THE INFLUENCE OF THE SOCIAL ENVIRONMENT ON THE HEALTH OF MANITOBA FIRST NATIONS COMMUNITIES

A thesis submitted to the Faculty of Graduate Studies
by

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IN PARTIAL FULFILLMENT OF THE
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DOCTOR OF PHILOSOPHY

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THE UNIVERSITY OF MANITOBA

FACULTY OF GRADUATE STUDIES

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APPENDIX 1 – INDIVIDUAL AND SOCIAL ENVIRONMENT MEASURES

Individual level covariates

For some variables, principal component factor analysis was used to reduce variables, develop factors, select meaningful factors, and ascertain the stability of the factor solution. The following is a report on the composite measures created at the community level for statistical and heuristic efficiency. For each composite measures, measures of dispersion showed the dissimilarity of the values (variability). The value below the 25th percentile and the cases that fell above the 75th percentile and the numerical difference between the 25th and 75th centiles or the inter-quartile range (population mean) were used as cut-off points. These cut-off points transformed the explanatory variables into deviations from the grand mean (low and high from typical). The reasons for this transformation are as follows: 1) to render the intercept meaningful; 2) to produce meaningful intercepts that can be interpreted as an adjusted mean, and 3) establish meaningful cut-off points for the dummy variables (low and high from typical high).

A factor analysis examined the potential for a composite measure representing discrimination experiences, and found that attendance of a residential school was a separate measure in and of itself and that there was not sufficient power to combine the two health service discrimination variables into a composite measure (Table 1).

Table 1: Discrimination factor analysis - Eigenvalues of the correlation matrix, factor pattern, and cronbach coefficient alpha

Factor	Eigenvalue	Difference	Proportion	Cumulative
1	**1.37322725**	**0.37261827**	**0.4577**	**0.4577**
2	**1.00060898**	**0.37444521**	**0.3335**	**0.7913**
3	0.62616377		0.2087	1.0000

Factor Pattern

	Factor1	Factor2
Attend residential school	0.13388	**0.98637**
In-community discrimination	**0.81740**	-0.16632
Out-community discrimination	**0.82895**	0.00470

Cronbach Coefficient Alpha (Factor 1 only)

Variables	Alpha
Raw	0.538345
Standardized	**0.542434**

In terms of a composite measure representing ceremonial and healing practices (Table 2), all measures were sufficiently correlated with the exception of language and consume wild meat. These two variables clearly represented a unique form of cultural practices. In factor one, four variables (use traditional plants, seek advice on plant medicines, see a traditional healer, and participate in spiritual ceremonies) loaded highly (positive). The variable "attend cultural activities" was not as great but the cronbach coefficient alpha was sufficiently high enough (greater than 0.70) to create a reliable composite measure from all five variables.

Table 2: Ceremonial and healing practices factor analysis - Eigenvalues of the correlation matrix, factor pattern, and cronbach coefficient alpha

Factor	Eigenvalue	Difference	Proportion	Cumulative
1	**2.52398478**	**1.06937750**	**0.3155**	**0.3155**
2	**1.45460728**	**0.37076361**	**0.1818**	**0.4973**
3	**1.08384367**	**0.24201366**	**0.1355**	**0.6328**
4	0.84183001	0.19597395	0.1052	0.7380
5	0.64585606	0.08948057	0.0807	0.8188
6	0.55637549	0.08737697	0.0695	0.8883
7	0.46899852	0.04449434	0.0586	0.9469
8	0.42450417		0.0531	1.0000

Factor Pattern

	Factor1	Factor2	Factor3
Use traditional plants	**0.72621**	0.32248	0.14423
Seek advice on plant medicines	**0.70299**	0.33947	0.20540
See a traditional healer	**0.74919**	0.11719	0.00192
Attend cultural activities	**0.58644**	- 0.44507	- 0.36804
Participate in spiritual ceremonies	**0.71754**	- 0.13873	- 0.29953
Use Aboriginal language daily	- 0.25110	**0.72266**	- 0.24350
Aboriginal and English daily	0.13108	- 0.35205	**0.82365**
Wild meat consumption	0.04602	**0.59844**	0.24082

Cronbach Coefficient Alpha (factor 1 only)

Variables	Alpha
Raw	0.744805
Standardized	**0.745583**

In terms of a composite measure representing household addiction problems (Table 4), all measures loaded highly as a factor, but gambling problems also loaded highly as a unique factor. Although the cronbach coefficient alpha was not greater than 0.70 (64%), it was sufficiently high enough and the decision was made to leave them together to represent households perceived to have addiction problems, regardless of the type of addiction. Regarding a measure representing household violence problems, all variables loaded highly and the cronbach coefficient alpha exceeded 0.70.

Table 3: Household addiction problems factor analysis - Eigenvalues of the correlation matrix, factor pattern, and cronbach coefficient alpha

Factor	Eigenvalue	Difference	Proportion	Cumulative
1	**1.75865608**	**1.03549391**	**0.5862**	**0.5862**
2	0.72316217	0.20498043	0.2411	0.8273
3	0.51818174		0.1727	1.0000

Factor Pattern

	Factor1	Factor2	Factor3
Gambling problems	**0.68649**	**0.72601**	0.04047
Drinking problems	**0.80808**	-0.27362	-0.52166
Drug use problems	**0.79648**	-0.34814	0.49438

Cronbach Coefficient Alpha (factor 1 only)

Variables	Alpha
Raw	0.640866
Standardized	**0.644485**

Table 4: Household violence problems factor analysis - Eigenvalues of the correlation matrix, factor pattern, and cronbach coefficient alpha

Factor	Eigenvalue	Difference	Proportion	Cumulative
1	**3.00743791**	**2.59185662**	**0.7519**	**0.7519**
2	0.41558129	0.07346507	0.1039	0.8558
3	0.34211622	0.10725164	0.0855	0.9413
4	0.23486458		0.0587	1.0000

Factor Pattern

	Factor1	Factor2	Factor3
Physical abuse of children	**0.90049**	-0.03575	-0.23303
Violence towards women	**0.84185**	-0.41424	0.34428
Elder abuse	**0.89076**	-0.03225	-0.32538
Neglect of children	**0.83330**	0.49160	0.25182

Cronbach Coefficient Alpha (Factor One only)

Variables	Alpha
Raw	0.882663
Standardized	**0.889536**

Variables representing perceptions of the community economic and infrastructure environment were assessed, and together explained about 40% of the variation. Because all factors loaded about the same and that the cronbach coefficient alpha exceeded 0.70, the decision was made to combine all these factors into a composite index.

Table 5: Perceived community economic and infrastructure disparity factor analysis - Eigenvalues of the correlation matrix, factor pattern, and cronbach coefficient alpha

Factor	Eigenvalue	Difference	Proportion	Cumulative
1	**2.70558587**	**1.56345116**	**0.3865**	**0.3865**
2	**1.14213472**	**0.31414892**	**0.1632**	**0.5497**
3	0.82798580	0.09418633	0.1183	0.6680
4	0.73379947	0.03746608	0.1048	0.7728
5	0.69633339	0.22522202	0.0995	0.8723
6	0.47111137	0.04806200	0.0673	0.9396
7	0.42304938		0.0604	1.0000

Factor Pattern

	Factor1	Factor2	Factor3
Unemployment	**0.61348**	0.54650	-0.27429
Housing availability	**0.67448**	0.43070	-0.26672
Drinking water availability	**0.62168**	-0.53582	-0.22182
Cost of food	**0.57815**	0.18563	0.49314
Road conditions	**0.61465**	-0.06669	-0.19588
Education opportunities	**0.58631**	0.03257	0.59108
Sewage disposal	**0.65728**	-0.57523	-0.03834

Cronbach Coefficient Alpha (factor 1 only)

Variables	Alpha
Raw	0.727710
Standardized	**0.734578**

Community Level Measures

For each community level measure (including composite measures), measures of dispersion showed the dissimilarity of the values (variability). The value below the 25th percentile and the cases that fell above the 75th percentile and the numerical difference between the 25th and 75th centiles or the inter-quartile range (population mean) were used as cut-off points. These cut-off points transformed the explanatory variables into deviations

from the grand mean (low and high from typical). The reasons for this transformation are as follows: 1) to render the intercept meaningful; 2) to produce meaningful intercepts that can be interpreted as an adjusted mean, 3) to pre-center explanatory variables, which would have had to have been "centered around the grand mean" in the multilevel analysis; and 4) establish meaningful cut-off points for the dummy variables (low and high from typical high) that are consistent with centering around the grand mean.

For some variables, principal component factor analysis was used to reduce variables, develop factors, select meaningful factors, and ascertain the stability of the factor solution. The following is a report on the composite measures created at the community level for statistical and heuristic efficiency

A factor analysis conducted on the community level measures of ceremonial and healing practices found that one factor was important in reducing the number of cultural practice variables (eigenvalues greater than 1.0) into one composite measure. Together, factor one accounted for 70 percent of the variation. Five variables (use traditional plants, seek advice on plant medicines, see a traditional healer, attend cultural activities and participate in spiritual ceremonies) loaded highly (positive) into the first factor. The variables were sufficiently correlated to be included in a scale as demonstrated by a reliability analysis. The analysis yielded a cronbach coefficient alpha of 0.89, which was sufficiently high enough (greater than 0.70) to create a reliable composite measure from all of the variables identified in factor one.

Table 6: Ceremonial and Health Practices Factor Analysis- Eigenvalues of the Correlation Matrix, Factor Pattern, and Cronbach Coefficient Alpha

Factor	Eigenvalue	Difference	Proportion	Cumulative
1	**3.50127048**	**2.54355941**	**0.7003**	**0.7003**
2	0.95771107	0.66174434	0.1915	0.8918
3	0.29596674	0.14971396	0.0592	0.9510
4	0.14625277	0.04745384	0.0293	0.9802
5	0.09879893		0.0198	1.0000

Factor Pattern

	Factor1	Factor2
Use traditional plants	**0.80896**	0.51132
Seek advice on plant medicines	**0.78860**	0.55036
See a traditional healer	**0.87916**	- 0.12083
Attend Cultural Activities	**0.86716**	- 0.43302
Participate in spiritual ceremonies	**0.83671**	- 0.43734

Cronbach Coefficient Alpha (factor 1 only)

Variables	Alpha
Raw	0.882068
Standardized	**0.892512**

A factor analysis conducted on community level infrastructure measures found that one factor was important in reducing the number of infrastructure variables (eigenvalues greater than 1.0) into one composite measure. Together, factor one accounted for 67.6 percent of the variation. Four variables (adequate water supply, sewage services, electrical services, and road access) that loaded highly (positive) into the first factor had relatively low correlations (negative) with variables that loaded highly into other factors. Fire services and waste disposal were not as strongly correlated, but were sufficiently correlated to be included in scale as demonstrated by a reliability analysis. The analysis yielded a cronbach coefficient alpha of 0.89, which was sufficiently high enough (greater than 0.70) for creating a reliable composite measure from all variables.

Table 7: Inadequate infrastructure factor analysis - Eigenvalues of the correlation matrix, factor pattern, and cronbach coefficient alpha

Factor	Eigenvalue	Difference	Proportion	Cumulative
1	4.05665441	3.08447598	0.6761	0.6761
2	**0.97217843**	**0.40708952**	**0.1620**	**0.8381**
3	0.56508891	0.26113983	0.0942	0.9323
4	0.30394908	0.20181992	0.0507	0.9830
5	0.10212917	0.10212917	0.0170	1.0000
6	0.00000000		0.0000	1.0000

Factor Pattern

	Factor1	Factor2
Water services	**0.95925**	-0.07336
Sewage services	**0.95925**	-0.07336
Electrification	**0.84769**	-0.32484
Road access	**0.93010**	-0.22203
Waste disposal	0.44816	**0.80482**
Fire protection	**0.65712**	0.39858

Cronbach Coefficient Alpha (factor 1 only)

Variables	Alpha
Raw	0.888950
Standardized	**0.891385**

The survey asked respondents to identify from a list of known social problems which problem was a major or a minor problem at the community level. The list included unemployment, housing availability, drinking water availability, sewage disposal, road conditions, and education opportunities. All variables were dichotomized into a yes and no response, which respectfully represented a problem or no problem at all. Respondents were also asked to identify whether there was violence or addiction problems in their household.

A factor analysis conducted on the household social problem measures found two factors that were important in reducing the number of household social problem variables (eigenvalues greater than 1.0). Together, Factor one and two accounted for 94.4 percent of the variation. Five variables (gambling, drinking, drug use, physical abuse of children,

violence towards women, abuse of elders, and neglect of children) loaded highly (positive) into the first factor and had relatively low correlations (negative) with variables that loaded highly in the second factor. The gambling problem measure was not strongly correlated in the first factor, but was sufficiently correlated with the other variables. A reliability analysis yielded a Cronbach coefficient alpha of 0.94, which is sufficiently high enough (greater than 0.70) to justify a reliable composite measure based on all seven variables.

Table 8: Community household social problem factor analysis - Eigenvalues of the correlation matrix, factor pattern, and cronbach coefficient alpha

Factor	Eigenvalue	Difference	Proportion	Cumulative
1	**5.52081683**	**4.43051022**	**0.7887**	**0.7887**
2	**1.09030662**	**0.88220466**	**0.1558**	**0.9444**
3	0.20810195	0.04829477	0.0297	0.9742
4	0.15980718	0.14522096	0.0228	0.9970
5	0.01458622	0.01059081	0.0021	0.9991
6	0.00399541	0.00160961	0.0006	0.9997
7	0.00238580		0.0003	1.0000

Factor Pattern

	Factor1	Factor2
Gambling problems	**0.36697**	**0.90919**
Drinking problems	**0.86953**	0.35061
Drug problems	**0.91192**	0.05961
Physical abuse of children	**0.96970**	- 0.21128
Violence towards women	**0.98777**	- 0.09085
Elder abuse	**0.96805**	- 0.19998
Neglect of children	**0.97229**	- 0.21050

Cronbach Coefficient Alpha (factor 1 only)

Variables	Alpha
Raw	0.948971
Standardized	**0.945538**

A more focused analysis of household social problems looked only at substance and addiction problems in the household (gambling, drinking, and drug use). The analysis

found only one factor that was important in reducing the number of substance and addiction problem variables (eigenvalues greater than 1.0) into one composite measure. Together, factor one accounted for 72.4 percent of the variation. The gambling, drinking, and drug use indicators loaded highly (positive) into the first factor, and a reliability analysis demonstrated sufficient correlation. A cronbach coefficient alpha of 0.80 was sufficiently high enough (greater than 0.70) to create a reliable composite measure that reflected household substance and addiction problems.

Table 9: Community perceived household addiction problems factor analysis - Eigenvalues of the correlation matrix, factor pattern, and cronbach coefficient alpha

Factor	Eigenvalue	Difference	Proportion	Cumulative
1	**2.17474936**	**1.51088716**	**0.7249**	**0.7249**
2	0.66386219	0.50247374	0.2213	0.9462
3	0.16138845		0.0538	1.0000

Factor Pattern

	Factor1	Factor2
Gambling problems	**0.72982**	**0.67563**
Drinking problems	**0.94559**	- 0.11956
Drug problems	**0.86485**	- 0.43942

Cronbach Coefficient Alpha (factor 1 only)

Variables	Alpha
Raw	0.808946
Standardized	**0.804324**

A factor analysis on measures reflecting household violence problems (physical abuse of children, violence towards women, abuse of elders, and neglect of children) found only one factor that was important in reducing the number of indicators (eigenvalues greater than 1.0) into one composite measure. Together, factor one accounted for 99.1 percent of the variation. These variables loaded highly (positive) into the first factor and a

reliability analysis demonstrated sufficient correlation to be included in a scale (Cronbach coefficient alpha = 0.99) that reflected household violence problems.

Table 10: Community perceived household violence problems factor analysis - Eigenvalues of the correlation matrix, factor pattern, and cronbach coefficient alpha

Factor	Eigenvalue	Difference	Proportion	Cumulative
1	**3.96450438**	**3.94101182**	**0.9911**	**0.9911**
2	0.02349257	0.01608983	0.0059	0.9970
3	0.00740274	0.00280244	0.0019	0.9988
4	0.00460030		0.0012	1.0000

Factor Pattern

	Factor1	Factor2
Physical abuse of children	**0.99813**	-0.01229
Violence towards women	**0.99172**	0.12667
Elder abuse	**0.99714**	-0.03668
Neglect of children	**0.99520**	-0.07715

Cronbach Coefficient Alpha (factor 1 only)

Variables	Alpha
Raw	0.996468
Standardized	**0.997014**

A factor analysis on perceived community level problems like housing availability, food costs, education opportunities and unemployment problems yielded the following measure. The analysis found a unique clustering around infrastructure services. A factor analysis was conducted on these variables and the results indicated that infrastructure problem variables clustered together into an independent factor and made a reliable scale.

