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Using health indicators (physical, dental, nutritional) at offender intake to identify needs

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Correctional Service of Canada's Offender Intake Assessment (OIA) process[2] *produces a comprehensive and integrated evaluation of each federal offender as they enter the correctional system. While the main purpose for these case-based assessments is to develop an individualized correctional plan to address criminal offending, the information can also be used to produce estimates of health care needs at admission.*

This article offers distributions of three health indicators – (physical, dental and nutritional) for offender admissions (flow) and the institutional population (stock) over a five-year period, 1997 to 2001. Additional distributions are provided for the conditional release population and relationships are examined between these health indicators and post-release outcome.

Distribution of health indicators at intake

Recognizing the strategic and operational planning dividends that deriving case-specific information from automated assessment systems can yield, the Service successfully designed, developed and implemented by 1994 a nation-wide standardized offender assessment protocol. Known as OIA, there are two core components of the assessment process: *Static Factors Assessment* and *Dynamic Factors Identification and Analysis.*

During assessment, the offender's complete background is considered, including criminal record and personal characteristics. Albeit the description of the entire OIA process is beyond the scope of the present article, three health indicators are of particular interest. Each of them are contained in the Service's automated Offender Management System (OMS) and available from the principal component "health" in the community functioning domain of the *Dynamic Factors Identification and Analysis* section of the OIA process. These health indictors include: *'poor physical', 'poor dental', and 'poor nutritional'.*

Notwithstanding the clinical utility of these health indicators in developing and managing a correctional plan for each offender, the compilation of these OIA indicators permits the Service to generate prevalence rates, track trends over time, and alert staff to cases where additional health care assessments would be warranted. Noteworthy, these health indicators refer to the condition that prevailed at the time of the offender's intake assessment. The exact nature of these health problems beyond physical, dental and nutritional requires another level of effort.

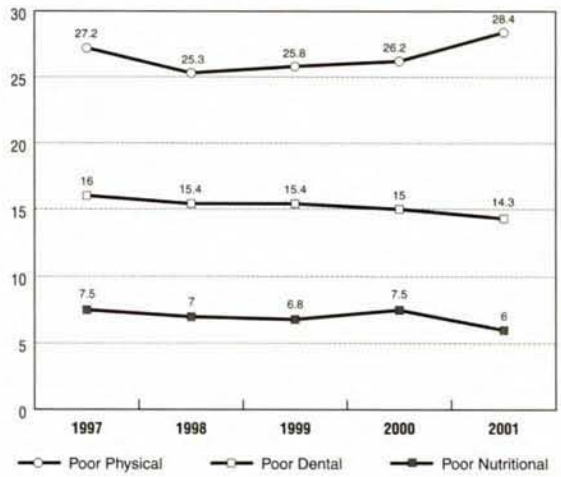
Offender admissions (flow)

A December 31, 2001 review of the Service's OMS identified 21,457 admissions with completed OIA's since January 1, 1997. According to officially reported admission statistics, this figure represents 97.5% of the newly admitted federal population. Of the completed admission assessments available for analysis, 5,703 (27%) were identified as having physical health problems at admission. About 15% of federal admissions reportedly had dental problems and 7% had poor nutrition.

Figure 1 shows three separate trend lines for the selected health indicators over a five calendar-year period. Each point in the line represents the proportion of offenders in each admission cohort identified with physical, dental and nutritional problems at admission.

Figure 1

Health indicators and offender admissions (flow)



When the trend line for 'poor physical' is examined the slope is generally upward. Relatively speaking, this means that the proportion of newly admitted offenders with a 'poor physical' health indicator has increased by 4.4% since 1997.

However, the review also determined that the trend lines for 'poor dental' and 'poor nutritional' are sloping downward. More specifically, the proportions of new admissions with these health indicators have been decreasing (10.6% and 20.0%, respectively).

Institutional population (stock)

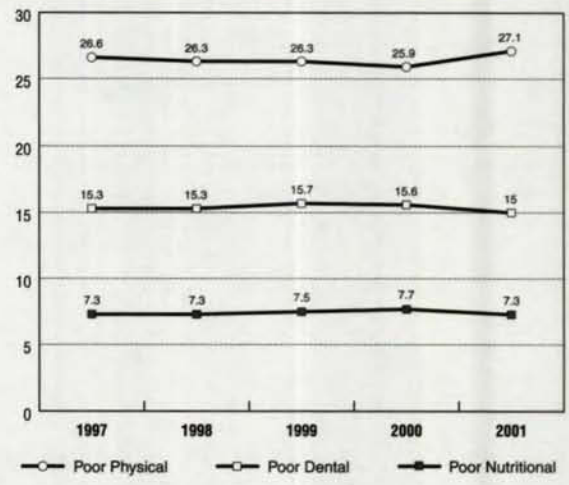
The end-of-2001 review of the Service's OMS identified 45,559 inmates with completed OIA's since January 1, 1997. Overall, and according to officially reported institutional population statistics, this figure represents 70.7% of the federal institutional population. The missing OIA indicators are due to legacy cases (offenders admitted prior to OIA implementation and serving long sentences). Nevertheless, for end-of-year 2001, the figure represents 78.7% of the institutional population. Of the completed OIA's available for analysis, 12,045 (26%) were identified as having physical health problems at admission. About 15% of federal institutional population reportedly had dental problems and 7% had poor nutrition at time of admission. These proportions essentially replicate the admission (flow) statistics. It would appear that offenders with health problems identified at admission are not accumulating by a significant amount in federal prisons.

Again, Figure 2 shows three separate trend lines for each of the selected health indicators over a five-year period. However, each point in Figure 2 represents the proportion of the institutional population at year-end (a snapshot) who had been identified with physical, dental and nutritional problems at admission. When the trend line for 'poor physical' is examined there is very little slope. Relative to 1997, the proportion of the institutional population exhibiting this health indicator has increased slightly by 1.9%.

The year-end review also showed that the health indicator trend lines for 'poor dental' and 'poor nutritional' have been relatively smooth. Although the proportion of institutional population that had a 'poor dental' indicator at intake has decreased 2.0% since 1997, the trend line is basically smooth.

Figure 2

Health indicators and institutional population (stock)



In sum, the proportions of institutional population with these health indicators identified at admission have remained relatively stable the past five years.

Health needs on conditional release

The Service has an automated means of monitoring (re-assessing) offender risk/need levels in the community at the domain level. Consequently, only health indicators identified at intake to prison are available.

Previous developmental research[3] on the OIA physical health indicator found that when examined in a conditional release study population there was no significant relationship with community supervision outcome. Similarly, an earlier study[4] on offender risk/needs in community showed no relationship between health and outcome on conditional release. Nevertheless, the relationship between 'poor physical' health at offender intake and outcome was revisited once more. This was accomplished by taking a snapshot of the conditional release population with OIA indicators as of July 1, 2001 and following-up for any return to federal custody within one year.

A July 1, 2001 review of the Service's OMS identified 6,486 offenders on conditional release with completed OIA's. Overall, this represents more than two-thirds of the conditional release population. Again, missing OIA indicators for the conditional release population are due to legacy cases (offenders admitted and/or released prior to OIA implementation). Of the

completed OIA's available for analysis, 1,585 (24%) were identified as having physical health problems at admission. Of those identified with a 'poor physical' health indicator at intake to prison, about 22% were returned to federal custody within one year. An equivalent proportion of those identified as not having 'poor physical' health were also returned within one year. Furthermore, this non-significant result held consistent over four phases of conditional release (0 to 3 months, 3 to 6 months, 6 to 12 months, and 12+ months). Consequently, no statistically significant relationship can be found between physical health at offender intake and post-release outcome.

Summary

Clearly, providing health services to offenders with physical, dental and nutritional issues presents both correctional administrators and practitioners with additional challenges. The results of selected health indicators derived from automated assessment systems, like OIA, can certainly raise awareness about offender health status at admission. Moreover, they can provide empirical support for delivering services to meet the health needs of correctional populations. However, we are still unable to generate specifics about the nature and magnitude of these health problems. Future health surveys may address this requirement for information. ■

[1] 340 Laurier Avenue West, Ottawa, Ontario K1A 0P9.

[2] Motiuk, L. L. (1997). Classification for correctional programming: The Offender Intake Assessment process. *Forum on Corrections Research*, 9(1), 18-22.

[3] Motiuk, L. L., and Brown, S. (1993). *The validity of case needs identification and analysis in community corrections.* Research Report R-34. Ottawa, ON: Correctional Service Canada.

[4] Motiuk, L. L., and Porporino, F. J. (1989). *Field test of the Community Risk/Needs Management Scale: A study of offenders on caseload.* Research Report R-6. Ottawa, ON: Correctional Service Canada.

Mental health trends among federal inmates

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In 1988, the Correctional Service of Canada (CSC) conducted a national study to determine the prevalence, nature and severity of mental health problems among federal inmates. Recognizing that estimates of the prevalence and severity of mental health problems would be invaluable to the Service in future years, provisions to collect proxy measures of mental health problems were embedded into the Offender Intake Assessment (OIA) process.

Analyzing these proxy measures, the population of federal inmates with OIA mental health indicators appears to be growing; especially considering that overall admission and institutional population counts have been in decline. Moreover, although mentally disordered offenders still represent a relatively small proportion of the overall population, the fact that their numbers are increasing is a matter of concern for the Service.

Background

In 1988, CSC conducted a study to determine the prevalence, nature and severity of mental health problems among federal inmates.[2] The 'Mental Health Survey' was unique in that it relied on a structured interviewing instrument - the Diagnostic Interview Schedule (DIS) and employed stringent diagnostic criteria described in the Diagnostic and Statistical Manual (DSM III) of the American Psychiatric Association.

At the time of the Mental Health Survey, the wide DIS lifetime prevalence rate of 'psychotic' disorder among the federal male inmate population was found to be 10.4%. The Report also noted that inmates who have suffered from 'psychotic' symptoms in the past would appear to have also endured a variety of other mental health problems during their lifetime.

Recognizing that estimates of the prevalence and severity of mental health problems would be invaluable to the Service in future years, the Research Branch embedded provisions to collect proxy measures of mental health problems at the design stage of the Offender Intake Assessment (OIA) process.[3] The intent was that these OIA indicators would permit the Service to estimate prevalence rates and track trends over time, and that the indicators would also be useful to alert managers and staff to cases where additional clinical assessments would be warranted.

Mental health indicators for federal offenders

Four mental health indicators were selected from the OIA for this analysis, each of which has a "current" and "past" dimension, as seen in Table 1.

Table 1

Indicators of the Offender's health status[4]

Current mental health	Previous mental health
Diagnosed as disordered currently?	Diagnosed as disordered previously?
Prescribed medication currently?	Prescribed medication previously?
Current hospitalization?	Previous hospitalization?
Receiving outpatient services prior to admission?	Received outpatient services prior to current admission?

These indicators are collected with reference to both the "current" and "previous" status of the offender (i.e., the condition that prevailed when they were first admitted on their current sentence; or prior to that admission for the history component).

Mental health profiles at admission

Flow trends were examined of offenders into the federal corrections system by analyzing offender intake assessments (OIA) for male and female admissions from calendar year 1997 to calendar year 2001. The data show a clear and significant increase over this period in the number and proportion of positive assessments on the mental health indicators embedded in OIA.

During the period from 1997 to 2001, the annual number of new admissions into federal custody decreased from a high of 4,590 admissions in 1998 to 4,298 admissions in 2001 (See Table 2).

Table 2

Federal admission trends

Calendar year	1997	1998	1999	2000	2001
Total Admissions	4,491	4,590	4,319	4,309	4,298

Table 3

Number and percentage of admissions with a mental health indicator

Calendar year	1997 n (%)	1998 n (%)	1999 n (%)	2000 n (%)	2001 n (%)
Diagnosed current	265 (6.2)	280 (6.4)	292 (7.0)	289 (6.9)	355 (8.5)
Prescribed current	443 (10.3)	495 (11.2)	564 (13.4)	605 (14.3)	751 (17.9)
Hospitalized current	80 (1.8)	81 (1.8)	73 (1.7)	77 (1.8)	89 (2.1)
Outpatient current	211 (4.9)	206 (4.7)	235 (5.6)	263 (6.2)	287 (6.8)
Diagnosed past	418 (9.8)	439 (10.0)	480 (11.4)	509 (12.2)	555 (13.4)
Prescribed past	962 (22.5)	1,039 (23.8)	1,139 (27.3)	1,207 (29.0)	1,351 (32.6)
Hospitalized past	687 (16.0)	678 (15.4)	713 (17.0)	719 (17.2)	789 (19.0)
Outpatient past	724 (17.0)	677 (15.5)	791 (18.9)	910 (21.8)	885 (21.4)
Estimated valid assessments *	**4,338**	**4,448**	**4,237**	**4,243**	**4,231**

* *The estimate of valid OIA assessments is based on responses to "Hospitalized current". The response to other indicators will be very similar but not identical.*

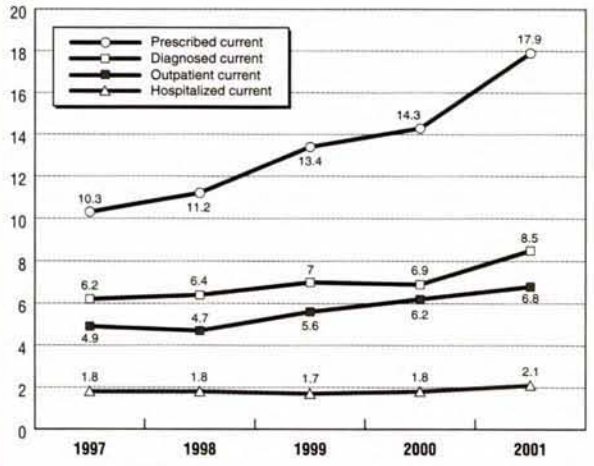
On the other hand, since 1997 the number of admissions with a current diagnosis at intake increased by 37%, from 265 to 355 cases in 2001 (see Table 3).

Figure 1 shows the proportion of offenders in each admission cohort with a mental health indicator for each of the four "current" mental health issues. When the numbers of positive assessments for each calendar year are compared, the proportion with a positive assessment is found to have increased significantly since 1997.

- Six out of every one hundred new federal admissions arriving from the court in 1997 were "Diagnosed as disordered currently". By 2001, this proportion had increased to 8.5 per 100, an increase of nearly 40% from five years earlier or 90 more diagnosed inmates during a period where there had been an overall decline of 90 admissions during the same period.
- In 1997, about 10% of all admissions were "Prescribed medication currently". This proportion had increased to almost 18% on 2001, nearly an 80% increase from five years earlier.
- Just fewer than 2 per 100 federal admissions (1.8%) in 1997 were "Hospitalized current", and this proportion remained relatively constant until 2001 when it jumped to 2.1% (a 17% increase).
- Finally, the proportion of admissions that were indicated as "Outpatient current" in 1997 (5%) was 40% higher by 2001 (at 7%).

Figure 1

Percent admissions with a current mental health indicator



Thus, with the exception of "Hospitalized current, all the changes since 1997 were statistically significant.[5] Similar trends were found examining the same variables for the "prior" existence of a mental health issue. The proportions of new federal inmates with a prior history also increased at about the same rate from 1997 to 2001, as those with a "current" indicator. Detailed admission assessments are provided in Table 3.

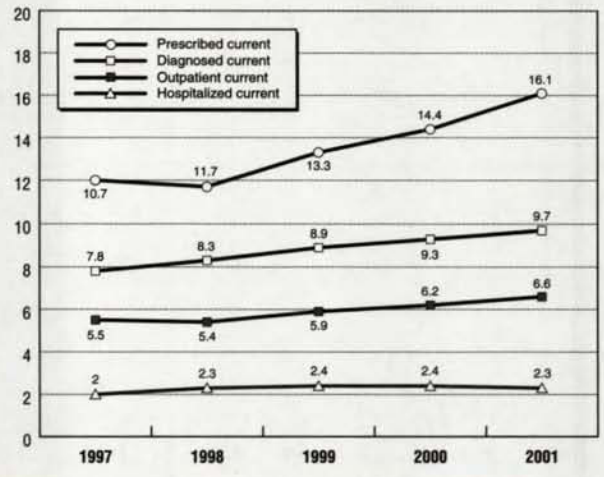
Mental health profiles of in-custody inmates

An examination of the distribution of cases with positive OIA indicators among the federal in-custody population was also undertaken. Analysis was made from a series of snapshots of all inmates in-custody at year-end (December 31st) of successive proportion of inmates with positive mental health assessments.

Figure 2 shows the proportion (%) of offenders in each snapshot with a positive OIA "current indicator" for one of the four mental health issues. When the numbers of mental health assessments for each year are compared, the proportion with current indicator is found to have increased significantly since 1997.

Figure 2

Percent of inmates with a current indicator



- On December 31st, 1997 nearly eight out of every hundred federal inmates had a positive OIA assessment as "Diagnosed as disordered currently". By December 2001, this proportion had increased to nearly 10 per 100, an increase in the proportion by 24% from five years earlier. Among those with an OIA assessment, the number increased from 615 to 953, or an increase of nearly 340 cases, as reflected in Table 4.
- In December 1997, about 11% of all admissions were "Prescribed medication currently". This proportion had increased to 16% in December 2001, about a 50% increase from five years earlier.
- 2% of the inmate population in 1997 were "Hospitalized current", and this proportion increased to 2.3% in 1998 and remained at or near that level throughout the period up to December 2001 (a 15% increase over 1997). Although the proportions are small, the increase represented a growth in some of the most severe cases of just over 70 offenders, from 161 to 232 during that period (see Table 4).
- Finally the proportion who were indicated as "Outpatient current" in 1997 (5.5%) was 20% higher by 2001 (at 6.6%)

The proportion of federal inmates with an assessed prior history of mental illness was also found to have increased during this period. The proportion of each indicator increased at roughly the same rate as for the "current" indicator. Table 4 provides a statistical summary of these results.

