

**Factors That Support Successful Transition to Community
among Women Leaving Prison in British Columbia: A
Prospective Cohort Study**

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| Abstract: | <p>Background In Canada, the number of women sentenced to prison has almost doubled since 1995. In BC, the rate of re-incarceration is 70% within 2 years. To elucidate factors supporting successful reintegration, we prospectively followed women after discharge from provincial corrections centres in BC.</p> <p>Methods We defined recidivism as committing a crime or violating the terms of probation during the year following release from a provincial corrections</p> |

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| | <p>centre. To identify predictive factors we carried out a repeated measures analysis using a logistic mixed-effect model.</p> <p>Results</p> <p>Four hundred women completed a baseline interview and 207 completed additional interviews during the subsequent year, contributing 395 interviews in total. Factors significantly associated in univariate analysis with recidivism included not having a family doctor or dentist, depression, not being mothers, less than high school education, index charge of drug offense or theft under \$5,000, poor general health, hepatitis C treatment, poor nutrition or spiritual health, and use of marijuana or cocaine. In multivariate analysis, good nutritional health, odds ratio 0.52 [0.35 to 0.76], positive spiritual health, OR 0.61 [0.44 to 0.83], high school graduation OR 0.44 [0.22 to 0.87], and incarceration for a drug offence vs. other crimes OR 0.30 [0.12 to 0.79] were protective against recidivism.</p> <p>Interpretation</p> <p>Our findings emphasize the relevance of health- related strategies to support successful community re-integration. Health assessment on admission followed by treatment for trauma and associated psychiatric disorders, and chronic medical and dental problems deserve consideration as priority approaches to reduce rates of re-incarceration.</p> |
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STROBE Statement—Factors That Support Successful Transition to Community among Women Leaving Prison in British Columbia: A Prospective Cohort Study

| | Item No | Recommendation |
|------------------------------|---------|--|
| Title and abstract | 1 | √ (a) Indicate the study's design with a commonly used term in the title or the abstract |
| | | √ (b) Provide in the abstract an informative and balanced summary of what was done and what was found |
| Introduction | | |
| Background/rationale | 2 | √ Explain the scientific background and rationale for the investigation being reported |
| Objectives | 3 | √ State specific objectives, including any prespecified hypotheses |
| Methods | | |
| Study design | 4 | √ Present key elements of study design early in the paper |
| Setting | 5 | √ Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection |
| Participants | 6 | √ (a) <i>Cohort study</i> —Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up <i>Case-control study</i> —Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases and controls <i>Cross-sectional study</i> —Give the eligibility criteria, and the sources and methods of selection of participants |
| | | √ (b) <i>Cohort study</i> —For matched studies, give matching criteria and number of exposed and unexposed <i>Case-control study</i> —For matched studies, give matching criteria and the number of controls per case |
| Variables | 7 | √ Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable |
| Data sources/ measurement | 8* | √ For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group |
| Bias | 9 | √ Describe any efforts to address potential sources of bias |
| Study size | 10 | √ Explain how the study size was arrived at |
| Quantitative variables | 11 | √ Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why |
| Statistical methods | 12 | √ (a) Describe all statistical methods, including those used to control for confounding |
| | | √ (b) Describe any methods used to examine subgroups and interactions |
| | | √ (c) Explain how missing data were addressed |
| | | √ (d) <i>Cohort study</i> —If applicable, explain how loss to follow-up was addressed <i>Case-control study</i> —If applicable, explain how matching of cases and controls was addressed <i>Cross-sectional study</i> —If applicable, describe analytical methods taking account of sampling strategy |
| | | √ (e) Describe any sensitivity analyses |