Table 11: Community perceived infrastructure disparity factor analysis - Eigenvalues of the correlation matrix, factor pattern, and cronbach Coefficient Alpha

Factor	Eigenvalue	Difference	Proportion	Cumulative
1	**2.87284424**	**1.02377497**	**0.4104**	**0.4104**
2	**1.84906927**	**1.02003119**	**0.2642**	**0.6746**
3	0.82903809	0.05889348	0.1184	0.7930
4	0.77014461	0.41187528	0.1100	0.9030
5	0.35826933	0.12480217	0.0512	0.9542
6	0.23346715	0.14629985	0.0334	0.9875
7	0.08716731		0.0125	1.0000

Factor Pattern

	Factor1	Factor2	Factor3
Unemployment	0.30405	-0.55744	**0.65094**
Housing availability	**0.62793**	-0.10973	-0.42003
Drinking water availability	**0.89545**	0.19795	0.22448
Cost of food	-0.17894	**0.85910**	0.21687
Road conditions	**0.86391**	0.08230	-0.29922
Education opportunities	-0.13164	**0.81391**	0.06901
Sewage disposal	**0.88802**	0.28255	0.19280

Cronbach Coefficient Alpha (factor 1 only)

Variables	Alpha
Raw	0.677312
Standardized	**0.605329**

Table 12: Perceived Community Infrastructure Disparity Factor Analysis - Eigenvalues of the Correlation Matrix, Factor Pattern, and Cronbach Coefficient Alpha

Factor	Eigenvalue	Difference	Proportion	Cumulative
1	**2.53709601**	**2.16739223**	**0.8457**	**0.8457**
2	0.36970378	0.27650358	0.1232	0.9689
3	0.09320020		0.0311	1.0000

Factor Pattern

	Factor1	Factor2	Factor3
Drinking Water	**0.94154**	-0.26589	0.20691
Road Conditions	**0.85989**	0.51003	0.02148
Sewage Disposal	**0.95456**	-0.19718	-0.22344

Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.903599
Standardized	**0.907717**

A factor analysis was conducted on the dietary change variables in order to determine if a scale could represent dietary changes at the community level. All variables clustered together into an independent factor and made a reliable scale representing positive dietary practices.

Table 13: Community dietary change environment factor analysis - Eigenvalues of the correlation matrix, factor pattern, and cronbach coefficient alpha

Factor	Eigenvalue	Difference	Proportion	Cumulative
1	**6.92049699**	**6.33031412**	**0.8651**	**0.8651**
2	0.59018287	0.40571863	0.0738	0.9388
3	0.18446425	0.05330177	0.0231	0.9619
4	0.13116248	0.04931990	0.0164	0.9783
5	0.08184258	0.03360306	0.0102	0.9885
6	0.04823952	0.01776654	0.0060	0.9945
7	0.03047298	0.01733465	0.0038	0.9984
8	0.01313833		0.0016	1.0000

Factor Pattern

	Factor1	Factor2
Eat less meat	**0.70943**	0.69444
Eat less salt	**0.94567**	0.08335
Eat less fat	**0.93491**	-0.22112
Eat less sugar	**0.97023**	0.01845
Eat less candy or pop	**0.95720**	-0.13620
Eat more fruit	**0.96334**	- 0.01753
Eat more vegetables	**0.97114**	-0.08319
Eat less junk	**0.95924**	-0.16117

Cronbach Coefficient Alpha (factor 1 only)

Variables	Alpha
Raw	0.970317
Standardized	**0.976496**

Assessment of a gendered environment

Of particular interest was the gendering of the environment. For communities participating in the Manitoba First Nations Regional Longitudinal Health Survey, community level census data demonstrated, as illustrated below, a gendered First Nations community environment. At the community level, women and men's knowledge of aboriginal language or socioeconomic status was strongly correlated. In some communities, men's knowledge or socioeconomic status exceeded that of other men (high), while in others it remained similar. In some communities, women's knowledge or socioeconomic status exceeded that of other women, while in others it remained the same. In some communities, men tended to achieve higher socioeconomic status on some measures, while in other communities, women exceeded men. Given such heterogeneity across measures, it was decided to retain each variable as an indicator unique to each gender.

Figure 1: Plot of the community level percentage of male lone parent families to female lone parent families (where A = 1 Community and B = 2 Communities)

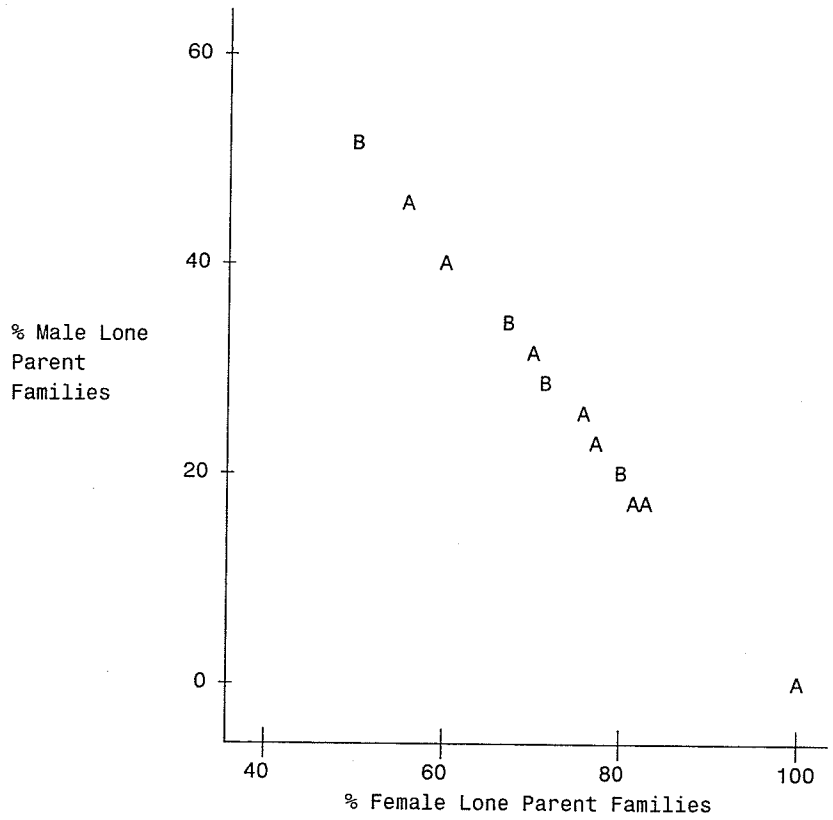


Figure 2: Plot of the community level percentage of men versus women's knowledge of Aboriginal languages reported (where A = 1 Community)

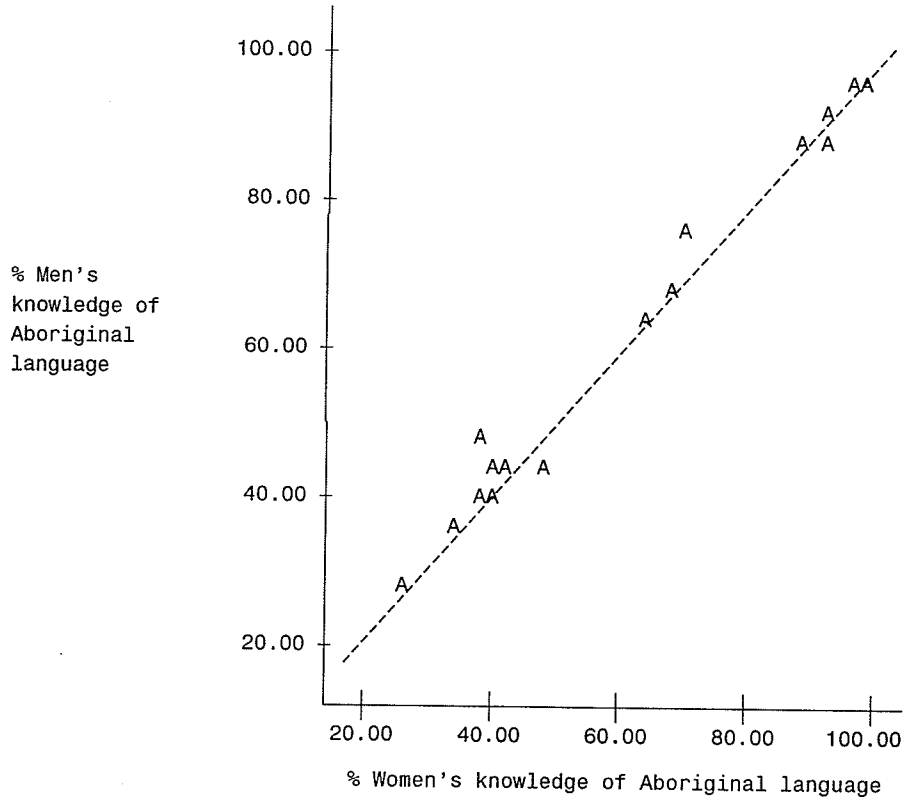


Figure 3: Plot of community level percentage of men versus women's home use of Aboriginal languages reported (where A = 1 Community)

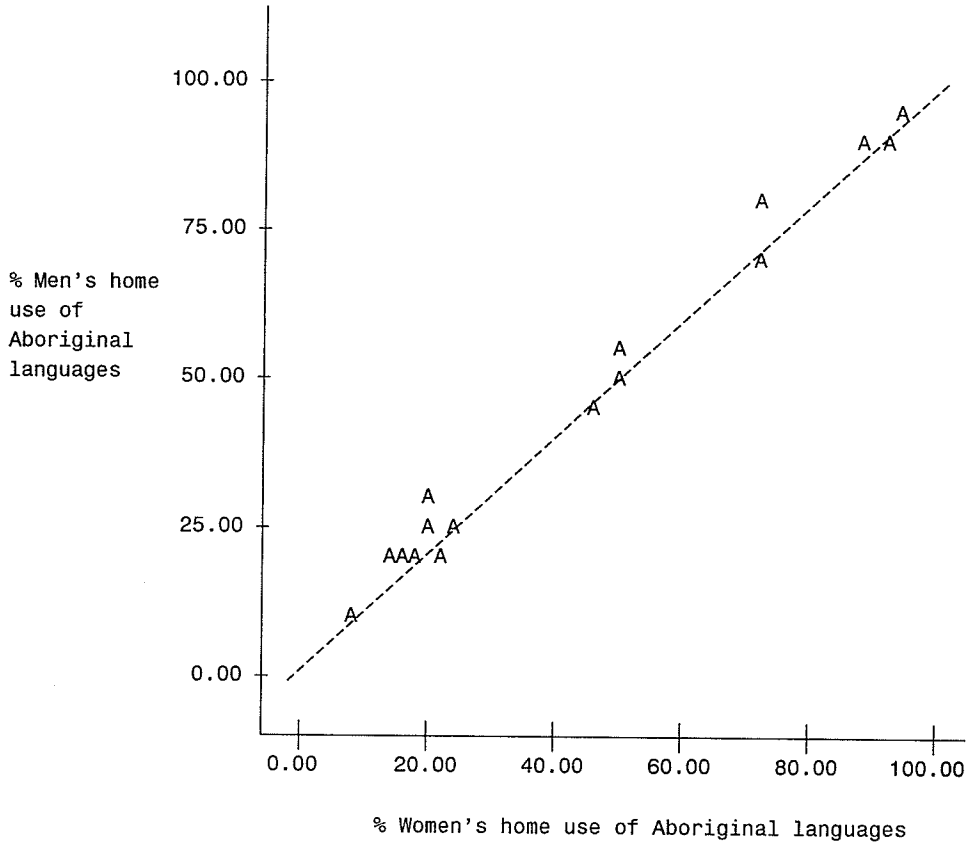


Figure 4: Plot of community level percentage of men's low level of education by women's low levels of education (where A = 1 Community and B = 2 Communities)

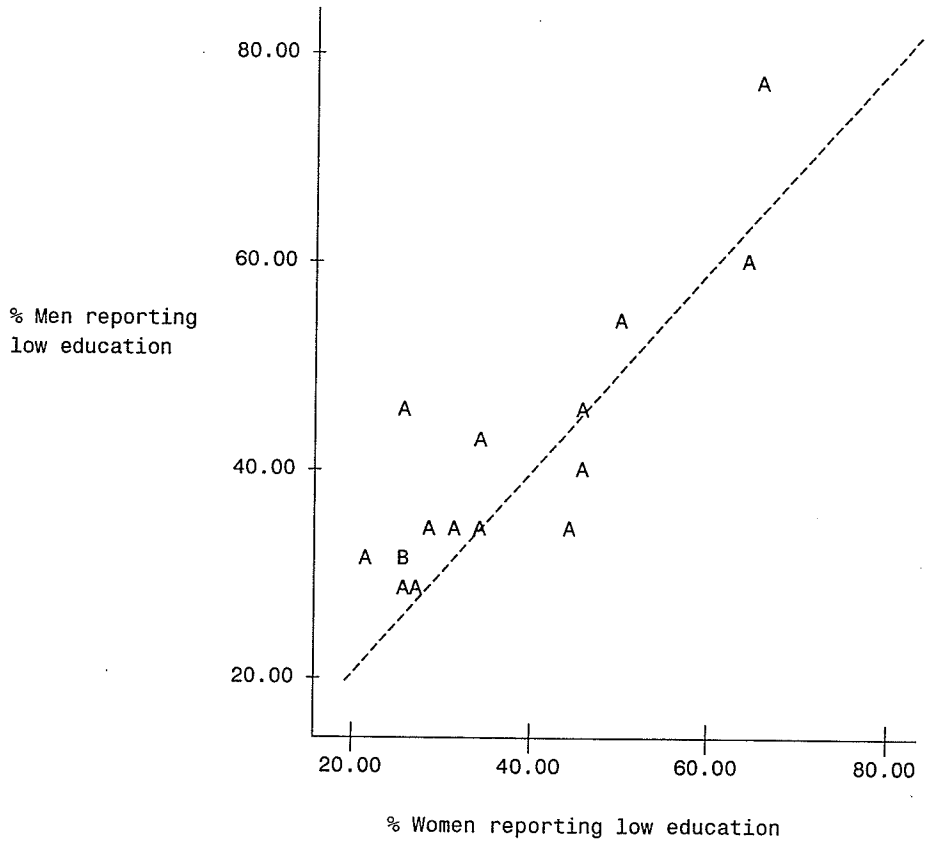


Figure 5: Plot of community level percentage of men's completion of high school by women's completion of high school (where A = 1 Community)

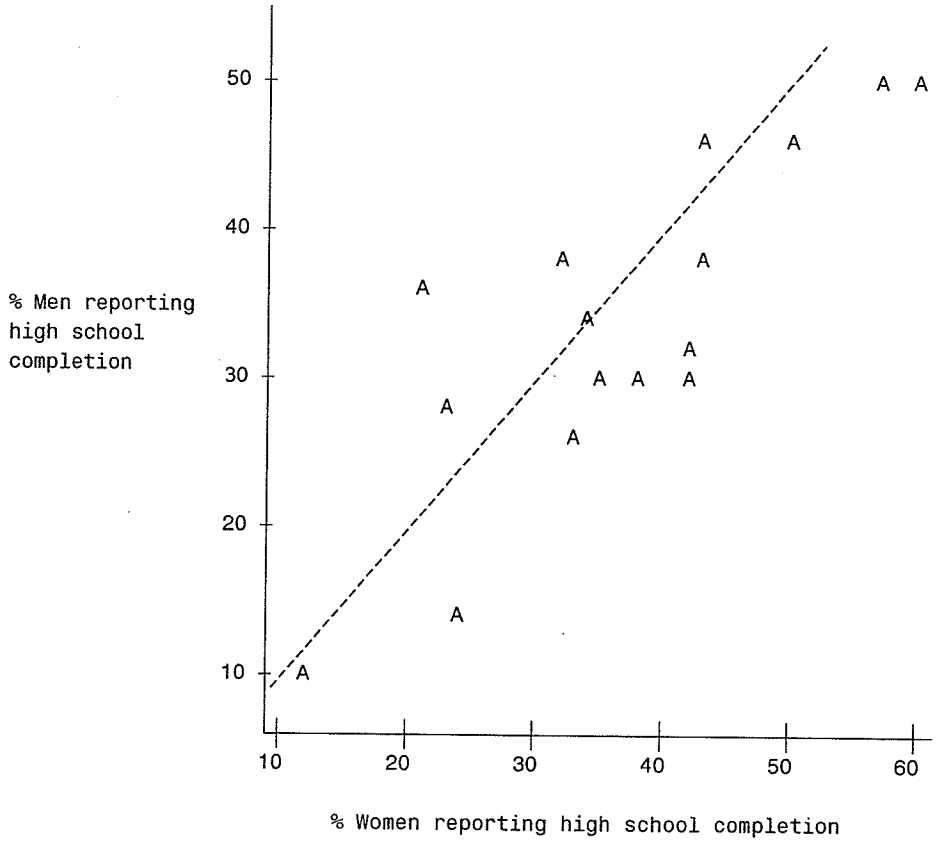


Figure 6: Plot of community level percentage of men's exposure to post secondary education by women's exposure post secondary education (where A = 1 Community and B = 2 Communities)

