

The Computerized Assessment of Substance Abuse (CASA)

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The Correctional Service of Canada's standardized approach to the assessment of criminogenic need is consistent with the principles of effective correctional treatment.² These principles argue that offenders who present with higher needs should be matched to more intensive and extensive services so that the probability of re-offending is diminished. Low-need offenders, on the other hand, require minimal to no treatment.

This article describes the Computerized Assessment of Substance Abuse (CASA) and the key research findings supporting its utility as a tool for identifying the level of criminogenic need in an offender population.

Standardized assessment

There is general agreement in the field of addictions that a standardized assessment approach builds efficiency in the system, ensures consistency or a common language among

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decision makers and stakeholders across the service-delivery continuum, and facilitates treatment-seeking behaviour by building motivation and a commitment to change in the client.³

Advancements in computer technology have created opportunities for innovation in assessment. Research in this area has demonstrated that efficient, computerized assessment models have the potential to increase candidness in self-reporting and improve the accuracy of results.⁴ From a policy perspective, an electronic database of standardized assessment results provides an excellent means of informing best practices policy because this information can be readily transformed into knowledge about the population's characteristics.

The Computerized Assessment of Substance Abuse (CASA)

In 1999, the Correctional Service of Canada (CSC) began developing the audio-enhanced CASA for the purpose of establishing substance-abuse severity levels and matching offender needs to the appropriate level of substance abuse treatment. The CASA serves as a supplementary assessment to the Offender Intake Assessment (OIA). The results are incorporated into the OIA and used by institutional parole officers to generate referrals to the low-, moderate- and high-intensity substance abuse programs available in various institutions.

The 288-item, self-administered CASA explores the nature and seriousness of an offender's substance abuse problems (see Table 1). The severity of alcohol abuse is assessed with the 25-item Alcohol Dependence Scale (ADS), the 15-item Problems Related to Drinking Scale (PRD) and the 25-item Michigan Alcoholism Screening Test (MAST). The MAST and ADS have been

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used extensively with a number of special populations, including offender populations, to assess severity of alcohol abuse.

To assess the severity of drug abuse, the CASA employs the 20-item Drug Abuse Screening Test (DAST) and the 5-item Severity of Dependence Scale (SDS). The former focuses on the extent of psycho-social interference and parallels the MAST items, whereas the latter assesses the degree of psychological dependence. The DAST uses the same classification system as the ADS, with severity levels ranging from "none" to "severe."

Table 1

CASA content	
Content areas	Number of items
Patterns of alcohol use	36
Consequences of alcohol use – MAST ⁵	25
Severity of alcohol problems – ADS ⁶	25
Problems related to drinking – PRD ^a	15
Link to past and current offending (alcohol)	20
Patterns of drug use	39
Severity of drug problems – DAST ⁷	20
Degree of psychological dependence on drugs – SDS ⁸	5
Link to past and current offending (drugs)	19
Injection drug use	6
Poly-substance use patterns	8
In-custody substance use patterns	9
Family-related patterns of use	9
Progress in prior programming	20
Treatment readiness	20
Respondent satisfaction with the CASA	12

^aThe PRD was developed by CSC during the early 1990s. It was derived from the MAST.

All of the scales reference the 12-month period prior to arrest to establish the severity of substance abuse; however, only the results from the ADS, DAST and PRD are considered in the referral criteria. The MAST has been included in the CASA to establish its clinical utility within a CSC context with the end goal of replacing the PRD in the program referral matrix. The SDS has been introduced in the CASA to provide a measure of psychological dependence on drugs and to establish its diagnostic utility within a CSC context. Both may be integrated into the referral matrix in the future.

Severity levels of “substantial” and “severe” result in assignment to the high-intensity substance abuse program. Severity levels of “low” or “moderate” result in referrals to programs with the corresponding intensities. All of the instruments are considered valid and reliable by best practices literature.

