

# Self-perceived Health Among Canadian Opiate Users

## A Comparison to the General Population and to Other Chronic Disease Populations

Peggy E. Millson, MD, MHSc, FRCPC<sup>1,2</sup>

Laurel Challacombe, MHSc<sup>2</sup>

Paul J. Villeneuve, PhD<sup>1</sup>

Benedikt Fischer, PhD<sup>1,3,4</sup>

Carol J. Strike, PhD<sup>1,4</sup>

Ted Myers, PhD<sup>1,2</sup>

Ron Shore, MPA<sup>5,6</sup>

Shaun Hopkins, BSW<sup>8,9</sup>

Sara Raftis<sup>2</sup>

Mary Pearson, MD, CCFP<sup>7</sup>

### ABSTRACT

**Background:** There are an estimated 40,000 to 90,000 injection opiate users in Canada. The social, economic and health consequences of opiate addiction have been well documented. However, there are no data on the self-perceived health status of opiate users in Canada. Therefore, the goal of this research is to gain an understanding of the self-perceived health status of opiate users by comparing the health-related quality of life of opiate users to chronic disease populations and to the general population.

**Methods:** The SF-36 was administered to a nonrandom sample of 143 opiate users entering low-threshold methadone treatment. Two sample t-tests were performed to assess statistical differences, at a 5% level of significance, between population scores across SF-36 dimensions.

**Results:** Opiate users perceived both their mental and physical health as worse than the general population and individuals with minor and serious medical problems, but comparable to those with diagnosed psychiatric illnesses.

**Conclusions:** Methadone treatment services should incorporate both primary care and psychiatric care into their programs, or at the very least secure appropriate referral mechanisms to ancillary services to ensure that the health concerns of opiate users are dealt with in the context of their treatment program.

*La traduction du résumé se trouve à la fin de l'article.*

1. Department of Public Health Sciences, University of Toronto

2. HIV Studies Unit, University of Toronto

3. Department of Criminology, University of Toronto

4. Centre for Addiction and Mental Health, Toronto, ON

5. Street Health Centre, Kingston, ON

6. KFL&A Health Unit, Kingston

7. Department of Family Medicine, Queen's University

8. The Works, Toronto

9. Toronto Dept. of Public Health, Toronto

**Correspondence and reprint requests:** Dr. Peggy Millson, 12 Queen's Park Cres W., 3rd Floor McMurrich Bldg, University of Toronto, Toronto, ON M5S 1A8, Tel: 416-978-5253, Fax: 416-971-2704, E-mail: p.millson@utoronto.ca

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There are an estimated 40,000 to 90,000 injection opiate users in Canada.<sup>1</sup> In 1992, the use of illicit substances was estimated to cost \$18.45 billion in both direct and indirect costs.<sup>2</sup> Illicit drug use is associated with morbidity and mortality attributable to the practice of needle sharing leading to infection with HIV, HCV and/or HBV. Injection with poorly sterilized injection equipment or through poorly cleaned skin can also lead to a range of bacterial infections from cellulitis, thrombophlebitis and skin abscesses to septicemia and bacterial endocarditis.<sup>3</sup> Drug users also have an increased prevalence of nutritional problems which can lead to susceptibility to infectious diseases such as tuberculosis.<sup>3</sup> Strong associations between drug use and mental health problems have been documented with the most common diagnoses being depression, anxiety and antisocial personality.<sup>3</sup> The use of illicit drugs is also frequently associated with a complex constellation of correlates of poor health that include: poly-substance use, childhood abuse history, poverty, homelessness, incarceration, violence, difficulty maintaining supportive interpersonal relationships and limited job skills.<sup>1,3-5</sup>

The myriad of social, economic and health consequences of opiate addiction likely contribute to poorer health among illicit opiate users. However, only two studies have directly evaluated how opiate users perceive their own health and how drug use impacts on their health-related quality of life (HRQOL) prior to treatment entry.<sup>6,7</sup> These studies were conducted in Australia and the United States, making generalizability to a Canadian opiate-using population problematic due to differing social and legal climates and because of the potential differing availability of specific drugs and of drug treatment options.