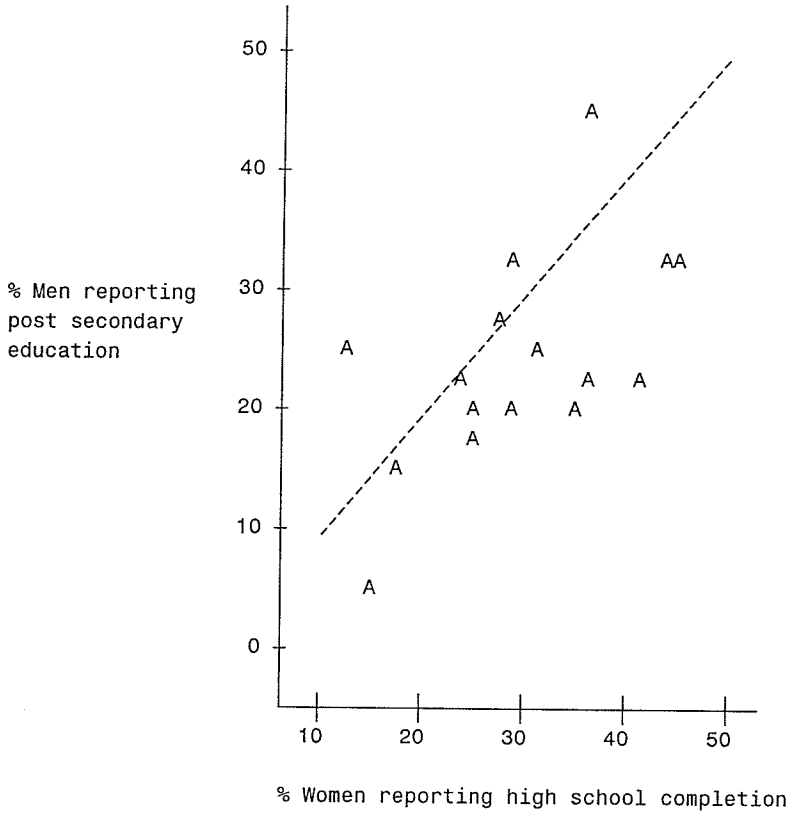


Figure 7: Plot of community level distribution of men's income by women's income (where A = 1 Community)

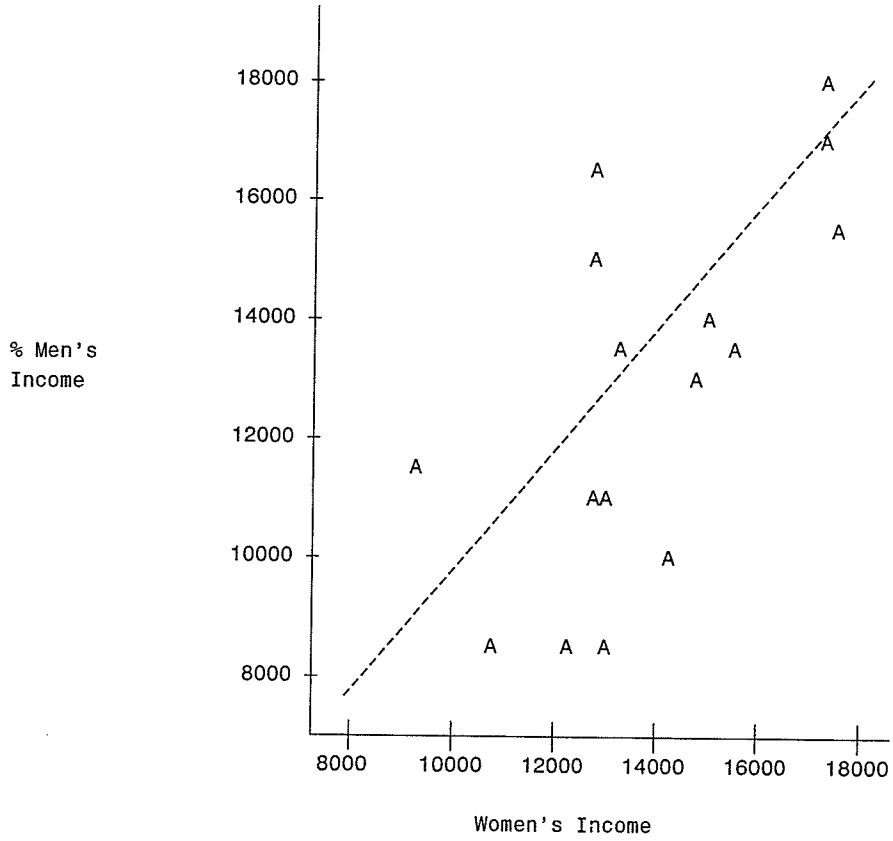


Figure 8: Plot of community level distribution of women lone parent income by women's income (where A = 1 Community)

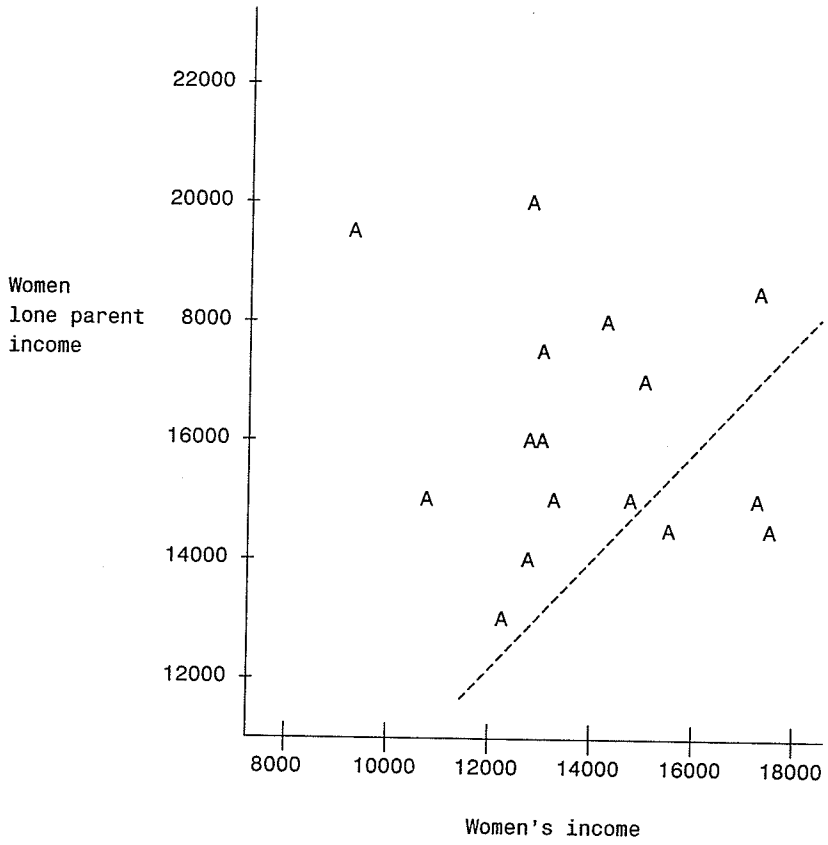


Figure 9: Plot of community level percentage of men's unemployment rate and women's unemployment rate (where A = 1 Community)

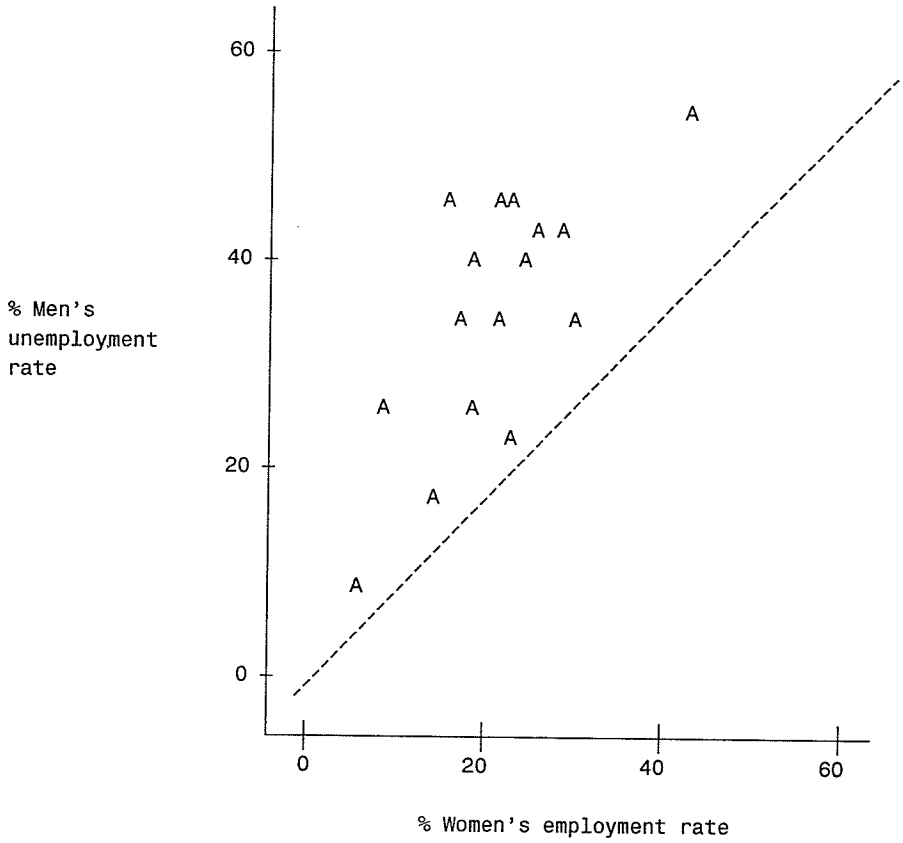


Figure 10: Plot of community level percentage of men's employment participation by women's employment participation (where A = 1 Community and B = 2 Communities)

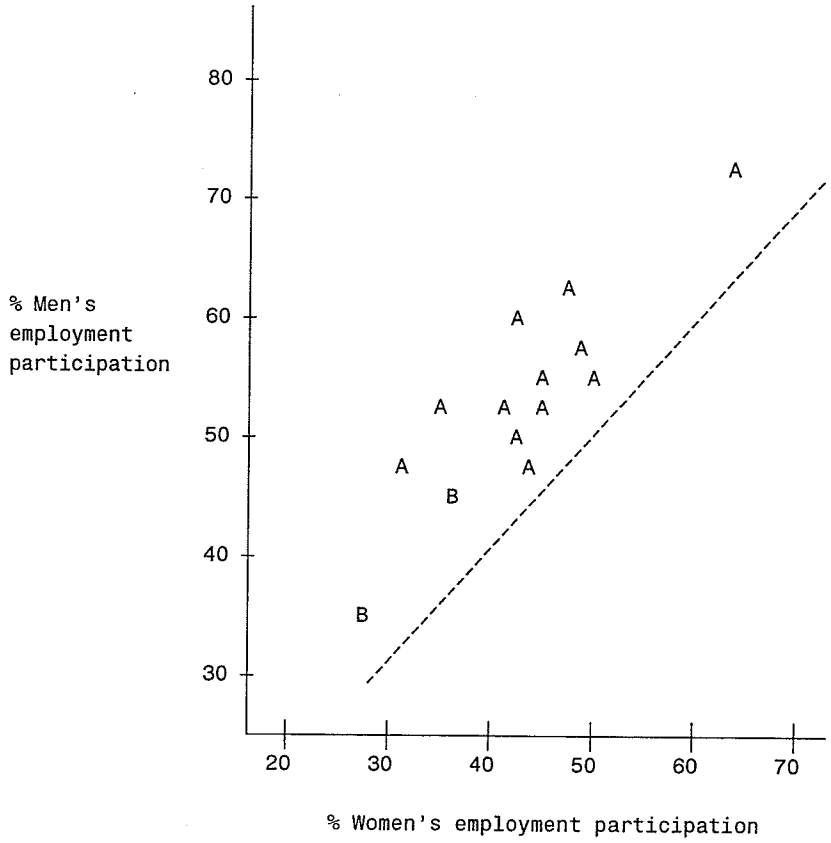


Figure 11: Plot of community level percentage of men's labor force participation by women's labor force participation (where A = 1 Community and B = 2 Communities)

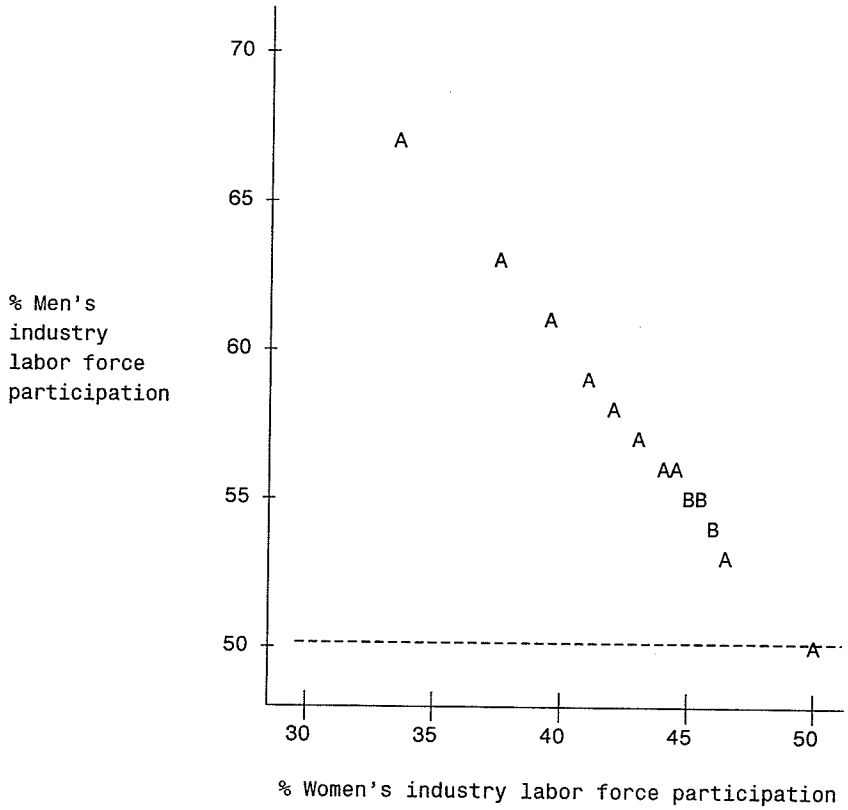


Figure 12: Plot of community level percentage of men's primary industry labor force participation by women's primary force labor force participation (where A = 1 Community, B = 2 Communities, and C = 3 Communities)

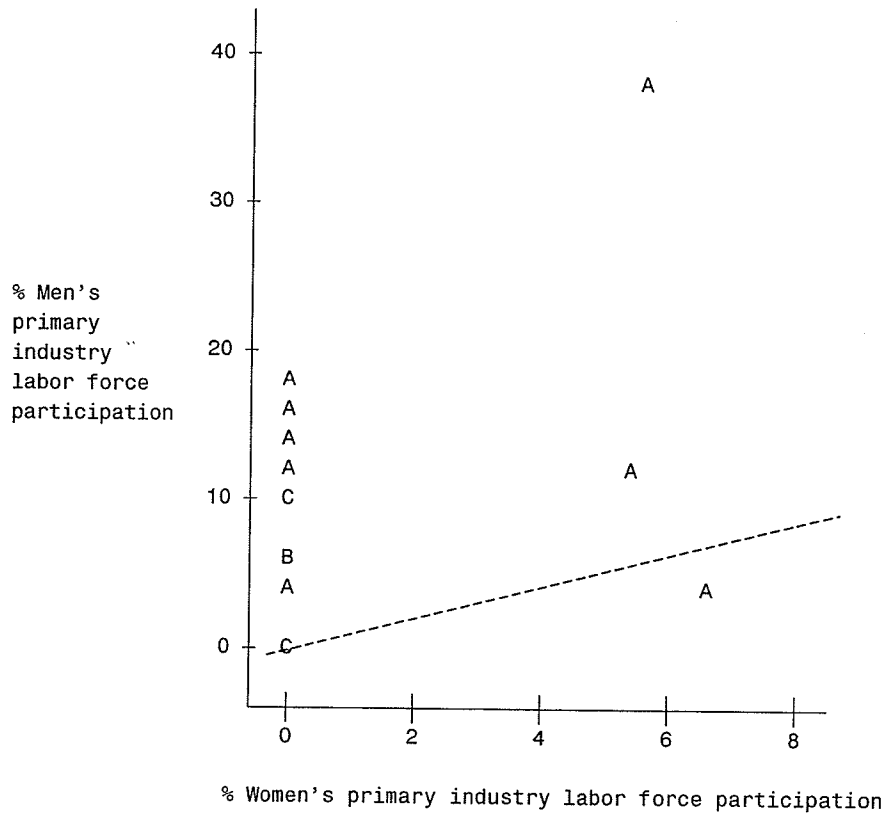


Figure 13: **Plot of community level percentage of men's secondary industry labor force participation by women's secondary industry labor force participation (where A = 1 Community, B = 2 Communities, and C = 3 Communities)**