Indicator coverage for the snapshot populations

Data coverage for OIA indicators is generally about 98% for the CSC admission population since OIA was implemented in November 1994. Under-coverage is a problem only when a sufficient waiting period is not observed before data is collected for a specific period, since CSC policy allows for intake assessments to be completed within *8 weeks* of offender admission.

Table 4

Number and percentage of inmates with an OIA Indicator[6]

Calendar year	1997		1998		1999		2000		2001	
Diagnosed current	615	(7.8)	724	(8.3)	811	(8.9)	885	(9.3)	953	(9.7)
Prescribed current	849	(10.7)	1,028	(11.7)	1,221	(13.3)	1,379	(14.4)	1,590	(16.1)
Hospitalized current	161	(2.0)	199	(2.3)	225	(2.4)	229	(2.4)	232	(2.3)
Outpatient current	441	(5.5)	475	(5.4)	544	(5.9)	597	(6.2)	649	(6.6)
Diagnosed past	899	(11.4)	1,064	(12.3)	1,192	(13.1)	1,333	(14.0)	1,438	(14.7)
Prescribed past	1,833	(23.3)	2,163	(25.0)	2,468	(27.3)	2,799	(29.6)	3,091	(31.7)
Hospitalized past	1,381	(17.4)	1,559	(17.9)	1,678	(18.4)	1,815	(19.1)	1,941	(19.8)
Outpatient past	1,387	(17.6)	1,557	(18.0)	1,684	(18.5)	2,016	(21.2)	2,139	(21.9)
Estimated valid assessments*	**8,034**		**8,839**		**9,244**		**9,660**		**9,977**	

* *The estimate of valid OIA assessments is based on responses to "Hospitalized current". The response to other indicators will be very similar but not identical.*

However, unlike the near full-coverage found with admission data there will be significant under-coverage in the early years of the historical data for the in-custody population, and this under-coverage increases the farther back one goes. The number of inmates in-custody who did not have an intake assessment was about 40% as of December 31 1997. By contrast, only about 21% of inmates in-custody on December 31, 2001 were missing an intake assessment (see Table 5). The cause of this early under coverage is due mainly to longer-sentenced inmates (i.e., those *admitted prior to November 15th, 1994*[7] and still serving their sentence in 1997 or 2001).

Table 5

Snapshot assessment coverage

Snapshot for Dec. 31st	Custodial Count	OIA* Assessment	No OIA Assessment	Under Coverage Rate
1997	13,385	8,034	5,351	40.0%
1998	13,039	8,839	4,200	32.2%
1999	12,711	9,244	3,467	27.3%
2000	12,604	9,660	2,944	23.4%
2001	12,608	9,977	2,631	20.9%

*** The estimate of valid OIA assessments is based on responses to "Hospitalized current". The response to other indicators will be very similar but not identical.*

Summary

Managing offenders with mental health issues presents the Correctional Service of Canada with additional challenges beyond those normally associated with federal offenders. Mentally challenged or chronically mentally disordered inmates often require special assistance, to follow their correctional plan and to enhance their abilities to cope with daily prison life. With mental or behaviour disorder problems, these inmates typically require additional interventions to help them better adapt to their environment. Often, the regular inmate population shuns these inmates and, fearing for their safety and or the safety of others, they require special supervision, accommodation and interventions.

Based on the trends we have just examined, the percentage of the federal population with mental health problems is growing, even though overall prison admission and the institutional population counts have been in decline. Although mentally disordered offenders still represent a relatively small proportion of the overall population, the fact that their numbers are growing (as indicated by the OIA assessment proxies) is a matter of concern. ■

1 340 Laurier Avenue West, Ottawa, Ontario K1A 0P9.

2 Motiuk, L., and Porporino, F. (1991). *The prevalence, nature and severity of mental health problems among federal male inmates in Canadian penitentiaries*. Research Report R-24. Ottawa, ON: Correctional Service of Canada.

3 The OIA was implemented by the Correctional Service of Canada in November 1994, and is applied to every new offender as they enter federal custody. The conceptual underpinning for this approach to offender Risk/Needs assessment is presented in: Andrews, D. A. (1989). Recidivism is predictable and can be influenced: Using risk assessments to reduce recidivism. *Forum on Corrections Research*, 1(2), 11-17. For an overview of the implementation of OIA, see: Motiuk, L. L. (1993). Where Are We in Our Ability to Assess Risk? *Forum on Corrections Research*, 5(2), 14-18. Since implementation in November 1994, standard and comprehensive offender intake assessments have been conducted on over 27,000 federal admissions.

4 The following description maps the indicators selected from OIA: (Diagnosed current, from the Disordered sub-component, Mental Health component, Personal/Emotional Orientation domain); (Prescribed current, from the Medication sub-component, Interventions component, Personal/Emotional Orientation domain); (Hospitalized current - from the Psychological/Psychiatric sub-component, Interventions component, Personal/Emotional Orientation domain; (Outpatient current, from the Psychological/Psychiatric sub-component, Interventions component, Personal/Emotional Orientation domain); (Diagnosed past, from the Disordered sub-component, Mental Health component, Personal/Emotional Orientation domain); (Prescribed past, from the Medication sub-component, Interventions component, Personal/Emotional Orientation domain; (Hospitalized past, from the Psychological/Psychiatric sub-component, Interventions component, Personal/Emotional Orientation domain) and; (Outpatient past, from the Psychological/Psychiatric sub-component, Interventions component, Personal/Emotional Orientation domain).

5 χ^2 p<.001.

6 Definitions for the indicators can be found in: "Offender Intake Assessment and Correctional Planning: Standard Operating Practices (Interim) 700-04". See in particular: "Annex 700-4C Dynamic Factor Analysis".

7 A back-fill assessment was undertaken in 1997 to gather information on all federal in-custody offenders who were missing an OIA assessment from intake. However, these assessments were completed only at the domain level (i.e., overall risk and need scores, etc.), so did not collect detailed indicator-level information.

Rates of prescribed medication use by women in prison

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This article discusses a few key findings from a study undertaken by the Correctional Service of Canada (CSC) regarding the use of prescribed medications among incarcerated federal women offenders.[4] *The study was initiated to verify the perception by health professionals that the use of prescribed medications among the women offender population could be as high as 90%.*

Prescribing practices have been shown to contain considerable gender bias. Many studies have shown that in general, women receive more prescriptions than men for all types of medications, and specifically for psychotropic medications.[5] *It is also known that medication use in the overall inmate population is high; reflecting the higher prevalence of chronic conditions, as well as possible differences in prescribing practices.*[6] *Despite these disparities, however, the reported anecdotal rates of prescribed medication use among women offenders under CSC jurisdiction appeared unusually high.*

The objectives of the study were to identify nationally and by region the prevalence and type of medication use among this population as well as any trends in prescribing patterns. This article is limited to summarizing broad findings related to national and regional prescription medication rates, the prescription rates of psychotropic medications in particular, and to comparing these rates to the general population of Canadian women.

Methodology

Medication profiles were collected from either the Health Services Units in the eleven women's institutions under the Service's jurisdiction or the individual pharmacies that provide service to the institutions. These profiles detail every medication that is prescribed (including both prescription and over the counter medications (OTC), to be taken on a regular basis or on an as needed basis) and therefore available to each inmate each day. For the purposes of the present study, profiles were reviewed that reflected all medication orders on one randomly selected day - July 3, 2001, at which time the incarcerated population numbered 384.

Among the objectives of the study was assessing the magnitude of medication use among incarcerated women in terms of the total number of medications per woman; the category or type of specific medication; identification of medications that are OTC; and identification of prescribing patterns.

Data were collected by hand and the actual medication names were not recorded. Only data on medication orders were collected. The current report is based on the tabulations in the report by institution. Raw data were not analyzed. Data tabulations were graphed using Microsoft Excel. Regional variation was tested for overall significance using a chi square statistic in EpiInfo 2000 (StatCalc). Interviews were also conducted with the CSC nurse who gathered the data to further elucidate and interpret some of the findings.

Results

The referencing of medication use for this study has generally been broken down into: "Total Medications" (including OTC medications), "Prescription Medications" (excluding OTC medications) and "OTC Medications" (excluding prescription medications). Common categorizations of medications are listed in Table 1. Other medications, such as antibiotics, acetaminophen, diabetes medications, etc. were not categorized and so appear only in the Prescription and OTC totals.

Table 2 shows how the data have been analyzed by region, with specific figures regarding the number of women and the number of institutions in each region. Findings will be discussed in terms of the original questions that the survey was designed to answer. A profile of the 370 women offenders incarcerated in November 2001 showed that 1.9% were 18-19 years of age, 49.7% were 20-34, 34.8% between 35 and 45, 9.6% 46-55, and 5% 56 and over.

Table 1

Categorization of medications and rate of prescription orders (nationally)

	Categorization of Medications	Study Prevalence
Allergy treatment	Oral, injectable, and inhalation drugs used to treat or prevent allergy symptoms. Allergy treatments specifically ordered for sedative effects at bedtime were counted as psychotropics.	18%
Anemia treatment	Oral and injectable drugs used to treat any form of anemia.	9%
Asthma treatment	Oral and inhalation drugs used to treat or prevent asthma symptoms.	21%
Birth Control	Oral and injectable contraceptives.	8%
Hormone Replacement Therapy	All oral and transdermal drugs used to prevent or reduce the symptoms of menopause.	7%
Migraine treatment	Oral and injectable drugs used to prevent or treat the pathophysiology of migraine, not including narcotics acetaminophen, or NSAIDs.	7%
Narcotics	Methadone and opiate analgesics.	8%
NSAID	All non-steroidal anti-inflammatory drugs, including acetylsalicylic acid (ASA).	34%
Peptic Ulcer Therapy	Antacids, cytoprotectives, histamine H2-receptor antagonists, prostaglandins, and proton pump inhibitors.	23%
Psychotropics	All categories of anti-depressants, neuroleptics, anti-psychotics, anxiolytics, anti-manic, anti-histamines prescribed specifically for sedation, benzodiazepines and anti-epileptic medication prescribed for mood stabilization purposes.	42%
Skeletal Muscle Relaxants	Medications classified as skeletal muscle relaxants in the CPS (e.g., Norflex, Flexeril, Robaxacet, Robaxin, etc.)	7%

Figure 1 illustrates the prescription rates for total medications by region. Overall, 87% of the women offenders within CSC institutions have medication orders (regional range 72 - 94%) with an average of 4.4 medications per woman and a median of 3.

Table 2

Regional population of women in correctional facilities

Region	Atlantic	Quebec	Ontario	Prairie	Pacific	National
Number of women	43	72	102	124	43	384
Number of institutions	2	2	2	4	1	11

The most common type of prescription medications are psychotropics (42%) and non-steroidal anti-inflammatory drugs (34%), followed by peptic ulcer therapy (23%), asthma treatment (21%), allergy treatment (18%), anemia treatment (9%), birth control (8%), narcotics (8%), hormone replacement therapy (7%), skeletal muscle relaxants (7%) and migraine treatments (7%) (See Table 1).

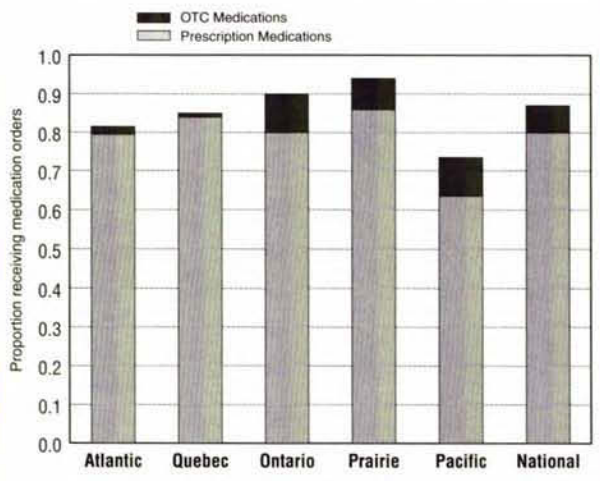
Since most OTC medications need to be ordered by physicians for women in institutions, these figures include OTC medications. Theoretically, this could significantly inflate the number of medication orders. However, although 29% of the medications in this study can be accessed over the counter in the community, data showed that this had a greater effect on the number of medications that women were taking than it did on the proportion who were taking medications.

Excluding OTC medications, 80% of women (N = 306) had medication orders. Some of these were "prn" (for use as needed, not necessarily on a regular basis). The average number of prescription medications was 3.1 per woman (range = 1.7 - 3.7) with a median of two.[7]

As is evident in Figure 1, even though OTC medications comprise a significant portion of all the medications, they add relatively little to the proportion of women already taking medications, especially in the Atlantic and Quebec regions. The figure shows significant

Figure 1

Medication use by region



differences among regions in both total medication use (chi-square = 17.3, p = 0.001) and in prescription medication use (chi-square = 11.7, p =.02), with rates in the Pacific Region lower than in the others. The highest rates are in the Prairies, followed by Ontario.

The *cumulative distributions* of medication orders is visually depicted in Figure 2, where the percentage of women on more or on less than any given number of medications can be determined. For example, as per above, it can be seen that 20% of women have zero orders for prescription medications. Fifty-two percent of women have orders for two or fewer prescription medications while 38% of women have orders for two or fewer total medications. Twenty-six percent of women have orders for five or more prescription medications. Only a minority of polypharmacy cases were older women with multi-system health concerns. The majority appeared to be 'anticipatory prescribing'. Regional data regarding the distribution of medications indicate that in Quebec and Ontario a larger number of women have multiple medication orders.

Psychotropics

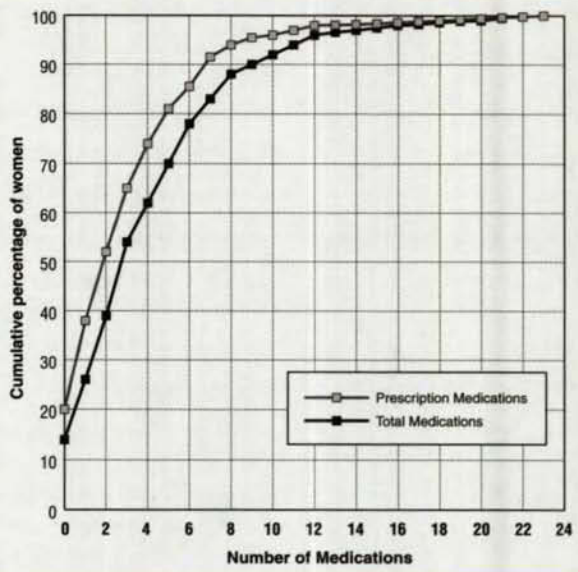
This study noted a 42% prevalence rate in prescription orders for psychotropics, with significant regional variation (p = .04), ranging from 26% (Pacific Region) to 46% (Ontario Region).[8] Furthermore, 23% (51% of those taking psychotropics) are taking two or more psychotropic medications. Regional variation on multiple psychotropic use is highly significant (p = .0008 for being on more than two).

Comparison to medication rates in the general population

The prescription medication rates for women offenders in this study are much higher than for women in the general Canadian population. Comparison data were obtained from the 1999 Report on the Health of Canadians;[9] data in this report are separated by gender and also broken down by fairly discrete age groups. Given that the offender population is younger than the general Canadian population, the Canadian rates of use were recalculated based on the age structure of the offender population – these are the expected rates in the incarcerated population if the two populations had similar rates.[10] Comparison of the CSC rates to rates in the general Canadian population appear in Figure 3. The differences are striking, even allowing for some underreporting in the survey data.[11] Only

Figure 2

Cumulative distribution of medications



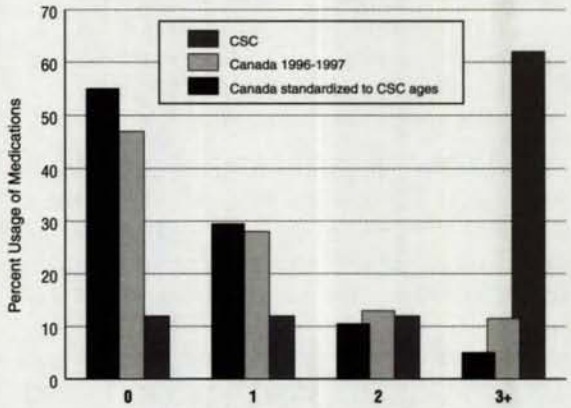
13% of incarcerated women were not on medications, whereas 55% would be expected for women in the Canadian population. Furthermore, 62% were on three or more medications, whereas 6% would be expected.

Discussion and conclusion

This study has shown that prescription rates in CSC's women's institutions are high, particularly for the use of psychotropics. Furthermore, there is significant regional variation in medication usage and the rates of usage by federally sentenced women offenders is significantly higher than what would be expected in the general population of Canadian women. There are various reasons contributing

Figure 3

Total medications: CSC women offender population versus Canadian women population



Source: Statistical Report on the Health of Canadians. (1999)

to these findings related to both prescribing patterns and practices endemic to institutional settings as well as health status factors and coping mechanisms associated with an incarcerated population.

Prescribing patterns

Access

One factor contributing to high numbers of medication orders is the nature of medication dispensation in institutions. Whereas people in the community may have access to a wide variety of medications - OTC medications plus old prescriptions not completed - institutional populations obviously do not share the same access. 'Anticipatory prescribing' practices may therefore be adopted by some institutions/practitioners to ensure the availability of medications should they be needed at some point in the future.

A *second access* issue involves the financial accessibility of medication. There is coverage of prescription medications for the CSC population as compared to many other Canadians who are covered to a much less and varying degree. This may have the result of increasing usage as well as altering prescribing patterns within institutions. For example, if NSAIDs are prescribed and therefore covered and acetaminophen needs to be paid for, NSAIDs may be preferred to acetaminophen.

