

# Prescription Medication Use Among an Aboriginal Population Accessing Addiction Treatment

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**Objectives:** Inappropriate prescription medication use can have significant consequences. Although it is suspected that Aboriginal populations within Canada have high rates of inappropriate use, published information is lacking. To better understand this issue, we studied an Aboriginal population seeking addiction treatment.

**Methods:** We surveyed Aboriginal clients who accessed addiction treatment in Calgary, Alberta, for prescription medication use in the previous year, frequency of medication use, and medication source(s), if inappropriately used.

**Results:** Sixty-nine percent of the clients completed the survey ( $n = 144$ ). Most respondents were aged 31 to 50 years (56%), and 52% were male. Of the respondents, 48% reported that they used prescription medication inappropriately, 8% indicated appropriate use, and the rest indicated no medication use. Sedatives or relaxants were most frequently used inappropriately. Among those who inappropriately used medication, 47% used medication more than 10 times in the previous year. Common sources for those who used medication inappropriately included medication given by a friend or a stranger (52%), medication bought on the street (45%), and medication prescribed by a physician (41%). Age greater than or equal to 30 years was associated with inappropriate use. Sex, residence, and Aboriginal status were not found to be associated with inappropriate use.

**Conclusion:** Inappropriate prescription medication use was a significant problem among an Aboriginal population that sought addiction treatment, and many of these individuals accessed medication from a prescribing physician.

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## Clinical Implications

- Our results imply a need for culturally sensitive screening, together with appropriate screening and treatments.

## Limitations

- The sample size was limited.
- There was no non-Aboriginal comparison group.
- Medication use may have been underestimated due to social response bias.

**Key Words:** *Aboriginal, Native, First Nations, prescription medication, inappropriate use*

In 1990, an estimated 3 million people in the US used psychotherapeutic agents for nonmedical purposes. Inappropriate use of prescription medication, or its use for purposes other than intended by a prescribing physician, can have significant physical, psychological, and social consequences. In particular, Health Canada has targeted prescription drug mis-

use among First Nations people—those persons with special rights that date back to the signing of the number treaties in Canada—as a serious health problem (1). Despite the significant morbidity associated with inappropriate use of prescription medicine, there is little information on drug-use patterns

among Aboriginal populations (that is, First Nations or status Indians, nonstatus Indians, Metis, and Inuit) (2).

Existing literature on prescription medication research has several limitations. Anderson and McEwan (2) analyzed a pharmacy claims database for the status Aboriginal population entitled to a medication subsidy. They found that 1.2% of this population excessively used acetaminophen with codeine, and up to 7.2% excessively used benzodiazepines. Excessive use was defined as greater than the maximum dosage stated by the Saskatchewan Joint Committee on Drug Use (3). The Aboriginal population also filled more prescriptions for acetaminophen with codeine and benzodiazepines than did the Canadian general population, but fewer than income-assisted clients in British Columbia. Although this study identifies a group that is at potentially high risk for inappropriate use of prescription medication—those with medication subsidization—it has limitations. For example, excessive use does not necessarily reflect inappropriate use: some medical conditions associated with chronic pain may legitimately require greater amounts of analgesia. On the other hand, pharmacy claims may underestimate inappropriate use of prescription medication, because medication can be obtained apart from a prescription.

In populations with addictions, 28% of a non-Aboriginal population seeking addiction treatment with the Alberta Alcohol and Drug Abuse Commission (AADAC) used prescription medication in the past year (unpublished data, 1998). However, AADAC data do not differentiate between appropriate and inappropriate use. Within the AADAC population, male subjects (66%) and those aged 31 to 50 years (58%) were more likely to use prescription medication. AADAC services are similar to those services offered by Native Addiction Services (NAS), where we obtained our study sample; both populations originate from the same geographical area. Therefore, a comparison with our study findings is possible. No prescription medication studies of an Aboriginal population with addiction were identified.

Several variables of interest other than age and sex may be associated with inappropriate use. As mentioned, Aboriginal status may facilitate inappropriate use arising from medication subsidies. As well, living on- or off-reserve may be important. For example, living on-reserve may facilitate social support and culturally appropriate services, but at the same time it may entail lack of opportunities for employment and education. Both lack of social support and lower income and education level have been found to be associated with addictive disorders (4).