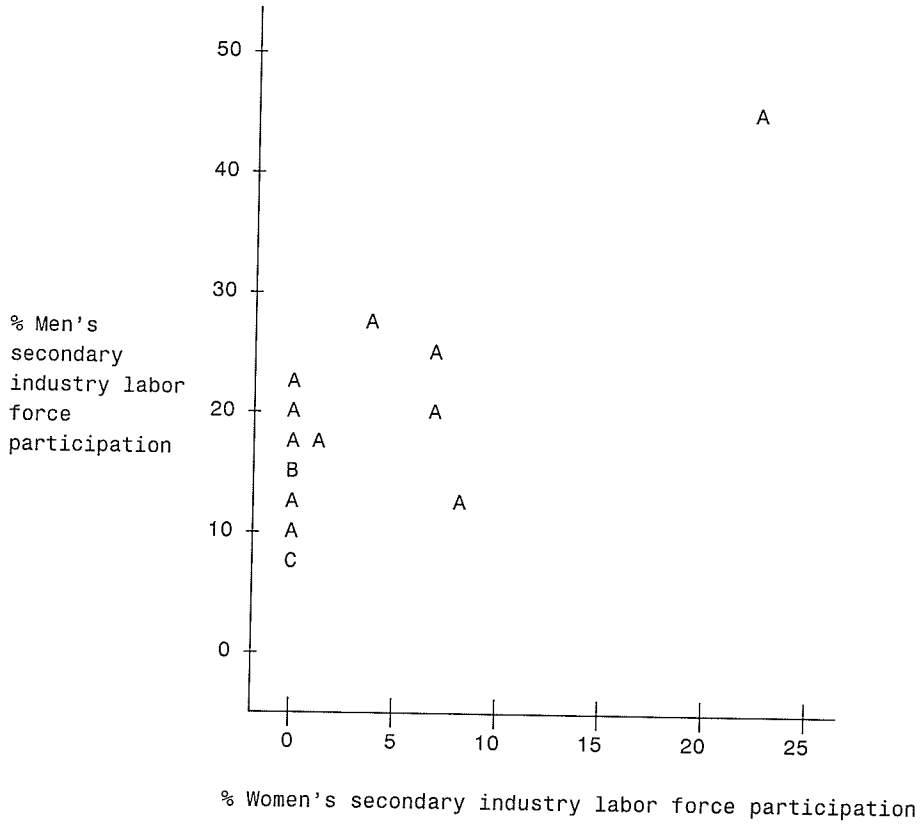


Figure 14: Plot of community level percentage of men's tertiary industry labor force participation by women's tertiary industry labor force participation (where A = 1 Community and B = 2 Communities)

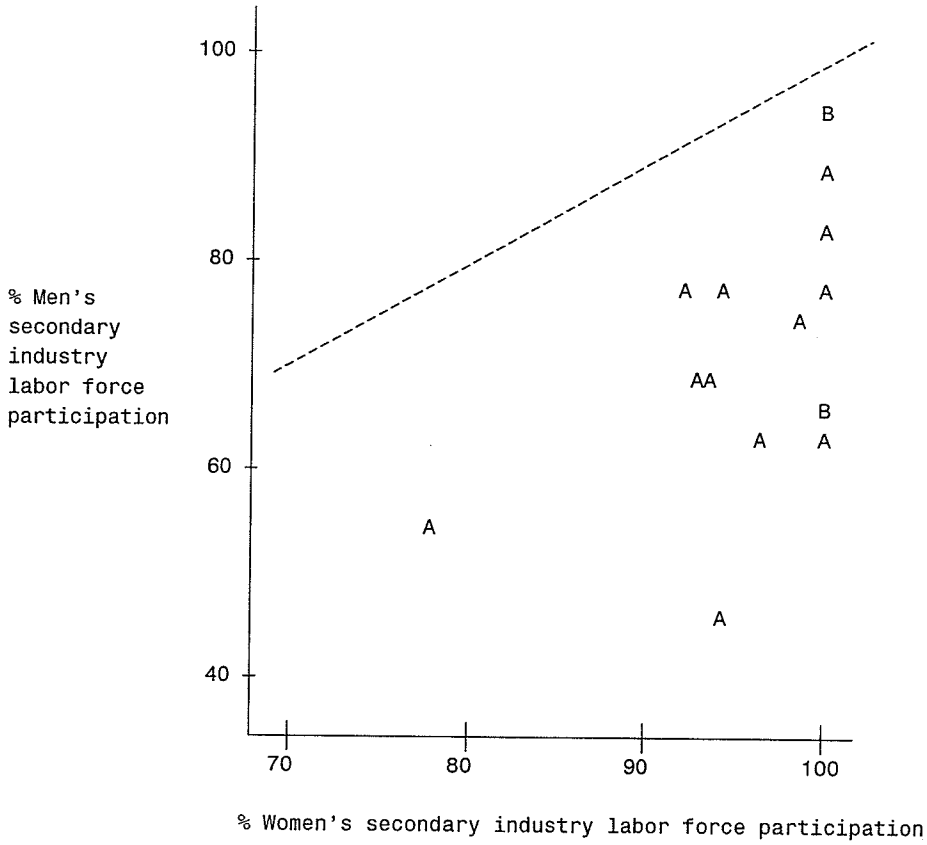


Table 14: Data sources for community level covariates

Covariates	Data Sources
Geopolitical environment	
Geographic location of First Nation Community (north versus south)	Health Canada
Community isolation	Health Canada
Treaty signatory status (19th versus 20th Century)	DIAND
Land claim	DIAND
Population environment	
Population change 1991-1996	Statistics Canada
Lone parent families	Statistics Canada
Female headed lone parent families	Statistics Canada
Male headed lone parent families	Statistics Canada
Age dependency (elders & children)	Statistics Canada
Cultural environment	
Individual use of Aboriginal language	Statistics Canada
Home use of Aboriginal language	Statistics Canada
Ceremonial and healing practices	MFNRLHS
Discrimination environment	
Attended residential school	MFNRLHS
In-community health service discrimination	MFNRLHS
Out-community health service discrimination	MFNRLHS
Housing & infrastructure environment	
Community infrastructure service disparity	Statistics Canada
Inadequate household plumbing facilities	Statistics Canada
Inadequate housing	Statistics Canada
Household crowding	Statistics Canada
Stock of older housing	Statistics Canada
Availability of alternative housing	Statistics Canada
New housing development	Statistics Canada
Socioeconomic environment	
Completed elementary education only	Statistics Canada
Completed secondary education	Statistics Canada
Women incomplete formal education	Statistics Canada
Men incomplete formal education	Statistics Canada
Women completed high school	Statistics Canada
Men completed high school	Statistics Canada
Women advanced education	Statistics Canada
Men advanced education	Statistics Canada
Individual income	Statistics Canada
Women individual income	Statistics Canada
Men individual income	Statistics Canada
Family income	Statistics Canada

Covariates	Data Sources
Female lone parent income	Statistics Canada
Income derived from social assistance	Statistics Canada
Income derived from employment	Statistics Canada
Employment participation	Statistics Canada
Men employment participation	Statistics Canada
Women employment participation	Statistics Canada
Unemployment rate	Statistics Canada
Women unemployment	Statistics Canada
Men unemployment	Statistics Canada
Primary industry participation	Statistics Canada
Secondary industry participation	Statistics Canada
Tertiary industry participation	Statistics Canada
Community economic disparity	DIAND
Perceived socioeconomic & infrastructure environment	
Infrastructure Disparity	MFNRLHS
Education Opportunities	MFNRLHS
Unemployment Disparity	MFNRLHS
Food Security Problems	MFNRLHS
Social problem environment	
Addiction problems	MFNRLHS
Violence problems	MFNRLHS
Social support environment	
Personal trust environment	MFNRLHS
Personal caring environment	MFNRLHS
Risk behavior environment	
Smoking	MFNRLHS
Quit smoking	MFNRLHS
Never smoked	MFNRLHS
Drinking problem history	MFNRLHS
Drinking problems	MFNRLHS
Stopped drinking	MFNRLHS
No positive dietary changes	MFNRLHS
Some positive dietary changes	MFNRLHS
Major positive dietary changes	MFNRLHS
Normal body weight	MFNRLHS
Overweight	MFNRLHS
Obesity	MFNRLHS
Health status environment	
Diabetes	MFNRLHS
Hypertension	MFNRLHS
Self-rated poor health status	MFNRLHS
Suicide thoughts	MFNRLHS

Covariates	Data Sources
Health service environment	
Type of community health center	Health Canada
Health transfer status	Health Canada
Need of physician services	Manitoba Health
Physician supply deficiency	Manitoba Health
Routine physical examination	MFNRLHS
Annual blood pressure check-up	MFNRLHS
Pap test in the last 2 years	MFNRLHS
Nurse availability (perceived)	MFNRLHS
Medical transportation availability (perceived)	MFNRLHS

APPENDIX 2 - SAMPLE DESCRIPTION

Sample breakdown by outcome measures

The following tables summarize the sample breakdown for each outcome measure by the follow domains: demographics, family roles, household composition, discrimination, cultural practices, social-economic, social support, and household and community social issues. Explanatory variables are listed within each domain, and identified, for each variable, is a dummy variable (underscored) that denotes the base category or the 'stereotypical' respondent. Each table reports for the explanatory variable by outcome its frequency, percent of group total, and level of significance.

Health risk factors

Table 1: Sample breakdown by health risk factors

Individual level variable	Smoking	Drinking problem	Over-weight	Obesity
Reference Category	(n=1694) No. (%)	(n=1717) No. (%)	(n=1004) No. (%)	(n=1521) No. (%)
Prevalence	1101 (63.0)	460 (26.0)	559 (56.3)	517 (30.0)
Demographics				
Age	P<0.001	P<0.001	P<0.001	P<0.001
18 – 24 years	329 (78.6)	132 (31.5)	115 (38.2)	57 (15.9)
25 – 44 years	592 (67.8)	263 (29.8)	308 (60.7)	293 (36.6)
45 – 64 years	151 (50.6)	49 (15.9)	105 (73.9)	144 (50.3)
65 and older	29 (28.2)	16 (15.0)	31 (57.4)	24 (30.8)
Sex	Not Sig.	P<0.001	Not Sig.	P<0.05
Male	589 (67.0)	283 (31.8)	317 (56.3)	259 (31.5)
Female	512 (62.8)	177 (21.4)	242 (54.9)	258 (36.9)
Family roles				
Marital status	P<0.001	P<0.001	P<0.001	P<0.001
Single	375 (74.2)	171 (33.6)	141 (42.7)	109 (24.8)
Past partner	79 (51.8)	52 (33.2)	67 (77.9)	48 (36.7)
Partner	641 (62.7)	233 (22.5)	348 (59.8)	358 (38.1)

Individual level variable Reference Category	Smoking (n=1694) No. (%)	Drinking problem (n=1717) No. (%)	Over-weight (n=1004) No. (%)	Obesity (n=1521) No. (%)
No parenting history	P<0.05	P<0.05	P<0.001	P<0.05
History	850 (63.8)	349 (25.7)	481 (61.5)	431 (35.5)
No History	194 (71.3)	89 (32.5)	61 (34.3)	66 (27.0)
Biological children parenting history	Not Sig.	Not Sig.	P<0.001	Not Sig.
No	271 (65.5)	124 (29.4)	111 (42.4)	121 (31.7)
Yes	773 (65.0)	314 (26.0)	431 (61.7)	377 (35.0)
Extended family parenting history	P<0.001	P<0.01	P<0.01	P<0.001
No	843 (67.5)	361 (28.4)	419 (54.3)	354 (31.4)
Yes	201 (56.5)	78 (21.6)	122 (64.9)	143 (43.1)
Lifetime of care giving	P<0.01	P<0.05	P<0.001	P<0.001
None	194 (71.4)	89 (32.6)	61 (34.3)	66 (27.0)
One to three children	493 (66.8)	207 (25.6)	259 (57.8)	203 (31.1)
Four or more children	356 (60.1)	142 (23.5)	222 (66.3)	229 (40.7)
Primary caregiver (current)	Not Sig.	Not Sig.	Not Sig.	Not Sig.
No	685 (64.5)	304 (28.3)	361 (56.1)	326 (33.7)
Yes	416 (65.9)	156 (24.3)	198 (54.8)	191 (34.6)
Single parent (current)	P<0.01	Not Sig.	Not Sig.	P<0.05
No	786 (48.3)	344 (27.2)	413 (56.9)	408 (36.0)
Yes	274 (71.7)	101 (26.2)	124 (52.1)	99 (29.4)
Household composition				
Currently living alone	P<0.01	P<0.001	Not Sig.	P<0.05
No	1033 (66)	413 (26.0)	515 (55.8)	487 (34.5)
Yes	50 (52.1)	37.4 (39.0)	40 (61.5)	21 (24.1)
Number of children	P<0.05	P<0.01	Not Sig.	Not Sig.
None	262 (60.7)	141 (32.0)	136 (52.5)	110 (29.9)
One to three	605 (65.3)	226 (23.9)	296 (54.9)	303 (36.0)
Four or more	235 (69.7)	93 (28.0)	127 (61.7)	104 (33.5)

Individual level variable	Smoking	Drinking problem	Over-weight	Obesity
Reference Category	**(n=1694) No. (%)**	**(n=1717) No. (%)**	**(n=1004) No. (%)**	**(n=1521) No. (%)**
Number of adults	P<0.05	Not Sig.	Not Sig.	Not Sig.
One	165 (58.5)	79 (27.7)	92 (51.7)	71 (28.4)
Two	489 (65.3)	193 (25.2)	262 (58.6)	244 (35.4)
Three or more	447 (67.5)	188 (28.3)	205 (54.1)	203 (34.8)
Total household	Not Sig.	Not Sig.	Not Sig.	Not Sig.
One to three	328 (62.2)	150 (27.5)	183 (38.0)	164 (31.5)
Four to five	410 (65.1)	152 (23.9)	187 (34.6)	180 (34.6)
Six or more	363 (67.6)	158 (29.4)	189 (38.0)	173 (33.2)
Discrimination				
Attend residential school	P<0.001	P<0.001	Not Sig.	P<0.001
No	941 (66.7)	406 (28.5)	445 (52.8)	406 (32.5)
Yes	130 (54.0)	46 (18.1)	95 (73.6)	102 (44.2)
In-community health service discrimination	Not Sig.	P<0.001	Not Sig.	Not Sig.
No	891 (64.7)	347 (24.8)	446 (55.5)	427 (34.7)
Yes	200 (67.8)	106 (36.0)	107 (57.2)	87 (31.8)
Out-community health service discrimination	Not Sig.	Not Sig.	Not Sig.	Not Sig.
No	796 (63.9)	328 (25.9)	418 (56.2)	364 (32.8)
Yes	293 (68.6)	123 (28.9)	137 (55.5)	147 (37.3)
Cultural Practices				
Language	P<0.001	Not Sig.	P<0.001	Not Sig.
Aboriginal only	412 (56.6)	202 (27.0)	263 (60.6)	233 (35.0)
Aboriginal & English	76 (59.9)	26 (20.1)	53 (76.8)	50 (41.7)
English only	609 (73.1)	228 (27.5)	241 (48.5)	233 (32.0)
Consume wild meat	P<0.001	Not Sig.	Not Sig.	P<0.01
No	786 (67.5)	317 (26.8)	410 (56.4)	340 (31.9)
Yes	308 (59.0)	141 (26.6)	147 (53.6)	178 (39.4)

Individual level variable	Smoking	Drinking problem	Over-weight	Obesity
Reference Category	**(n=1694) No. (%)**	**(n=1717) No. (%)**	**(n=1004) No. (%)**	**(n=1521) No. (%)**
Ceremonial and healing practices	P<0.001	Not Sig.	Not Sig.	P<0.01
Low	440 (56.6)	200 (25.9)	253 (55.7)	220 (32.7)
Typical	392 (68.3)	169 (29.0)	185 (53.0)	164 (32.0)
High	270 (77.6)	89 (25.5)	111 (59.4)	133 (41.4)
Social-economic				
Education	P<0.001	Not Sig.	Not Sig.	Not Sig.
Elementary or less	107 (42.8)	61 (23.3)	79 (54.1)	78 (34.6)
Some junior high school	728 (69.0)	295 (27.7)	350 (57.8)	327 (35.1)
High school or more	257 (69.6)	102 (27.5)	123 (50.4)	106 (30.2)
Worked in the past year	Not Sig.	Not Sig.	Not Sig.	P<0.05
No	503 (63.4)	202 (25.0)	239 (51.0)	209 (30.9)
Yes	584 (66.5)	255 (28.4)	314 (59.7)	304 (36.6)
Currently employed	P<0.01	Not Sig.	P<0.01	P<0.001
No	608 (61.6)	270 (26.7)	310 (52.0)	258 (30.2)
Yes	459 (68.9)	184 (27.0)	238 (61.7)	256 (39.9)
Primary source of income	Not Sig.	P<0.05	P<0.001	P<0.001
Social assistance	584 (53.0)	261 (29.0)	276 (49.3)	217 (27.9)
Wages	374 (34.0)	152 (26.3)	183 (62.0)	235 (44.3)
Other sources	143 (13.0)	47 (19.7)	100 (67.1)	65 (30.4)
Household income	Not Sig.	P<0.001	Not Sig.	P<0.001
Not stated	310 (65.0)	205 (32.7)	199 (52.1)	191 (33.3)
< $10,000	411 (67.1)	90 (24.1)	134 (59.3)	122 (35.0)
$10 – 24,999	236 (65.0)	56 (22.6)	87 (66.4)	106 (44.7)
$25,000 or more	143 (59.4)	109 (23.2)	139 (52.7)	99 (27.2)
Worse off than other households	Not Sig.	Not Sig.	Not Sig.	Not Sig.
No	437 (66.0)	183 (27.0)	215 (54.6)	201 (33.8)
Yes	656 (64.3)	277 (26.8)	342 (56.3)	315 (34.1)