HRQOL "is a construct that reflects a persons' [sic] appraisals of their circumstances in relation to their expectations of life experiences."<sup>8</sup> It encompasses physical and mental aspects of quality of life (QoL) that have been shown to affect health.<sup>9</sup> It is increasingly being used in public health and clinical research as a complement to other health status indicators and/or outcome indicators in order to capture features of disability and dysfunction associated with chronic illness.<sup>8</sup>

The objective of these analyses is to assess how opiate users rank in terms of

self-perceived health status by comparing the self-perceived health of Canadian opiate users to published values for the general U.S. population and to other chronic disease populations. This will serve to highlight the physical and mental health concerns of opiate users and provide insights for strategies to address these concerns at entry into methadone programs.

## METHODS

### Participants

#### *Opiate-dependent Population*

The participants in this study are opiate users recruited at enrolment into one of two low-threshold methadone programs offered through needle exchanges in Kingston and Toronto, Ontario, Canada. Low-threshold methadone programs are a relatively recent innovation seeking to break down barriers to treatment by reducing entry and retention criteria, and by allowing individuals to continue to use drugs without fear of expulsion from the program.<sup>10,11</sup> Unlike higher-threshold programs, the primary aim of these programs is not to necessarily eliminate illicit drug use, but rather to establish and maintain contact with opiate users, to help stabilize and reduce some of the risks associated with their drug use,<sup>10,12</sup> and to develop the trust needed to begin addressing other health concerns. In some cases, low-threshold programs provide only low doses of methadone.<sup>11</sup> However, in this current study, low threshold does not equate to low dose; the average dose prescribed by these clinics is approximately 90 mg/day.

All individuals enrolling in one of these two sites are approached to participate in a longitudinal study consisting of 3 interviews over a one-year period. Trained study personnel administer a standardized interview schedule including a quality of life instrument, the Medical Outcomes Study Short-Form 36 (SF-36).<sup>13</sup> The human ethics review board at the University of Toronto approved this project.

Between December 2000 and August 2002, 211 opiate users enrolled in the programs, of whom 143 (68%) agreed to participate in the study; analysis of baseline interviews recording pretreatment status is reported here. The average age of the participants is 33 (range 18-54). Sixty-three

**TABLE I**

**Descriptions of Lowest and Highest SF-36 Scale Scores**

| Scale                                   | Definition of Lowest and Highest Scores                                                                                                  |                                                                                                                                                                 |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                         | Lowest Possible                                                                                                                          | Highest Possible                                                                                                                                                |
| Physical functioning (PF)†              | Limited a lot in performing all physical activities including bathing or dressing due to health                                          | Performs all types of physical activities including the most vigorous without limitations to health                                                             |
| Role-Physical (RP)†                     | Problems with work or other daily activities as a result of physical health                                                              | No problem with work or other daily activities as a result of physical health                                                                                   |
| Bodily Pain (BP)†                       | Very severe and extremely limiting pain                                                                                                  | No pain or limitations due to pain                                                                                                                              |
| General Health (GH)†                    | Evaluates personal health as poor and believes it is likely to get worse                                                                 | Evaluates personal health as excellent                                                                                                                          |
| Vitality (VI)†                          | Feels tired and worn out all of the time                                                                                                 | Feels full of pep and energy all of the time                                                                                                                    |
| Social Functioning (SF)†                | Extreme and frequent interference with normal social activities due to physical or emotional problems                                    | Performs normal social activities without interference due to physical or emotional problems                                                                    |
| Role-Emotional (RE)†                    | Problems with work or other daily activities as a result of emotional problems                                                           | No problems with work or other daily activities as a result of emotional problems                                                                               |
| Mental Health (ME)†                     | Feelings of nervousness and depression all of the time                                                                                   | Feels peaceful, happy and calm all of the time.                                                                                                                 |
| Physical Component Summary Score (PCS)‡ | Substantial limitations in self care, physical, social, and role activities; severe bodily pain; frequent tiredness; health rated "poor" | No physical limitations, disabilities, or decrements in well-being; high energy level; health rated "excellent"                                                 |
| Mental Component Summary Score (MCS)‡   | Frequent psychological distress, substantial social and role disability due to emotional problems; health in general rated "poor"        | Frequent positive affect; absence of psychological distress and limitations in usual social/role activities due to emotional problems; health rated "excellent" |