Continued on next page

| Results | | | |
|--------------------------|-----|---|--|
| Participants | 13* | √ | (a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed |
| | | √ | (b) Give reasons for non-participation at each stage |
| | | √ | (c) Consider use of a flow diagram |
| Descriptive data | 14* | √ | (a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders |
| | | √ | (b) Indicate number of participants with missing data for each variable of interest |
| | | | (c) <i>Cohort study</i> —Summarise follow-up time (eg, average and total amount) |
| Outcome data | 15* | √ | <i>Cohort study</i> —Report numbers of outcome events or summary measures over time |
| | | | <i>Case-control study</i> —Report numbers in each exposure category, or summary measures of exposure |
| | | | <i>Cross-sectional study</i> —Report numbers of outcome events or summary measures |
| Main results | 16 | √ | (a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included |
| | | √ | (b) Report category boundaries when continuous variables were categorized |
| | | | (c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period |
| Other analyses | 17 | | Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses |
| Discussion | | | |
| Key results | 18 | √ | Summarise key results with reference to study objectives |
| Limitations | 19 | √ | Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias |
| Interpretation | 20 | √ | Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence |
| Generalisability | 21 | √ | Discuss the generalisability (external validity) of the study results |
| Other information | | | |
| Funding | 22 | √ | Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based |

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at <http://www.plosmedicine.org/>, Annals of Internal Medicine at <http://www.annals.org/>, and Epidemiology at <http://www.epidem.com/>). Information on the STROBE Initiative is available at www.strobe-statement.org.

Factors That Support Successful Transition to Community among Women Leaving Prison in British Columbia: A Prospective Cohort Study

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 The authors have no competing interests to declare

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ABSTRACT

Background

In Canada, the number of women sentenced to prison has almost doubled since 1995. In BC, the rate of re-incarceration is 70% within 2 years. To elucidate factors supporting successful reintegration, we prospectively followed women after discharge from provincial corrections centres in BC.

Methods

We defined recidivism as committing a crime or violating the terms of probation during the year following release from a provincial corrections centre. To identify predictive factors we carried out a repeated measures analysis using a logistic mixed-effect model.

Results

Four hundred women completed a baseline interview and 207 completed additional interviews during the subsequent year, contributing 395 interviews in total. Factors significantly associated in univariate analysis with recidivism included not having a family doctor or dentist, depression, not being mothers, less than high school education, index charge of drug offense or theft under \$5,000, poor general health, hepatitis C treatment, poor nutrition or spiritual health, and use of marijuana or cocaine. In multivariate analysis, good nutritional health, odds ratio 0.52 [0.35 to 0.76], positive spiritual health, OR 0.61 [0.44 to 0.83], high school graduation OR 0.44 [0.22 to 0.87], and incarceration for a drug offence vs. other crimes OR 0.30 [0.12 to 0.79] were protective against recidivism.

Interpretation

Our findings emphasize the relevance of health-related strategies to support successful community re-integration. Health assessment on admission followed by treatment for trauma and associated psychiatric disorders, and chronic medical and dental problems deserve consideration as priority approaches to reduce rates of re-incarceration.

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INTRODUCTION

In Canada, the number of women sentenced to prison for greater than two years has almost doubled between 1995-2002.¹ Mandatory minimum sentences, zero tolerance legal policies, and the reduction in health and social services across Canada have all contributed to this increase.^{2,3} In the Province of British Columbia, approximately 1500 women are incarcerated annually.⁴ The rate of re-incarceration is 40% within one year of release and 70% within 2 years.⁴ The majority of women are sentenced to prison for drug-related offences.⁵ Few studies to date on recidivism have focused on women^{6,7} and among these,⁸⁻¹¹ none have examined health-related factors.

In the current study, we followed a cohort of women for one year after discharge from incarceration in a provincial corrections centre in order to understand factors that supported their successful re-entry into society, that is, without reported re-engagement in criminal activity.

METHODS

We undertook a prospective longitudinal cohort study to examine the impact of health and social factors on re-incarceration among women after release from provincial corrections centres. Our model was participatory action research (PAR). PAR mobilizes people who stand to benefit from the research to inform, develop or create social action to improve the quality of their lives and of those in their community.¹²

Setting

We recruited women leaving provincial correctional or remand centres in BC from 2008-2010. Women in provincial facilities have received sentences less than two years. The majority are held in Alouette Correctional Centre for Women (ACCW), a medium security prison located in Maple Ridge, 30 miles from Vancouver. ACCW houses up to 150 women in seven cottages. Length of stay averages three months and ranges from a few days to 24 months. Similar numbers were housed at Surrey Pre-Trial Centre and Prince George Correctional Centre.

Participants

Women were eligible to participate if they had been discharged from a provincial correctional centre in BC within the previous year.