Individual level variable	Smoking	Drinking problem	Over-weight	Obesity
Reference Category	**(n=1694) No. (%)**	**(n=1717) No. (%)**	**(n=1004) No. (%)**	**(n=1521) No. (%)**
Household run out of money for food	P<0.01	P<0.001	Not Sig.	Not Sig.
No	606 (61.9)	215 (21.6)	324 (56.1)	288 (33.2)
Yes	488 (69.1)	244 (34.0)	232 (55.0)	229 (35.3)
Social support				
Someone to confide in	Not Sig.	P<0.05	Not Sig.	Not Sig.
No	312 (65.2)	150 (30.3)	169 (58.3)	141 (32.8)
Yes	776 (65.0)	307 (25.4)	386 (54.6)	371 (34.4)
Someone that loves you	Not Sig.	Not Sig.	Not Sig.	Not Sig.
No	105 (70.0)	46 (29.1)	43 (53.1)	47 (36.6)
Yes	983 (64.7)	412 (26.6)	510 (55.8)	464 (33.7)
Social Issues				
Household addiction problems	P<0.001	P<0.001	Not Sig.	Not Sig.
No	336 (55.2)	61 (9.7)	200 (54.2)	168 (31.3)
Yes	750 (70.7)	397 (37.0)	354 (56.3)	341 (35.2)
Household violence problems	Not Sig.	P<0.001	Not Sig.	Not Sig.
No	892 (64.5)	356 (25.3)	447 (54.4)	411 (33.3)
Yes	192 (67.5)	101 (34.7)	105 (61.0)	98.7 (36.5)
Household overcrowding	Not Sig.	P<0.01	P<0.001	Not Sig.
No	708 (63.8)	281 (24.8)	343 (51.7)	323 (32.8)
Yes	374 (67.6)	177 (31.4)	208 (63.0)	184 (35.9)
Perceived community economic and infrastructure disparity	Not Sig.	Not Sig.	P<0.01	Not Sig.
Low	193 (62.7)	80 (26.6)	55 (21.2)	86 (33.2)
Typical	410 (66.0)	172 (27.0)	144 (25.9)	177 (32.5)
High	498 (65.1)	208 (26.7)	212 (31.4)	254 (35.4)

Health status

Table 2: Sample breakdown by health status

Individual level variables Reference Category	Self-rated poor health (n=1686) No. (%)	Suicide thoughts (n=1491) No. (%)	Hyper-tension (n=1667) No. (%)	Diabetes (n=1685) No. (%)
Prevalence	888 (51.0)	411 (27.6)	392 (22.0)	297 (17.0)
Demographics				
Age	P<0.001	P<0.001	P<0.001	P<0.001
18 – 24 years	181 (44.1)	99 (29.1)	39 (9.9)	26 (6.3)
25 – 44 years	418 (48.3)	258 (32.0)	163 (18.9)	106 (12.2)
45 – 64 years	214 (69.6)	49 (18.6)	123 (40.4)	126 (41.2)
65 and older	76 (73.6)	4 (4.9)	68 (62.2)	40 (36.8)
Sex	P<0.001	Not Sig.	P<0.001	P<0.001
Male	416 (47.2)	205 (26.8)	173 (20.1)	117 (13.4)
Female	472 (58.7)	206 (28.3)	220 (27.2)	180 (22.2)
Family roles				
Marital status	Not Sig.	Not Sig.	P<0.001	P<0.001
Single	253 (51.0)	127 (29.5)	81 (17.1)	59 (12.1)
Past partner	93 (60.9)	35 (24.8)	59 (38.3)	45.3 (30.2)
Partner	533 (52.0)	248 (27.0)	246 (23.9)	188 (18.1)
No parenting history	Not Sig.	P < 0.02	P<0.001	P<0.001
History	711 (53.2)	357 (28.8)	332 (24.9)	263 (19.6)
No history	125 (46.8)	53 (21.3)	27 (10.7)	25 (9.6)
Biological children parenting history	P<0.01	Not Sig.	P<0.01	Not Sig.
No	190 (46.3)	92 (24.2)	70 (17.6)	67 (16.4)
Yes	646 (54.1)	319 (28.7)	289 (24.4)	221 (18.5)
Extended family parenting history	Not Sig.	Not Sig.	P<0.001	P<0.001
No	636 (50.9)	317 (27.4)	253 (20.6)	189 (15.2)
Yes	200 (56.3)	93 (28.1)	106 (29.9)	99 (27.9)

Individual level variables Reference Category	Self-rated poor health (n=1686) No. (%)	Suicide thoughts (n=1491) No. (%)	Hyper-tension (n=1667) No. (%)	Diabetes (n=1685) No. (%)
Lifetime of care giving	P<0.001	P<0.02	P<0.001	P<0.001
None	125 (46.9)	53 (21.3)	27 (10.6)	25 (9.6)
One to three children	347 (47.1)	208 (30.7)	144 (19.7)	118 (16.0)
Four or more children	364 (60.6)	150 (26.5)	188 (31.5)	145 (24.2)
Primary caregiver	Not Sig.	P<0.001	P<0.05	Not Sig.
No	544 (51.3)	220 (24.4)	265 (25.2)	193 (18.2)
Yes	344 (55.0)	191 (32.4)	128 (20.6)	103 (16.6)
Single parent	Not Sig.	P<0.05	Not Sig.	Not Sig.
No	643 (51.4)	298 (26.2)	281 (22.8)	203 (16.2)
Yes	208 (55.1)	113 (32.0)	88 (23.6)	76 (20.4)
Household Composition				
Currently living alone	Not Sig.	Not Sig.	Not Sig.	Not Sig.
No	819 (52.4)	392 (28.1)	357 (23.1)	273 (17.5)
Yes	48 (52.4)	19 (21.1)	28 (29.3)	16 (16.5)
Number of children	Not Sig.	P<0.02	P<0.01	P<0.05
None	234 (54.9)	69 (21.4)	120 (29.1)	68 (16.1)
One to three	485 (52.2)	243 (28.4)	213 (22.9)	184 (19.6)
Four or more	169 (51.1)	99 (31.6)	60 (18.3)	45 (13.9)
Number of adults	Not Sig.	Not Sig.	P<0.01	Not Sig.
One	154 (55.9)	56 (24.0)	71 (25.6)	55 (20.1)
Two	382 (50.9)	187 (26.8)	150 (20.0)	123 (16.2)
Three or more	352 (53.4)	169 (30.0)	171 (26.8)	118 (18.1)
Total household	Not Sig.	Not Sig.	Not Sig.	Not Sig.
One to three	297 (56.3)	136 (25.1)	133 (25.4)	104 (19.5)
Four to five	315 (50.6)	177 (27.9)	148 (23.8)	103 (16.6)
Six or more	276 (51.6)	159 (29.5)	111 (21.6)	89 (16.8)
Discrimination				
Attend residential school	P<0.001	Not Sig.	P<0.001	P<0.001
No	679 (49.0)	362 (28.3)	257 (18.8)	197 (14.2)
Yes	182 (70.9)	48 (22.6)	126 (49.7)	92 (36.3)

Individual level variables Reference Category	Self-rated poor health (n=1686) No. (%)	Suicide thoughts (n=1491) No. (%)	Hyper-tension (n=1667) No. (%)	Diabetes (n=1685) No. (%)
In-community health service discrimination	Not Sig.	P<0.001	Not Sig.	Not Sig.
No	733 (53.2)	313 (25.5)	317 (23.3)	236 (17.1)
Yes	147 (50.6)	98 (37.4)	73 (25.3)	58 (20.1)
Out-community health service discrimination	Not Sig.	P<0.001	Not Sig.	Not Sig.
No	655 (53.0)	255 (23.2)	282 (23.0)	215 (17.4)
Yes	224 (52.1)	155 (39.3)	108 (25.6)	79 (18.7)
Cultural practices				
Language	Not Sig.	P<0.001	P<0.001	P<0.01
Aboriginal only	390 (53.2)	114 (17.8)	195 (26.5)	148 (20.1)
Aboriginal & English	72 (56.1)	33 (28.4)	47 (35.8)	38 (29.6)
English only	421 (51.6)	264 (36.0)	151 (18.9)	109 (13.5)
Consume wild meat	Not Sig.	P<0.001	Not Sig.	Not Sig.
No	609 (52.7)	316 (30.0)	270 (23.6)	207 (17.8)
Yes	276 (52.4)	95 (21.7)	122 (23.7)	90 (17.3)
Ceremonial and healing practices	Not Sig.	P<0.001	Not Sig.	Not Sig.
Low	380 (50.5)	146 (21.7)	166 (22.2)	126 (16.8)
Typical	312 (54.7)	137 (27.2)	141 (25.2)	108 (18.9)
High	188 (53.9)	128 (40.6)	84 (24.6)	61 (17.7)
Social-economic				
Education	P<0.001	P<0.001	P<0.001	P<0.001
Elementary or less	156 (60.1)	22 (9.9)	109 (42.3)	70 (26.9)
Some junior high school	553 (53.7)	265 (28.5)	211 (20.6)	178 (17.2)
High school or more	168 (44.4)	124 (36.5)	68 (18.4)	45 (12.1)
Worked in the past year	P<0.001	P<0.001	P<0.01	Not Sig.
No	456 (58.3)	148 (21.1)	210 (26.8)	142 (18.2)
Yes	427 (47.8)	263 (33.3)	175 (20.3)	149 (17.0)
Currently employed	Not Sig.	P<0.001	Not Sig.	Not Sig.
No	523 (53.5)	216 (24.5)	232 (24.1)	184 (18.8)
Yes	349 (51.5)	192 (32.3)	152 (22.6)	108 (16.1)

Individual level variables Reference Category	Self-rated poor health (n=1686) No. (%)	Suicide thoughts (n=1491) No. (%)	Hyper-tension (n=1667) No. (%)	Diabetes (n=1685) No. (%)
Primary source of income	P<0.01	P<0.05	Not Sig.	Not Sig.
Social assistance	485 (55.4)	196 (25.2)	201 (23.3)	139 (16.0)
Wages	306 (52.7)	147 (28.5)	134 (23.7)	116 (20.1)
Other sources	97 (42.4)	67 (34.0)	57 (23.7)	41 (17.4)
Household income	P<0.05	P<0.02	Not Sig.	Not Sig.
Not stated	264 (57.9)	91 (24.4)	101 (22.5)	99 (16.1)
< $10,000	309 (50.2)	148 (26.3)	138 (22.8)	67 (18.2)
$10 – 24,999	197 (53.4)	90 (27.6)	82.6 (22.6)	49 (19.9)
$25,000 or more	118 (48.1)	82 (35.7)	70 (28.6)	82 (17.9)
Worse off than other households	P<0.01	P<0.001	Not Sig.	Not Sig.
No	380 (57.3)	187 (31.6)	140 (21.7)	117 (17.8)
Yes	507 (49.8)	224 (24.9)	248 (24.5)	177 (17.3)
Household runs out of money for food	Not Sig.	P<0.02	Not Sig.	P<0.05
No	508 (52.8)	213 (25.0)	221 (23.2)	185 (19.2)
Yes	378 (52.7)	198 (30.9)	170 (23.9)	108 (15.2)
Social support				
Someone to confide in	Not Sig.	P<0.01	Not Sig.	Not Sig.
No	268 (56.0)	101 (22.9)	122 (25.7)	97 (19.9)
Yes	613 (51.4)	29.5 (310)	262 (22.4)	195 (16.6)
Someone that loves you	Not Sig.	Not Sig.	P<0.05	Not Sig.
No	90 (59.8)	39 (28.9)	24 (16.3)	30 (20.5)
Yes	791 (52.0)	372 (27.4)	360 (24.0)	263 (17.3)
Social Issues				
Household addiction problems	Not Sig.	P<0.001	Not Sig.	P<0.05
No	323 (52.9)	84 (15.8)	141 (23.3)	124 (20.1)
Yes	555 (52.5)	327 (34.1)	244 (23.5)	166 (16.0)
Household violence problems	Not Sig.	Not Sig.	P<0.05	Not Sig.
No	724 (52.7)	329 (26.9)	301 (22.1)	238 (17.3)
Yes	151 (52.0)	82 (30.7)	84 (30.2)	51 (18.3)

Individual level variables Reference Category	Self-rated poor health (n=1686) No. (%)	Suicide thoughts (n=1491) No. (%)	Hyper-tension (n=1667) No. (%)	Diabetes (n=1685) No. (%)
Household overcrowding	Not Sig.	P<0.001	Not Sig.	Not Sig.
No	591 (53.3)	244 (24.7)	244 (22.1)	196 (17.5)
Yes	282 (51.1)	167 (33.1)	141 (26.3)	94 (17.3)
Perceived community economic and infrastructure disparity	P<0.05	P<0.05	Not Sig.	Not Sig.
Low	136 (46.4)	155 (24.1)	73 (24.4)	51 (16.9)
Typical	345 (55.4)	97 (31.1)	151 (24.5)	105 (16.9)
High	407 (52.9)	158 (29.5)	168 (22.4)	141 (18.5)

Preventative health practices

Table 3: Sample breakdown by preventative health practices

Individual level variables Reference Category	Blood pressure check-up (n=1738) No. (%)	Routine physical examination (n=1729) No. (%)
Prevalence	1142 (65.0)	1058 (61.0)
Demographics		
Age	P<0.001	P<0.001
18 – 24 years	220 (52.4)	228 (54.3)
25 – 44 years	560 (62.6)	496 (55.8)
45 – 64 years	270 (85.3)	242 (55.8)
65 and older	93 (85.5)	92 (84.4)
Sex	P<0.001	P<0.001
Male	530 (58.7)	498 (55.4)
Female	613 (73.3)	560 (67.4)
Family roles		
Marital status	P<0.001	P<0.001
Single	293 (57.6)	270 (52.8)
Past partner	123 (77.9)	122 (77.5)
Partner	719 (67.8)	659 (62.9)
No parenting history	P<0.001	P<0.001
History	931 (67.7)	862 (63.0)
No history	148 (53.6)	143 (52.0)
Biological children parenting history	P<0.05	Not Sig.
No	259 (60.7)	249 (58.6)
Yes	821 (67.0)	757 (62.1)
Extended family parenting history	P<0.001	P<0.01
No	804 (62.6)	757 (59.2)
Yes	275 (74.9)	248 (67.9)
Lifetime of care giving	P<0.001	P<0.001
None	148 (53.6)	143 (52.0)
One to three children	475 (62.9)	433 (57.7)
Four or more children	456 (73.6)	429 (69.5)

Individual level variables Reference Category	Blood pressure check-up (n=1738) No. (%)	Routine physical examination (n=1729) No. (%)
Primary Caregiver (current)	P<0.01	Not Sig.
No	693 (63.3)	652 (59.9)
Yes	449 (69.8)	406 (63.3)
Single Parent (current)	Not Sig.	Not Sig.
No	853 (66.3)	792 (62.0)
Yes	248 (64.2)	233 (60.1)
Household composition		
Currently living alone	Not Sig.	Not Sig.
No	1052 (65.4)	977 (61.0)
Yes	69 (71.4)	64 (66.4)
Number of children	Not Sig.	Not Sig.
None	286 (65.1)	273 (62.5)
One to three	626 (65.3)	575 (60.3)
Four or more	230 (67.6)	209 (62.0)
Number of adults	Not Sig.	Not Sig.
One	191 (66.6)	181 (63.6)
Two	497 (63.9)	457 (59.2)
Three or more	454 (67.4)	420 (62.4)
Total household	Not Sig.	Not Sig.
One to three	341 (62.6)	352 (62.4)
Four to five	368 (57.8)	411 (64.8)
Six or more	349 (63.7)	379 (68.5)
Discrimination		
Attended residential school	P<0.001	P<0.001
No	893 (62.7)	823 (57.8)
Yes	223 (85.6)	210 (81.1)
In-community health service discrimination	P<0.05	P<0.001
No	920 (64.7)	840 (59.4)
Yes	214 (71.7)	206 (69.6)