A *third access* issue is that of accessibility to unconventional therapies within CSC institutions. The limited access of the woman offender population to unconventional therapies available in the general Canadian population (i.e. chiropractor, vitamins etc.) may have the effect of increasing reliance on medications as a substitute for any 'natural' alternative.

Context of correctional health practice

Institutional populations pose challenges to physicians not encountered within the community. While medication requests from patients are common to physicians in both settings, it may be easier for community-based physicians to educate their patients on the medications they are requesting and rationalize with patients if the request is deemed to be inappropriate. An institutional population will likely not be as receptive to this type of dialogue. A related factor is the potential lack of support received by the physician from institutional staff if he/she declines to prescribe a medication requested by a woman offender.

Health status and coping mechanisms

Many of the social factors such as poverty, abuse, trauma, and lack of social support that increase risk for crime also have been shown to increase the risk of illness and decrease the ability to cope. Women offenders are more prone to experiencing a greater number of health concerns at a younger age than the general population. The strong relationship between negative emotions and illness is well established.[12] Research indicates that illness rates in the lowest socioeconomic quintile are several times those in the highest,[13] and it would be expected that many of these women are on higher rates of medication than the general population when they are out in the community.

Psychotropics

The data suggest that overprescribing and multiple prescribing of psychotropics may be problematic in some institutions. Moreover, the variation across regions suggests that there could be room for improvement in prescribing practices. With respect to understanding potential reasons underlying these relatively high rates of prescribing, studies of incarcerated women have shown extremely traumatic life and childhood histories.[14] Women offenders are more likely than women in general to have unresolved past and current substance abuse issues as well as unresolved past physical, mental, and/or sexual abuse issues, which often have the effect of limiting coping responses. These histories, coupled with the fact that the institutions have traditionally been understaffed in terms of psychology resources, may contribute to a higher reliance on these types of medications.

While a discussion of these factors is useful in terms of providing a context within which to interpret the findings of this study, the elevated rate of prescribed medication usage among federally sentenced women in prison should serve to highlight some potential avenues to explore for addressing this concern. One application might be to develop clinical practice guidelines for the management and use of certain prescription drugs within correctional settings to assist physicians and other health professionals. While changes may need to be directed at this level, they need to be adjunctive to changes at a more fundamental level - i.e. the treatment of women's underlying issues - in order to truly effect appropriate and sustainable reductions in medication use. ■

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[7] The average is inflated by small numbers of women on large numbers of medications (see Figure 2).

[8] Significance determined by Chi square analyses, $p<.04$.

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[10] A profile of women offenders incarcerated in November 2001 was used for this recalculation.

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The physical and mental health of older offenders

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Recent reports[2] *indicate that the average age of offenders incarcerated by the Correctional Service of Canada (CSC) has been increasing and that offenders over the age of 50 are the fastest growing subgroup. Currently older offenders account for 13% of the offender population. The two most predominant issues for this population are physical and mental health. This article reviews these issues in the older offender population and the implications they have on the institutions.*

Physical health

Knowledge about older offenders' physical health is important for identifying the institutional needs of older offenders (e.g., the palliative care program) and to develop solutions to effectively manage them. DeLuca[3] pointed out that increasing age is associated with a deterioration of health and an increased need for medical services. In addition to the normal aging process, many offenders prematurely deteriorate as a result of substance abuse and poor dental hygiene. DeLuca suggested that the increasing demand for medical services to meet the needs of the aging offender population will exert pressure on already limited resources. For example, it was reported that the annual cost of incarceration is $23,000 U.S. per offender while the annual cost of incarcerating an elderly inmate is $69,000 U.S.

Physical health concerns of older offenders

A number of studies[4] have shown that older offenders have multiple health problems. The most common ailments among this population are cardiovascular disease, diabetes, arthritis, hypertension and cancer.

Using information from the Offender Intake Assessment (OIA), which provides a global indicator of health problems, dietary problems and dental problems, Gal[5] compared older and younger offenders' health needs, (see Table 1). Of the older offenders, 54% had identified physical health as a problem at the time of admission compared to less than one quarter of the younger offenders. Poor diet was also more likely to be identified as a problem for older offenders. Interestingly, there was no difference in reported dental problems between older and younger offenders.

Table 1

Percentage of older and younger offenders with physical health issues identified by OIA

	Younger offenders	Older offenders	χ^2
Poor Physical Health	23.7	53.6	327.3***
Poor Diet	7.2	14.3	47.9***
Poor Dental	15.5	15.6	0

*** $p < .001$

A similar pattern emerged with groups of older offenders as seen in Table 2. Among the 50 to 54 year old age group, 46% reported health problems at the time of admission and the rate increased to 79% for offenders over the age of 65. The rate of dietary problems ranged from 11% to 14% for offenders 50 to 64, and increased to 22% for offenders over 65. Consistent with US studies, these results suggest that older offenders will require a great deal of attention in addressing their health problems.

Table 2

Percentage of offenders with physical health issues in OIA by age categories

	Younger	50-54	55-59	60-64	65+	χ^2
Poor Physical Health	23.7	45.7	50.7	61.5	79.1	373.8***
Poor Diet	7.2	14.5	10.9	14.0	22.4	59.1***
Poor Dental	15.5	18.7	12.3	15.0	12.8	4.8

*** $p < .001$

Prevalence of mental health problems among older offenders

Studies that have examined the prevalence rates of mental health problems among older offenders are mixed. Some studies[6] have shown that older offenders have greater social, psychological and physical health needs than younger offenders, while other researchers[7] indicate that older offenders have fewer mental health concerns.

McCreary and Mensh[8] compared the Minnosota Multiphasic Personality Inventory (MMPI) profiles of older and younger offenders and found that older offenders were more neurotic, less psychotic and exhibited less anti-social symptomatology than younger offenders. However, older offenders were more hypochondrial, depressed and repressed than younger offenders were. They concluded that the pattern of psychopathology among offenders over the age of sixty is more reflective of psychological malfunctioning than sociopathic malfunctioning.

Motiuk and Porporino[9] assessed the prevalence, nature and severity of mental health problems among the male offender population using the *Diagnostic Interview Schedule*. Comparisons across age groups indicated that dementia was the only mental health problem for which older offenders had higher rates. However, it was noted that the prevalence rates of disorders such as alcohol abuse (58%), anxiety (45%) and depression (32%) were relatively high for this population and should be of some concern.

A number of factors have been shown to be related to or augment existing mental health problems. These include stress, depression and suicide risk factors.

Stress

The difficulty that an older offender may encounter in an attempt to cope with the stress of imprisonment can impact on the development of physiological and/or psychological problems.[10] Bergman and Amir[11] found that the strain of incarceration produces an accelerated deterioration in both the physical and mental health status of the elderly. In addition, the older offender may have also experienced other major life changes such as the loss of loved ones and friends. The lack of a supportive social network can also adversely affect the older offender because social support from significant others is one of the key factors that can serve to buffer the effects of continuous stress.[12]

With respect to sources of stress, Vega and Silverman[13] reported that the two most disturbing events that older offenders identified were being locked up and abrasive interactions with other inmates. Most (92%) of the older offenders indicated that they had few, if any, interpersonal problems with staff. However, the majority (78%) indicated that they had problems with other offenders.

More recently, Gal[14] examined the psychosocial stressors that offenders are experiencing in an effort to identify those situations that are unique or more likely to be problematic for older offenders. A stress scale from the 1995 Inmate Survey was used. The scale was factor analyzed and three factors emerged, offence and sentence issues, personal stressors and institutional stressors. The offence and sentence factor contains items such as sentence length and getting parole. The personal stressors factor contains items such as family, health and relationships. The institutional stressors factor contains items such as substance abuse problems and school/work problems. Results from the survey are presented in Table 3.

Overall, older offenders were less likely to be stressed than younger offenders were. However, it was noted that older and younger offenders did differ in terms of the items identified as being stressful.

With respect to sentence issues, younger offenders were somewhat more concerned about being transferred to another institution than older offenders, while older offenders were

Table 3

A comparison of older and younger offenders' perceived stressors

Stress Type	Younger offenders (%)	Older offenders (%)	χ^2
Offence & sentence issues			
Getting parole	56.8	56.7	.5
Getting transferred	39.4	34.8	6.3*
My offence	46.7	53.9	6.1*
Length of my sentence	58.6	63.6	4.7
How soon I will be released	62.9	64.0	.3
Personal stressors			
Family Issues	63.8	67.8	6.4*
Physical Health	47.0	54.1	10.7**
Mental Health	38.7	30.8	17.2***
Relationships with Inmates	39.9	35.0	5.7*
Relationships with Staff	40.0	32.5	12.0**
Physical safety	32.6	32.8	4.1
Institutional stressors			
A drug/alcohol problem	20.0	6.9	41.3***
Financial problems	31.6	21.1	51.0***
School or work	28.7	18.2	32.1***
Double bunking	59.3	54.8	8.9***
Getting enough tobacco	37.4	24.1	34.6***
Percentage who scored above 4 (considered stressed)	37.1	29.5	8.3**

*$p < .05$; **$p < .01$; ***$p < .001$

more stressed about their offence. This is probably reflective of the fact that many of the older offenders were convicted of a sexual offence involving a child, and the prison subculture of non-acceptance of such offenders.

In terms of personal stressors, older offenders were somewhat more stressed about family issues and their physical health than younger offenders. Somewhat surprisingly, older offenders were less stressed about mental health issues than younger offenders. Older offenders were significantly less stressed about all of the institutional stressors than younger offenders. In particular they were less stressed about a drug and/or alcohol problem, school/work issues and financial problems. This is probably reflective of the fact older offenders are somewhat more stable than younger offenders are.

Table 4

A comparison of older and younger offenders on depression

	Younger offenders	Older offenders	χ^2
Felt hopeless about the future	35.8	32.7	1.2
Felt content	44.8	53.5	10.1**
Felt lonely	65.9	61.5	5.3
Felt optimistic	55.1	62.1	8.0*
Felt depressed	49.8	42.9	9.8**
Felt bored or had little interest in things	59.6	47.8	25.5*
Felt happy	51.1	55.5	6.0*
Had thoughts about possibly ending my life	13.0	11.6	4.7
Felt fear about my personal safety	19.6	18.7	1.4
Depression Score	25.3	19.5	

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

Depression

Depression is quite common among older non-incarcerated adults[15] and older offenders.[16] Flynn reported that depression is the most frequently reported mental health problem among older offenders.[17] She suggested that incarceration accentuates an offender's sense of loss. In addition, some offenders may also be suffering from withdrawal (e.g., alcohol or drugs), either at the time of admission or during the incarceration period, which, in combination with depression may result in increased risk for suicide.

To investigate feelings of depression among the older offender population, the 1995 Inmate Survey was used. As seen in Table 4, the overall level of depression as measured by the Inmate Survey was somewhat higher for the younger offenders with 25% meeting the cut-off compared to only 19% of the older offenders. It appears that older offenders displayed fewer symptoms of depression and reported greater life satisfaction than younger offenders.

Suicide

Statistics gathered by the World Health Organization (WHO) have repeatedly illustrated that the elderly succeed at suicide at a rate that far exceeds any other age group for both North America and most western countries. Offenders have also been identified as a high-risk group to commit suicide. Therefore, one would expect a strong relationship between age and suicide among older offenders. However, the research on the relationship between age and suicide among offenders is mixed. Some researchers suggest that older offenders are not at greater risk to commit suicide[18] while others found a higher incidence of suicide among older offenders.[19]

In Canada, between fiscal year 1991-1992 and fiscal year 1996-1997, offenders aged 50 and over who had committed suicide constituted 10% of population. Given that older offenders only accounted for 8.5% of the population, these results suggest that older offenders committed suicide at a slightly higher rate than would be expected. Therefore, it may be useful to identify those factors associated with suicidal behaviour that may be unique to the older offender.

The OIA has nine suicide indicators that are used to identify offenders who may be at risk for suicide at the time of admission. As seen in Table 5, there were only 3 statistically significant differences between older and younger offenders. Younger offenders were more likely to have had a previous suicide attempt and were also more likely to have been under the influence of alcohol/drugs than older offenders. Older offenders were more likely to have lost a spouse/relative (10% vs 6%) than younger offenders were. It was expected that older offenders would be more likely to lose a spouse and/or family member because of their age.

Table 6 presents the OIA suicide indicators across the age categories. The same three indicators were significant. However, the differences were more accentuated across the expanded age categories.

Table 5

OIA suicide by older and younger offenders

	Younger offenders	Older offenders	χ^2
Inmate may be suicidal	5.9	4.9	1.3
Inmate has previous suicide attempt	21.5	15.0	18.5***
Inmate has recent psychological/ psychiatric intervention	16.5	17.4	.5
Loss of relative/spouse	6.7	10.1	10.2***
Major problems	7.9	7.2	.5
Influence of alcohol/drugs	4.9	1.9	14.8***
Signs of depression	9.8	10.8	.9
Expressed suicide attempt	4.2	3.6	.4
Has suicide plan	1.1	1.0	0

****p <.001*

Table 6

OIA suicide risk indicators by age categories

	Younger	50-54	55-59	60-64	65+	χ^2
Inmate may be suicidal	5.9	5.0	5.0	6.3	2.3	2.9
Inmate has previous suicide attempt	21.5	16.0	17.0	13.2	8.8	21.6***
Inmate has recent psychological/ psychiatric intervention	16.5	15.7	23.6	16.8	9.9	11.1*
Loss of relative/spouse	7.0	8.1	15.0	9.9	5.5	23.4***
Major problems	7.9	7.5	7.6	8.5	3.3	2.7
Influence of alcohol/drugs	4.9	2.6	1.8	0	2.2	16.3***
Signs of depression	9.8	10.4	13.3	9.9	7.8	3.6
Expressed suicide attempt	4.2	2.6	4.5	5.4	2.2	3.4
Has suicide plan	1.1	.6	.5	3.1	1.1	6.5

**p <.05 ***p <.001*

Among the older offender age groupings, some interesting trends emerged. For example, the rate of recent psychological intervention was highest among offenders aged 55 to 59 and lowest among those 65 and over. Offenders aged 55 to 59 also had the highest rate of previous suicide attempts (17%). Wichman, Serin and Motiuk[20] identified four predictors of suicide among offenders, inmate may be suicidal, inmate has a previous suicide attempt, inmate has received psychological/psychiatric intervention and signs of depression. The results presented indicate that offenders aged 55 to 59 were more likely to have three of those indicators (no difference for inmate who may be suicidal). Therefore, offenders in the 55 to 59 age groups may be at higher risk for committing suicide than other older offenders. However, overall there is not sufficient data to suggest that older offenders are at higher risk for suicide.

Implications of physical and mental health needs

From a financial perspective the combination of the physical health problems and the type of health care available at the prison often requires that the older offender be transferred to community medical facilities. This is an expensive undertaking because the offender requires constant supervision by two on-site correctional officers.

From a treatment perspective, particularly for correctional psychologists, it is important to have knowledge about the types of health problems that older offenders have. It has been suggested that this type of knowledge can be valuable in assisting the psychologist to discuss the illness and related issues with the offender, as well as to communicate these problems and concerns with other health care professionals. It has been shown that correctional psychologists can assist the correctional health care system through involvement in interventions such as the palliative care program, in the Pacific region.[21]

From a responsivity perspective, some treatment programs may need to be modified for the older offender to participate. Most correctional programs are two to three hours in duration per day for a period of three months and this may be too long for an older offender to sit and give their full attention too. Programs may have to be delivered for a shorter duration and over a longer period of time so that the older offender can participate without being in discomfort.

It may also be beneficial to incorporate wellness programs that promote physical well being. Aday and Rosefield[22] suggested that programs such as walking, gardening, woodworking, ceramics, low impact exercises, prison support groups and other more passive recreational activities can prove successful among older offenders. Programs such as those listed above could prevent serious physical health problems (e.g. cardiac arrest) or help in the rehabilitation from serious health conditions. Rubenstein[23] noted that when programs have been offered specifically for the older offender, it resulted in increases in self-respect, a reduction in feelings of loneliness and depression, an increased desire for social interaction, and a renewed intellectual interest. ■

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Health issues for Aboriginal offenders

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In Canada, Aboriginal people represent approximately 2% of the adult population,[2] while Aboriginal offenders comprise 17% of the federal incarcerated population.[3] The numerous health issues facing the incarcerated Aboriginal offender population in general, has become a concern for the Correctional Service of Canada (CSC). This article provides a summary of the literature on physical non-communicable and communicable diseases that impact the Aboriginal offender population as well as some other areas of concern. The majority of the research presented is on the health of Aboriginal people in the general population since very few studies have been conducted on Aboriginal offender health specifically. It should be noted that the majority of health research on Aboriginal people has been conducted on First Nations and Inuit populations, and to a much lesser extent, on Métis.

Death rate, causes of death, and life expectancy

In 1999, Health Canada reported that the death rate for First Nations and Inuit peoples from Eastern Canada, the Prairies, and the Western provinces was almost 1.5 times higher than the 1996 national rate. The three most common causes of death for First Nations and Inuit people were diseases of the circulatory system, cancer, and injuries and poisonings.[4] More specifically, First Nations and Inuit were 6.5 times more likely to die as a result of poisonings and injuries than the general Canadian population.[5] There was no information available on the causes of death for Métis.

According to Health Canada, the life expectancy of the Aboriginal population has been reported to be lower than the Canadian population in general. In 1998, the life expectancy of *"Registered Indian men"* was 69 years compared to 75 years for men in the general population. For *"Registered Indian women"* the life expectancy was 77 years compared to 81 years for women in the general population.[6]

Physical Non-Communicable Diseases

The majority of research completed on physical non-communicable diseases for Aboriginal people has focused on diabetes and cancer and, to a lesser extent, on cardiovascular diseases, arthritis and rheumatism.