Protocol Development

The study protocol was conceived at forums held within the ACCW that had been initiated by incarcerated women to present personal stories, including circumstances preceding incarceration, trajectories following previous releases, and issues that had contributed to re-incarceration. During a series of 10 forums, focus groups and in surveys conducted by a peer research team in ACCW¹³, women identified health and social goals they believed would contribute to successful transition to the community: 1) improved relationships with children, family and partners; 2) improved peer and community support; 3) safe and stable housing; 4) improved access to primary health care; 5) increased job skills and relevant employment; 6) more exercise and better nutrition; 7) improved dentition oral health; 8) improved access to health education; and 9) increased ability to contribute to society.¹⁴ For the current study we developed survey tools designed to explore factors that could facilitate or present barriers to achievement of these goals and to determine whether or not these factors were associated with successful re-integration into the community.

A team of peer researchers, themselves formerly incarcerated, were recruited by word of mouth. They were hired to recruit and conduct interviews with participants. Each peer researcher attended a workshop on interviewing skills, guided by a manual and supported by a video entitled *Women in the Shadows*.¹⁵

Recruitment

Women were made aware of the study prior to discharge through posters and by word of mouth. At the Surrey and Prince-George centres women were contacted by the peer researchers at the time of release or shortly thereafter. At discharge from ACCW women are routinely given a taxi voucher to go to the nearest major bus terminal and a bus ticket to return to where they were arrested. Our peer researcher waited at the bus terminal to invite women arriving by taxi to participate in the study. Women were given a study brochure and a verbal explanation. After written consent, responses to survey questions were recorded on paper forms, a process which took about 20 minutes. Participants received a \$20 gift card for a local pharmacy at the conclusion of the interview. Participants then provided detailed contact information for future interviews. Surveys were conducted in six urban (Vancouver, Surrey, Kelowna, Victoria, Nanaimo, Prince George), and three rural (Abbotsford, Chilliwack, and Maple Ridge) settings. We chose these sites because they were the home communities of our peer researchers. Peer researchers initiated follow up interviews at three, six, nine, and twelve months following the initial interview. They maintained contact with participants through cell phone, Facebook, word of mouth and frequenting popular hangouts and shelters. Interviews took place in cafes, on the street, and in women's shelters and drop in centres.

Analysis

To identify associations between achievement of the health and social goals identified in the ACCW forums in the year following release and the probability of committing a criminal act in the three months prior to each interview, we undertook a repeated measures analysis using a logistic mixed-effects model with each participant's unique study number as a random nesting effect. Mixed-effects models allow for unbalanced and incomplete sample sizes at each follow up point. This results in the inclusion of participants with different numbers of follow up interviews, while controlling for correlation among the responses from each individual at different time points. We defined recidivism as participation in criminal activity as disclosed by participants. We elected not to designate re-incarceration as our outcome of interest as participants told us that incarceration depended on circumstances beyond their control, i.e. "luck," their skill at shoplifting, and whether their associates could afford legal counsel and advocacy. We therefore chose to measure behaviour which could have resulted in arrest had it been detected. We denoted statistical significance at $p < 0.05$, using a Wald test.

Variables tested univariately included age at incarceration, education, Aboriginal status, marital status, number of children, criminal charge, health conditions, general health, intention to find a family doctor, desire to learn more about health and nutrition, quality of diet, spiritual health, dental care needs, hopes for relationships with partners, children, parents, or friends, living circumstances, substance use, injection drug use, methadone use, exposure to violence and abuse, employment status, and support from peers or community.

Factors associated with recidivism univariately were analyzed in a predictive multivariable model. The full model was reduced by sequentially removing each variable and then assessing the change in log-likelihood of the model. At each step, the variable with the highest p-value for the likelihood-ratio test was removed followed by another round of model fitting until all variables in the model caused significant reductions in log-likelihood. P-values were calculated from likelihood-ratio tests comparing the fit of the model (deviance) with the variable included vs. the fit with the variable removed. Analyses were conducted with R statistical software, version 3.1.¹⁶

RESULTS

Among 405 women meeting eligibility criteria, 400 consented to participation and completed a baseline interview. Among these, 207 women completed one or more follow-up interviews during the subsequent year. These women together contributed 395 interviews. (Figure 1)