Individual level variables Reference Category	Blood pressure check-up (n=1738) No. (%)	Routine physical examination (n=1729) No. (%)
Out-community health service discrimination	Not Sig.	P<0.01
No	830 (64.8)	754 (59.2)
Yes	301 (68.7)	290 (66.9)
Cultural Practices		
Language	P<0.05	Not Sig.
Aboriginal only	514 (67.6)	485 (64.0)
Aboriginal & English	95 (72.0)	82 (62.3)
English Only	526 (63.0)	485 (58.3)
Consume wild meat	Not Sig.	Not Sig.
No	800 (66.9)	724 (60.8)
Yes	334 (62.6)	332 (62.2)
Ceremonial and healing practices	Not Sig.	Not Sig.
Low	499 (64.1)	463 (59.7)
Typical	395 (67.5)	357 (60.8)
High	1131 (65.9)	227 (64.7)
Social-economic		
Education	P<0.05	P<0.001
Elementary or less	193 (72.3)	198 (74.4)
Some junior high school	682 (63.5)	635 (59.5)
High school or more	253 (66.9)	216 (57.2)
Worked in the past year	Not Sig.	Not Sig.
No	531 (65.8)	490 (60.6)
Yes	592 (65.6)	556 (61.5)
Currently employed	Not Sig.	Not Sig.
No	658 (65.4)	625 (62.0)
Yes	447 (65.0)	411 (59.7)
Primary source of income	Not Sig.	Not Sig.
Social assistance	580 (64.3)	556 (61.5)
Wages	395 (67.6)	362 (62.1)
Other sources	167 (66.3)	139 (57.7)

Individual level variables Reference Category	Blood pressure check-up (n=1738) No. (%)	Routine physical examination (n=1729) No. (%)
Household Income	P<0.01	Not Sig.
Not stated	297 (60.6)	280 (58.8)
< $10,000	408 (65.2)	382 (60.7)
$10 – 24,999	251 (67.3)	235 (62.7)
$25,000 or more	187 (74.6)	161 (64.7)
Worse off than other households	Not Sig.	Not Sig.
No	439 (64.1)	403 (58.7)
Yes	691 (66.6)	652 (62.8)
Household run out of money for food	Not Sig.	P<0.05
No	644 (64.7)	628 (63.2)
Yes	489 (67.0)	427 (58.5)
Social support		
Someone to confide in	P<0.05	P<0.001
No	311 (62.3)	253 (50.6)
Yes	814 (67.3)	798 (65.8)
Someone that loves you	P<0.01	P<0.01
No	89 (56.3)	81 (51.1)
Yes	1035 (66.7)	971 (62.4)
Social issues		
Household addiction problems	P<0.001	P<0.05
No	378 (59.8)	366 (57.6)
Yes	742 (69.1)	681 (63.5)
Household violence problems	P<0.05	Not Sig.
No	912 (64.6)	854 (60.5)
Yes	207 (70.7)	192 (65.3)
Household overcrowding	P<0.05	Not Sig.
No	721 (63.5)	693 (60.8)
Yes	395 (69.8)	351 (62.2)

Individual level variables Reference Category	Blood pressure check-up (n=1738) No. (%)	Routine physical examination (n=1729) No. (%)
Perceived community economic and infrastructure disparity	Not Sig.	Not Sig.
Low	195 (60.9)	178 (57.4)
Typical	429 (67.6)	392 (61.7)
High	518 (66.2)	487 (62.2)

Demographic structure of the Manitoba First Nations population

Table 4: Age and sex structure of the Manitoba First Nations population

Sex	Age				Total
	18 – 24	25 - 44	45 – 64	65 Plus	
Men	218	471	165	55	909
	24.0%	51.8%	18.2%	6.1%	
Women	205	428	152	54	839
	24.4%	51.0%	18.1%	6.4%	
Total	423	899	317	109	1748
	24.2%	51.4%	18.1%	6.2%	

Community Level Sample

The following table lists each social environmental factor within the following domains and summarizes the distribution of each factor: geopolitical, population, cultural practices, discrimination, housing and infrastructure, social-economic, perceived social-economic and infrastructure, social support, social problems, risk factors, health status, and health and social service environment. Community level explanatory variables are listed within each domain, and the table reports for each explanatory variable its frequency and percent of group total.

Table 4: Distribution of First Nations community level factors at the community level (N=16)

Domain and community characteristic	Frequency	Percent (%)
Geopolitical environment		
Geographic location of community		
North	8	50%
South	8	50%
Community isolation		
Not isolated	9	56%
Isolated	7	44%
Population environment		
Population change 1991-1996		
Low	4	25%
Typical	8	50%
High	4	25%
Lone parent families		
Low	4	25%
Typical	8	50%
High	4	25%
Female headed lone parent families		
Low	5	31%
Typical	7	44%
High	4	25%
Male headed lone parent families		
Low	4	25%
Typical	7	44%
High	5	31%

Domain and community characteristic	Frequency	Percent (%)
Age dependency (elders & children)		
Low	4	25%
Typical	8	50%
High	4	25%
Cultural environment		
Individual use of Aboriginal language		
Low	4	25%
Typical	8	50%
High	4	25%
Home use of aboriginal language		
Low	4	25%
Typical	8	50%
High	4	25%
Ceremonial and healing practices		
Low	5	31%
Typical	6	38%
High	5	31%
Discrimination environment		
Attended residential school		
Low	4	25%
Typical	8	50%
High	4	25%
In-community health service discrimination		
Low	5	31%
Typical	7	44%
High	4	25%
Out-community health service discrimination		
Low	4	25%
Typical	8	50%
High	4	25%
Housing & infrastructure environment		
Community infrastructure service disparity		
Low	5	31%
Typical	7	44%
High	4	25%
Inadequate household plumbing facilities		
Low	4	25%
Typical	8	50%
High	4	25%

Domain and community characteristic	Frequency	Percent (%)
Inadequate housing		
Low	4	25%
Typical	8	50%
High	4	25%
Stock of older housing		
Low	4	25%
Typical	8	50%
High	4	25%
Availability of alternative housing		
Low	4	25%
Typical	8	50%
High	4	25%
New housing development		
Low	4	25%
Typical	8	50%
High	4	25%
Social-economic environment		
Completed elementary education only		
Low	4	25%
Typical	8	50%
High	4	25%
Completed secondary education		
Low	4	25%
Typical	8	50%
High	4	25%
Women incomplete formal education		
Low	4	25%
Typical	8	50%
High	4	25%
Men incomplete formal education		
Low	4	25%
Typical	8	50%
High	4	25%
Women completed high school		
Low	4	25%
Typical	9	56%
High	3	19%
Men completed high school		
Low	3	19%
Typical	9	56%
High	4	25%

Domain and community characteristic	Frequency	Percent (%)
Women advanced education		
Low	4	25%
Typical	6	38%
High	6	38%
Men advanced education		
Low	4	25%
Typical	9	56%
High	3	19%
Individual income		
Low	4	25%
Typical	8	50%
High	4	25%
Women individual income		
Low	4	25%
Typical	8	50%
High	4	25%
Men individual income		
Low	4	25%
Typical	8	50%
High	4	25%
Family income		
Low	4	25%
Typical	8	50%
High	4	25%
Female lone parent income		
Low	4	25%
Typical	8	50%
High	4	25%
Income derived from social assistance		
Low	4	25%
Typical	8	50%
High	4	25%
Income derived from employment		
Low	4	25%
Typical	8	50%
High	4	25%
Employment participation		
Low	4	25%
Typical	8	50%
High	4	25%

Domain and community characteristic	Frequency	Percent (%)
Men employment participation		
Low	4	25%
Typical	8	50%
High	4	25%
Women employment participation		
Low	4	25%
Typical	8	50%
High	4	25%
Unemployment rate		
Low	5	31%
Typical	7	44%
High	4	25%
Women unemployment		
Low	4	25%
Typical	8	50%
High	4	25%
Men unemployment		
Low	4	25%
Typical	8	50%
High	4	25%
Primary industry participation		
Low	4	25%
Typical	8	50%
High	4	25%
Secondary industry participation		
Low	4	25%
Typical	8	50%
High	4	25%
Tertiary industry participation		
Low	4	25%
Typical	8	50%
High	4	25%
Community economic disparity		
Poor	2	12%
Typical disparity	6	38%
High disparity	8	50%
Perceived social-economic & infrastructure environment		
Infrastructure disparity		
Low	4	25%
Typical	8	50%
High	4	25%

Domain and community characteristic	Frequency	Percent (%)
Education opportunities		
Low	4	25%
Typical	8	50%
High	4	25%
Unemployment disparity		
Low	4	25%
Typical	8	50%
High	4	25%
Food security problems		
Low	4	25%
Typical	8	50%
High	4	25%
Social problem environment		
Addiction problems		
Low	4	25%
Typical	8	50%
High	4	25%
Violence problems		
Low	4	25%
Typical	8	50%
High	4	25%
Social support environment		
Personal trust environment		
Low	4	25%
Typical	8	50%
High	4	25%
Personal caring environment		
Low	4	25%
Typical	8	50%
High	4	25%
Risk behavior environment		
Smoking		
Low	4	25%
Typical	8	50%
High	4	25%
Quit smoking		
Low	4	25%
Typical	8	50%
High	4	25%

Domain and community characteristic	Frequency	Percent (%)
Never smoked		
Low	4	25%
Typical	8	50%
High	4	25%
Drinking problem history		
Low	4	25%
Typical	8	50%
High	4	25%
Drinking problems		
Low	4	25%
Typical	8	50%
High	4	25%
Stopped drinking		
Low	4	25%
Typical	8	50%
High	4	25%
No positive dietary changes		
Low	4	25%
Typical	8	50%
High	4	25%
Some positive dietary changes		
Low	4	25%
Typical	8	50%
High	4	25%
Major positive dietary changes		
Low	4	25%
Typical	8	50%
High	4	25%
Normal body weight		
Low	4	25%
Typical	8	50%
High	4	25%
Overweight		
Low	4	25%
Typical	8	50%
High	4	25%
Obesity		
Low	4	25%
Typical	8	50%
High	4	25%

Domain and community characteristic	Frequency	Percent (%)
Health status environment		
Diabetes		
Low	4	25%
Typical	8	50%
High	4	25%
Hypertension		
Low	4	25%
Typical	8	50%
High	4	25%
Self-rated poor health		
Low	4	25%
Typical	8	50%
High	4	25%
Suicide thoughts		
Low	4	25%
Typical	8	50%
High	4	25%
Health service environment		
Type of community health center		
Community health center	4	25%
Nursing station	6	37.5%
Community health representative office	6	37.5%
Health transfer status		
Not transferred	12	75%
Transferred	4	25%
Need of physician services		
Low	5	31%
Typical	7	44%
High	4	25%
Physician supply deficiency		
Low	4	25%
Typical	8	50%
High	4	25%
Routine physical examination		
Low	4	25%
Typical	8	50%
High	4	25%
Annual blood pressure checkup		
Low	4	25%
Typical	8	50%
High	4	25%

Domain and community characteristic	Frequency	Percent (%)
Pap test in the last 2 years		
Low	4	25%
Typical	8	50%
High	4	25%
Nurse availability (perceived)		
Low	4	25%
Typical	8	50%
High	4	25%
Medical transportation availability (perceived)		
Low	4	25%
Typical	8	50%
High	4	25%

APPENDIX 3 - SAMPLE SIZE BY MODELING STAGE

Table 1: Sample size by modeling stage

Outcome measure	Outcome weighted sample	Forward logistic regression sample	Fitted logistic regression sample	Fitted final logistic regression sample	HLM Un-weighted sample
Health risk factors					
Smoking	1694	1498	1515	1637	1637
Drinking problem	1717	1537	1625	1625	1613
Overweight	1004	919	938	950	
Obese	1521	1360	1396	1495	1487
Health status					
Self-rated poor health	1686	1537	1537	1614	1598
Suicide thoughts	1491	1520	1614	1620	1620
Hypertension	1667	1487	1516	1603	1589
Diabetes	1685	1509	1525	1676	1676
Preventative health Practices					
Routine physical examination	1729	1524	1572	1693	1695
Annual blood pressure checkup	1738	1534	1553	1647	1629

APPENDIX 4 - SMOKING

Logistic regression analysis

Table 1: Significant predictors of smoking identified using "forward" logistic regression (n=1498)

Individual level variables	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Demographics				
Age				
18 – 24 years	P < 0.001	6.58	3.98	11.18
25 – 44 years	P < 0.05	3.89	2.38	6.32
45 – 64 years	P < 0.01	1.88	1.11	3.19
65 and older	Ref.			
Family roles				
Marital status				
Single	Not Sig.	0.96	0.52	1.77
Partner	P<0.0001	0.46	0.30	0.70
Past partner	Ref.	--	--	--
No parenting history				
History	Ref.			
No history	Not Sig.			
Extended family parenting history				
No	P<0.01	1.42	1.10	1.85
Yes	Ref.			
Single parent (current)				
No	Ref.	--	--	--
Yes	P<0.05	1.56	1.08	2.26
Lifetime of care giving				
None	Not Sig.			
One to three children	Not Sig.			
Four or more children	Ref.			
Household composition				
Currently living alone				
No	P<0.01	1.92	1.25	2.95
Yes	Ref.	--	--	--
Number of children				
None	Ref.			
One to three	Not Sig.			
Four or more	Not Sig.			

Individual level variables	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Number of adults				
One	Ref.			
Two	Not Sig.			
Three or more	Not Sig.			
Discrimination				
Attend residential school				
No	P<0.01	1.49	1.10	2.03
Yes	Ref.	--	--	--
Cultural practices				
Ceremonial and healing practices				
Low	Ref.	--	--	--
Typical	P<0.001	1.65	1.29	2.11
High	P<0.001	2.67	1.95	3.6
Language				
Aboriginal	Ref.	--	--	--
Aboriginal & English	Not Sig.	1.10	.75	1.75
English only	P<0.001	1.74	1.45	2.29
Consume wild meat				
No	P<0.05	1.28	1.00	1.63
Yes	Ref.	--	--	--
Social-economic				
Education				
Elementary or less	Ref.	--	--	--
Some junior high school	P<0.001	2.92	2.05	3.79
High school or more	P<0.001	3.01	1.94	3.96
Currently employed				
No	Ref.			
Yes	Not Sig.			
Run out of money for Food				
No	Ref.	--	--	--
Yes	P<0.01	1.35	1.08	1.69
Social Issues				
Household Addiction Problems				
No	Ref.	--	--	--
Yes	P<0.01	1.27	1.50	2.33

Table 2: Smoking – Best null model fitted using "block entry" logistic regression (n=1515)

Individual level variables / Domain	- 2 Log Likelihood	d.f.	R^2
Smoking	1919.126		
Demographic	1834.523	3	.076
Age (4 categories)			
Family roles	1880.810	4	.035
Marital status (3 categories)			
Single parent (2 categories)			
Extended family parenting history			
Household composition	1911.446	1	.007
Currently living alone			
Discrimination	1911.716	1	.007
Attend residential school			
Cultural practices	1838.796	5	.072
Language			
Consume wild meat			
Ceremonial and healing practices			
Social-economic	1866.131	3	.048
Education			
Household run out of money for food			
Social Issues	1890.174	1	.027
Household addiction problems			

Table 3: Smoking – Best model fitted using "block entry" logistic regression (n=1515)

Base and Domain	X^2 (df)	Level of Significance
Smoking null model		
Demographic	84.603 (3)	0.05 > P > 0.001
Family roles	38.317 (4)	0.05 > P > 0.001
Household composition	7.681 (1)	0.05 > P > 0.010
Discrimination	7.411 (1)	0.05 > P > 0.010
Cultural practices	80.311 (5)	0.05 > P > 0.001
Social-economic	52.996 (3)	0.05 > P > 0.001
Social issues	28.953 (1)	0.05 > P > 0.001
Step 1: Demographic base		
Family roles	5.85 (4)	Not Sig.
Household composition	1.82 (1)	Not Sig.
Discrimination	3.24 (1)	Not Sig.
Cultural practices	62.42 (5)	0.05 > P > 0.001
Social-economic	14.15 (3)	0.05 > P > 0.010
Social issues	29.42 (1)	0.05 > P > 0.001
Step 2: Demographic + cultural practices base		
Family roles	7.41 (4)	Not Sig.
Household composition	1.05 (1)	Not Sig.
Discrimination	0.82 (1)	Not Sig.
Social-economic	10.15 (3)	0.05 > P >0.020
Social issues	20.54 (1)	0.05 > P > 0.001
Step 3: Demographic + cultural practices + social issues base		
Family roles	8.90 (4)	Not Sig.
Household composition	0.83 (1)	Not Sig.
Discrimination	0.52 (1)	Not Sig.
Social-economic	7.32 (3)	Not Sig.
Final model	**20.54 (1)**	**0.05 > P > 0.001**
Demographic		
Cultural practices		
Social issues		

Table 4: Smoking - Final logistic regression main effects model (n=1654)