† As published by Ware et al.<sup>14</sup>

‡ As published by Ware et al.<sup>15</sup>

percent of the sample is male. Approximately 89% self-identify their race as white with 4% self-identifying as First Nations, 2% as Metis and 1% as Black.

#### *Normative Data*

U.S. population norms were used to interpret the SF-36 scale scores derived from the opiate-dependent population.<sup>14,15</sup> Information on the normative U.S. data has been published elsewhere.<sup>14</sup> Normative U.S. data were used despite the availability of Canadian normative data<sup>16</sup> due to the potential biases inherent in the study population used to norm the Canadian data. The subjects were originally recruited to participate in an osteoporosis study resulting in an oversampling in the older age groups. Furthermore, subjects who participated may have differed from the general population because they had to be willing to participate in medical/diagnostic tests

along with the questionnaires. Second, the Canadian data do not include individuals under the age of 25 which would have resulted in the removal of 25% of our data from the analysis due to the younger mean age of the opiate population.

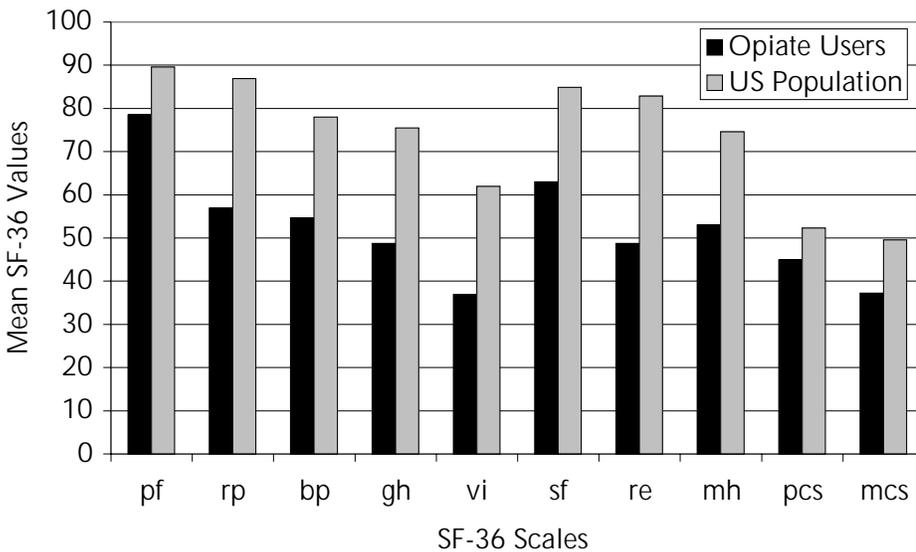
The four mutually exclusive chronic disease populations used to compare to our population were constructed from the Medical Outcomes Study (MOS) and include: minor (uncomplicated) chronic medical conditions, serious (complicated) chronic conditions, psychiatric conditions (major depression and/or dysthymia or serious depressive symptoms) only, and both serious medical and psychiatric conditions.<sup>17</sup> Information on the norming of these data has been published elsewhere.<sup>17</sup>

It is important to note that the HRQOL comparisons between these opiate users and other chronic disease populations were not