Study participants were on average 34 years of age. Over 50% reported Aboriginal ancestry. The majority were single (67%) and 74.9% were mothers. Most (70%) were not educated beyond high school. The

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3 average duration of incarceration was 82 days. Women who were lost to follow up were not different than
4 those who remained in the study except there were fewer Aboriginal women in the group lost to follow up.
5 (Table 1)
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7 Fourteen variables were associated univariately with recidivism. (Table 2) Variables documented at
8 recruitment included intention to find a family doctor; depression, not having children, less than high school
9 education, and incarceration for theft under \$5,000 or for a drug offence. Variables associated with recidivism
10 measured at follow-up included: poor general health; treatment for hepatitis C; lack of opportunity to learn
11 about health, poor nutrition, poor spiritual health, not having a dentist; and use of marijuana or cocaine as drug
12 of choice.
13

14 These variables were included in a multivariable mixed effects logistic regression nested within unique
15 identifiers for participants. After excluding women without complete data on the 14 variables of interest, 127
16 women remained in the analysis, contributing 198 interviews in total. Seventy two women had one follow-up
17 interview; 34 had two follow-up interviews, 17 had three interviews and one had four interviews. Of these 198
18 follow-up interviews, 106 indicated that women had not undertaken a criminal act during the three months
19 prior to the interview. Among the variables associated with criminal activity, four emerged as being statistically
20 significantly independently associated with the probability of committing a criminal act within the prior three
21 months in the multivariable model: nutritional health, spiritual health, education, and incarceration for a drug
22 offence. (Table 2). The results suggest that for every one point increase in nutritional health (on a scale of 1-5),
23 the odds of committing a criminal act in the past 3 months are reduced by approximately 50%, holding all other
24 variables in the model constant. Similarly, for every point increase in spiritual health, odds are reduced by about
25 40%. High school vs. less than high school decreased the odds by about 56%, and post-secondary vs. less than
26 high school decreased the odds by about 80%. Finally, having been incarcerated for a drug vs. other offences
27 decreased the odds by 70%.
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32 INTERPRETATION

33 Among 207 women, we determined that successful transition to the community was associated with factors
34 related to health and access to health care, education, drug of choice and the nature of the charge.
35 Independent predictors included nutritional and spiritual health, education, and drug-related charges. These
36 findings suggest that opportunities to foster successful reintegration to the community reside within health and
37 education sectors of government as opposed to justice alone.
38

39 Poor health among incarcerated women in Canada has been documented, with higher rates of
40 mortality, mental health disorders, substance use, communicable disease, and injury.^{7,17} Our surveys and those
41 of others^{7,18} have indicated that many have not had access to appropriate health care services prior to
42 incarceration due to use of substances and lack of resources (transportation, medical insurance, night-time
43 work). As well, disproportionately high rates of childhood and adult exposure to sexual and physical abuse and
44 associated trajectories in the sex and drug trades contribute to trauma-associated mental health disorders.¹⁹ An
45 early Canadian study of incarcerated women reported a 12% rate of psychiatric diagnosis.²⁰ Canadian studies of
46 recidivism among women have noted the importance of family relationships, academic/vocational skills,
47 employment, financial management, and behavioural/emotional stability but have not reported on health
48 status.⁴ In our study, health status and post incarceration access to health services proved more important than
49 either employment status or relationships.
50

51 Similar to a recent report,²¹ lack of access to dental care was associated with recidivism. Women
52 reported pain from damage to teeth after use of crack pipes. Pain in turn predisposed them to use of opioids
53 post-release and a return to criminal activity. They also indicated that missing or damaged teeth made finding
54 work or housing nearly impossible.
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56 Spirituality has been reported to be an important factor supporting women's transition to community.²²
57 This was a particularly important for Aboriginal participants. At ACCW, an Aboriginal Elder describes Aboriginal
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3 women seeking to learn about their people then finding the courage to return their community with dignity.²³
4 Fifty two percent of our sample was comprised of Aboriginal women in stark contrast to 4% of the Canadian
5 population.²⁴ Incorporation of culturally competent and trauma-informed approaches to address the ongoing
6 legacy of colonization and the residential school system in this population may facilitate transition success.^{25,26}
7

8 The protective effect of having a child at home has been documented²⁷ as concern about appropriate
9 childcare²⁸ and a sense of inadequacy and loss^{29,30} are strong deterrents to recommencing criminal activity. The
10 number of children whose mothers are incarcerated in Canada is unknown.