According to the 1991 Aboriginal Peoples Survey, the prevalence of non-insulin dependent diabetes, or type II, was highest among First Nations (6%), followed by Métis (6%) and Inuit (2%). The national rate (3%) for the general Canadian population was reported lower than the Aboriginal rates with the exception of the Inuit.[7] However, this may be a result of under-reporting or under-diagnosis of diabetes by this specific group of Aboriginals.

Due to the lack of systematic or consistent collection of data by ethnic status, it is difficult to assess the incidence of cancer among Aboriginal people. However, one study concluded that Inuit in the Northwest Territories were more likely to develop cancer of the lung, cervix, nasopharynx, and salivary gland and less likely to develop cancer of the breast, uterus, prostate, and colon compared to the total Canadian population.[8]

Two recent studies explored the prevalence of cardiovascular disease among the Aboriginal population in Canada. The results of the first study indicated that First Nations and Inuit people in the Northwest Territories had a lower mortality rate for all circulatory diseases compared to the general Canadian population.[9] In contrast, the second study reported that the prevalence of heart problems among First Nations and Inuit people were almost three times the national population (23% and 8% respectively). This finding was consistent across all age and sex groups.[10]

The First Nations and Inuit Regional Health Survey examines the prevalence of arthritis and rheumatism among First Nations and Inuit people. The report documents that Inuit suffer from osteoarthritis and rheumatoid arthritis equal to that of the general population. However, First Nations were found to have a higher incidence of osteoarthritis for all age and sex groups. The Inuit were more likely to develop other rheumatic disorders such as Reiter's syndrome.[11]

Given the findings, it appears that Aboriginal people represent a higher risk to develop and suffer from a number of physical non-communicable diseases. This increased risk may have an impact upon the Aboriginal offender population in a number of ways. Many of the diseases may be triggered or worsened by poor eating habits, a sedentary lifestyle, stress and anxiety, and heavy smoking, which are typical characteristics of the incarcerated general population. CSC has made efforts to improve the physical health of offenders, such as offering salads as a meal option and providing access to physical and leisure activities. However, further provisions need to be generated to help alleviate an existing health condition(s) and to reduce the risk of developing one.

Physical Communicable Diseases

A number of studies have addressed the incidence of Human Immunodeficiency Virus (HIV), Acquired Immune Deficiency Syndrome (AIDS), tuberculosis (TB), and hepatitis. Although research has been conducted on offender populations in these health areas, there has not been a specific focus on Aboriginal offenders.

HIV/AIDS has dramatically affected the Aboriginal population in Canada. According to Health Canada, the annual number of reported AIDS cases among Aboriginal people has steadily increased from 1991 to 2000. The proportion of reported Aboriginal AIDS cases has increased from 1% before 1990 to 11% in 1999 and 9% in 2000. It is important to note that these figures represent the proportion of reported AIDS rather than HIV cases and that many individuals carry HIV for a number of years before the disease is detected. An examination of HIV cases found that Aboriginal people are over-represented among new diagnoses for known cases. There was a higher proportion of Aboriginal women across all age groups, and Aboriginal people between 20 and 29 years diagnosed as HIV positive, in comparison to their non-Aboriginal counterparts.[12]

Relatively few studies have examined the prevalence of tuberculosis (TB) among Aboriginal people. However, it is known that the overall rate of TB in Canada reached a plateau in 1989 with approximately seven cases per 100,000. Unfortunately, the rate for the Aboriginal population continued to rise with 70 cases per 100,000 in 1995.[13] Further, the TB rates are particularly high for the more northernly and remote areas.[14] To date, the rate for Métis people has not been examined. Since 1998, the prevalence of TB among the federal offender and correctional staff population has been available due to the implementation of the Tuberculosis Tracking System (TBTS). A CSC report revealed that one out of every five offenders who enter the federal correctional system in 1998 was infected with TB. Furthermore, Aboriginal offenders reported positive tuberculin skin test (TST) results at twice the rate of non-Aboriginal offenders.[15]

There is also very little research on hepatitis among the Aboriginal population. One study in Canada detailed the outbreak of hepatitis A in a small Aboriginal community. Although the disease was confined, the incident demonstrated how easily it could be spread in a small remote area.[16] Health Canada has estimated that there are 1,477 Aboriginal people infected with hepatitis C and HIV. According to these data, the majority of infected persons (56%) live in British Columbia.[17]

These findings have important implications for correctional operations and programming. More specifically, prisons are at a higher risk for infection than non-prison communities. For example, offenders tend to practice more high-risk behaviour such as injection drug use, tattooing, and fighting. Given that communicable diseases are spread easily, an analysis of the prevalence of these specific diseases in the offending population is needed. Due to the higher rates of communicable diseases among Aboriginal people, this is an area that requires attention in order to contribute to the reduction and containment of diseases through treatment and education.

Other health concerns

There are a number of other areas that directly affect the health of Aboriginal people including substance abuse, nicotine, suicide, and mental illness. The incidence of alcohol, drug, and solvent abuse appears to be much higher in some Aboriginal communities than in other parts of Canada. This is particularly prevalent among Aboriginal youth that have a 2 to 6 times' higher risk for alcohol-related problems than non-Aboriginal youth. Furthermore, it has been suggested that Aboriginal men are more likely to abuse alcohol, whereas Aboriginal women are more likely to abuse drugs. A pattern of binge drinking also has been evident in some Aboriginal communities'.[18]

Due to the frequency of alcohol abuse among the Aboriginal people, the prevalence of Fetal Alcohol Syndrome (FAS) and Fetal Alcohol Effects (FAE)[19] among this specific population has generated concern. A study of a First Nation's reserve in Manitoba found that approximately 100 cases per 1,000 births were diagnosed with FAS or FAE. In contrast, the rate of FAS in western countries is approximately 0.33 cases per 1,000 births.[20]

The 1996 Northwest Territories Alcohol and Drug Survey examined the incidence of substance abuse in the Northwest Territories. The study concluded that Aboriginal residents aged 15 years or older were almost three times more likely to have used marijuana or hashish and three and a half times more likely to have used LSD, speed, cocaine, or heroin than non-Aboriginal residents. In addition, Aboriginal respondents aged 15 and over were 11 times more likely to sniff solvents or aerosols than non-Aboriginal respondents. Furthermore, the surveyed Aboriginal people were almost 24 times more likely to abuse solvents compared to the rest of Canada.[21]

With regard to Aboriginal people in the offender population, research has clearly demonstrated that substance abuse is a high-need area. For instance, in an Aboriginal Offender Survey, the majority of respondents reported an early history of alcohol (58%) and drug abuse (60%).[22] Furthermore, a higher proportion of North American Indian (93%), Inuit (93%), and Métis (91%) were identified as having high substance abuse needs at admission to federal custody.[23]

The heavy use of nicotine is quite frequent in Aboriginal communities. In 1997, 62% of First Nations and Labrador Inuit over the age of 15 were smokers. This rate is twice as high as the general Canadian population (29%). The rate of Aboriginal smokers does not appear to be declining as the smoking rate has remained unchanged since the 1991 Aboriginal Peoples Survey.[24]

In 1994, the National Task Force on Suicide in Canada identified Aboriginal people as a high-risk group for suicide.[25] A study of the Innu in Newfoundland revealed suicide rates of 178 per 100,000 population. The overall Canadian rate was 12 per 100,000 population.[26] Likewise, a retrospective study of suicide in Manitoba between 1988 and 1994 found that suicide rates were higher for Aboriginal people (31.8 per 100,000) than non-Aboriginal people (13.6 per 100,000).[27]

Similar to the trend in the general population, Aboriginal offenders are over-represented among offenders who commit and attempt suicide.[28] For example, an examination of inmate suicide in federal Canadian prisons reported that although the largest proportion of suicide victims were Caucasian (89%), 9% of victims were Aboriginal. Further, a study of attempted suicide in the male offender population also found that the majority of suicide attempts were committed by Caucasian offenders (81%). However, Aboriginal offenders represented 15% of suicide attempts.[29]

In conjunction with other health problems such as substance abuse and suicide, mental disorders are common characteristics of some Aboriginal communities. Epidemiological studies have reported high levels of mental health problems among Aboriginal people in Canada.[30] Results from the First Nations and Inuit Regional Health Survey indicated that 17% of Aboriginal parents reported that their children had more emotional or behavioural problems than non-Aboriginal children in the same age group. These problems significantly increased with age.[31] However, many research studies on mental health only provide crude estimates rather than actual rates, and very little information is available on specific disorders.

Many of these health issues, such as smoking and substance abuse, may complicate and exacerbate pre-existing health conditions. Furthermore, other health problems may facilitate thoughts of suicide and initiate occurrences of mental illness among offenders. Gradually, more treatment efforts have been developed to alleviate Aboriginal health problems including access to Elders, substance abuse programs, sweat lodges, and other spiritual ceremonies. However, there is a need to research these specific health issues as it is known that the Aboriginal offender population presents diverse needs and poses different risks than the non-Aboriginal offender population.

Conclusion

It is evident that there is very limited research in the area of health for Aboriginal people in Canada. Most studies have focused on selected Aboriginal communities and Aboriginal youth, as well as different age and gender groups. Furthermore, the literature available has not equally examined the prevalence of health problems among the three Aboriginal groups. For the most part, studies have focused on First Nations and Inuit populations. However, it is

clear that the many health-related problems faced by Aboriginal people in general are greatly intensified for Aboriginal people incarcerated in correctional facilities. Aboriginal offenders may have easier access to medical services than Aboriginal people living on reserves and in rural areas, but this does not imply that there is a complete understanding of their diverse and complex health needs, nor does it suggest that Aboriginal offenders use the services available. Aboriginal offenders continue to be at a greater risk than non-incarcerated Aboriginals for developing, spreading, and contracting diseases especially in an environment that is characterized by a sedentary lifestyle, violence, stress, and sometimes unsanitary accommodations. It has been clearly demonstrated that more research needs to be conducted in all health-related areas for the Aboriginal offender population. This research could help health services inform the development and improvement of education programs, treatment models, as well as assist in the safe reintegration of Aboriginal offenders into the community. ■

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Infectious Diseases in Canadian Federal Penitentiaries, 2000–2001

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In January 2000, the Correctional Service of Canada (CSC) implemented the CSC Infectious Disease Surveillance System (CSC-IDSS) in response to a growing need by correctional authorities for more complete data on infectious diseases in Canadian federal prisons. The CSC-IDSS represents an ongoing effort by CSC Health Services to enhance its capacity for public health surveillance in prisons. This article is based on a more comprehensive report of CSC health surveillance data, using information collected through the CSC-IDSS during 2000 and 2001.

Background

Correctional facilities in Canada are becoming increasingly important in the control of infectious diseases. The high prevalence of infectious diseases in federal prisons raises several concerns regarding the increased risk to uninfected inmates and to public health upon reintegration of infected offenders into the community. Prison inmates experience higher rates of infectious diseases than the general population. They often possess a history of high-risk behaviours such as injection drug use, trade sex and unprotected sex with high risk partners, which place them at risk of infection bloodborne and sexually transmitted diseases (STDs)[2] prior to their incarceration. Transmission of tuberculosis (TB) within prison settings has also been well documented in the literature.[3] As such, the correctional setting presents an important public health opportunity for identifying infected persons and providing them with appropriate care, treatment and counselling to prevent future transmission of infection.

In Canada, reports indicate that the number of inmates in federal correctional facilities reported to be infected with human immunodeficiency virus (HIV) and hepatitis C virus (HCV) has grown since the early 1990s. Voluntary screening (done with the consent of the inmate) for HIV, Hepatitis B and C, STDs and TB is encouraged for all newly admitted offenders and general population inmates in CSC facilities. Screening is available throughout an inmate's federal sentence. It is provided anytime upon request by the inmate, by recommendation of the health care professional, upon clinical indication of infection, after involvement in an incident where exposure to an infectious agent may have occurred, and prior to release from custody. Testing is accompanied by counselling as well as appropriate follow-up when treatment is necessary.

CSC Health Surveillance

Health surveillance is an integral part of disease prevention and control. The CSC-IDSS is designed to enable CSC to gather relevant health information on infectious diseases in inmates of Canadian federal penitentiaries. This information can serve to inform decisions of resource allocation for health services within CSC facilities. The performance of prevention and treatment programs can, in turn, be evaluated in light of surveillance data to guide the improvement of existing programs and the creation of new initiatives. In addition, surveillance allows CSC to examine trends in infection rates and thereby target particular high-risk groups for intervention.

All CSC institutional Health Services clinics contribute data to the CSC-IDSS through monthly surveillance reports. Surveillance data is collated, verified and analyzed by Health Canada staff with the support of CSC Health Services staff. This report presents rates of HIV, Hepatitis B and C, and STDs in federal inmates.

Results

HIV

In Canada, HIV prevalence in the general population in 1999 was estimated at 0.1%.[4] In comparison, the prevalence of reported HIV-positive inmates in CSC facilities at year-end 2001 was 223 (1.8%), up from 214 inmate cases (1.7%) in 2000 (Table 1).

During 2001, 16 inmates were newly identified within CSC with HIV infection, compared to 45 new reported HIV infections in 2000. Infections discovered at admission accounted for 69% of all newly reported HIV cases in 2001 and for

Table 1

HIV in inmates of Canadian federal penitentiaries,[1] 2000-2001

	2001 n (%)	2000 n (%)
HIV antibody screening uptake		
New admissions	1,606 (34.8)	1,768 (38.1)
General population	2,412 (19.0)	2,770 (21.7)
Total	**4,018**	**4,538**
New reported HIV cases		
New admissions	11 (0.2)	24 (0.5)
General population	5 (0.04)	21 (0.2)
Total	**16**	**45**
Gender		
Male	15 (93.8)	43 (95.6)
Female	1 (6.2)	2 (4.4)
Total	**16**	**45**
Total reported HIV cases[2]		
Male	210 (1.7)	201 (1.6)
Female	13 (4.7)	13 (5.0)
Total	**223 (1.8)**	**214 (1.7)**

[1] *2001 inmate population: 12,755 general population inmates (12,418 males, 277 females [excluding females in institutions also housing male inmates]), 4,643 new admissions*
2000, inmate population: 12,681 general population inmates (12,361 males, 262 females [excluding females in institutions also housing male inmates]), 4,618 new admissions

[2] *Prevalence of reported cases as of year-end*

53% of cases in 2000. A higher screening rate among new admissions may have allowed for better case-finding in this group compared to general population inmates.

Higher rates of screening among women offenders[v] also likely accounts for increased opportunities for identifying prevalent infections compared to men. In 2001, the prevalence of reported HIV cases was 4.7% among women offenders and 1.7% among males. Compared to the previous year, rates were lower for women (5.0% in 2000) but were comparable for men (1.6%).

Hepatitis C

The prevalence of reported HCV infection in federal inmates increased from 2,542 (20.1%) reported cases in 2000 to 2,993 (23.6%) cases in 2001 (Table 2). In comparison. the rate of HCV infection in the general Canadian population (0.8%) was several fold lower than in federal inmates.[5]

During 2001, 562 new cases of HCV infection were identified in CSC facilities, compared to 533 new cases in 2000. In contrast to results for HIV infection, new cases of HCV infection were more frequently identified among general population inmates (65% in 2001, 54% in 2000) than in new admissions. The reasons for this finding could be that it is only in the last three years that recognition of this disease and availability of testing have been promoted within CSC.

Table 2

Hepatitis C in inmates of Canadian federal penitentiaries[1], 2000-2001

	2001 n (%)	2000 n (%)
HCV antibody screening uptake		
New admissions	1,908 (41.1)	1,583 (18.1)
General population	2,512 (19.7)	2,151 (17.0)
Total	**4,420**	**3,734**
New reported Hepatitis C cases		
New admissions	195 (4.2)	244 (5.3)
General population	367 (2.9)	289 (2.3)
Total	**562**	**533**
Gender		
Male	528 (94.0)	500 (93.8)
Female	34 (6.0)	33 (6.2)
Total	**562**	**533**
Total reported Hepatitis C cases[2]		
Male	2,879 (23.2)	2,431 (19.7)
Female	114 (41.2)	111 (42.4)
Total	**2,993 (23.6)**	**2,542 (20.1)**

[1] *2001 inmate population: 12,755 general population inmates (12,418 males, 277 females [excluding females in institutions also housing male inmates]), 4,643 new admissions*
2000, inmate population: 12,681 general population inmates (12,361 males, 262 females [excluding females in institutions also housing male inmates]), 4,618 new admissions

[2] *Prevalence of reported cases as of year-end*

However, as with HIV infection, women were more likely than men to test positive for HCV. At year-end 2001, 41.2% of women offenders and 23.2% of male inmates were reported to be living with Hepatitis C. The rate of infection was lower for women (42.4%) and higher for men (23.2%) than in 2000.

Hepatitis B and Sexually Transmitted Diseases

The preponderance of HIV and hepatitis C among prison inmates often overshadows the burden of illness associated with less commonly reported communicable diseases such as STDs. In the community as well as in prison, hepatitis B and other sexually transmitted infections are more often identified symptomatically rather than through voluntary screening.

In 2000 and 2001, the number of reported infections of hepatitis B in CSC inmates was 13 and 43 cases, respectively. This corresponds to 0.1% of the inmate population in 2000 and 0.3% in 2001. In comparison, the rate in the general Canadian population has been estimated to be between 0.5%-1.0% in 2000.[5]

In 2001, 23 cases of genital chlamydia (0.18% of inmate population) were reported by CSC facilities, compared to 21 cases (0.17%) in 2000. Gonorrhea cases also increased slightly during this interval from 11 cases in 2000 (0.09%) to 13 cases (0.10%) in 2001. During 2001, rates of Chlamydia and gonorrhea in the general Canadian population were estimated at 0.15% and 0.02%, respectively.[6]

Discussion

Surveillance data provide merely one small part of the picture with respect to infectious diseases and must be complemented with targeted research studies to elucidate information not captured through routine surveillance. Data compiled by the CSC-IDSS during 2000 and 2001 corroborate results found by Canadian prison researchers on the distribution and rates of HIV and hepatitis C in inmates.[7] Studies indicate that a history of injection drug use is the most common risk factor for infection with HIV and HCV among federal inmates in Canada.[8] More specifically, the sharing of unsafe injection equipment among inmates who inject illicit drugs is conducive to the transmission of bloodborne viruses.