**TABLE II**  
Age and Sex Comparisons of the Mean SF-36 Scale Scores of Canadian Opiate Users to the U.S. Population

| Scale | Population   | Age Group   |             |             |             |             |             |             |             |             |             |             |             |
|-------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|       |              | 18-24       |             |             | 25-34       |             |             | 35-44       |             |             | 45-54       |             |             |
|       |              | A*          | M           | F           |
| PF    | US           | 92.1        | 94.1        | 90.2        | 92.0        | 94.9        | 89.1        | 89.7        | 91.4        | 88.1        | 84.6        | 86.5        | 82.9        |
| PF    | Opiate users | <b>84.9</b> | 88.7        | <b>80.6</b> | 87.9        | <b>88.2</b> | 87.5        | <b>74.8</b> | <b>75.7</b> | 77.2        | <b>67.1</b> | <b>70.9</b> | 46.7        |
| RP    | US           | 89.1        | 93.5        | 84.9        | 89.2        | 91.9        | 86.7        | 86.7        | 89.8        | 83.7        | 82.7        | 85.6        | 79.9        |
| RP    | Opiate users | <b>65.3</b> | 80.3        | <b>48.5</b> | <b>69.9</b> | <b>63.0</b> | 82.1        | <b>49.0</b> | <b>51.7</b> | <b>47.2</b> | <b>46.1</b> | <b>46.9</b> | 41.7        |
| BP    | US           | 80.8        | 79.6        | 82.0        | 81.4        | 83.1        | 79.6        | 77.1        | 79.4        | 74.9        | 73.1        | 74.2        | 72.1        |
| BP    | Opiate users | <b>55.1</b> | <b>62.6</b> | <b>46.6</b> | <b>61.5</b> | <b>62.9</b> | <b>59.0</b> | <b>50.5</b> | <b>49.1</b> | <b>54.2</b> | <b>50.9</b> | 57.5        | <b>16.0</b> |
| GH    | US           | 76.7        | 77.0        | 76.5        | 77.1        | 79.4        | 74.8        | 75.9        | 77.6        | 74.3        | 71.8        | 73.2        | 70.5        |
| GH    | Opiate users | <b>50.7</b> | <b>52.2</b> | <b>48.9</b> | <b>50.6</b> | <b>53.2</b> | <b>45.9</b> | <b>50.6</b> | <b>50.8</b> | <b>52.7</b> | <b>42.1</b> | <b>45.2</b> | <b>25.8</b> |
| VI    | US           | 62.5        | 65.4        | 59.7        | 61.3        | 64.7        | 58.0        | 62.4        | 65.5        | 59.4        | 61.8        | 63.1        | 60.6        |
| VI    | Opiate users | <b>31.1</b> | <b>33.9</b> | <b>27.9</b> | <b>38.9</b> | <b>40.2</b> | <b>36.4</b> | <b>39.9</b> | <b>38.8</b> | <b>43.1</b> | <b>32.6</b> | <b>37.2</b> | <b>8.3</b>  |
| SF    | US           | 83.9        | 86.1        | 81.7        | 84.9        | 85.7        | 84.1        | 85.8        | 88.5        | 83.1        | 84.1        | 85.5        | 82.7        |
| SF    | Opiate users | <b>64.6</b> | 73.0        | <b>55.2</b> | <b>70.8</b> | <b>71.0</b> | 70.5        | <b>62.8</b> | <b>64.2</b> | <b>61.8</b> | <b>51.3</b> | <b>57.8</b> | 16.7        |
| RE    | US           | 83.0        | 87.5        | 78.6        | 82.2        | 82.2        | 82.3        | 82.8        | 85.5        | 80.1        | 83.6        | 85.4        | 81.9        |
| RE    | Opiate users | <b>48.2</b> | <b>50.9</b> | <b>45.1</b> | <b>50.4</b> | <b>49.3</b> | <b>52.4</b> | <b>51.7</b> | <b>52.2</b> | <b>48.1</b> | <b>42.1</b> | <b>43.8</b> | 33.3        |
| MH    | US           | 74.7        | 78.0        | 71.5        | 73.3        | 74.1        | 72.5        | 75.1        | 77.0        | 73.3        | 75.3        | 76.4        | 74.4        |
| MH    | Opiate users | <b>54.1</b> | <b>56.4</b> | <b>51.5</b> | <b>55.0</b> | <b>52.1</b> | <b>58.9</b> | <b>51.8</b> | <b>52.4</b> | <b>50.7</b> | <b>51.4</b> | <b>54.8</b> | 33.3        |
| PCS   | US           | 53.4        | 53.5        | 53.4        | 53.7        | 55.0        | 52.5        | 52.2        | 52.9        | 51.4        | 49.6        | 50.4        | 48.9        |
| PCS   | Opiate users | <b>47.1</b> | <b>50.2</b> | <b>43.7</b> | <b>48.9</b> | <b>49.1</b> | 48.5        | <b>43.1</b> | <b>43.3</b> | <b>44.6</b> | <b>41.0</b> | <b>42.6</b> | <b>32.5</b> |
| MCS   | US           | 49.1        | 50.9        | 47.4        | 48.6        | 48.9        | 48.3        | 49.9        | 51.0        | 48.8        | 50.5        | 51.0        | 50.1        |
| MCS   | Opiate users | <b>35.9</b> | <b>37.0</b> | <b>34.8</b> | <b>37.4</b> | <b>36.9</b> | <b>38.1</b> | <b>38.4</b> | <b>38.5</b> | <b>37.5</b> | <b>35.7</b> | <b>37.4</b> | 26.6        |

