be reliably rejected, a number of judgments are partially guided by empirical criteria, including the number of factors to be extracted, which items should be retained or dropped, and the interpretation of factors (e.g., scree test, Cronbach's alpha). To assess the external validity of the analytical decisions made in the current study, future research should focus first on conducting confirmatory factor analyses to determine whether the current solution replicates with other samples not used to develop the questionnaire.

Beyond establishing the generalizability of the current solution, future research should also address the concurrent, discriminant, and predictive validity of the Drug Court Components Questionnaire. Concurrent validity presents a particular problem for this questionnaire because limited research exists on operationalizing the 10 key components using an objective self-report instrument; to our knowledge, this is one of two studies that are examining these key components (see Carey & Finnegan, 2008). Thus there is no extant scale ("gold standard") that has been validated for measuring the key components against which the current questionnaire can be compared. Preliminary analyses on the current data suggest that some scales have statistically significant correlations with variables that index the number of different drug court activities in which team members are involved. In future research, we believe that these types of validation tests are important to use. For example, we found that a correlation between higher ratings on the Team Collaboration and Communication scale was related significantly to higher levels of involvement by the judge, defense attorney, and treatment representatives. This suggests that higher perceptions of collaboration were more likely to occur when judges, treatment providers, and defense attorneys were involved in a number of drug court activities.

In future studies, objective measures of court activities can be further analyzed in relation to the scales to further assess their concurrent validity; high correlations between these and actual court activities would suggest that the self-report scales are useful for assessing drug court operations. In terms of discriminant validity, future research could compare drug court programs established with funding from BJA (and thus required to implement the 10 key components) with drug court programs that have developed with other funding streams or have been converted to funding through other mechanisms. The greater the extent to which these groups of programs differ on their average scores on the seven composites, the greater the discriminant validity. This could naturally lead to an assessment of the predictive validity of these composites in which multilevel models could be built to examine differences

in participant outcomes as a function of both the individual participant characteristics and the degree to which programs adhere to the ideals represented in the key components as reflected in the current scale.

CONCLUSIONS

Our analyses suggest that the 10 key components have salience for describing current practices in drug courts. Additional research is needed with other samples of drug courts to understand how these programs differ organizationally and structurally from each other or from those that receive federal implementation funding. The construction of additional statements to increase the number of items for the Graduated Sanctions and Defense and Prosecution Collaboration composites would also be desirable, as would be the development of a specific scale for assessing judicial involvement and interactions in the program. In addition to this, vague items should be reworded to convey a clear, consistently interpreted meaning for each respondent. Prospectively collecting and comparing composite scores over time would provide a tool for monitoring program components on a periodic basis to determine whether scores on these constructs change over time within a particular program. This might be useful in implementation studies that examine the impact of different strategies to improve the operations of the drug treatment court. Finally, research also is needed on the relation between the composites and client retention and postprogram outcomes as well as the effects on organizational stability and sustainability to assess the validity of the tools for assessing drug court operations. A key empirical and programmatic question is "Which of the composites are most essential for achieving the goals of drug courts to reduce relapse and recidivism among drug-involved offenders?"

This study also provided the opportunity to review the 10 key components that were developed for drug courts more than 15 years ago. It is not surprising that the drug court components embrace many of the key system features that are included in the current evidence-based practices literature. However, new and evolving research has refined the core components of effective correctional programs and drug courts (National Institute on Drug Abuse, 2006). It would be prudent to update the monograph that laid out the 10 key components to incorporate the literature that has been developed since these were first published. Such a revision could serve to provide further guidance to drug courts on the core system features that should improve offender outcomes on the basis of the existing literature.