11 Lack of education has been denoted as an independent predictor of recidivism in US studies, similar to
12 ours.³¹ In Canada, 35% of women in provincial prisons and 48% in federal prisons have a Grade 10 or lower
13 education.⁵ This underscores the need to offer education programs in jail that can be continued post-release.

14 The finding that incarceration for a drug offence was associated with successful integration appears at
15 first to be counter-intuitive. However, in this study, other charges included breaking and entering, assault or
16 theft. Drug related charges, in contrast, were not aimed at others or property and may have represented a lower
17 level of criminality.
18

19 Qualitative studies of incarcerated women have identified health education as a priority need.²¹ In our
20 study, knowledge of nutrition was independently associated with avoidance of criminal activity. A recent study
21 of Canadian women's post-incarceration health literacy revealed limited ability to assess and make meaning of
22 different sources of health information, particularly online health information.³² This highlights the potential
23 benefit of teaching online health literacy skills during incarceration, however at present women are not
24 permitted to access the Internet. Other opportunities to improve health literacy identified by women in our
25 study involved accessing community services that were actively assisting women to connect to health resources
26 including women's shelters, support groups and community outreach workers.
27

28 A strength of our study was access to a representative sample. We recruited from all correction centres
29 for women in our province and socio-demographic characteristics of our sample are similar to those of the
30 incarcerated population in Canada.³³ The longitudinal design of our study allowed us to follow women to one
31 year of post-incarceration. We were also able to measure the risk of criminal activity as opposed to re-
32 incarceration which is subject to factors separate from criminal activity. We feel that respondent bias was
33 limited by our use of peer-researchers. Our study is limited by high rates of attrition. Given the nature of our
34 study sample, and the fact that we were only able to support peer researchers in nine communities in the
35 province, this loss was not unexpected. With the exception of Aboriginal status, women who were not located
36 during the year post-incarceration did not differ in socio-demographic characteristics to those who were
37 retained in the study.
38

39 Our findings emphasize the relevance of health related strategies to support successful re-integration to
40 community for women leaving prison. Health assessment on admission followed by treatment for trauma and
41 associated psychiatric disorders, as well as for chronic medical and dental problems, deserve consideration as
42 priority approaches. Post-release re-instatement of medical insurance coverage, referral to a primary care
43 health provider, access to a dentist, and funds to cover essential prescription needs, according to our data,
44 would be critical components of re-integration. Limited personal resources dictate the need for low barrier
45 health care clinics open 24/7. A US study evaluating introduction of primary medical care and social work in
46 prison and continuing post discharge was associated with a 15% reduction in recidivism over one year.³⁴ In
47 Canada the average annual cost of incarcerating a woman is \$150,897 per year and the cost of supervising a
48 women on parole is \$19,755.³ The cost effectiveness of partnerships between the health, education and justice
49 systems in Canada to improve the health of incarcerated women needs to be evaluated in future studies.
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Table 1. Characteristics of Participants according to Retention for Follow-up