\* A = ALL (Male and Female); M=Male; F=Female  
Bolder cells are significant to p<0.05



**Figure 1.** Adjusted Mean SF-36 Scores for Opiate Users compared to the U.S. Population  
The scores were adjusted for the following age groupings: 18 to 24, 25 to 34, 35 to 44 & 45 to 54

adjusted for differences in the age of the subjects. The mean age of opiate drug users is younger at 33.2 years than these comparator populations with chronic health ailments at 40.1 years<sup>17</sup> due to increasing prevalence of chronic diseases with age. Because HRQOL is widely acknowledged to worsen with age, it is likely that our comparisons with opiate users who have lower HRQOL underestimate the degree of difference.

**Survey instrument**

The SF-36 was derived from the larger Medical Outcomes Study to represent

8 health concepts (Table I), with two standard algorithms applied to calculate summary scores for the mental component scale (MCS), and the physical component scale (PCS). Standardized scores range from 0 to 100 with higher scores reflecting better HRQOL. The SF-36 is a generic measure of HRQOL with broad applicability, and has been used extensively in a wide variety of patient populations.<sup>18-22</sup> The SF-36 is relatively brief and easy to administer, and has been successfully used in a similar population.<sup>6</sup>

**Statistical analysis**

Age-adjusted mean score values were calculated to compare opiate users to the general U.S. population in order to account for differences in the age structure of the two populations. Two sample t-tests with unequal variances were used to compare the two adjusted means, and to compare SF-36 scores between opiate users and the U.S. population by age-group and sex.

Two sample t-tests were also used to compare opiate users to four comparison groups: individuals with minor medical conditions, serious medical conditions, psychiatric conditions only, and both serious medical and psychiatric conditions.

When multiple comparisons are made as in this analysis, false positive associations are possible simply by chance. This problem could be addressed by making the test of significance more stringent by decreasing the required p-values; however, this approach has been rejected as creating more problems than it might possibly solve.<sup>23</sup>

**RESULTS**

For every scale of the SF-36, opiate users had significantly lower scores (p<0.05) compared to the U.S. population which equates to a poorer perceived HRQOL among opiate users (Figure 1). The magnitude of the differences was largest for the role emotional scale (34.1), followed by role physical (30.0), and general health (26.8).