This fact points to the increasingly important challenge for correctional health care workers to find creative and effective ways to reduce the transmission of infectious diseases between infected and non-infected. Interventions for reducing the high burden of disease may require implementation in the context of harm reduction strategies, while complementing traditional means of health promotion through inmate education. In addition to confidential voluntary testing, CSC has implemented several initiatives aimed at preventing the transmission of infectious diseases and reducing the harms associated with risky behaviours. These include 1) the provision of educational materials and programs for offenders and staff, 2) the availability of condoms, dental dams, water-based lubricants and bleach in all institutions, 3) the promotion of immunization for Hepatitis A and B, and 4) the provision of a methadone maintenance program for opioid-addicted inmates. Specific studies are needed to better quantify the risk of infection within Corrections in order to improve the interventions.

The early identification of HIV, hepatitis B and C, and STDs in inmates will help reduce morbidity and lower treatment costs associated with disease sequelae. Given the common route of transmission shared by hepatitis B, Chlamydia and gonorrhea with HIV and hepatitis C (through blood and sexual transmission),[9] the role of some STDs in facilitating the transmission of HIV,[10] and the increased impact on health of co-infections, it is undoubtedly critical to address the prevention of hepatitis B and STD transmission. While CSC offers immunization for Hepatitis B to all inmates, no data are collected on the number of inmates who receive the vaccine. Active screening for STD, can facilitate their control. Expanding screening uptake for inmates, especially upon admission, is supported by the success of early case-finding opportunities indicated by data in this report.

The findings in this article must be interpreted with caution. A limitation of the aggregate surveillance data lies in the fact that screening uptake rates do not differentiate individuals who undergo multiple testing. Thus, actual rates of disease, which are based on the number of positive test results, may be higher than presented here. Furthermore, reported disease rates reflect only those who come forward for testing. The asymptomatic nature of many infectious diseases further underestimates the true prevalence of disease in the inmate population.

Prevalence data reported on a yearly basis cannot indicate if changes in rates be attributed solely to transmission within the Institutions. A significant percentage of inmates come into the system already infected. In coming years, health surveillance at CSC will strive to take advantage of more rigorous methodologies in disease monitoring to allow for better characterization of reported infections. Moreover, CSC will continually re-evaluate strategies to find effective methods for disease prevention and control among federal inmates. ■

[9] In this article, women offenders refer to female inmates housed in exclusively CSC women's institutions and do not include federal female inmates in provincial facilities and in federal institutions housing both male and female offenders.

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Let's Talk

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Synthetic forms of THC in clinical treatment settings

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The marijuana plant has been used for both herbal medication and as a mild intoxicant for centuries. There is anecdotal evidence of its effectiveness in treating the symptoms of several diseases, and currently laboratory and clinical studies are attempting to provide clear, scientific information on the issue. The medical use of marijuana poses several challenges. The debate is based on its therapeutic value relative to the potential harm posed by the drug. In an attempt to circumvent the smoking of marijuana, while retaining the therapeutic value of the drug, two synthetic forms of marijuana have been developed. The purpose of this article is to provide an overview of the basis for developing these medications and to examine their usefulness in a clinical setting.

History and pharmacology

Cannabis sativa, or marijuana as it is more commonly known, contains literally hundreds of identified chemicals. One group of chemicals, known as the cannabinoids, is responsible for all of the drug's psychoactive effects. The main psychoactive ingredient is delta-9-tetrahydrocannabinol (THC). This compound was identified in 1964, when scientists were able synthesize it and study its structure, pharmacology and actions in the brain[2]. For several years afterward, the precise mechanism by which THC exerted its effects remained unknown. It was not until 1988, with the use of emerging technology, that it was found that THC was attaching to cell membranes, suggesting that there was a specific receptor to which the compound was bound.[3] A short time later, the first cannabinoid receptor (CB1) was discovered and cloned in the central nervous system (CNS).[4] Within a few years a second cannabinoid receptor (CB2) was found in peripheral tissues.[5] It was shown that THC binds to these receptors with different potency, and they produce different effects in the body.

The discovery of the cannabinoid receptors prompted scientists to search for a chemical that is produced by the brain itself (endogenous) that binds to these receptors. Two such chemicals have been identified, N-arachidonylethanolamine (anandamide) and N-arachidonylglycerol.[6] Since then, both have been synthesized and studied for their effects in the brain and other areas. Much has been discovered as to how the cannabinoids exert their effects, what effects they have, and where the receptors are located in the brain and peripheral tissues.

Prescription THC

The medical benefits of smoking marijuana have been reported anecdotally for centuries. With the discovery of the endogenous cannabinoid system, it was possible to develop drugs that targeted the system directly, in an attempt to mimic the effects of smoking marijuana. Smoked marijuana is a crude drug delivery system that contains variable amounts of THC and also delivers harmful substances to the smoker. Marijuana smoke contains tars and other chemicals similar to that found in tobacco smoke, and is associated with an increased risk of lung disease and an increase in cellular mutations in lung tissue.[7] Because of this, it was of great interest to develop alternate methods of drug delivery.

At present, there are two compounds based on THC that are marketed as prescription drugs. Dronabinol (Marinol) is synthetic THC, structurally identical to the psychoactive THC found in marijuana. It has been approved for use in the United States since 1986, and is also commercially available in Canada. Nabilone (Cesamet) is an analogue of THC. It is available by prescription in Canada and the United Kingdom, however the United States has not approved this drug for prescription use. Both drugs are available in pill form.

Other forms of synthetic THC exist, such as levonantrodol, a THC analogue, and HU-210, which is an analogue much more potent than the THC found in marijuana.[8] These drugs are not commercially available and have not been approved for prescription use.

Effectiveness in treatment

Initial evidence for the potential efficacy of any new drug is typically obtained through research with animals in a laboratory setting. Animal studies have shown synthetic THC to be

effective in stimulating appetite, preventing nausea and vomiting, in pain management and in relieving muscle tremors associated with several disorders (multiple sclerosis, epilepsy).[9] The results from animal research have been the basis for beginning clinical trials in human patients.

Clinical trials with human patients are subject to a host of specialized problems that are not present in animal research. Trials involving human subjects are less tightly controlled than in the laboratory, and increases in individual variability through medical history or current conditions can influence the study outcome. Small sample sizes are also a limitation in clinical trials, where individual variability can have a more profound impact. The most effective method of clinical trial involves random assignment of patients to either a drug condition or to an inactive (placebo) or an active control condition. Neither the experimenters nor the patients know which they have received, which reduces the possibility of an individual's expectations or preconceptions influencing the results. These caveats should inform the reader to be cautious in interpreting the results of clinical trials involving human subjects and synthetic THC, as many clinical studies use small samples and inadequate control groups.

Anti-nausea treatment

There is a large body of literature examining the anti-nauseant properties of THC. One study has attempted to consolidate the literature and clarify the effectiveness of cannabinoids for the treatment of nausea and vomiting.[10] The review began with 198 studies, and using standard methods found that only 30 met the criteria for completely randomized clinical trials. In these 30 clinical trials, data from 1366 patients were analyzed. The drugs studied were oral nabilone, oral dronabinol, and intramuscular levonantrodol (synthetic analogue of THC). Trials compared the cannabinoids to both placebo and active control. It was found that cannabinoids were slightly more effective than standard anti-nausea drugs and placebo for controlling nausea and vomiting associated with moderate chemotherapy treatment, but not when patients were receiving very low or very high chemotherapy.

None of the trials included in the previous study compared cannabinoids to the most effective and commonly used drugs for controlling nausea and vomiting, the serotonin receptor blockers, ondansetron and granisetron. There is evidence that cannabinoids are not more effective than serotonin blockers for controlling nausea and vomiting associated with chemotherapy.[11]

Appetite stimulation

'Wasting Syndrome' in acquired immune deficiency syndrome (AIDS) is associated with secondary processes related to the disease such as diarrhea, vomiting, and a loss of appetite, resulting in a significant reduction of body weight. The Food and Drug Administration in the United States has approved the use of Marinol as an appetite stimulant for the treatment of wasting in AIDS patients. There is a lack of clinical evidence to support the efficacy of synthetic THC in appetite stimulation, despite its continued frequent use.[12] The only cannabinoid that has been evaluated in controlled clinical trials is Marinol, and these studies generally support its effectiveness in treatment. However, it is not more effective than the traditional treatment, a synthetic derivative of progesterone.[13]

THC may be an effective treatment option in medical conditions such as AIDS where multiple symptoms exist (nausea, vomiting, appetite loss, anxiety) that can be alleviated by the use of one treatment, rather than offering separate medications for each symptom. One possible disadvantage is that CB2 cannabinoid receptors located outside the CNS have been linked to immune functions, and marijuana smoke has been shown to have immunosuppressive effects mediated by these receptors.[14] The effect of oral THC and other cannabinoids as compared to smoking marijuana on the immune system is not known, and requires further study in patients whose immune system is already compromised.

Other treatment indications

Other applications for the use of prescription THC are being studied. Animal research has shown that THC is a powerful analgesic (pain reducer), however studies with humans have produced conflicting and inconsistent results.[15] In cases where traditional treatment with opiate analgesics is ineffective, THC may be useful as an alternative or in combination with opiates. There is evidence that the control of pain with these two drugs is not mediated through the same neurological pathways,[16] and it is possible that combining them could result in a synergistic and more powerful effect. Further

research will determine if this is a viable treatment option.

Cannabinoid receptors are densely localized in brain areas that are involved in motor control. Animal studies have shown that THC acts directly on the motor areas of the brain, producing changes in movement[17]. Individuals with multiple sclerosis often report relief from muscle spasticity with the use of smoking marijuana.[18] Although the research to date has not produced strong evidence for the use of THC in this condition, there is a need for more controlled clinical trials before any conclusions can be made.

Side effects

It has been shown that side effects occur significantly more often with cannabinoids.[19] Side effects noted include things like drowsiness, sedation, euphoria and feeling 'high', dizziness, depression, hallucination, paranoia and hypotension. In 19 of the 30 trials examined in the chemotherapy review, the number of patients withdrawing from the study due to adverse side effects was significantly higher with cannabinoids (11%) compared to the traditional treatments and placebo conditions (2%).

Abuse potential

There is the additional concern with synthetic THC, as with other prescription drugs that have psychoactive effects, that it could become a drug of abuse. However, many of the side effects reported are aversive, such as dizziness and depression, which would decrease the likelihood that the drug would be abused widely. Additionally, the effect of oral ingestion slows the process of drug absorption into the body, which results in less intense psychoactive effects. In a study supported by the pharmaceutical company responsible for manufacturing Marinol in the United States, no evidence of abuse or diversion of Marinol was found.[20] Before any firm conclusions can be made, however, more research is needed in the area of abuse potential of Marinol and Cesamet.

It is also not clear what effect prior experience with smoking marijuana has on individual susceptibility to abuse. However, there is evidence that prior use can influence patients' expectations of a positive outcome with synthetic THC treatment. In one trial included in the chemotherapy review, over half of the patients were regular marijuana users. Of these, 94% believed that cannabinoids would reduce their nausea and vomiting symptoms.[21]

Policy

In Canada, marijuana and its synthetic derivatives fall under schedule II of the *Controlled Drugs and Substances Act*. The rules regarding their legal distribution are outlined in the *Narcotic Control Regulations*. At present, Marinol and Cesamet are approved for the management of severe nausea and vomiting associated with chemotherapy, and Marinol is approved for the treatment of anorexia in patients with AIDS.[22]

The Correctional Service of Canada does not have a national policy regarding the use of prescription THC. Each of the five regions across Canada has a Pharmacy and Therapeutics Committee, whose role is to develop and maintain a regional drug formulary and pharmacy policy.[23] The policy regarding the use of prescription THC varies by region. For example, in the Atlantic region, prescription THC has not been approved for use with offenders. In the Pacific region it has been used in the past to treat AIDS patients, however there are no offenders currently receiving treatment with THC.

Conclusion

There is some evidence that synthetic THC may be an option for treatment of secondary symptoms in certain medical conditions. At this time, evidence is lacking that would favor using synthetic THC over currently available treatments, with the possible exception of circumstances where traditional treatments were not effective. It has been shown that synthetic THC can produce a variety of unwanted side effects along with its desired effects. As our understanding of the endogenous cannabinoid system grows, it may be possible to develop specific and selective drugs that target receptor subtypes which enhance the desired effects, while lessening the unwanted side effects that now limit its clinical usefulness. ■

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Mental health needs of women offenders: Needs analysis for the development of the intensive Intervention Strategy

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This article summarizes some key findings from a study jointly undertaken by Health Services Branch, Research Branch, and the Women Offender Sector of the Correctional Service of Canada. In 1990, a Task Force on Federally Sentenced Women was formed to examine the correctional management of federally sentenced women and to develop a plan responsive to their unique and special needs.[3] Among the Task Force's recommendations was the closing of the Prison for Women (P4W) in Kingston, Ontario,[4] and its replacement with four regional facilities and an Aboriginal Healing Lodge. Between 1995 and 1997, these new institutions were opened. The design of the new institutions reflected the recommendations of the Task Force, specifically promoting concepts associated with community-style living (inmate housing is provided through stand-alone houses clustered behind a main building which contains staff offices, program space, a health care unit, and visiting area). While the new institutions did address the needs of most women, they did not address the needs of some women who needed more intensive mental health treatment (which, at the time, was unavailable at the regional institutions) or the small group of maximum-security offenders who needed more structure and control.[5]

Over the past few years, the priority has been to put into place a comprehensive, realistic and sustainable strategy to meet the needs of those women with intensive mental health needs, as well as addressing the needs and risk of those women classified as maximum-security.[6] To help develop this strategy, a Needs Analysis was required in order to obtain information regarding the mental health, living skills, and security needs of these women and provide further information on treatment and programming needs, staffing, staff training, security, and the nature of the supervision/intervention required.[7] The present article is limited to describing certain findings of the Needs Analysis pertaining to the mental health issues of the target populations.

Methodology

The criteria for inclusion in the Needs Analysis were designed to include all women with maximum-security classifications, severe mental health concerns, and/or significant problems with daily-living (i.e., those women who cannot function in the community living environment of the regional facilities without considerable additional support and intervention).[8]

Needs Analysis Questionnaires were sent to all institutions housing federal women inmates (10) and completed by all staff and/or members of the inter-disciplinary team working with women in the target populations.[9] To ensure consistency in the completion of the questionnaires, representatives received direction from the national researchers.

The questionnaire covered a broad range of questions (both closed and open-ended) and was designed to provide a comprehensive national picture of the nature of the difficulties experienced by these women and the staff who work with them, as well as corresponding security, programming and staff training needs.

With respect to the mental health needs of the women, the questionnaire elicited information intended to gauge the following: existence and identification of psychiatric diagnosis/diagnoses,[10] the use of psychiatric and other medications, suicide risk, self-injurious behaviour, substance abuse, and other mental health issues/concerns, treatment and related programming needs and requirements.

Data organization

Data were analyzed using a coding guide; where the coding was not straight forward/self-evident, categories were delineated on the basis of the most frequently occurring responses. The sample was divided into four mutually exclusive sub-groups according to which criteria the women met (see Table 1). Data were also analyzed regionally.

Table 1

Sub-group categorization

Sub-group label	Number (n)	Description of the sub-groups
Max (Maximum-Security)	20	Those women with maximum-security classification who are *not* living in a special-needs or mental health unit or treatment centre and do *not* have significant mental health problems and/or living-skills deficits.
MaxSN (Maximum-security Special Needs)	9	Those women with maximum-security classifications who are living in a special-needs or mental health unit or treatment centre or who have significant mental health problems and/or living skills deficits
SN-Tx (Special Needs-Treatment Centre)	20	Those women with medium- or minimum-security classifications who are living in a special-needs or mental health unit or treatment centre
SN-NonTx (Special Needs-Non Treatment Centre)	25	Those women with medium- or minimum-security classifications who are not in a treatment centre or special needs unit but who have significant mental health problems and/or living-skills deficits

Results

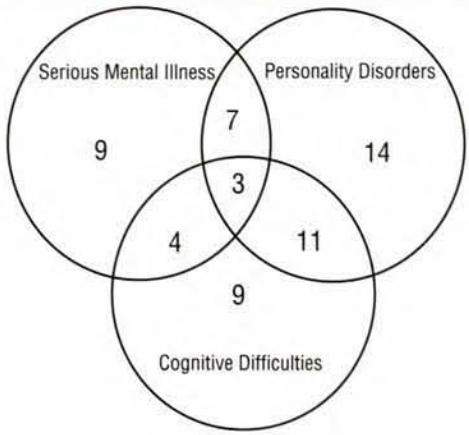
Seventy-four completed questionnaires were returned.[11] The mean age across the sub-groups was 35.3 (SD = 8.7); 19 women were Aboriginal (25.7%).

Constellation of needs

Psychiatric diagnoses and information on cognitive functioning were examined to determine a broad constellation of needs, based on: Serious Mental Illness (SMI, e.g., schizophrenia); Personality Disorder (PD, e.g. Borderline Personality Disorder); and/or Cognitive Difficulties, (CD, e.g. low cognitive functioning).[12] The majority of women (77%) could be accounted for in this constellation; almost half (43%) had more than one of the above needs identified (see Figure 1).