Individual level effects	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Demographic				
Age				
18 – 24 years	P < 0.001	9.71	5.86	16.09
25 – 44 years	P < 0.001	5.22	3.26	8.34
45 – 64 years	P < 0.001	2.40	1.45	3.99
65 and older	Ref.	--	--	--
Cultural practices				
Ceremonial and healing practices				
Low	Ref.	--	--	--
Typical	P<0.001	1.69	1.32	2.16
High	P<0.001	2.67	1.96	3.63
Social issues				
Household addiction problems				
No	Ref.	--	--	--
Yes	P<0.001	1.77	1.42	2.22

Table 5: Smoking – Test for age interactions within the domains of cultural practices and social issues using "block entry" logistic regression (N=1653)

Domains and Interaction Terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Cultural practices			
Ceremonial and healing practices main effects:	1966.700 (3)		
Age			
Typical practices			
High practices			
Ceremonial and healing practices interaction effects model	1957.683 (5)	9.017 (2)	0.05<P<0.02
Age			
Typical practices			
Age X Typical practices			
High practices			
Age X High practices			
Social issues			
Household addiction main effects	1979.122 (2)		
Age			
Household addiction problems			
Household addition interaction effects model	1979.036(3)	0.086 (1)	Not Sig.
Age			
Household addiction problems			
Age X Household addiction problems			

Table 6: Smoking – Odds ratios in the presence of significant age by cultural practices interaction

Age as an effect modifier	Odds ratio: Ceremonial and healing practices and smoking Ref. Low practices and No smoking **Typical practices** Ref. Low practices (n=1314)	**High practices** Ref. Low practices (n=1089)
18 – 24 years	**1.75 (1.05 - 2.92)**	3.28 (1.40 - 7.65)
25 – 44 years	**2.02 (1.44 - 2.83)**	**2.44** (1.64 - 3.63)
45 – 64 years	1.63 (0.95 - 2.83)	**2.74** (1.52 – 4.99)
65 and over	0.47 (0.16 - 1.40)	**10.39 (2.47 – 43.68)**

Table 7: Smoking – Examination of sample size issues within the interaction (n=1654)

Age groups	Ceremonial and healing practices (Freq; % within)	Smoking	
		No	**Yes**
18 – 24 years	Low	51 (28.3%)	129 (71.7%)
	Typical	30 (18.4%)	133 (81.6%)
	High	7 (10.8%)	58 (89.2%)
	Total	88 (21.6%)	320 (78.4%)
25 – 44 years	Low	161 (41.1%)	231 (58.9%)
	Typical	70 (25.6%)	203 (74.4%)
	High	42 (22.2%)	147 (77.8%)
	Total	273 (32.0%)	581 (68.0%)
45 – 64 years	Low	79 (59.8%)	53 (40.2%)
	Typical	41 (47.7%)	45 (52.3%)
	High	25 (35.2%)	46 (64.8%)
	Total	145 (50.2%)	144 (49.8%)
65 Years and older	Low	34 (73.9%)	12 (26.1%)
	Typical	36 (85.7%)	**6 (14.3%)**
	High	**3 (21.4%)**	11 (78.6%)
	Total	73 (71.6%)	29 (28.4%)

Table 8: Smoking – Test for sex interactions within the domains of cultural practices and social issues using "block entry" logistic regression (n=1654)

Domains and interaction terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Demographics			
Demographic main effect model:	1986.640 (2)		
Age			
Sex			
Demographic interaction effects model:	1986.619 (3)	0.021 (1)	Not Sig.
Age			
Sex			
Age X Sex			
Cultural practices			
Ceremonial and healing practices main effects:	2086.229 (3)		
Sex			
Typical practices			
High practices			
Ceremonial and healing practices interaction effects model	2084.159 (5)	2.07 (2)	Not Sig.
Sex			
Typical practices			
Sex X Typical practices			
High practices			
Sex X High practices			
Social issues			
Household addiction problem main effects	2098.690 (2)		
Sex			
Household addiction problems			
Household addition interaction effects model	2098.130(3)	0.056 (1)	Not Sig.
Sex			
Household Addiction Problems			
Sex X Household addiction problems			

Table 9: Smoking - Final logistic regression main effects model (n=1654)

Individual level effects	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Main effects				
Age				
18 – 24 years	P < 0.001	9.71	5.86	16.09
25 – 44 years	P < 0.001	5.22	3.26	8.34
45 – 64 years	P < 0.001	2.40	1.45	3.99
65 years and older	Ref.			
Ceremonial and healing practices				
Low	Ref.			
Typical	P<0.001	1.69	1.32	2.16
High	P<0.001	2.67	1.96	3.63
Household addiction problems				
No	Ref.			
Yes	P<0.001	1.77	1.42	2.22

Multilevel logistic regression analysis

Table 10: Significant individual level predictors of smoking using "block entry" multilevel logistic regression (community N = 16; n=1647)

Base and Domain	X^2 (df)	Level of Significance
Smoking null model		
Demographic	90.31 (3)	0.05 > P > 0.001
Cultural practices	8.09 (2)	0.05 > P > 0.02
Social issues	20.58 (1)	0.05 > P > 0.001
Step 1: Demographic base		
Cultural practices	7.97 (2)	0.05 > P > 0.02
Social issues	19.35 (1)	0.05 > P > 0.001
Step 2: Demographic + Social issues base		
Cultural practices	8.98 (2)	0.05 > P > 0.02
Final model	**8.98 (2)**	**0.05 > P > 0.02**
Demographic		
Cultural practices		
Social issues		

Table 11: Smoking - Final multilevel logistic regression individual main effects model (n=1647)

Individual level effects	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Demographic				
Age				
18 – 24 years	P < 0.001	9.14	4.81	17.36
25 – 44 years	P < 0.001	5.03	2.78	9.10
45 – 64 years	P < 0.02	2.17	1.16	4.06
65 years and older	Ref.	--	--	--
Cultural practices				
Ceremonial and healing practices				
Low	Ref.	--	--	--
Typical	P<0.05	1.34	1.03	1.74
High	P<0.01	1.57	1.14	2.16
Social Issues				
Household addiction problems				
No	Ref.	--	--	--
Yes	P<0.001	1.64	1.29	2.07

Table 12: Multilevel logistic regression model of community effects independently associated with smoking (community N=16; n=1647)

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Smoking null model	5030.00 (2)		
Geopolitical environment			
Geographic location	5027.80 (3)	2.20 (1)	N.S.
Community isolation	5026.03 (3)	3.97 (1)	P = 0.046
Population environment			
Population change 1991-1996	5029.41 (4)	0.59 (2)	N.S.
Lone parent families	5027.86 (4)	2.14 (2)	N.S.
Female headed lone parent families	5024.56 (4)	5.44 (2)	N.S.
Male headed lone parent families	5024.56 (4)	5.44 (2)	N.S.
Age dependency (elders & children)	5027.60 (4)	2.40 (2)	N.S.
Cultural environment			
Individual use of Aboriginal language	5025.78 (4)	4.22 (2)	N.S.
Home use of Aboriginal language	5022.81 (4)	7.19 (2)	P = 0.027
Ceremonial and healing practices	5018.86 (4)	11.14 (2)	P = 0.004

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Discrimination environment			
Attend residential school	5027.56 (4)	2.44 (2)	N.S.
In-community health service discrimination	5028.61 (4)	1.39 (2)	N.S.
Out-community health service discrimination	5028.66 (4)	1.34 (2)	N.S.
Housing & infrastructure environment			
Community infrastructure service disparity	5028.22 (4)	1.78 (2)	N.S.
Inadequate household plumbing facilities	5026.06 (4)	3.94 (2)	N.S.
Inadequate housing	5028.38 (4)	1.62 (2)	N.S.
Stock of older housing	5026.78 (4)	3.22 (2)	N.S.
Availability of alternative housing	5026.02 (4)	3.98 (2)	N.S.
New housing development	5023.14 (4)	6.86 (2)	P = 0.032
Social-economic environment			
Completed elementary education only	5026.86 (4)	3.14 (2)	N.S.
Completed secondary education	5026.96 (4)	3.04 (2)	N.S.
Women incomplete formal education	5026.79 (4)	3.21 (2)	N.S.
Men incomplete formal education	5027.46 (4)	2.53 (2)	N.S.
Women completed high school	5025.68 (4)	4.32 (2)	N.S.
Men completed high school	5026.76 (4)	3.24 (2)	N.S.
Women advanced education	5023.46 (4)	6.54 (2)	P = 0.038
Men advanced education	5028.95 (4)	1.05 (2)	N.S.
Individual income	5028.39 (4)	1.61 (2)	N.S.
Women individual income	5029.69 (4)	0.31 (2)	N.S.
Men individual income	5028.61 (4)	1.39 (2)	N.S.
Family income	5024.34 (4)	5.66 (2)	N.S.
Female lone parent income	5029.84 (4)	0.16 (2)	N.S.
Income derived from social assistance	5028.92 (4)	1.08 (2)	N.S.
Income derived from employment	5028.92 (4)	1.08 (2)	N.S.
Employment participation	5026.82 (4)	3.19 (2)	N.S.
Men employment participation	5028.80 (4)	1.20 (2)	N.S.
Women employment participation	5023.96 (4)	6.04 (2)	P = 0.049
Unemployment Rate	5024.41 (4)	5.59 (2)	N.S.
Women unemployment	5028.74 (4)	1.26 (2)	N.S.
Men unemployment	5024.42 (4)	5.58 (2)	N.S.
Primary industry participation	5027.62 (4)	2.38 (2)	N.S.
Secondary industry participation	5029.73 (4)	0.27 (2)	N.S.
Tertiary industry participation	5027.11 (4)	2.89 (2)	N.S.
Community economic disparity	5022.81 (4)	7.19 (2)	P = 0.028
Perceived social-economic & infrastructure environment			
Infrastructure disparity	5028.48 (4)	1.52 (2)	N.S.
Education opportunities	5029.35 (4)	0.65 (2)	N.S.
Unemployment disparity	5029.15 (4)	0.14 (2)	N.S.
Food security problems	5029.15 (4)	0.85 (2)	N.S.

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Social problem environment			
Addiction problems	5028.59 (4)	1.41 (2)	N.S.
Violence problems	5029.18 (4)	0.82 (2)	N.S.
Social support environment			
Personal trust environment	5029.76 (4)	0.24 (2)	N.S.
Personal caring environment	5029.09 (4)	0.91 (2)	N.S.
Risk behavior environment			
Smoking	5007.45 (4)	22.55 (2)	P = 0.000
Never smoked	5008.76 (4)	21.24 (2)	P = 0.000
Quit smoking	5028.36 (4)	1.62 (2)	N.S.
Drinking problem history	5027.85 (4)	2.15 (2)	N.S.
Drinking problem	5021.59 (4)	8.41 (2)	P = 0.015
Stopped drinking	5026.34 (4)	3.66 (2)	N.S.
No positive dietary changes	5027.04 (4)	2.96 (2)	N.S.
Some positive dietary changes	5028.46 (4)	1.54 (2)	N.S.
High positive dietary changes	5026.38 (4)	3.62 (2)	N.S.
Normal body weight	5023.45 (4)	6.55 (2)	P = 0.038
Overweight	5027.26 (4)	2.74 (2)	N.S.
Obesity	5028.57 (4)	1.43 (2)	N.S.
Health status environment			
Suicide thoughts	5023.53 (4)	6.46 (2)	P = 0.039
Diabetes	5024.78 (4)	5.22 (2)	N.S.
Hypertension	5029.02 (4)	0.98 (2)	N.S.
Self-rated poor health	5027.28 (4)	2.72 (2)	N.S.
Health service environment			
Type of community health center	5028.52 (4)	1.48 (2)	N.S.
Health transfer status	5029.75 (3)	0.25 (2)	N.S.
Need of physician services	5028.14 (4)	1.86 (2)	N.S.
Physician supply deficiency	5025.19 (4)	4.81 (2)	N.S.
Routine physical examination	5026.34 (4)	3.66 (2)	N.S.
Annual blood pressure checkup	5027.94 (4)	2.06 (2)	N.S.

Table 13: Multilevel Logistic Regression Model of Community Effects Independently Associated with Smoking (Community N=16; n=1647)

Community level effects	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Cultural environment				
Home use of Aboriginal language				
Low	P<0.01	3.43	1.39	8.44
Typical	Not Sig.	1.51	0.69	3.29
High	Ref.	--	--	--
Ceremonial and healing practices				
Low	Ref.	--	--	--
Typical	P<0.02	2.61	1.33	5.12
High	P<0.01	3.48	1.71	7.08
Social-economic environment				
Women advanced education				
Low	Ref.	--	--	--
Typical	Not Sig.	2.29	0.99	5.28
High	P<0.02	2.96	1.28	6.85
Women employment participation				
Low	Ref.	--	--	--
Typical	P<0.02	2.71	1.21	6.06
High	Not Sig.	1.66	0.66	4.19
Community economic disparity				
Poor	Ref.	--	--	--
Typical disparity	P<0.05	3.12	1.12	8.65
High disparity	Not Sig.	1.36	0.51	3.63
Risk behavior environment				
Smoking				
Low	Ref.	--	--	--
Typical	P<0.001	3.07	1.91	4.92
High	P<0.001	5.84	3.32	10.27
Never smoked				
Low	P<0.001	5.61	3.13	10.08
Typical	P<0.001	3.13	1.91	5.13
High	Ref.	--	--	--
Drinking problems				
Low	Ref.	--	--	--
Typical	P<0.01	3.09	1.47	6.49
High	P<0.02	2.74	1.17	6.41
Normal body weight				
Low	P<0.01	3.37	1.68	6.78
Typical	P<0.02	2.34	1.28	4.28
High	Ref.	--	--	--

Community level effects	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Health status environment				
Suicide thoughts				
Low	Ref.	--	--	--
Typical	Not Sig.	2.14	0.97	4.73
High	P<0.02	3.24	1.30	8.12

Table 14: Multilevel logistic regression model of community level effects independently associated with smoking after adjusting for individual level effects (Community N=16; N=1647)

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Level one model	4911.36 (8)		
Geopolitical environment			
Community isolation	4907.57 (9)	3.81 (1)	Not Sig.
Cultural environment			
Home use of Aboriginal language	4903.98 (10)	7.40 (2)	P=0.007
Ceremonial and healing practices	4901.89 (10)	9.49 (2)	P= 0.009
Housing & infrastructure environment			
New housing development	4905.81 (10)	5.57 (2)	Not Sig.
Social-economic environment			
Women advanced education	4906.09 (10)	5.29 (2)	Not Sig.
Women employment participation	4905.19 (10)	6.19 (2)	P=0.045
Community economic disparity	4904.09 (10)	7.27 (2)	P=0.026
Risk behavior environment			
Smoking	4889.29 (10)	22.08 (2)	P=0.000
Never smoked	4891.68 (10)	19.70 (2)	P=0.000
Drinking problems	4901.11 (10)	10.27 (2)	P=0.006
Normal body weight	4902.15 (10)	9.23 (2)	P=0.010
Health status environment			
Suicide thoughts	4903.06 (10)	6.19 (2)	P=0.045

Table 15: Multilevel logistic regression model of community level effects independently associated with smoking after Adjusting for individual level effects (Community N=16; n=1647)

Community level effects	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Cultural environment				
Home use of Aboriginal language				
Low	P<0.01	3.13	1.38	7.11
Typical	Not Sig.	1.49	0.73	3.01
High	Ref.	--	--	--
Ceremonial and healing practices				
Low	Ref.	--	--	--
Typical	P<0.02	2.33	1.21	4.49
High	P<0.01	2.94	1.46	5.91
Social-economic environment				
Women employment participation				
Low	Ref.	--	--	--
Typical	P<0.02	2.51	1.21	5.22
High	Not Sig.	1.64	0.71	3.81
Community economic disparity				
Poor	Ref.	--	--	--
Typical disparity	P<0.05	2.98	1.20	7.40
High disparity	Not Sig.	1.37	0.57	3.29
Risk behavior environment				
Smoking				
Low	Ref.	--	--	--
Typical	P<0.001	2.51	1.60	3.95
High	P<0.000	5.17	3.01	8.88
Never smoked				
Low	P<0.001	4.91	2.74	8.78
Typical	P<0.001	2.60	1.60	4.23
High	Ref.	--	--	--
Drinking problems				
Low	Ref.	--	--	--
Typical	P<0.01	3.08	1.62	5.86
High	P<0.02	2.50	1.21	5.19
Normal body weight				
Low	P<0.02	3.37	1.57	7.24
Typical	P=0.05	2.34	1.21	4.53
High	Ref.	--	--	--

Community level effects	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Health status environment				
Suicide thoughts				
Low	Ref.	--	--	--
Typical	P<0.02	2.25	1.14	4.45
High	P<0.01	3.20	1.40	7.07

APPENDIX 5 - DRINKING PROBLEMS

Logistic regression analysis

Table 1: Significant predictors of drinking problems identified using "forward" logistic regression (n=1537)

Individual level variables	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Demographics				
Age				
18 – 24 years	Ref.	--	--	--
25 – 44 years	Not Sig.	0.88	0.67	1.16
45 – 64 years	P<0.001	0.40	0.27	0.60
65 and older	P<0.05	0.48	0.27	0.87
Sex				
Male	Ref.	--	--	--
Female	P<0.001	0.54	0.43	0.68
Family roles				
Marital status				
Single	Ref.	--	--	--
Partner	Not Sig.	1.01	0.68	1.51
Past partner	P<0.001	0.57	0.45	0.74
No parenting history				
History	Not Sig.			
No history	Ref.			
Extended family parenting history				
No	Ref.			
Yes	Not Sig.			
Lifetime of care giving				
None	Ref.			
One to three children	Not Sig.			
Four or more children	Not Sig.			
Household composition				
Currently living alone				
No	Not Sig.			
Yes	Ref.			
Number of children				
None	Ref.	--	--	--
One to three	P<0.001	0.61	0.43	0.80
Four or more	Not Sig.	0.75	0.54	1.04

Individual level variables	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Discrimination				
Attend residential school				
No	Ref.	--	--	--
Yes	P<0.01	0.57	0.40	0.81
In-community health service discrimination				
No	Ref.	--	--	--
Yes	P<0.001	1.71	1.29	2.26
Social-economic				
Primary source of income				
Social assistance	Not Sig.			
Wages	Not Sig.			
Other sources	Ref.			
Household income				
Not stated	Ref.	--	--	--
<10,000	P<0.05	1.40	1.04	1.87
$10 – 24,999	Not Sig.	0.98	0.69	1.38
$25,000 or more	Not Sig.	0.99	0.68	1.47
Run out of money for Food				
No	Ref.	--	--	--
Yes	P<0.001	1.80	1.43	2.27
Social support				
Someone to confide in				
No	Ref.	--	--	--
Yes	P<0.05	0.77	0.61	0.98
Social issues				
Household addiction problems				
No	Ref.	--	--	--
Yes	P<0.001	5.52	4.03	7.54
Household violence problems				
No	Ref.			
Yes	Not Sig.			
Household overcrowding				
No	Ref.			
Yes	Not Sig.			