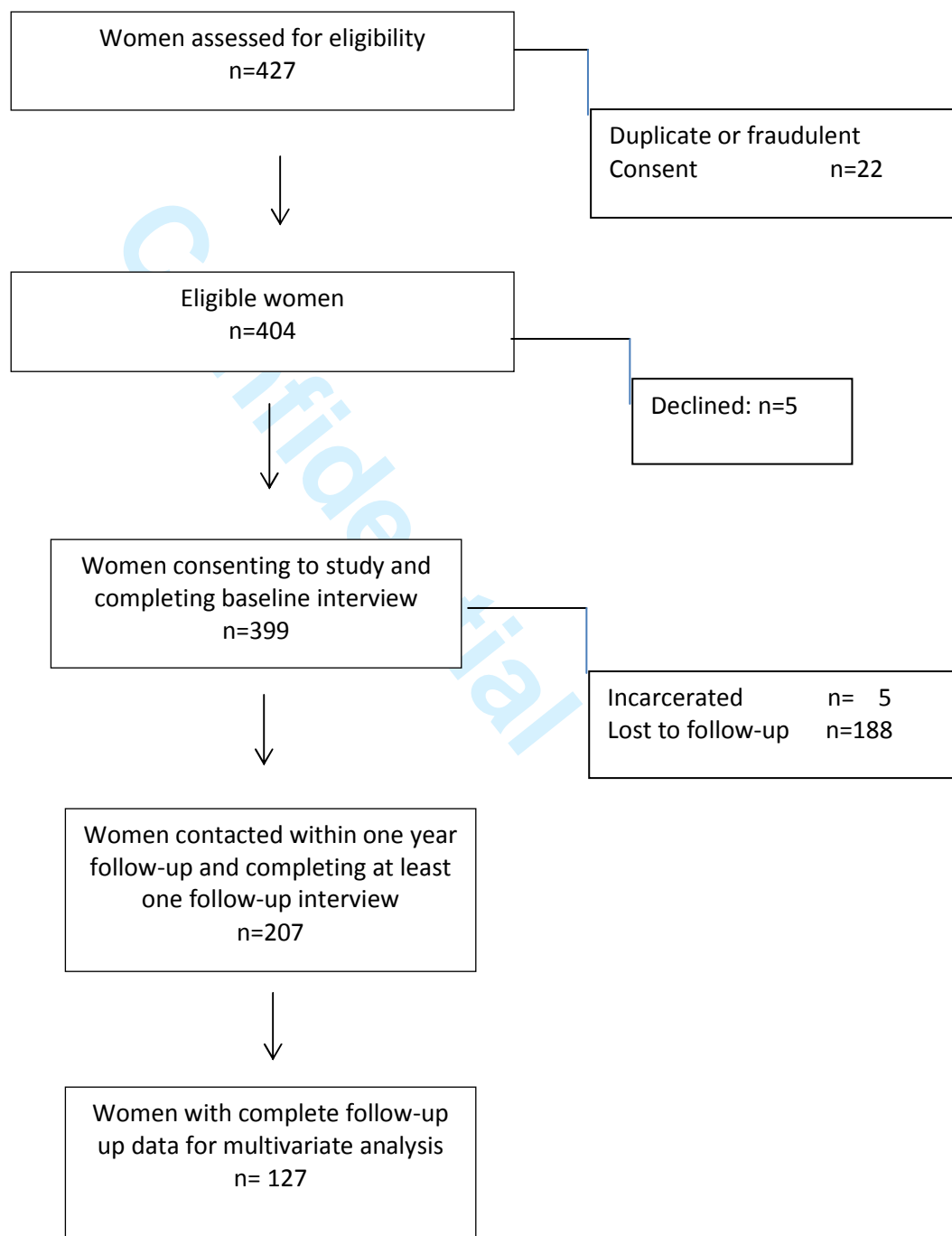
| Characteristic | Participants | Lost to Follow-up | p-value |
|--|--------------|-------------------|---------|
| | n=207 | n=193 | |
| | n (%) | n (%) | |
| Age, years, mean (SD) | 34.2 (9.0) | 33.2 (9.5) | 0.34 |
| Aboriginal status | 109 (52.6) | 67 (36.5) | <.001 |
| Marital Status | | | 0.39 |
| Single | 132 (67.3) | 118 (69.8) | |
| Married/Commonlaw | 39 (14.8) | 24 (13.2) | |
| Girlfriend/boyfriend | 21 (10.7) | 31 (17) | |
| Separated/divorced | 11 (5.6) | 6 (3.3) | |
| Widowed | 3 (1.5) | 3 (1.6) | |
| Has children | 152 (74.9) | 127 (67.9) | 0.13 |
| First Language English | 191(99.0) | 175 (98.3) | 0.67 |
| Education | | | 0.77 |
| Less than high school | 101 (37.8) | 84 (45.9) | |
| High School | 66 (33.8) | 67 (36.6) | |
| Trade certificate/diploma | 6 (3.1) | 8 (4.4) | |
| Some college/university | 16 (8.2) | 19 (10.4) | |
| Completed college/university | 6 (3.1) | 5 (2.7) | |
| Employed | 19 (10.1) | 11 (6.0) | 0.15 |
| Reason for Incarceration | | | |
| Theft under \$5000 | 65 (31.4) | 51 (26.4) | 0.55 |
| Theft over \$5000 | 7 (3.4) | 13 (6.7) | 0.32 |
| Assault | 44 (21.3) | 17 (8.8) | .002 |
| Breaking and entering | 11 (5.3) | 12 (6.2) | 0.92 |
| Drug-related offence | 48 (22.2) | 63 (32.6) | .06 |
| Driving-related offence | 5 (2.4) | 5 (2.6) | 0.98 |
| Breach of conditions | 65 (31.4) | 70 (36.3) | 0.56 |
| Injection drug use | 75 (43.9) | 55 (41.7) | 0.70 |
| Duration in prison last time, days mean (SD) | 81.6 (94.2) | 78.6 (84.5) | 0.74 |