Figure 1

Constellation of needs



None of the Above: 17

Constellation of needs by sub-groups

In Figure 2, the constellation of needs identified above is further examined in relation to the four sub-groups. Some of the more interesting findings are that for almost half (n = 9) of the Max sub-group, none of the needs in the constellation identified were noted; moreover, no one in this sub-group presented with an SMI. Of the remainder of the Max sub-group, almost one-third (n = 7) were identified as having a personality disorder, comprising the highest percentage of PDs across any of the remaining sub-groups. Half of the women in the MaxSN group were diagnosed with an SMI or SMI combination. Additionally, half of these women were diagnosed with a PD (Borderline Personality Disorder; BPD). Again, half of the women in the SN-Tx sub-group were diagnosed with an SMI or SMI combination. Additionally one-third were diagnosed with BPD. Finally, in the SN-NonTx sub-group, the highest number of needs were noted: over three-quarters of the sub-group had one or more of these need areas identified, the majority of which were cognitive difficulties and personality disorders (including a high frequency of co-occurrence).

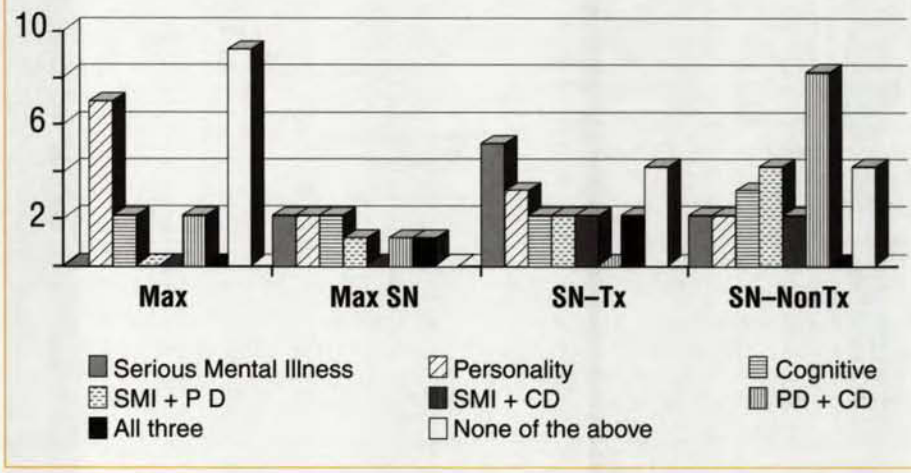
Other findings: Substance abuse, suicide, self-injury

The majority of women (75%) were identified as having a significant substance abuse problem. For about one third (35%) of those with a substance abuse problem, this presented serious challenges within the institution (e.g., using, trafficking). Of those with a substance abuse problem, there was 70% co-occurrence with a psychiatric diagnosis (PD, SMI).

Almost half the women were identified as at risk for suicide;[13] of these women, two-thirds had attempted suicide in the past two years. With respect to the sub-groups, suicidal risk appeared highest for MaxSN (89%). Similarly, half of the women were identified as having a history of self-injury. Self-injurious behaviour was reported more often for women with maximum-security classifications (either Max or MaxSN): 58% compared to 35%. Furthermore, self-injurious behaviour was identified as a current concern for 25% of the women, with no differentiation across sub-groups.

Figure 2

Constellation of needs by sub-groups



When staff were asked for their opinion regarding the women's treatment needs, the most frequently identified type of treatment need was psychological, including the need for individual counselling. Other treatment needs frequently identified were: treating deficits in skills/coping abilities which included things such as interpersonal skills and daily living skills; psychiatric treatment needs where medication management was required; treatment to address substance abuse; and treatment to address anger management issues.

A great deal of variability was noted in the responses to questions relating to interpersonal skills. While this is a subjective assessment that can be influenced by the quality of the relations between the women and the staff; staff identified the majority of the women as having difficulties, the most common being: creating conflict; interpersonal difficulties; antisocial behaviours; and impulsive behaviours.

Three-quarters of the women were identified as experiencing difficulties in activities associated with daily-living. Common difficulties identified included: emotional/behavioural (coping, problem solving, impulsivity); self-care (personal hygiene, eating); household; and motivational/organizational (e.g., initiating activities; organizing the steps in completing a task). Across the sub-groups the greatest difficulties were in emotional/behavioural; the SN-NonTx group had the most difficulties across all of the categories.

Staff identified approximately 70% of these women as having a mental health or treatment issue(s) that fell outside of any DSM-IV category. Among the more commonly identified issues were: emotion dysregulation, past trauma issues and serious medical conditions (e.g., Hepatitis C, asthma, epilepsy; HIV/AIDS).[14] In terms of the different sub-groups, emotion regulation and past trauma issues were more commonly reported for women in the SN-NonTx group; eating disorders and emotion regulation were more commonly reported for women in the Max group; and serious medical conditions were more commonly reported for women in the SN-Tx group.

The findings relating to programming revealed that approximately one-quarter of the women require programs adapted to their cognitive level (this need was highest for SN groups and considerably lower for the Max group). The majority were identified as being capable of participating in group programming; however there were differences again across the sub-groups, with MaxSN identified as least likely to be able to function in groups and requiring more individual programming.

Finally, the staff identified various areas for additional and specialized training. Among the most frequently identified areas were: Dialectical Behaviour Therapy (DBT); mental health awareness; and crisis intervention. Other suggestions included, substance abuse; therapeutic skills; responding to suicide/self-injury; Aboriginal awareness; understanding abuse/trauma; and anger management training.

Conclusion

On September 3, 1999 Solicitor General Lawrence MacAulay announced the *Intensive Intervention Strategy for Women Offenders*. The *Strategy* addresses the complex needs and risks of the populations included in the Needs Analysis. In brief, the *Strategy* delineates specialized housing environments to accommodate the women within the regional facilities — Structured Living Environments have been built to accommodate medium-and minimum-security women with significant mental health difficulties and Secure Units are

being created to better accommodate maximum-security women. Both environments offer 24-hour staff supervision and support, as well as specialized programming delivered through an inter-disciplinary team. Within the context of an effective therapeutic environment, the two primary treatment models being implemented in the Structured Living Environments are: DBT — to address emotion and behaviour dysregulation and other interpersonal skill needs; and Psychosocial Rehabilitation (PSR) — to address the daily-living and coping skills needs for women who are identified as lower cognitively functioning. These interventions will also be available for women in the Secure Units.

In summary, the Needs Analysis provided useful information to assist in addressing the mental health needs of the target populations, including the choice, design and implementation of the primary treatment interventions (DBT and PSR). Furthermore, information from the Needs Analysis was also used to develop the *Institutional Functioning Scale*, which will assist in the progress and outcome evaluation of both environments. ■

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[2] 284 Wellington Street, Ottawa, Ontario K1A 0H8.

[3] Correctional Service of Canada (1990). *Creating Choices: The Report of the Task Force on Federally Sentenced Women*. Ottawa, ON: Author.

[4] P4W opened in 1934 and in 1990 was the only federal penitentiary for federally sentenced women inmates in Canada.

[5] Each house accommodates 6 to 10 women and includes communal living space, a kitchen, dining area, bathrooms, a utility/laundry room and access to the grounds. The women in each house are responsible for all their daily living needs, such as cooking, cleaning and laundry.

[6] In September 1996, an interim decision was made to remove all maximum-security women from the Service's new regional facilities for women because the community-living design of the regional facilities was not meeting the needs of this population either in terms of security or programming and the enhanced units at the regional facilities were designed for short-term stays, not long-term accommodation. Maximum-security women have been regionally accommodated at the Prison for Women (now closed) or in separate and distinct units at existing facilities for men: Saskatchewan Penitentiary, Regional Psychiatric Centre - Prairies (Saskatchewan), Regional Reception Centre (Quebec) and Springhill Institution (Nova Scotia). In the Pacific Region, all female inmates are accommodated at the Burnaby Correctional Centre for Women under an Exchange of Services Agreement.

[7] Previous reports on women with special needs and/or maximum-security classifications include: McDonagh, D. (1999). *Federally Sentenced Women Maximum Security Interview Project: "Not Letting the Time Do You"*. Ottawa, ON: Correctional Service of Canada. Morin, S. (1999) *Federally Sentenced Aboriginal Women in Maximum Security: What Happened to the Promises of "Creating Choices"?* Ottawa, ON: Correctional Service of Canada. Warner, A. (1998) Implementing Choices at Regional Facilities: Program *Proposals for Women Offenders with Special Needs*. Ottawa, ON: Correctional Service of Canada.

[8] Staff were requested to complete the questionnaires on all women incarcerated in their institutions July 1st, 1999 who met the following criteria:

[1] Currently classified as maximum-security.

[2] Currently living in a special-needs or mental-health unit or a treatment centre (due to severe mental health problems and/or low cognitive functioning and deficits in basic living skills). [Regardless of security classification.].

[3] Women who, although they are not currently classified as maximum-security, have had a maximum-security classification within the last calendar year. [Results have not been included in present report.].

[4] Women who, although they are not currently living in a mental-health unit or treatment centre, have significant mental health problems and/or living-skills deficits such that the women cannot function in the community living environment without considerable additional support and intervention.

[9] Questionnaires were sent to the following facilities and units: Nova Institution, Springhill Institution, Établissement Joliette, Centre régional de réception, Grand Valley Institution, Prison for Women, Edmonton Institution for Women, Okimaw Ohci Healing Lodge, Regional Psychiatric Centre, Saskatchewan Penitentiary, and Burnaby Correctional Centre for Women.

[10] American Psychiatric Association (1994). *Diagnostic and Statistical Manual of Mental Disorders - Fourth Edition* (DSM-IV). Washington, DC: Author.

[11] In total 90 questionnaires were returned; 16 of these questionnaires considered inmates who had a maximum-security classification in the past 12 months but were no longer classified maximum-security.

[12] SMI includes major psychotic diagnoses such as schizophrenia, major depression, bipolar or dissociative disorder; PD most frequently identified was Borderline Personality Disorder (BPD); Cognitive difficulties were identified by either a DSM IV diagnosis indicating low cognitive functioning or an answer of yes to the question "Is this women's cognitive functioning below normal?"

[13] This figure is an overall indicator of risk as determined by staff and is based on current ideation or attempts (current is considered to have occurred within the past two years) or past risk.

[14] Emotion dysregulation comprised issues such as mood lability and anger management. For the purposes of our analyses, past trauma issues included both family violence as well as abuse experienced in a woman's family of origin. Serious medical conditions such as Hepatitis C, asthma, epilepsy, HIV/AIDS or other serious medical conditions were also considered as a mental health issue insofar as the emotional toll experienced by women with these conditions.

Correctional adaptation of Dialectical Behaviour Therapy (DBT) for federally sentenced women

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Dialectical Behaviour Therapy (DBT), is an empirically supported, systematic and comprehensive psychotherapeutic approach for treating individuals struggling with severe emotion and behavioural dysregulation (including chronic suicidality, intentional self-harm, as well as extreme and problematic impulsive behaviour.[3] *DBT, employing cognitive and behavioural principles united by strategies to achieve balance and underlying assumptions, is increasingly being used to treat individuals presenting with these difficulties. In community-based settings, DBT was more effective than community based treatment-as-usual in reducing incidence and severity of parasuicidal acts (including suicide attempts), therapy drop-outs, inpatient psychiatric days, and self-reported anger, and in increasing interpersonal and global adjustment.*[4] *This article describes DBT and outlines the Correctional Service of Canada's (CSC) adaptation of the therapy. In particular, the article highlights CSC's Comprehensive DBT Model and the evaluation framework developed to assess its effectiveness with women offenders.*

Dialectical Behaviour Therapy: Foundations

DBT was developed from a joint motivational and capability deficit model of problematic behaviour. In brief, in such a model, personal difficulties stem from:

1) deficits in important interpersonal, self-regulation (including emotion regulation) and distress tolerance skills, and
2) personal and environmental factors that reinforce maladaptive behaviours and inhibit the use of existing behavioural skills and the development of new skills and capacities.

DBT is framed by an overarching perspective that emphasizes the interrelatedness and wholeness of reality and the synthesis of opposites. The dialectical viewpoint is the foundation upon which the entire structure of the treatment rests. Dialectics is a process of achieving balance. In DBT, synthesis, or balance, is sought on several levels: the key dialectic being *acceptance* on the one hand and *change* on the other. Thus, DBT includes specific strategies to promote acceptance and validation of the individual's current capabilities and behavioural functioning (e.g., mindfulness; recognizing aspects of problematic behaviour as having an adaptive function). These are balanced by strategies for promoting change (e.g., behavioural analysis, problem solving, contingency procedures, skills training) which teach the individual more adaptive ways of dealing with difficulties and assist in the acquisition of skills to accomplish this. Dialectical strategies inform all aspects of DBT treatment.

DBT targets skill development to address dysregulation in the sphere of emotions, relationships, cognition's and behaviours while increasing adaptive behaviours. The goal of DBT is for individuals to increase dialectical thinking, emotional and behavioural patterns — to learn and refine skills to identify and change rigid, dichotomous patterns associated with significant problems in living.

Standard DBT — DBT as originally developed by Dr. Linehan — involves four treatment components: individual psychotherapy, skills training, telephone consultation (to provide additional support and assistance to clients, especially during crisis) and therapist consultation. The purpose of DBT is to: 1) improve behavioural capabilities; 2) improve motivation to change; 3) promote the generalization of new capabilities to other environments (e.g., everyday life settings); 4) structure the environment to support the individual and inter-disciplinary treatment team members' capabilities; and 5) enhance inter-disciplinary treatment team members' capabilities and motivation to treat individuals effectively.[5] DBT treatment is a process that involves the collaborative efforts of the clinicians/service providers and the individual in order to devise the most effective intervention. This process encourages individuals to acquire and generalize skills to

more appropriately and effectively address their mental health and other needs at a pace consistent with their needs and learning styles.

CSC correctional/forensic adaptation

DBT has been applied in correctional/ forensic settings and appears promising for assisting offenders manifesting the problems associated with severe emotional and behavioural dysregulation.[6]

These initiatives have integrated recent theoretical and clinical thinking suggesting that Borderline Personality Disorder (the population DBT was originally developed to treat) and Antisocial Personality Disorder (highly prevalent in forensic/correctional settings) share several common characteristics, lending support to efforts aimed at such treatment adaptations.

CSC first introduced DBT for use with women offenders in 1997, in an effort to respond to the needs of those women presenting serious emotional and behavioural difficulties. The consideration of DBT as a treatment option was supported by the fact that its theoretical base is compatible with the *Mental Health Strategy for Women Offenders*[7], and its approach to treatment is non-pathologizing, client-centred and empowering. Between 1997 and 2000, various CSC facilities for women offenders offered some aspects of DBT. A great deal was learned from these early initiatives and for the past several years, CSC National Mental Health Services has been concentrating its efforts on an extensive adaptation of DBT to address the needs of its correctional populations. In 2001, the Service began exploring options for extending the availability of DBT to its male population. Three CSC DBT Models have been developed: Comprehensive DBT (for use with offenders residing in mental health units), General DBT (for offenders in general population) and Secure DBT (for maximum-security women offenders).

While integrating key targets and treatment components of the original model, CSC's adaptations have needed to also address: an expanded target offender population (including correctional-specific targets), a different treatment context or environment (prison as compared to community out-patient), and then within the carceral environment, the needs associated with different settings (general population inmates, inmates housed in treatment facilities, and maximum-security inmates). Moreover, broader organizational factors, such as consistency with, and incorporation of, correctional philosophy, principles and practices, as well as planning for multi-site implementation were addressed.

The adaptations have included modifying published DBT materials (particularly the Skills Training Manual)[8] and the development of CSC-specific materials to support training and implementation of DBT with CSC offender populations. For example, materials required extensive modification and development so that they were sensitive and relevant to a carceral offender population and environment; inclusive of criminogenic considerations; integrated crime cycle and relapse prevention information; had straightforward and understandable language; and had clear directions accompanying *any* and *every* treatment tool, procedure or homework assignment. Additional treatment tools were developed to support treatment team consultations (particularly to enhance communication between staff involved in the various treatment components and shift-work schedules), behavioural analyses and the implementation of contingency procedures. Further, materials were developed to standardize, as much as possible, the administering of DBT treatment components across multi-sites, so that information regarding best practices and further adaptation of treatment materials could be efficiently distributed and data on treatment process and outcome aggregated nationally.

Finally, to support the implementation of its DBT Models, CSC developed a national training curriculum for DBT with specialized training specific to each of the Models and designed for delivery to an inter-disciplinary team comprised of both correctional and clinical staff. As such, training begins from the point of assuming that some participants will have no prior knowledge of cognitive-behavioural theory and principles. In addition, ongoing training and consultation is provided nationally.

CSC's comprehensive DBT Model

In 2001, CSC opened *Structured Living Environment (SLE)* units in each of its four regional institutions for women offenders. These SLE units each accommodate eight medium- and minimum-security women whose significant mental health needs are addressed by an interdisciplinary team providing 24 hour support and supervision. The two primary treatment models being implemented in each of the SLE units are DBT and Psychosocial Rehabilitation (PSR).[9]

The Model of DBT implemented in these units is the Comprehensive Model — the most intensive of the CSC DBT Models. Within the context of an effective therapeutic environment, the Comprehensive Model incorporates the following treatment components: Individual Psychotherapy (minimum 1 hour/week); DBT Skills Training Sessions (once or twice/week); Support/Coaching (available 24 hours/day); DBT Team Consultations (various formal and informal consultations with DBT treatment team members); and DBT National Consultations (including weekly conference calls with the psychologists and site visits).