This study aimed to determine the patterns of prescription medication use in a high-risk population: Aboriginal persons seeking addiction treatment. Specifically, we used a cross-sectional survey to investigate the prevalence of inappropriate use of stimulants, sedatives or relaxants, opioids or analgesics, and other prescription medications. This descriptive study also aimed to further characterize prescription drug use by identifying the source of the prescription medication and the frequency of its inappropriate use.

## Methods

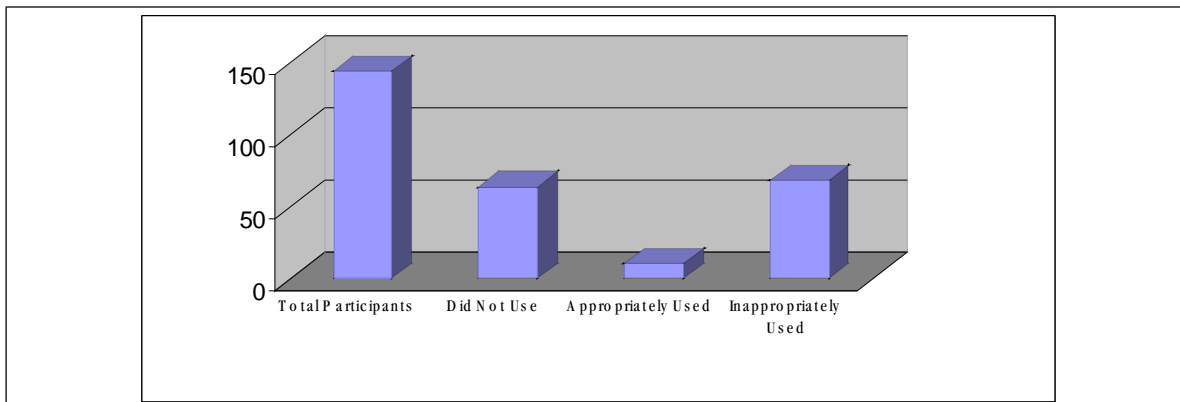
From May 15 to December 15, 2000, during their initial assessment, we gave a self-administered questionnaire to 209 new clients of the Native Addiction Services (NAS) in Calgary, Alberta. We excluded clients from the analysis if they identified themselves as non-Aboriginal. Non-Aboriginal clients were not used as a comparison group because they generally constitute too small a proportion of those who attend NAS.

The survey was created *de novo* and then pretested for cultural sensitivity, face validity, and comprehension by an Aboriginal focus group of 20 clients who accessed addiction treatment and 10 addiction-treatment service staff. The survey collected baseline demographic information, the reason for seeking treatment, and the frequency of medication use within the past year; as noted above, stimulants, sedatives or relaxants, opioids or analgesics, and other prescription medications were measured. These are the particular medication classes most commonly used inappropriately (5–7). To determine whether prescription medications were inappropriately used, patients were asked to indicate whether in the past year they had taken any of the listed medications longer, in larger amounts, or for other purposes than intended by a prescribing physician(s). Those who reported inappropriate use were then asked to indicate the source of their drug, with the following options: prescribed by a physician, prescribed by several physicians, given by a family member, taken without permission from a family member, given by a friend or a stranger, taken without permission from a friend or a stranger, bought on the street, or obtained from another source not listed.

Self-identified Aboriginal participants accessed treatment at NAS in Calgary for a period of 6 months. We obtained informed consent, participation was voluntary, and the survey was self-administered at the initial assessment. Clients deposited the completed survey into a secured box accessed only by the researchers. Surveys were anonymous, and NAS staff were not informed of survey information. Client treatment was not affected by study participation, which is critical for