When the analysis was stratified by age only, opiate users had poorer HRQOL compared to the general population for every scale except for the physical functioning scale for those aged 25 to 34 (Table II). After stratification for age and gender, all SF-36 scores were statistically significant except those noted (Table II). However, power to detect differences was very low for some strata, for example our sample contained only 3 women aged 45-54.

Compared to individuals with minor medical problems, opiate users reported a poorer HRQOL in all domains except physical functioning (Table III). Relative to individuals with serious medical conditions, opiate users had better physical functioning and role-physical scores, but worse scores for bodily pain, vitality, social functioning, role-emotional and mental health (Table III).

When opiate users' HRQOL scores were compared to individuals with psychiatric problems, three scales differed between the two populations: bodily pain, general health and vitality were found to be poorer for opiate users (Table III). Finally, when opiate users were compared to individuals with psychiatric and serious medical problems, three scores were significantly different between the two groups: physical functioning, role-physical and general health were all better for opiate users (Table III).

## DISCUSSION

When entering treatment, illicit opiate users have a markedly poorer perceived HRQOL across a range of physical and psychological functioning compared to a general population after adjustment for age. Opiate users report more limitations in physical activities (physical functioning) and more problems with work and daily activities due to physical health problems (role-physical). Opiate users experience greater pain and more limitations due to their pain (bodily pain) and evaluate their general health as poorer with a greater fear that it will worsen (general health) compared to the general U.S. population. The perception of poor physical health may be the result of the physical toll that drug addiction has taken on their lives or may be an ongoing problem that preceded the use of drugs and could have been a contributing factor to drug use initiation.

TABLE III

Comparisons of SF-36 Scale Scores Among Canadian Opiate Users to Other Populations with Chronic Medical Conditions

| Scales | Opiate Population | Minor Medical† | Serious Medical† | Psychiatric Only† | Psychiatric & Serious Medical† |
|--------|-------------------|----------------|------------------|-------------------|--------------------------------|
| PF     | 79.9              | 80.5           | 57.4             | 80.6              | 46.4                           |
| RP     | 58.4              | <b>70.3</b>    | <b>43.9</b>      | 55.6              | <b>23.8</b>                    |
| BP     | 54.7              | <b>76.1</b>    | <b>65.1</b>      | <b>63.3</b>       | 50.2                           |
| GH     | 49.5              | <b>67.0</b>    | 49.13            | <b>57.9</b>       | <b>39.9</b>                    |
| VI     | 36.4              | <b>62.0</b>    | <b>47.79</b>     | <b>45.3</b>       | 37.1                           |
| SF     | 63.9              | <b>91.6</b>    | <b>80.03</b>     | 64.5              | 65.1                           |
| RE     | 49.2              | <b>84.3</b>    | <b>76.16</b>     | 40.7              | 52.7                           |
| MH     | 53.2              | <b>82.5</b>    | <b>77.59</b>     | 52.8              | 56.9                           |

\* PCS and MCS scores were unavailable for the reference populations

Bolded cells  $p < 0.05$  when compared to the opiate population

† Values as published by Mchorney et al.<sup>17</sup>

Opiate users also report poorer mental health scores, with greater feeling of tiredness (vitality), greater interferences in social activities (social functioning), more problems with daily activities due to emotional problems (role-emotional) and greater feelings of nervousness and depression (mental health) compared to the general population. Therefore, opiate users face greater mental health challenges and acknowledge these mental health issues at treatment entry.