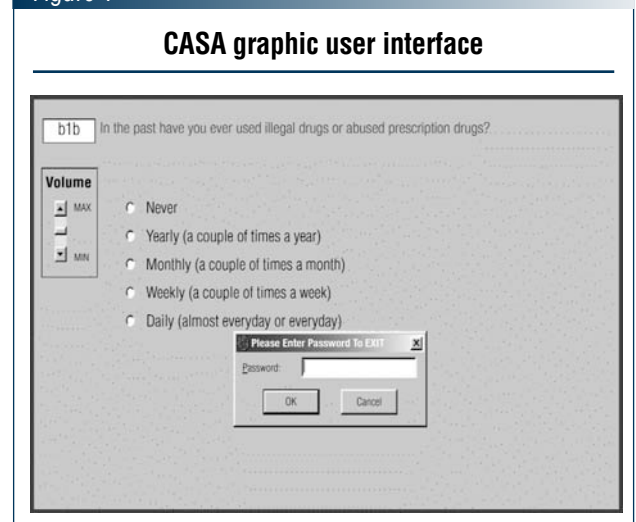
Functionality

The CASA’s computer-controlled question flow and automated data-checking increase the integrity of the data and the quality of self-reported information. When the computer detects major inconsistencies in self-reported information, it adjusts the delivery of subsequent questions so that respondents are presented with additional opportunities to reconcile the inconsistencies. For example, if a respondent denies any substance use during the 12-month period prior to arrest for the current offences, but later reports substance use at the time of the current offences (which occurred during the same 12-month period), the computer displays a message describing this inconsistency and branches back to re-sequence relevant questions.

Each CASA item is delivered sequentially by the software in either French or English. Each question is presented separately along the upper edge of the computer screen while the offender uses a mouse to point and click at the appropriate answers that appear directly below the question. The software uses hidden, conditional logic-branching to present only those questions that are relevant. The system incorporates a variety of visually appealing option buttons, check boxes and text fields similar to those found in web browsers to create a graphic user interface (see Figure 1). Security features such as password protection prevent respondents from exiting the program, windowing between applications and minimizing screens.

The CASA also incorporates an optional audio function to assist respondents with reading difficulties. Digital audio recordings of a human

Figure 1



voice are linked to each instruction box, question and answer choice. With a click of the mouse button, the computer can play each text string to the respondent in either French or English through a set of headphones.

An automated report, in either French or English, is produced upon conclusion of the computerized interview. Demographic information, summary scores for the standardized measures, substance-abuse severity levels and recommended substance abuse programming appear on the first page. Subsequent pages include a bulleted summary of the respondent's substance abuse history, prior programming and treatment-readiness indices.

Results from the demonstration project

Methodology

The CASA was administered to 907 male offenders who participated in the OIA process at Millhaven and Springhill intake units between May 2002 and January 2004. This sample represents about 36% of the actual admissions to these facilities during that timeframe (N=2,530). Assignment to the CASA was dependent on the availability of the CASA work-stations. The remaining offenders (64%) were assessed with the existing Computerized Lifestyle Assessment Instrument (CLAI) because the rate of admission at the two facilities exceeded the capacity of this demonstration project.

The general aim of the demonstration project was to establish the assessment's ability to appropriately differentiate cases for program referral purposes. Toward this end, the relationship between severity of substance abuse and criminogenic need was examined.

Main findings

First, respondents who were identified as requiring more intensive substance abuse treatment based on the CASA's referral criteria experienced more instability in their personal lives. This was illustrated by the strong association between the level of substance-abuse treatment intensity recommended by the CASA and the overall dynamic-factor (need) rating on the Offender Intake Assessment (OIA).⁹ Generally, as the substance-abuse intensity level moved from none to high, the proportion of offenders identified with a high-need rating on the OIA increased (see Figure 2). Clearly, offenders with more severe substance-abuse problems experienced more instability in a number of life areas.

Second, the convergence between the CASA results and the results from the OIA and the Revised Statistical Information on Recidivism Scale (SIR-R1)¹⁰ substantiated the important link between criminal behaviour and substance abuse. Generally, offenders who were assessed by the CASA as requiring more intensive treatment to address their problems with substances of abuse had more involved criminal histories as evidenced by higher static-factor (risk) ratings on the OIA (see Figure 3). These individuals were also rated more likely to re-offend during the first three years after release based on the results from the SIR-R1.

Third, with respect to current offending, higher severity levels on the ADS and the DAST were

Figure 2

Distribution of the overall dynamic-factor rating by recommended substance-abuse program intensity level

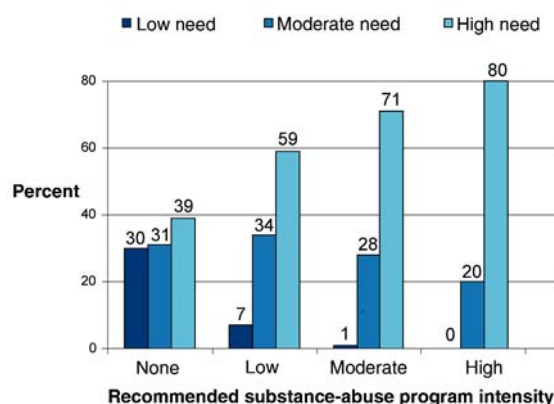
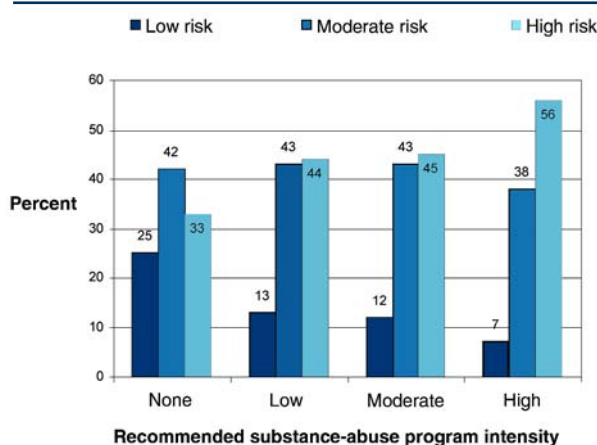