Table 1 Demographic characteristics of study participants				
Variable	Total participants % (n = 144)	Did not use % (n = 64)	Appropriately used % (n = 11)	Inappropriately used % (n = 69)
<b>Sex</b>				
Male	52 (75)	50 (32)	73 (8)	51 (35)
Female	48 (69)	50 (32)	27 (3)	49 (34)
<b>Age (years)</b>				
< 16	3 (5)	6 (4)	0	1 (1)
16–20	9 (13)	13 (8)	18 (2)	4 (3)
21–30	31 (44)	25 (16)	55 (6)	32 (22)
31–50	56 (80)	53 (34)	27 (3)	62 (43)
51–65	1 (2)	3 (2)	0	0
> 65	0	0	0	0
<b>Status</b>				
Status	83 (119)	83 (53)	82 (9)	83 (57)
Nonstatus	16 (23)	14(9)	18 (2)	17 (12)
<b>Place of dwelling</b>				
On-reserve	7 (10)	8 (5)	0	7 (5)
Off-reserve	93 (132)	92 (58)	100 (11)	93 (63)
<b>Reason for treatment</b>				
Alcohol	74 (107)	81 (52)	82 (9)	67(44)
Prescription medication	15 (21)	0	0	29 (20)
Street drugs	38 (54)	33 (21)	36 (4)	42 (29)
Gambling	9 (13)	5 (3)	18 (2)	12 (8)
Other	3 (4)	5 (3)	0	1 (1)

**Figure 1** Number of participants who did not use prescription medication, appropriately used, and inappropriately used



open reporting of this sensitive issue. The study received approval from the Conjoint Health Research Ethics Board at the University of Calgary. NAS does not collect client demographic information, and thus nonresponder information was not available.

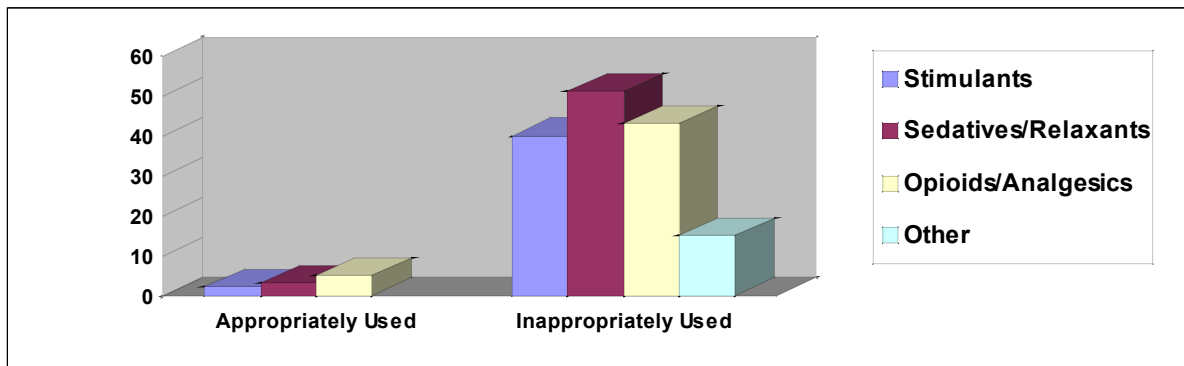
We used STATA 7.0 statistical software to calculate the prevalence of appropriate and inappropriate use, odds ratios (ORs), confidence intervals (CIs), and 2-sided Fisher’s exact test with a *P*-value of 0.05 for statistical significance.

Aboriginal clients who did not use prescription medication served as the comparison group.

**Results**

There were 149 completed surveys; 5 respondents were excluded because they self-reported non-Aboriginal descent, giving a final response rate of 69%. Most respondents were aged 31 to 50 years (56%), and 48% were women. Almost all respondents lived off reserves, and 83% classified themselves as status Indian. Alcohol abuse and illicit drug use was the

**Figure 2** Number of participants that appropriately used and inappropriately used prescription medication by medication class



**Table 2** Frequency of prescription medication appropriately used and inappropriately used

Medication	1–3 Times (appropriately used)	1–3 Times (inappropriately used)	4–10 Times (appropriately used)	4–10 Times (inappropriately used)	> 10 Times (appropriately used)	> 10 Times (inappropriately used)
Stimulant	0	4	0	5	2	9
Sedative or relaxant	3	18	0	8	0	17
Opioid	2	12	0	5	3	20
Other	0	4	0	1	0	5
Total	5	38	0	19	5	51