When compared to other patient populations, opiate users have poorer HRQOL compared to individuals with minor medical problems and individuals with serious medical problems on all mental health scales and some physical health scales. Opiate users were most similar to two comparison patient populations: individuals with psychiatric illnesses only and individuals with both psychiatric and serious medical problems. Opiate users perceived their bodily pain as greater, their general health as worse and their vitality as lower than individuals with psychiatric problems. When compared to individuals with both psychiatric and serious medical problems, opiate users report their physical functioning as better, their role-physical abilities as better and their general health as better (all physical scales) with all other scales being equal. These findings fit with the high reported prevalence of psychiatric problems among opiate users and substance use problems among those with psychiatric problems.<sup>24</sup> These results are similar to those reported by Ryan and White (1996) who compared opiate users to the British population and to individuals reporting minor medical, major medical and psychiatric conditions.

These findings indicate that opiate users seeking methadone treatment are likely to be entering treatment with concerns about extensive problems in a variety of health domains. Policy changes in Ontario since 1996 have led to significant expansion of methadone provision, especially in Toronto and the surrounding area.<sup>25</sup> Much of this provision occurs outside specialized programs, in settings that prescribe methadone but do not provide primary care or other services for these clients. Our findings support the need for methadone programs enrolling new participants to provide the needed range of services on site in a user-friendly environment. Ideally, this would involve a 'one stop shop' approach where clients can access the needed range of services including methadone, primary care, counselling and psychiatric care to ensure that their HRQOL concerns do not go unaddressed. However, if this is not feasible, then programs need the capacity to refer clients to services that are prepared to effectively meet their needs. This requires that service providers understand methadone treatment and harm reduction and recognize methadone maintenance as a viable treatment option for chronic opiate dependence. Currently many mental health services require abstinence from all illicit drugs, and in some cases from methadone as well, before initiating treatment for mental health problems. For clients who may be self-medicating with illicit substances, this may effectively prevent them from obtaining such treatment.

One study limitation may be that perceived health status, not clinical health status, of opiate users was measured, limiting certainty about some recommendations. However, the intent of the study was to

examine the perception of health and its limitations which are a result of opiate using or the associated lifestyle. The perception of poor health reflects the services drug users actually want and may accept as opposed to those which may be deemed necessary by a health care professional.

## CONCLUSIONS

Measurement of perceived HRQOL at entry into treatment for opiate-related problems can help staff and clients to identify areas where assistance is needed. Following the HRQOL over the course of treatment may help to determine effectiveness of services in reaching treatment and life goals.

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## RÉSUMÉ

**Contexte :** Selon les estimations, il y aurait entre 40 000 et 90 000 utilisateurs d'opiacés injectables au Canada. Les conséquences sociales, économiques et sanitaires des toxicomanies opiacées sont bien documentées, mais il n'existe aucune donnée sur l'état de santé autoperçu des utilisateurs d'opiacés au Canada. Nous avons donc cherché à comprendre l'état de santé autoperçu des utilisateurs d'opiacés en comparant leur qualité de vie (du point de vue de la santé) à celle de personnes atteintes de maladies chroniques et de la population générale.

**Méthode :** Nous avons administré le questionnaire SF-36 à un échantillon non aléatoire de 143 utilisateurs d'opiacés qui entreprenaient un traitement à la méthadone à seuil bas. Nous avons ensuite exécuté deux tests t modèles afin d'évaluer l'écart statistique, à un seuil de signification de 5 %, entre les notes obtenues par les segments démographiques selon les volets du questionnaire.

**Résultats :** L'état de santé mentale et physique perçu par les utilisateurs d'opiacés était pire que dans la population générale et pire que chez les personnes atteintes de problèmes de santé mineurs ou graves, mais il était comparable à l'état de santé perçu des personnes ayant un diagnostic de maladie psychiatrique.

**Conclusions :** Les services de traitement à la méthadone devraient intégrer à la fois des soins primaires et psychiatriques dans leurs programmes, ou à tout le moins des mécanismes d'aiguillage appropriés vers des services complémentaires, pour que l'on s'occupe des préoccupations de santé des utilisateurs d'opiacés dans le cadre de leur traitement.