The DBT Treatment Team staff, in consultation with each of the participants identifies individual treatment targets. Consistent with the Linehan model, these treatment targets are arranged in a hierarchy with imminently life-threatening and unit destructive behaviours and are rated first priority. When significant treatment gains have been achieved, the treatment focus is shifted to quality-of-life interfering behaviours. Adaptive behaviours the participant already has in her repertoire are also identified, so that these may also be targeted for increase. Targeted behaviours (behaviours to increase and behaviours to decrease) are also conceptualized in terms of corresponding skill development areas. Assistance in the acquisition of new skills occurs in the DBT Skills Training Sessions as well as in the therapeutic environment. Targeted behaviours and skills practiced are monitored daily by each participant on a *DBT Diary Card*.

Aside from the *DBT Diary Card* providing a means for analyzing behaviour daily and weekly (particularly when these are reviewed by the psychologist in the individual sessions), the use of behavioural analyses figures prominently in the therapeutic environment. When a participant is struggling with making a decision, or has engaged in a slightly problematic response to a situation, staff assign a *Decision Balance Sheet* — a treatment tool designed to quickly assess the 'pros and cons' of choosing, or having chosen, a particular behaviour. When more egregious problem behaviours have occurred, staff assigns a *Behaviour Chain Analysis*, that assesses, in intricate detail, the entire problematic event. The focus is placed more heavily on what led up to the event (internal and external vulnerability factors, precipitating factors and the prompting event) and the consequences that occurred following it, as well as an analysis of possible alternative solutions, rather that the display of the problem behaviour itself. This is done so that treatment team staff and the participant can examine the behaviour in its entirety — the accompanying thoughts, emotions, body sensations, actions and the reactions of others. Given that participants generally consider the *BCA* aversive, a BCA Protocol has been established to assist in managing the contingencies around its completion, including a 24-hour rule for the completion of a first draft.

Comprehensive DBT is an intensive and thorough psychological treatment. The process of change is a slow and difficult one — taxing both the participant and the treatment team. It is anticipated that participants stay in the treatment for at least a year — continually understanding, analyzing and changing behaviour, cycling through the Skills Training Sessions, abandoning maladaptive behaviours, and acquiring, practicing and integrating new skills to improve their quality of life.

Evaluation

A complete program evaluation framework has been integrated into the SLE Comprehensive DBT Model. The evaluation will use a multi-method, multi-wave approach in its overall assessment, and both qualitative and quantitative research methods will be employed in a longitudinal study design. Interviews and surveys will be administered to staff and program participants throughout the implementation of the program and quantitative assessment scales will be administered to participants and staff pre-, interim- and post-program. This approach will mitigate methodological biases resulting from use of only one method in addition to tracking program effectiveness as the program advances.

Dynamic quantitative assessment measures were selected based on: their link to treatment targets; appropriateness and availability of normative data for women offenders, and Aboriginal people; reading level required (for self-report measures); and time, cost, and expertise required for administration. Quantitative assessments will examine the following areas: inmate functioning in six different domains (including daily living, interpersonal relations, personal involvement/development, institutional behaviour, work conduct and mental health issues); psychiatric symptomatology; psychological symptom patterns; coping strategies; subjective mood states; self-control behaviours; and negative

experiences and pessimism concerning the future. Finally, an estimate of the extent of socially desirable responding (managing the impression one gives by describing themselves in overtly positive terms or exaggerating virtues as a result of self-deception) that exists in the results provided by respondents will be included.

Research to date provides support for the utilization of the above mentioned assessment instruments. More specifically, a comprehensive review of the literature reveals that randomized clinical trials indicate treatment targets such as parasuicide,[10] social adjustment and anger[11] are important in the evaluation of a DBT program. Preliminary findings in uncontrolled clinical trials provide further support for treatment targets of depression,[12] and anxiety.[13] Appropriately, each of these areas is evaluated with the assessment battery previously mentioned.

The evaluation was designed such that the measures have both clinical and empirical utility. More specifically, correctional staff can use the measures to assess each woman's current level of functioning and progress, and research staff can use the measures for an overall assessment of the treatment. Moreover, researcher will provide on-going individual or group feedback regarding the women's scores in relation to published norms and to earlier assessments. Such an arrangement permits continuous verification of a participant's progress and assists in ensuring high completion rates of the assessment battery.

For ease of administration of the DBT test battery, all pre-, interim- and post-measures have been incorporated into a computer software application. The application has been implemented in each of the SLE units within four of the regional facilities (Edmonton Institution for Women, Grand Valley Institution for Women, Nova Institution for Women and Joliette Institution for Women) providing staff and program participants with an easily accessible and user-friendly reporting medium.

As previously mentioned, qualitative (staff and inmates interviews) information will supplement the quantitative assessment. Semi-structured interviews provide respondents with an opportunity to confidentially express personal views, feelings, and ideas about the program. Such qualitative data provides invaluable information that is overlooked when quantitative assessments are used in isolation.

Preliminary evaluation of the DBT Program is currently underway with the intention of determining any imminent successes, difficulties or concerns the treatment may be presenting. ■

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2 Inquiries regarding the assessment and evaluation of CSC's SLE Comprehensive DBT Model should be directed to Kelley Blanchette, 340 Laurier Avenue West, Ottawa, Ontario K1A 0P9.

3 DBT was developed by Dr. Marsha Linehan to treat individuals who meet criteria for Borderline Personality Disorder (BPD); the types of difficulties noted here are characteristic of the BPD diagnosis. See: Linehan, M. M. (1993a). *Cognitive-Behavioral Treatment of Borderline Personality Disorder*. New York, NY: Guilford Press. Also see, Linehan, M. M. (1993b). *Skills Training Manual for Treating Borderline Personality Disorder*. New York, NY: Guilford Press.

4 Linehan, M. M., Armstrong, H. E., Suarez, A., Allmon, A., and Heard, H. L. (1991). Cognitive-behavioral treatment of chronically parasuicidal borderline patients. *Archives of General Psychiatry, 48*, 1060-1064. Also see, Linehan, M. M., Tutek, D. A., Heard, H. L., and Armstrong, H. E. (1994) Interpersonal outcome of cognitive-behavioral treatment for chronically suicidal borderline patients. *American Journal of Psychiatry, 151*, 1771-1776.

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6 McCann, R. A., Ball, E. M., and Ivanoff, A. (2000). *Forensic modification of Dialectical Behavior Therapy modes, targets, and skills: The CMHIP Forensic Model*. Paper presented at the 8th Symposium on Violence and Aggression, Saskatoon, SK.

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10 Op. cit., Linehan, Armstrong, Suarez, Allmon, and Heard, 1991. Also see Linehan, M. M., Heard, H. L., and Armstrong, H. E., (1993). Naturalistic follow-up of a behavioral treatment for chronically suicidal borderline patients. *Archives of General Psychiatry, 50*, 971-974.

11 Op. cit., Linehan, Heard, and Armstrong, 1993, p. 971-974. Also see, Linehan, M. M., Schmidt, H., Dimeff, L. A., Craft, J. C., Kanter, J., and Comtois, K. A. (1999). Dialectical behavior therapy for patients with borderline /personality disorder and drug-dependence. *American Journal of Addictions, 8*, 279-292.

12 Bohus, M., Haaf, B., Stiglmayr, C., Pohl, U., Boehme, R., and Linehan, M. M. (2000). Evaluation of inpatient Dialectical-Behavioral Therapy for borderline personality disorder: A prospective study. *Behaviour Research & Therapy, 38*, 875-887. Also see, Telch, C., Agras, S. W., and Linehan, M. M. (2000). Group dialectical behavior therapy for binge-eating disorder: A preliminary, uncontrolled trial. *Behavior Therapy, 31*, 569-582.

13 Ibid, Bohus et al, 2000, p. 875-887.

An examination of suicide attempts among inmates

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To date research suggests that prison settings have a higher incidence of suicidal behaviour than other settings.[3] An important and consistent observation has been that many offenders who complete suicide have a history of attempts, suggesting that an increased understanding about these individuals may also reduce the prevalence of completed suicide. Presently, much of the research in this area has been descriptive, such that the relative contribution of risk factors is unclear. Also, the research has often been retrospective rather than postdictive. Quantitative analyses and the use of comparison groups are also infrequent in this area, thereby impacting on being able to draw conclusions.

This article presents an overview of an ongoing research initiative regarding the assessment and prediction of suicidal behaviour among offenders to address the aforementioned limitations. First, research regarding the prediction of suicide attempts among male offenders is presented. Second, research regarding self-harm among women offenders is described. Third, a comparison between attempters and completers for a sample of male offenders is provided. An aspect of this research is the emphasis on suicidal behaviour as a process, with static, vulnerability and protective, and precipitating factors being considered important to improve our understanding.[4]

Suicide attempts in male offenders

Using work by Polvi[5] as a guide, static factors (previous self-harm, psychiatric history, adjustment problems) were assessed in addition to general demographics (age at admission, race), criminality, and family history. Further, indicators from the Offender Intake Assessment[6] were used to assess a range of criminogenic needs and psychological constructs. From a population of 14,500 offenders, a sample of 731 attempters was identified plus a random comparison sample of 731 offenders who had never attempted suicide while in federal custody. The attempter group were younger, more likely to be single, but there were no differences regarding ethnicity.[7] The attempter group also had different criminal histories, being more likely to have committed homicides, break and enters or robberies, and less likely to have committed sex offences. Attempters were over-represented as being in maximum security.

From this sample of attempters, a subsample of 76 was identified for whom comprehensive information was available. A comparison sample of 76 offenders was identified, matched according to age at admission (above and below 30 years), sentence length (4 years or less and 5 years and greater), and type of offence (violent crimes and non violent). Multivariate and univariate analysis of variance revealed that attempters had more serious mental health difficulties (externalizing and social cognitive problems, internalizing problems, dysfunctional family relationships). Criminal risk also significantly distinguished between groups, even after the matching strategy. The attempters also had more problematic institutional adjustment. They had significantly, more violent incidents, contraband incidents, and more requests for protective custody, relative to the matched comparison group.

At intake offenders are assessed for suicide risk potential using a standardized rating scale that has 9 indicators reflecting a standard of care for such practice. The indicators represent prior history, recent loss, depressive symptoms, current suicidal ideation, and presence of a suicide plan. One aspect of this research was to determine the efficacy of this assessment procedure. The internal consistency of the scale was 0.77. Also, the attempter group had a significantly higher mean total score than the comparison group ($r^2 = .17$). Comparisons indicated significant differences between attempters and the comparison sample on 4 scale items - a rating the offender may be suicidal; a prior suicide attempt; recent psychological/psychiatric intervention; and, signs of depression. Finally, including proximal (institutional disciplinary problems, contraband incidents) and distal factors (previous adult convictions) in an exploratory logistical regression with these suicide scale items, served to enhance the prediction of a suicide attempt during incarceration.

Summary

These findings are consistent with prior research. Attempters were predominantly young unmarried Caucasian men who had committed violent (person-related) crimes. Attempters were classified as higher criminal risk at intake and placed in higher security. Importantly, older offenders were not more likely to attempt suicide. When age was controlled, there was no direct association between marital status and suicide attempts; suggesting marital status is more related to age than risk of suicide. Psychological functioning assessed at intake differentiated offenders who *later* attempted suicide from those who did not. Attempters displayed more externalizing and internalizing problems, had more extensive psychiatric histories, and more dysfunctional families. Augmenting the suicide risk scale with institutional adjustment and criminal history information improved the prediction of subsequent suicide attempts.

Self harm among women offenders

Estimates indicate that almost half of women offenders have attempted suicide[8] and that other forms of self-harm are prevalent in this high-risk population.[9] Such findings underscore the merits of conceptualizing self-harm as a mental health concern for women offenders.

The sample included 155 federally sentenced women, a target group of 78 who had engaged in self-harm while in federal custody and a comparison group of 77 who had not.[10] The groups were matched on admission year (before or after 1994), age at admission (under 30, above 30), sentence length (3 years or less, 4 to 9 years, 10 years or more), and offence type (violent, non violent). The self-harm group was more likely to be unmarried, Caucasian or Aboriginal. In terms of criminal history, the attempter group was significantly more likely to have prior convictions, escapes, disciplinary infractions, less time crime free, a violent history, and prior failures on conditional release. Based on intake ratings, the attempter group had significantly greater problems in terms of employment, marital/family, substance abuse, community functioning, and personal/emotional stability. Women offenders who engaged in self-harm were also significantly more likely to have difficulties in terms of externalizing and social cognitive problems, internalizing and psychiatric problems, and lacked education and cognitive functioning skills.

Investigation of institutional adjustment indices revealed that the self-harm group was more likely to have been segregated and to have been involved in a range of disturbances (contraband, disciplinary infractions, been victimized, violent incidents, and substance abuse). While preliminary and descriptive, these findings are comparable to those for male offenders. Although there may be gender differences regarding the etiology of self-harm, their expression appears similar for male and women offenders. For those women who exhibited suicidal behaviour, there were a host of adjustment difficulties that were also prevalent. These difficulties were not apparent in a matched group of women offenders. Also, while coping deficits may be related to the expression of suicidal behaviour in these women offenders, notably their violent behaviour was not exclusively self-directed.

Completers versus attempters in male offenders

This group was a random sample of 48 offenders who had attempted suicide but were unsuccessful and 48 offenders who succeeded in committing suicide. A comparison group of 48 offenders who had not attempted suicide were matched in the same manner as described previously. Inter-rater reliability for coding variables was calculated for 10% of the sample and was found to be acceptable (92% of variables had agreement > 75%). Consistent with the literature and not surprisingly, method of self-injury varied by group. Attempters were significantly more likely to overdose and slash, whereas completers were more likely to hang/suffocate themselves. Suicide attempters, however, were heterogeneous with respect to intent, with greater than 20% reporting very serious intent and 22% using methods with high lethality.

In terms of demographics, relative to the attempters, the completers had a slightly higher mean age, were more somewhat likely to be Aboriginal, and were more likely to be in maximum security. Regarding criminal history, the comparison group was significantly less likely to have violated parole/probation and was less likely to have had escapes than completers and attempters. While both the completers and attempters were somewhat more likely to have a suicide alert on file relative to the comparison group, fewer than 20% of offenders who actually did attempt or commit suicide were flagged as high suicide risk at intake. Significantly more offenders who attempted or completed suicide during their present federal sentence were more likely to have made previous attempts and to have engaged in self-injury than the comparison group. More importantly, the attempters were

significantly more likely to have made previous attempts and to have engaged in self-injury than the completers. Also, while attempters and completers had more serious psychiatric histories than the comparison group, there were no between group differences. The type of psychiatric diagnoses, however, was instructive: attempters were more likely to have been diagnosed as having antisocial personality disorder, whereas the completers were more likely to have been diagnosed as schizophrenic, paranoid, or depressed; the comparison group had fewer institutional adjustment difficulties than those offenders who engaged in suicidal behaviour; those who attempted suicide had more adjustment difficulties in terms of acting-out behaviour than completers. Proximal to the target date of suicide, very few attempters were in minimum security, but attempters and completers were over-represented in maximum security. Finally, significantly fewer completers participated in correctional programs, relative to the attempters, whose rate of participation was significantly lower than the comparison group.

Assessment of psychological adjustment at intake also differentiated among groups. Completers were rated as less impulsive and with poorer coping skills than the other groups. Their social problem-solving skills were comparable to the comparison group, but notably poorer than the attempter group. At intake, there were no significant between group differences for depression, anger/hostility, suicidal ideation, or insight.

Proximal to the target date, the attempters had significantly poorer family relationships than the completers, whose family relationships were poorer than the comparison group. Also, the completers had markedly poorer relationships with other offenders than the attempters and both groups were significantly poorer than the comparison group. Finally, proximal to the target date, attempters and completers had more adjustment difficulties in terms of depression, impulsivity, anger/hostility, coping, psychiatric symptoms, isolation, insight, and social problem-solving.

Additional investigation of proximal events was informative. There appeared to be deterioration in adjustment prior to the target date for 19% of completers, 10% of attempters, and 2% of the comparison group. Further, for attempters and completers, precipitants were identified proximal to the target date that could affect level of suicidal ideation (e.g., negative personal events/decisions, transfer, placement in segregation, being under the influence, inmate pressure). Importantly, relative to the comparison group, the attempters and completers had significantly more precipitants.

Conclusions

The research described suggests there are identifiable factors, both static and proximal, that distinguish attempters from non-attempters and that predict suicidal attempts and self-harm in male and women offenders. The validity of the suicide risk scale completed at intake was supported, and the inclusion of institutional adjustment and criminal history variables augmented its utility. As well, proximal precipitants distinguished offenders who engaged in suicidal behaviour from those who did not. Finally, comparisons between completers and attempters highlighted important differences in terms of social adjustment, coping skills, and program involvement. Together, these findings support the importance of assessment at intake and the monitoring of offenders' behaviour over time in order to enhance clinical practice. ■

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[3] We define suicidal behaviour as encompassing attempts and completions. Burtch, B., and Ericson, R. (1979). *The silent system: An inquiry into prisoners who suicide.* Toronto, ON: Centre of Criminology, University of Toronto. See also Dooley, E. (1990). Prison suicide in England and Wales 1972-1987. *British Journal of Psychiatry, 156,* 40-45.

[4] Heikkinen, M., Aro, H., & Lönnqvist, J. (1993). Life events and social support in suicide. *Suicide and Life-Threatening Behaviour, 23,* 343-358.

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[6] Motiuk, L. L. (1997). Classification for correctional programming: The offender intake assessment process. *Forum on Corrections Research 9*(1), p. 14-18.

[7] Wichmann, C. G., Serin, R., and Motiuk, L. (2000). *Suicide and parasuicide in federal institutions: Predicting suicide attempts by male offenders.* Research Report R-91. Ottawa, ON: Correctional Service of Canada.

[8] Blanchette, K. (1997). *Maximum-security female and male federal offenders: A comparison.* Research Report R-53. Ottawa, ON: Correctional Service of Canada. See also Loucks, A. D., and Zamble, E. (1994). Some comparisons of female and male serious offenders. *Forum on Corrections Research, 6*(1), 22-24.