**Table 3** Prescription medication source if inappropriately used

Source	Stimulant	Sedative or relaxant	Opioid or analgesic	Other	Total	Number who accessed medication from source
Prescribed by physician	9	10	20	5	44	28
Prescribed by several physicians	7	8	7	3	25	10
Given by family member	4	4	6	3	17	9
Taken from family member	1	1	2	0	4	4
Given by friend or stranger	22	20	18	5	65	36
Taken from friend or stranger	2	2	1	0	5	5
Bought on street	19	16	16	9	60	31
Other	1	1	0	0	1	1

most common reason for seeking treatment at NAS. Table 1 contains demographic information for all respondents, categorized by pattern of prescription medication use.

Among the respondents, 44% ( $n = 64$ ) indicated that they did not use prescription medications; 8% ( $n = 11$ ) reported appropriate use; and 48% ( $n = 69$ ) reported inappropriate use (see Figure 1). Among those who reported inappropriate use, 58% ( $n = 40$ ) used stimulants; 74% ( $n = 51$ ) used sedatives or relaxants; 62% ( $n = 43$ ) used opioids or analgesics; and 22% ( $n = 15$ ) used other medications (see Figure 2). No participant specified the “other” prescription medication. Polypharmacy was common: 36% ( $n = 25$ ) used only 1 medication class, 26% ( $n = 18$ ) used 2 medication classes, 20% ( $n = 14$ ) used 3

medication classes, and 17% ( $n = 12$ ) used 4 medication classes. Among those who used medication appropriately, 18% ( $n = 2$ ) used stimulants; 27% ( $n = 3$ ) used sedatives or relaxants; and 45% ( $n = 5$ ) used opioids or analgesics. Table 2 includes frequency of self-reported appropriate and inappropriate drug use. Among those who used inappropriately, 47% ( $n = 51$ ) used “greater than 10 times” in the last year. As seen in Table 3, medications used inappropriately were obtained from a friend or a stranger (52%), or bought on the street (45%), or prescribed by a physician (41%).

Bivariate analysis revealed that age greater than or equal to 30 years was significantly associated with inappropriate use ( $P = 0.047$ , OR = 4.4 [1.1 to 16.7]). Sex, being status or nonstatus

Indian, and living on or off a reserve were not associated with inappropriate use.

## Discussion

This study found an extremely high prevalence of inappropriate prescription medication use among an Aboriginal population seeking addiction treatment. These findings are higher than the rate for the primarily non-Aboriginal population with addiction (AADAC unpublished data, 1998) and parallel the higher rate of addictions among the Aboriginal population. Although our study did not investigate reasons for the higher rate, it likely reflects many social factors. Our study prevalence also appears to be higher than the prevalence among the general non-Aboriginal and Aboriginal populations (2,5,9). For this comparison, the higher rate may be partly explained by the fact that respondents were selected from those who sought treatment for addiction problems; this group may be more prone to use licit drugs inappropriately.

Directly surveying treatment participants allowed us to capture those who obtained prescription medications from sources other than a physician. Those who inappropriately used prescription medication most commonly obtained it from a friend or a stranger, or bought it on the street, or had it prescribed by a physician, or all of the foregoing. These multiple sources suggest that the pharmacy claims database may significantly underestimate the magnitude of the problem.

Given the significant number who obtained medication from a prescribing physician, appropriate physician screening is required. This should include determining whether family and friends with addiction disorders can access patient prescription medication. Physicians need to caution patients not to share medication and to securely store medication. Pharmacists need to apply a warning label to addictive medication, stating that sharing may cause harm. A large number of respondents purchased medication illegally, and legal strategies that address this source need to be employed. Addiction services for Aboriginal populations need to screen for prescription medication use with a culturally appropriate tool. Such a tool will need to use face-to-face, rather than telephone, interview techniques. It should also be administered in a culturally sensitive manner wherein the interviewer initially shares personal information. Treatment programs will need to address prescription medication use and possible concurrent client withdrawal, given that the high frequency of use may equate with physical dependence. Lastly, consideration should be given to the fact that provincial regulation of prescription medication is associated with reduced inappropriate use (2).