Table 2. Characteristics and Conditions associated with Committing a Criminal Act

| Condition or Behaviour | Criminal Act N = 168 | | No Criminal Act N = 202 | | OR [95%CI] ¹ | p-value ² |
|--|-------------------------|------------|----------------------------|------------|-------------------------|----------------------|
| | n | % | n | % | | |
| General health 1-5; median, (IQR), | 138 | 3 (2 to 3) | 171 | 3 (3 to 4) | 0.47 [0.34 to 0.67] | <.001 |
| Received Treatment for Hepatitis C | 43 | 27 | 28 | 15 | 2.21 [1.21 to 4.01] | <.001 |
| Had an opportunity to learn about health | 38 | 23 | 79 | 39 | 0.47 [0.29 to 0.75] | 0.002 |
| Nutritional health 1-5; median, (IQR), | 164 | 3 (2 to 4) | 197 | 3 (3 to 4) | 0.52 [0.40 to 0.67] | <.001 |
| Spiritual health 1-5; median, (IQR), | 155 | 4 (2 to 4) | 173 | 3 (3 to 5) | 0.54 [0.43 to 0.68] | <.001 |
| Has a dentist | 26 | 15 | 50 | 26 | 0.54 [0.31 to 0.92] | 0.02 |
| Use of Marijuana past 3 mo | 102 | 65 | 97 | 50 | 1.90 [1.20 to 2.98] | 0.005 |
| Use of Cocaine past 3 mo | 103 | 66 | 90 | 47 | 2.19 [1.38 to 3.48] | <.001 |
| Thought about finding a family doctor | | | | | | 0.002 |
| No | 40 | 24 | 27 | 14 | 1.00 | |
| Yes | 23 | 14 | 53 | 26 | 0.28 [0.14 to 0.59] | |
| Already has one | 104 | 62 | 120 | 60 | 0.58 [0.32 to 1.04] | |
| Has depression | 36 | 22 | 65 | 34 | 0.57 [0.34 to 0.93] | 0.03 |
| Has children | 112 | 68 | 157 | 80 | 0.50 [0.30 to 0.85] | 0.009 |
| Education | | | | | | <.001 |
| Less than high school | 93 | 60 | 81 | 42 | 1.00 | |
| High school | 55 | 35 | 73 | 38 | 0.65 [0.41 to 1.04] | |
| Post-secondary | 8 | 5 | 37 | 19 | 0.19 [0.08 to 0.43] | |
| Incarceration for theft under \$5000 | 64 | 39 | 56 | 29 | 1.65 [1.01 to 2.70] | 0.04 |
| Incarceration for drug offence | 15 | 9 | 48 | 25 | 0.30 [0.16 to 0.58] | <.001 |

¹ Reference is “no” unless otherwise specified² P-values are derived from Likelihood-ratio tests.

Figure 1. Flow Diagram for Participation



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Figure 2. Odds ratios and 95% Confidence Intervals for Conditions and Behaviours associated with Committing a Criminal Act