APPENDIX
ITEM POOL FOR THE DRUG COURT COMPONENTS QUESTIONNAIRE

Key Component	*Questionnaire Order*	*Item*
1	8	**The operations of the drug court reflect both court and treatment goals**
1	18	**Everyone feels like they are an important part of the drug court team**
1	34	**Court and treatment staff have a difficult time communicating with each other (R)**
1	41	**Major decisions are made collaboratively by the drug court team**

(continued)

APPENDIX (continued)

Key Component	*Questionnaire Order*	*Item*
2	2	**Prosecution and defense work together to identify offenders eligible for drug court**
2	4	Positive drug tests indicate illegal behavior and should result in a new charge (R)
2	10	**Traditional adversarial roles are set aside during the drug court process**
2	40	**Defense and prosecution work together on addressing treatment issues for offenders**
3	19	A potential participant must meet distinct substance abuse dependency criteria to be eligible for the program
3	13	**Treatment assessments are completed within 30 days of when participants begin the program**
3	29	**A potential participant must meet explicit legal criteria to be eligible for the program**
3	36	Potential program participants are identified for eligibility shortly after arrest
4	5	Mental health issues are addressed in addition to substance abuse issues
4	24	Treatment plans are individualized to address the needs of each participant
4	31	The court has the capacity to actively build relationships with other supportive service providers
4	35	Only licensed providers are used to provide services to the drug court participants
4	38	**A participant may be referred to more intensive treatment if needed**
4	42	**Participants can participate in educational or vocational assessment and training**
5	16	Alcohol testing is used in conjunction with illicit drug testing
5	23	**Participants are regularly tested for drug use**
5	28	Drug test results are quickly communicated to all members of the drug court team
5	33	**Abstinence from alcohol and drugs is required before a participant completes the program**
6	1	The drug court uses a specific system of rewards to recognize positive behavior
6	7	**The drug court judge tends to individualize the sanctions given to the participant**
6	9	**Rewards are matched to the level of compliance shown by the participant**
6	11	**The drug court judge tends to individualize the rewards given to the participant**
6	14	**The drug court uses a specific system of sanctions to address noncompliant behavior**
6	39	**A written policy links specific sanctions to specific behaviors**
6	43	**The severity of the sanction is matched with the seriousness of the infraction**
7	21	**Participants attend regular status/review hearings with the judge**
7	26	Participants are required to watch the status/reviews of the other participants
8	6	**The team regularly uses data to assess the operations of the program**

(continued)

APPENDIX (continued)

Key Component	*Questionnaire Order*	*Item*
8	15	An automated information system is maintained by the drug court
8	20	The drug court collects standard data from all participants on treatment, testing, sanctions, and rewards that participants receive
8	22	**Evaluation data have been used to make changes in drug court**
9	3	Team members attend regional or national drug court training sessions
9	12	A training process has been established for new drug court staff
9	30	**The team has worked hard to understand each other's perspective**
9	37	Staff is up-to-date on their continuing education credits
10	17	**The community supports the drug court's efforts**
10	25	**Team members make presentations about the drug court to local community groups**
10	27	**Community agencies have a good understanding of the drug court program**
10	32	**The drug court uses the news media as a means to garner support**

Note. Questionnaire order refers to the order in which the items were presented in the part of the eCourt Drug Court Coordinator Survey that included the initial 43-item version of the Drug Court Components Questionnaire. Items were sorted to avoid question order effects in the coordinator's response. The 27 items in bold were retained for the final version of the questionnaire. Responses were made on 5-point Likert-type scale that ranged from 1 (*strongly disagree*) to 5 (*strongly agree*).

NOTES

1. After the Drug Courts Program Office was disbanded, the responsibility for administering federal funds for implementing and enhancing drug courts was assumed by the Bureau of Justice Assistance.

2. Three additional items related to staff and team training (staff is up-to-date on continuing education needs; team members regularly attend regional and national drug court training sessions; a training process has been established for new drug court staff) also loaded on this factor. An alternative, five-item composite ($\alpha = .68$) could therefore also be scored reflecting quality assurance procedures related to training and data-driven program management.

3. Researchers seeking to establish the external validity of their factor solution will often split the sample prior to analysis into a testing sample and a validation sample. Then the initial solution is established with the testing sample, and its structure is replicated in the validation sample. Unfortunately, because only 141 participants were available for study, this type of approach could not be used in the current study.

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