Figure 3

Distribution of the overall static-factor rating by recommended substance-abuse program intensity level



strongly associated with antecedent substance use and impairment. Offenders with higher severity levels on the ADS and DAST were more likely to report substance use and impairment prior to the commission of their current offences than were offenders with lower severity levels. In addition, offenders with higher severity levels on the ADS and DAST were more likely to blame their use of substances for their current offences.

Figure 4 illustrates this important link between substance use and criminal behaviour for the offenders who identified alcohol use as a contributing factor.

Exacerbated offence-related aggression was closely associated with alcohol use, but not with drug use. It is not surprising, then, that violent offences were more closely related to alcohol impairment than drug impairment, whereas property offences were more closely linked to drug impairment.

Fourth, for this sample of offenders, the most frequently reported drugs of choice were the cannabinoids, followed by crack cocaine, cocaine and opioids. The “other” drug category accounted for less than 10% of the sample.

When the distribution of cocaine, crack cocaine and opioids users were compared to the cannabinoids users and the “other” group, the former were more likely to produce DAST results suggestive of moderate to severe substance abuse problems and SDS results indicative of psychological dependence. This is not surprising since opioids, cocaine and crack cocaine have long been considered highly addictive because of their biochemical mechanisms of action and their behavioural effects on the user.¹¹ In a correctional

context, users of these drugs will require intensive programming to mitigate the drug-related health risks and to address the psycho-social and behavioural problems associated with drug dependence.

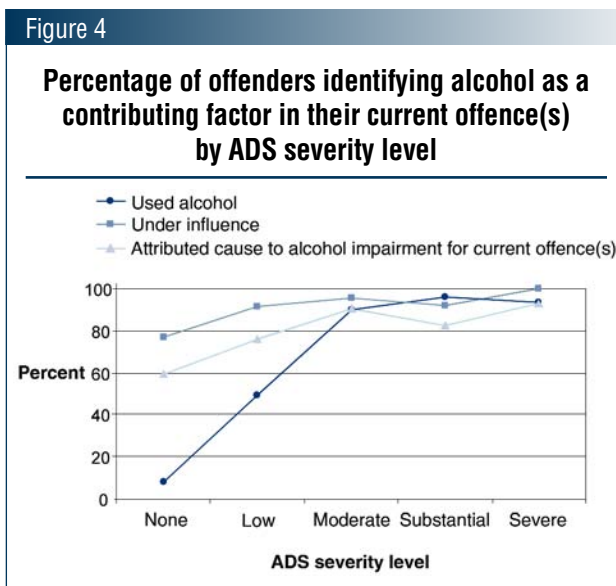
Conclusions

Offenders who were rated by the CASA as having more severe substance-abuse problems were also more likely to have higher need ratings and criminal-risk ratings on the OIA and on the SIR-R1. This is in keeping with the literature on substance abuse and its link to problems in other areas of an individual’s life and to criminal behaviour. In addition, offenders with more severe substance-abuse problems according to the CASA were more likely to have used substances or been impaired by them at the time of their current offence(s). This too is in keeping with the literature on substance abuse and criminal behaviour. Finally, users of cocaine, crack cocaine and opioids were more likely to get higher scores on the CASA related to drug addiction than were users of cannabinoids and “other” drugs. This is in keeping with the literature indicating that cocaine, crack cocaine and opioids are more highly addictive.

In summary, then, the characteristics of the offenders assessed by the CASA at the various substance-abuse severity levels are in keeping with research conducted to date in this field. This would indicate that the CASA efficiently and accurately differentiates offenders by their substance-abuse severity level and thereby for referral to the appropriate intensity level of substance abuse treatment.

Offenders with more severe substance-abuse problems on the CASA were also rated with higher needs and higher criminal risk. Based on the principles of effective correctional treatment, these offenders require more intensive and extensive services to mitigate the risk of re-offending.

Notwithstanding these results, future research is needed to refine the CASA. The development of a new algorithm, which incorporates the results from the SDS and the MAST, will need to be formally tested to determine whether their inclusion contributes to the overall accuracy of the CASA. National implementation of the CASA later this year will allow for larger scale research involving the replication of these results and the linking of the CASA results with other indicators to examine the determinants of post-release success. ■



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