Our study identified interesting demographic information on prescription medication misuse. Within the general population, those aged 20 to 49 years have been found to have higher

rates of prescription medication dependency (5). Our demographic data reveal that age greater than or equal to 30 years is associated with inappropriate use, which is similar to the general population rate. Age greater than 29 years can thus be useful for screening. Among those in the general population aged 14 to 24 years, preference for medication used without medical legitimization—which is similar to the definition of misuse—is equal between the sexes (6). In our study, Aboriginal male respondents were just as likely to indicate inappropriate use as were female respondents, which, again, is similar to the pattern in the general population. Last, our sample group consisted mainly of status Aboriginals. Why the nonstatus Aboriginal population did not access treatment at NAS is unclear; therefore, additional research—particularly qualitative research—is needed to clarify this important issue. Future research should also include a comparison group of non-Aboriginal subjects accessing similar addiction services. Income assistance and socioeconomic status needs to be examined as well.

This cross-sectional descriptive study had several limitations. First, potential social-response bias for inappropriate use could have underestimated its prevalence. However, the anonymity of the questionnaire and the high prevalence found suggest that this bias is less likely to be found. Second, the survey listed the most commonly used medications rather than asking participants to identify medications used; listing medications may have led to overreporting of their use. Third, information on why treatment was sought was missing or incorrectly completed in several cases, so particular results need to be interpreted with caution. Finally, sex, residence, and status were not associated with inappropriate use, which may reflect the limited sample size.

The findings of this study confirm the suspicion raised by Anderson and McEwan that inappropriately used prescription medication is a significant problem among Aboriginal persons who seek addiction treatment (2). These results support the proposition that addiction treatment programs serving Aboriginal populations need to screen for and provide prescription medication treatment and, possibly, concurrent medication withdrawal management. Provincial regulation of prescription medication should also be considered when addressing this problem.

## Acknowledgement

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### **Résumé : Utilisation des médicaments sur ordonnance au sein d'une population autochtone ayant accès au traitement de la toxicomanie**

**Objectifs :** L'utilisation inappropriée de médicaments sur ordonnance peut avoir des conséquences significatives. Même si les populations autochtones du Canada sont soupçonnées d'un taux élevé d'utilisation inappropriée, l'information écrite fait défaut. Pour mieux comprendre cette question, nous avons étudié une population autochtone suivant un traitement pour la toxicomanie.

**Méthodes :** Nous avons interrogé des clients autochtones qui avaient accès à un traitement de la toxicomanie à Calgary (Alberta), relativement à l'utilisation de médicaments sur ordonnance l'année précédente, à la fréquence d'utilisation et aux sources des médicaments, si utilisés de façon inappropriée.

**Résultats :** Soixante-neuf pour cent des clients ont rempli le questionnaire ( $n = 144$ ). La plupart des répondants avaient entre 31 et 50 ans (56 %), et 52 % étaient des hommes. Sur les répondants, 48 % ont déclaré utiliser les médicaments sur ordonnance de façon impropre, 8 % ont indiqué une utilisation appropriée, et le reste n'utilisait pas de médicaments. Les sédatifs ou les relaxants étaient les médicaments le plus souvent utilisés de façon inappropriée. Parmi ceux qui faisaient une utilisation inappropriée des médicaments, 47 % en avaient utilisé plus de 10 fois l'année précédente. Les sources habituelles de ceux qui faisaient une utilisation inappropriée des médicaments incluaient des médicaments donnés par un ami ou un étranger (52 %), des médicaments achetés dans la rue (45 %) et des médicaments prescrits par un médecin (41 %). L'âge égal ou supérieur à 30 ans était associé à l'utilisation inappropriée. Le sexe, le lieu de résidence et le statut d'Autochtone n'étaient pas associés à l'utilisation inappropriée.

**Conclusion :** L'utilisation inappropriée de médicaments sur ordonnance était un problème significatif chez une population autochtone suivant un traitement de la toxicomanie, et nombre de ces personnes avaient accès à ces médicaments par l'intermédiaire d'un médecin qui les leur prescrivait