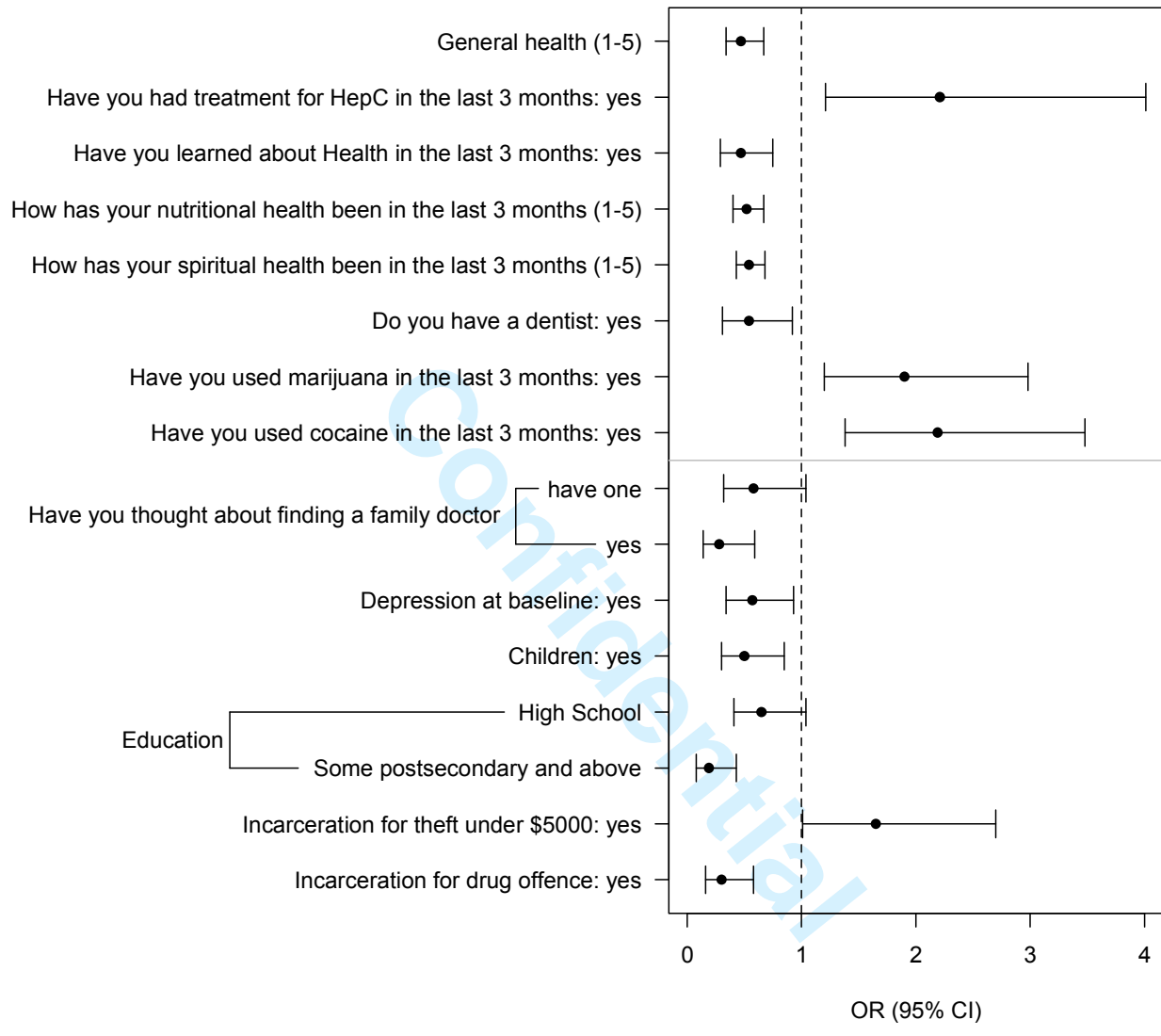


Table 3
Factors significantly and independently associated with committing a criminal act

| | OR [95% CI] | Likelihood-ratio test statistic | p-value |
|--------------------------------|---------------------|------------------------------------|---------|
| Nutritional health | 0.52 [0.35 to 0.76] | 12.1 | <.001 |
| Spiritual health | 0.61 [0.44 to 0.83] | 9.9 | 0.002 |
| Education | - | 10.3 | 0.006 |
| Less than high school | 1.00 | | |
| - High school | 0.44 [0.22 to 0.87] | - | - |
| - Post-secondary | 0.20 [0.06 to 0.70] | - | - |
| Incarceration for drug offence | | 6.5 | 0.01 |
| No | 1.00 | | |
| Yes | 0.30 [0.12 to 0.79] | | |

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