[9] Heney, J. (1990). *Report on self-injurious behaviour in Kingston Prison for Women.* Ottawa, ON: Correctional Service of Canada.

[10] Wichmann, C., Serin, R., and Abracen, J. (2002). *Women offenders who engage in self-harm: A comparative investigation.* Research Report R-123. Ottawa, ON: Correctional Service of Canada.

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here is increasing evidence demonstrating that offenders can make positive behavioural change. Furthermore, recent research has led to identifying components of successful offender rehabilitation programs.[2] *Still, motivating offenders to actively participate in treatment can be difficult for practitioners and remains a critical issue within the corrections field. This article describes why many offenders may have little intrinsic motivation to work therapy as they enter the treatment program and how implementing a quality of life (QOL) approach into program delivery can help increase offender motivation at the beginning of the treatment process. QOL promotion is firmly rooted in the values of the helping professions and is compatible with current theoretical frameworks that describe behavioural change.*

uccessful offender rehabilitation efforts can be challenging for a variety of reasons. For one, many offenders seem to show little motivation to change. They often struggle to let go of the "thinking errors" that have become embedded in their perceptions. Other times they may say "the right things," but their speech and actions are not always congruent. For many offenders motivation toward therapy may centre on completing program requirements, rather than actual self-improvement and lasting behavioural change. Indeed, there is a vast difference between "knowing" therapy and "working" therapy. If treatment is to reduce recidivism, we must help offenders to do the latter.

Another challenge for corrections professionals is this occupation involves working directly with individuals who have violated the established standards of society. Some of these people have done terrible things, and the emotional response that comes from this awareness is sometimes difficult to manage and can affect the communication process between practitioner and offender. It is common for professionals to intellectualize as a way to understand disturbing events, yet the reality of such knowledge may play out in subtle ways. For example, interpersonal dynamics include both conscious and subconscious components, and the "relationship messages" (vs. content messages) that human's send each other during the communication process reflect both types of components. Because of the subconscious components (e.g., body language, emotional expression, word selection) of communication that result from specific knowledge or attitudes, relationship messages can be given that were not intended to be sent.

These difficulties contribute to the mentality in criminal justice settings commonly referred to as "us vs. them," which can be two-directional (offender to program staff and staff to offender). If we are to help offenders increase intrinsic motivation, and therefore experience lasting success from treatment, it is imperative to dispel the "us vs. them" mentality. It is possible that a continual awareness of the quality of life (QOL) construct can be utilized to help accomplish this task. Without a solid foundation built from QOL-related components in one form or another, offenders will remain reluctant to engage in the treatment process. Therefore, program delivery will be difficult for many staff members, and the entire rehabilitation effort will provide only limited effectiveness in terms of promoting lasting behavioural improvement and recidivism reduction.

Before proceeding, it is necessary to examine some assumptions concerning offender treatment. Practitioners believe, with supporting evidence, that therapy produces benefits. These benefits can significantly improve the way individuals live their lives. Clinicians spend years obtaining education to develop skills needed to effectively help others. This makes perfect sense—to *us*. Do offenders hold these same views? Not necessarily. To *them*, their freedom has been greatly restricted; some may harbour perceptions of being victimized and the correctional system is largely their punishment. Mandated treatment may not be perceived as a benefit, something of personal value, or an opportunity for change, but as part of the punishment. Not only do cognitive implications of correctional therapy for the offender exist long before treatment actually begins, there are also emotional responses to consider. Offender treatment, paired with the correctional institution from which it is administered, can certainly be viewed as a case of classical conditioning and helps explain negative

affect and high levels of resistance present when many offenders enter therapy.

QOL and offender rehabilitation

QOL can be an effective method to debunk the treatment / "corrections is punishment" connection and perception. There is evidence that such an approach is associated with higher treatment completion rates in community-based corrections programming.[3] With this particular approach, offenders meet with program staff for an orientation prior to beginning treatment programming. The beginning of the orientation consists of introductions and a short presentation of the program philosophy (which is to provide opportunities for QOL improvement) and the rules. Offenders are then asked to consider and discuss the few things that are *most* important to them, what they would like to accomplish over the course of a lifetime, and how they would like to attain personal growth. Notice that it is the offenders who take the lead in developing this discussion, which may decrease perceived control by the system while increasing personal empowerment from the beginning of the treatment experience. With minimal guidance, offenders tend to provide responses associated with QOL shown in Table 1.

Table 1

What do offenders want from life?

Relationship with family and friends
Adequate money
Job satisfaction
Health
Education
Freedom

Program staff members are also encouraged to participate in identifying their "most important things." What becomes evident is, that as human beings, we all want the same important things—including close relationships with family and friends, adequate money for our needs, job satisfaction, health, and education. These variables are viewed as central to *desired* QOL, which requires constant work in order for them to be sustained and improved.

Crime and its consequences restrict opportunities for improvement on these variables, and help determine *actual* QOL. Although definitions of QOL vary within the clinical literature,[4] from this functional context QOL is seen as "how much you have, in terms of quality, of life's most important things." With respect to desired QOL, a higher quality than is currently experienced is the continual goal, while actual quality of life is what is experienced at a given time. It can then be shown how "thinking errors," violence, and criminal behaviour largely determine actual QOL and can prevent progression toward desired QOL. The primary goal of rehabilitation is to provide offenders opportunities to reduce the gap between their actual and desired QOL via treatment. It is essential that both staff and offenders are ever conscious of this purpose.

This approach is relatively simple, but can be powerful. It facilitates offender empowerment from the beginning of the program. It illustrates that as humans, we all want the same important things throughout our lives. The responsibility of the program is to provide tools to dismantle criminal thinking patterns, help the offender work through negative emotional states and past traumas, and adopt an overall lifestyle that leads to QOL improvement. Since each individual is ultimately responsible for his or her QOL, it is the offender who shoulders the responsibility of personal change. This approach also underscores the fact that effort toward personal improvement does not stop at treatment termination, but must continue for a lifetime. The goal for the offender is not program completion, but a lifetime of personal improvement and increased life satisfaction. The general "tone" of the treatment experience is positive, and it is possible that transference-countertransference dynamics that contribute to relationship messages in communication are less likely to impede the therapeutic process. For many offenders there is shift from extrinsic motivation to complete treatment (to escape control of "the system") to an intrinsic motivation for improved QOL and lasting behavioural change.

It is important that the QOL concept is not discarded after a one-time service, but conscientiously nourished by program staff throughout the treatment process. Treatment goals should be based on the "most important things" identified at program orientation; progress should be directed to areas of most importance identified by the offender. The clinician, in planning treatment objectives, largely decides what type of therapy will likely result in the best progress. Offenders then journal or report on how they are specifically applying treatment content to improve QOL. Treatment goals, set at orientation, may be relatively general; however, at the end of each treatment session specific goals, leading to progress toward treatment goals, are developed based on application of content from the session. Therefore, QOL becomes the "thread" that

continually weaves through program content and makes it applicable, understandable, and desirable. It also provides opportunities for positive reinforcement from both offenders and program staff, since participants regularly report on how they have applied program content to work toward long-term goals and improved QOL. It is recommended that at treatment completion offenders evaluate with staff how treatment has been utilized to improve QOL and that ideas for continued improvement are planned.

QOL promotion reflects core principles and values of the helping professions. It is a constant reminder the difference between humans—who have inherent goodness and worth—and a collection of behaviours, which when observed within the criminal justice system often reflects a clinical disease or disorder. If offenders are to adopt and maintain positive changes, practitioners must treat the "whole person" not simply characteristics of a clinical disorder. QOL, then, is consistent with the strengths perspective[5] and a solution-focused paradigm[6] that have been recently promoted in offender rehabilitation.

The utilization of QOL at the beginning of the treatment process is also an important consideration from the framework of the Transtheoretical Model (TTM), which postulates that behaviour change is a process characterized by sequential stages of change readiness.[7] It is believed that although many rehabilitation programs expect action (observable behavioural change), a significant percentage of offenders are likely to be in the precontemplation stage of change—thus, they are not motivated to change. By illustrating common human values that comprise QOL, the incongruence of actual and desired QOL, and the goal of treatment being to improve QOL; offenders may see that treatment may indeed have something to offer them, thereby initiating the change process from precontemplation and a step closer towards action. Since for many offenders a motivational shift begins to take place from extrinsic to intrinsic rewards with QOL exposure, change that follows is more likely to be of longer duration.[8]

Conclusion

While the relevance of QOL to offender rehabilitation seems to be "common sense," if it is dismissed as such, it may not be promoted sufficiently for offenders to initially trust program practitioners. Nor would a strong classical conditioning response from pairing treatment with the correctional institution (which some offenders may equate treatment being part of their punishment), be unlocked and such faulty perceptions discarded. For these reasons QOL promotion is essential when working with offenders and may need to be amplified within many programs in order to effectively engage clients in therapy.

We propose that those working to help rehabilitate offenders search for their own assumptions about offender treatment and program delivery and ask themselves whether or not their clients share the same assumptions. If assumptions appear to be different, the following questions might be asked: How might these perceptual differences affect the treatment process? and What can be done to find a more "common (therapeutic) ground?" In such a case, the long-standing social work principle "begin where the client is" is particularly relevant—and as practitioners we *begin from the assumptions of the client*. A more rigorous interjection of QOL into programming just might be a viable answer to finding that common therapeutic ground.

In this paper we have offered some suggestions regarding how a QOL approach may guide offender rehabilitation efforts. There may certainly be some differences as to how QOL is implemented within programming, but we maintain that effective offender rehabilitation must have a strong and visible QOL foundation. ■

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Alternative medicines in corrections: A survey

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An important aspect of the Corrections and Conditional Release Act *is the legal mandate it provides, directing the Correctional Service of Canada to ensure offenders receive health care services consistent with community standards. Juxtaposed against this requirement are changes in community approaches to health care and changes in the offender population. Complementary and alternative therapies are receiving increasing attention in delivery of health care services.*[3] *These therapies are considered alternative by the medical profession because physicians do not traditionally practice them, they are not usually used as the primary method of treatment, and they are not widely accepted by insurance companies.*[4] *Recent research has indicated that 60% of medical schools are now incorporating alternative medicine into their curriculum.*[5]

Regarding changes in the offender profile, two notable areas are age and diversity. Current estimates are that the offender population will have a proportionately greater number of older offenders, such that there will be a bimodal distribution of younger and older offenders.[6] This change will introduce challenges with respect to the delivery of health care services to offenders.[7] The proportion of non-Caucasian offenders is also expected to rise markedly for both male and women offenders, with the population becoming notably more diverse. This too raises challenges regarding the delivery of heath care services to offenders.[8]

Familiarity with and support of alternative medicinal approaches, may well vary by ethnicity. Accordingly, as the offender population becomes more diverse, the demand for alternative medicines may also increase. As well, as the correctional population ages, alternative medicinal approaches could be adopted to ameliorate some of the somatic symptoms relating to aging and palliative care. Further, as community interest in alternative medicines increases, it is reasonable to expect that offenders who have had positive experiences with these approaches will seek such continuation of care while incarcerated. As this is an emerging issue, policy guidelines regarding such practices also need to be developed. For these reasons it seemed timely to survey correctional health care staff to determine their views regarding alternative medicines. This paper presents a summary of findings from a national survey regarding complementary and alternative medical practices (CAM) of all federal prisons in Canada.[9] Alternative therapies are treatments or interventions that are not within the mainstream of conventional Western (allopathic) medicine. Complementary therapies are alternative therapies that have gained some acceptance with Western medicine. Generally, complementary and alternative forms of medicine have certain common characteristics. They, and the practitioners who deliver them, operate from a holistic perspective; that is to say, they treat the whole person rather than just an affected part. Additionally, they work to stimulate the body's natural ability to heal itself. Finally, it is important to remember that non-orthodox therapeutic practices often have unconventional explanations. From the survey, using the York University/Health Canada (1999) overview we describe CAM usage below. The first 5 examples are components of larger CAM systems, whereas the last 4 are complete traditional systems.

1. *Nutritional therapies* - diet, vitamins, minerals, oxygen therapies.
2. *Herbal or botanical medicine* - various traditions, including Chinese, Ayurvedic, Aboriginal, naturopathic.
3. *Physical or movement therapies: movement/ exercise regimes* - Chi Kung, yoga, Tai Chi; Feldenkrais; Alexander Technique; chiropractic; massage - Swedish, Hawaiian, Shiatsu, etc.; craniosacral; reflexology; colonic irrigation; cell extraction; chelation therapy.
4. *Energy or Life-force therapies* - therapeutic touch; Reiki; light
5. *Psychological therapies* – hypnosis; imagery or visualization; meditation; psychotherapy

and counselling; support groups; art and music classes.

6. *Traditional Chinese medicine* (TCM) – a health system that is said to be between 3000 and 7000 years old that sees diseases, disorders, and dysfunctions as imbalances in the body's energy. It includes nutritional therapy, tuina massage, herbal therapy, acupuncture, and exercise regimes for relaxation and balancing of the body's energies.
7. *Ayurvedic medicine* - a traditional Hindu medicine using naturally-based therapies.
8. *Naturopathic medicine* - a system of primary health care that uses natural methods and substances to stimulate the body's inherent self-healing processes. It includes botanical medicine, clinical nutrition, homeopathic, lifestyle counselling, stress management, manipulation, oriental medicine, and physical therapies including hydrotherapy, light therapy, and massage.
9. *Aboriginal medicine* - a highly complex group of systems that draws on and develops the physical, mental, and spiritual talents and powers of individuals. It includes intervention by *Elders* and in some cases by *Healers*. Practices include, but are not limited to, ceremonies and the use of herbals and medicinal substances.

Demand for CAM Therapies

Of the 42 surveys sent to sites with Health Care units, 39 were returned for a 92.9% rate of completion, with the majority being completed by the Chief of Health Care. Respondents were asked to rank order the CAM therapies according to current demand within each institution. The results are presented in Table 1. Although there was some variability across the 5 regions in the Service, nutritional therapies were ranked first for all regions. The majority of respondents reported an existing need for CAM from their perspective (84%), from the inmates' perspective (80%), and the perspective of health service professionals (70%).

A general pattern emerged across the regions, with more well-known therapies ranked as higher demand than other therapies. Notably, the demand for Aboriginal medicine was higher in the Prairies where there are a greater number of Aboriginal offenders. Further, most respondents (79%) expected that the overall demand for CAM will increase in the future.

Table 1

Overall ranking of CAM Therapies

Form of CAM	Rank
Nutritional Therapies	1
Psychological Therapies	2
Herbal or Botanical Medicine	3
Physical and Movement Therapies	4
Aboriginal Therapies	5
Naturopathic Therapies	6
Chinese Medicine	7
Energy or Life-Force Therapies	8
Ayurvedic Medicine	9

Their reasons for this expected increase included (not in any particular order):

- An increase in the number of persons from differing ethno-cultural backgrounds and their previous experiences with CAM in the community
- Changing community standard encouraging CAM and increased awareness and education regarding CAM
- Encouragement by CSC to change habits and lifestyles —focus on health in prison
- Increased contact with elders in the institution
- Inmates are becoming more aware of their rights
- More herbals are being offered as an alternative to Western medicine (i.e., sleeping pills)

Effect of ethnocultural makeup on demand for CAM

As expected, most respondents anticipated that the ethno-cultural makeup of their inmate population would impact on their need for CAM therapies (84%). The most common reason cited for this anticipated impact was the growing population of Aboriginal offenders and to a lesser extent other minority groups (e.g., African and Asiatic) who use CAM therapies in their communities. However, several respondents noted that the growing population of older offenders and the specific needs of women may also affect the need for CAM therapies.

Utility of CAM therapies

When asked about the usefulness of different forms of CAM, very few therapies were noted to

be preferable as *the first* approach to treatment. However, a majority of respondents noted that Nutritional, Physical and Movement and Psychological Therapies were very useful to treatment in some cases (see Table 2). Interestingly, over one third of the respondents were unfamiliar with Traditional Chinese Medicine, and a majority had no knowledge of Ayruvedic medicine. Notwithstanding the profile of Canada's Aboriginal offenders, just over one quarter of the respondents had no knowledge of Aboriginal medicine.

Table 2

Usefulness of CAM Therapies for inmate's treatment

CAM Therapy	Most Popular Response
Nutritional	Very useful to treatment in some cases (64%)
Herbal/Botanical	Limited usefulness (44%) and very useful (44%)
Physical or Movement	Very useful to treatment in some cases (72%)
Energy of Life Force	Limited usefulness (33%)—28% No knowledge
Psychological	Very useful to treatment in some cases (80%)
Traditional Chinese	No knowledge (33%) and Limited usefulness (31%)
Ayruvedic	No knowledge (72%)
Naturopathic	Very useful (44%) and Limited usefulness (31%)
Aboriginal	Very useful (51%) and No knowledge (26%)

Provision of CAM in the institution

Approximately half of the respondents indicated that some form of CAM was currently provided in their institution (51%). For those who did not provide CAM (n = 19), most often endorsed reasons included: lack of policy, lack of funding, security concerns, and lack of demand.

Of the institutions where CAM was provided (n = 20), physical and movement therapies and Aboriginal medicine were most often provided followed by nutritional therapies. There were no instances were Ayurvedic medicine was provided, and only one facility reported the provision of Energy and Naturopathic approaches.

Summary

CAMs have been incorporated into social work,[10] psychological treatment,[11] and treatment with Aboriginals.[12] Encouragingly, from this survey it is apparent that CAM is also an emerging issue within corrections, with almost half the sites currently providing some alternative approach. Further, the majority of respondents report an existing need for complementary and alternative medicines, expecting this need will increase with time. Cautions regarding the uncritical acceptance of CAMs are represented in the literature.[13] Also, several approaches appear to be viewed has having greater utility and demand, in part because information regarding some CAMs remain limited, notably Aboriginal approaches. Finally, respondents indicated the need for policy development to inform practice. ■

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