Table 2: Drink problems – Best null model fitted using "block entry" logistic regression (n=1625)

Individual level variables / Domain	- 2 Log Likelihood	d.f.	R^2
Drinking problems	1893.256		
Demographics	1833.391	4	.053
Age			
Sex			
Family roles	1871.183	2	.020
Marital status			
Household composition	1882.933	2	.009
Number of Children			
Discrimination	1866.540	2	.024
Attend residential school			
In-community health service			
Discrimination			
Social-economic	1853.135	4	.035
Household income			
Household runs out of money for food			
Social support	1888.532	1	.004
Someone to confide in			
Social issues	1735.749	1	.134
Household addiction problems			

Table 3: Drinking problems – Best model fitted using "block entry" logistic regression (n=1625)

Base and Domain	X^2 (df)	Level of Significance
Drinking null model		
Demographics	59.865 (4)	0.05 > P > 0.001
Family roles	22.073 (2)	0.05 > P > 0.001
Household composition	10.324 (2)	0.05 > P > 0.001
Discrimination	26.716 (2)	0.05 > P > 0.001
Social-economic	40.122 (4)	0.05 > P > 0.001
Social support	4.724 (1)	0.05 > P > 0.010
Social issues	157.508 (1)	0.05 > P > 0.001
Step 1: Social issues base		
Demographics	55.20 (4)	0.05 > P > 0.001
Family roles	20.36 (2)	0.05 > P > 0.001
Household composition	13.94 (2)	0.05 > P > 0.001
Discrimination	22.20 (2)	0.05 > P > 0.001
Social-economic	22.03 (4)	0.05 > P > 0.001
Social support	7.97 (1)	0.05 > P > 0.010
Step 2: Social issues + demographics base		
Family roles	24.76 (2)	0.05 > P > 0.001
Household composition	15.85 (2)	0.05 > P > 0.001
Discrimination	11.38 (2)	0.05 > P > 0.010
Social-economic	23.37 (4)	0.05 > P > 0.001
Social support	8.94 (2)	0.05 > P > 0.020
Step 3: Social issues + Demographics + Family roles base		
Household composition	8.46 (2)	0.05 > P > 0.010
Discrimination	10.68 (2)	0.05 > P > 0.001
Social-economic	21.01 (4)	0.05 > P > 0.001
Social support	7.22 (1)	0.05 > P > 0.010
Step 4: Social issues + Demographics + Family roles + Social-economic base		
Household composition	6.60 (2)	P = 0.05
Discrimination	8.92 (2)	0.05 > P > 0.020
Social support	6.45 (1)	0.05 > P > 0.020

Base and Domain	X^2 (df)	Level of Significance
Step 5: Social issues + Demographics + Family roles + Social-economic + Discrimination base		
Household composition	7.57 (2)	0.05 > P > 0.010
Social support	7.90 (1)	0.05 > P > 0.020
Step 6: Social issues + Demographics + Family roles + Social-economic + Discrimination + Social support base		
Household composition	7.14 (2)	P = 0.05
Final model	**7.14 (2)**	**P = 0.05**
Demographics		
Family roles		
Household composition		
Discrimination		
Social-economic		
Social support		
Social issues		

Table 4: Drinking problems - Final logistic regression main effects model (n=1625)

Individual level effects	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Demographics				
Age				
18 – 24 years	Ref.	--	--	--
25 – 44 years	Not Sig.	0.96	0.70	1.31
45 – 64 years	P<0.001	0.37	0.23	0.62
65 years and older	P<0.001	0.23	0.11	0.48
Sex				
Male	Ref.	--	--	--
Female	P<0.001	0.58	0.45	0.74
Family roles				
Marital status				
Single	Ref.	--	--	--
Partner	Not Sig.	0.81	0.60	1.10
Past partner	P<0.001	1.99	1.21	3.30
Household composition				
Number of children				
None	Ref.	--	--	--
One to three	P<0.05	0.65	0.47	0.90
Four or more	P<0.01	0.64	0.43	0.96
Discrimination				
In-community health service discrimination				
No	Ref.	--	--	--
Yes	P<0.001	1.63	1.20	2.20
Social-economic				
Household income				
Not stated	Ref.	--	--	--
<10,000	P<0.05	1.37	1.01	1.88
$10 – 24,999	Not Sig.	1.00	0.70	1.45
$25,000 or more	Not Sig.	1.02	0.67	1.57
Run out of money for food				
No	Ref.	--	--	--
Yes	P<0.01	1.45	1.13	1.85
Social support				
Someone to confide in				
No	Ref.	--	--	--
Yes	P<0.01	0.69	0.52	0.90
Social issues				
Household addiction problems				
No	Ref.	--	--	--
Yes	P<0.001	5.24	3.82	7.20

Table 5: Drinking problems - Test for age interactions within the domains of family roles, household composition, discrimination, social-economic, social support and social issues using "block entry" logistic regression (n=1625)

Domains and interaction terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Family roles			
Marital status main effects model	1835.393 (3)		
Age			
Partner			
Past partner			
Marital status interaction effects model	1831.851 (5)	3.54 (2)	Not Sig.
Age			
Partner			
Age X Partner			
Past partner			
Age X Past partner			
Household composition			
Number of children main effects model	1843.484 (3)		
Age			
One to three children			
Four or more			
Number of children interaction effects model	1841.937 (5)	1.55 (2)	Not Sig.
Age			
One to three children			
Age X One to three children			
Four or more			
Age X Four or More			
Discrimination			
In-community health service discrimination main effects model	1846.199 (2)		
Age			
In-community health service discrimination			

Domains and interaction terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
In-community health service discrimination interaction effects model	1843.108 (3)	3.09 (1)	Not Sig.
Age			
In-community health service discrimination			
Age X In-community health service discrimination			
Social-economic			
Household income main effects model	1846.656 (4)		
Age			
<$10,000			
$10,000 – 24,999			
$25,000 or more			
Household income interaction effects model	1836.719 (7)	**9.94(3)**	**P < 0.05**
Age			
<$10,000			
Age X <$10,000			
$10,000 – 24,999			
Age X $10,000 – 24,999			
$25,000 or more			
Age X $25,000 or more			
Run out of money for food main effects model	1831.774 (2)		
Age			
Run out of money for food			
Run out of money for food interaction effects model	1826.028 (3)	**5.75 (1)**	**0.05 < P < 0.01**
Age			
Run out of money for food			
Age X Run out of money for food			

Domains and interaction terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Social support			
Someone to confide in main effects model	1855.251 (2)		
Age			
Someone to confide in			
Someone to confide in interaction effects model	1842.401 (3)	**12.85 (1)**	**0.05 < P < 0.001**
Age			
Someone to confide in			
Age X Someone to confide in			
Social issues			
Household addiction main effects model	1708.978 (2)		
Age			
Household addiction problems			
Household addiction interaction effects model	1704.081 (3)	**4.90 (1)**	**P < 0.05**
Age			
Household addiction problems			
Age X Household addiction problems			

Table 6: Drinking problems – Odds ratios in the presence of significant age by household income interactions (*n=1523)

*Age as an effect modifier	Household income and Drinking problems Ref. No stated income (n=392) and No drinking problems		
	< $10,000 (n=560)	**$10,000 – 24,999** (n=341)	**$25,000 or more** (n=230)
18 – 24 Years	1.25 (0.77– 2.04)	0.89 (0.46 – 1.72)	0.65 (0.23 – 1.87)
25 – 44 Years	**1.83 (1.22– 2.78)**	0.78 (0.62 – 1.95)	1.21 (0.74 – 1.97)
45 – 64 Years	1.96 (0.85– 4.51)	0.94 (0.36 – 1.48)	0.65 (0.20 – 2.08)
*65 and Over	--	--	--

*There were no reported cases of drinking problems among individuals age 65 years and older living in households with a household income $25,000 or more. Because there was no comparative cohort in this age group, this group was dropped in order to calculate the odds ratios for this indicator (N=1523).

Table 7: Drinking problems – Odds ratios in the presence of significant age by run out of money for food interactions (n=1625)

Age as an effect modifier	Run out of money for food Ref. No food insecurity and No drinking problems (n=1625)
18 – 24 years	1.22 (0.78– 1.85)
25 – 44 years	**2.11 (1.56– 2.85)**
45 – 64 years	1.61 (0.87– 2.97)
65 and over	**31.1 (3.91–247.2)**

Table 8: Drinking problems – Odds Ratios in the Presence of Significant Age by Social support and Social Problem Interactions

Age as an effect modifier	Social support Someone to confide in Ref. No one to confide in and No drinking problems (n=1625)	Social problems Household addiction problems Ref. No household addiction problems and No drinking problems (n=1523)
18 – 24 years	0.97 (0.60 – 1.56)	**4.51 (2.66 – 7.65)**
25 – 44 years	0.80 (0.58 – 1.11)	**4.28 (2.88 – 6.37)**
45 – 64 years	**0.49 (0.26 – 0.92)**	**20.99 (4.99 – 88.31)**
*65 and over	**0.47 (0.06 – 0.37)**	--

*In the 65 years and older age group, the only cases were individuals that did not have a drinking problem and they lived in households free of addiction problems. Because there was no comparative cohort, this age group was dropped in order to calculate the odds ratios for this indicator (N=1523).

Table 9: Drinking problems – Test for sex interactions within the domains of demographic, family roles, household composition, discrimination, social-economic, social support, and social issues using "block entry" logistic regression (n=1625)

Domains and Interaction Terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Demographics			
Demographic main effects model Age Sex	1835.092 (2)		
Demographic interaction effects model Age Sex Age X Sex	1834.753 (3)	0.34 (1)	Not Sig.
Family roles			
Marital status main effects model Sex Partner Past partner	1844.843 (3)		
Marital status interaction effects model Sex Partner Sex X Partner Past partner Sex X Past partner	1827.938 (5)	**16.91 (2)**	**0.05 < P < 0.001**
Household composition			
Number of children main effects model Sex One to three children Four or more	1861.096 (3)		
Number of children interaction effects model Sex One to three children Sex X One to three children Four or more Sex X Four or more	1851.15 (5)	**9.42 (2)**	**0.05 < P <0.01**

Domains and Interaction Terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Discrimination			
In-community health service discrimination main effects model Sex In-community health service discrimination	1851.58 (2)		
In-community health service discrimination interaction effects model Sex In-community health service discrimination Sex X In-community health service discrimination	1847.359 (3)	**4.22 (1)**	**P < 0.05**
Social-economic			
Household income main effects model Sex <$10,000 $10,000 – 24,999 $25,000 or more	1849.93 (4)		
Household income interaction effects model Sex <$10,000 (2,3) Sex X <$10,000 (2,3) $10,000 – 24,999 (1,3) Sex X $10,000 – 24,999 (1,3) $25,000 or more (1,2) Sex X $25,000 or more (1,2)	1848.713 (7)	1.22 (3)	Not Sig.
Run out of money for food main effects model Sex Run out of money for food	1837.725 (2)		
Run out of money for food interaction effects model Sex Run out of money for food Sex X Run out of money for food	1834.917 (3)	2.75 (1)	Not Sig.

Domains and Interaction Terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Social support			
Someone to confide in main effects model Sex Someone to confide in	1863.598 (2)		
Someone to confide in interaction effects model Sex Someone to confide in Sex X Someone to confide in	1861.814 (3)	1.784(1)	Not Sig.
Social issues			
Household addiction main effects model Sex Household addiction problems	1708.035 (2)		
Household addiction interaction effects model Sex Household addiction problems Sex X Household addiction problem	1705.555 (3)	2.48 (1)	Not Sig.

Table 10: Drinking problems – Odds ratios in the presence of significant sex by marital status, discrimination and household composition interactions (n=1625)

Sex as an effect modifier	Family roles - Marital status Ref. Single (n=482) and No drinking problems	
	Partner (n=994)	**Past partner** (n=150)
Male	**0.63 (0.46 – 0.86)**	**2.51 (1.44 – 4.39)**
Female	**0.58 (0.40 – 0.85)**	**0.49 (0.26 – 0.93)**
	Discrimination – In-community health service discrimination Ref. No In-community health service discrimination and No drinking problems (n=1625)	
Male	**1.72 (1.12 – 2.64)**	
Female	1.11 (0.73 – 1.69)	
	Household composition – Number of children Ref. No children in household (n=410) and No drinking problems	
	One to three children Ref. No children (n=893)	**Four or more** Ref. No children (n=708)
Male	**0.58 (0.42 – 0.80)**	1.01 (0.67 – 1.52)
Female	1.11 (0.68 – 1.79)	0.84 (0.47 – 1.50)

Table 11: Examination of multicollinearity between predictors: Marital status by drinking problems after controlling for age in years (n=1625)

Age in years	Marital status Freq (% within)	Drinking problems No	Drinking problems Yes
18 – 24 years	Single	164 (66.9%)	81 (33.1%)
	Past partner	0 (0%)	0 (0%)
	Partner	102 (72.3%)	39 (27.7%)
	Total	266 (68.9%)	120 (31.1%)
25 – 44 years	Single	114 (61.3%)	72 (38.7%)
	Past partner	31 (59.6%)	21 (40.4%)
	Partner	443 (73.6%)	159 (26.4%)
	Total	588 (70.0%)	252 (30.0%)
45 – 64 years	Single	36 (85.7%)	6 (14.3%)
	Past partner	38 (69.1%)	17 (30.9%)
	Partner	174 (87.0%)	26 (13.0%)
	Total	248 (83.5%)	49 (16.5%)
65 years and older	Single	8 (88.9%)	1 (11.1%)
	Past partner	29 (67.4%)	14 (32.6%)
	Partner	49 (98.0%)	1 (2.0%)
	Total	86 (84.3%)	16 (15.7%)

Table 12: Examination of multicollinearity between predictors: Number of children in household by marital status by age in years (n=1625)

Age in years	Number of children in household Freq (% within)	Marital status		
		Single	Past partner	Partner
18 – 24 years	None	104 (92.9%)		8 (7.1%)
	One to three	119 (50.6%)		116 (49.4%)
	Four or more	22 (55.0%)		18 (45.0%)
	Total	245 (63.3%)		142 (36.7%)
25 – 44 years	None	71 (56.8%)	11 (8.8%)	43 (34.4%)
	One to three	86 (18.2%)	27 (5.7%)	359 (76.1%)
	Four or more	29 (11.9%)	14 (5.8%)	200 (82.3%)
	Total	186 (22.1%)	52 (6.2%)	602 (71.7%)
45 – 64 years	None	17 (14.9%)	27 (23.7%)	70 (61.4%)
	One to three	23 (15.5%)	20 (13.5%)	105 (70.9%)
	Four or more	2 (5.6%)	8 (22.2%)	26 (72.2%)
	Total	42 (14.1%)	55 (18.5%)	201 (67.4%)
65 Years and older	None	9 (14.8%)	27 (44.3%)	25 (41.0%)
	One to three		15 (39.5%)	23 (60.5%)
	Four or more		1 (33.3%)	2 (66.7%)
	Total	9 (8.8%)	43 (42.2%)	50 (49.0%)

Table 13: Drinking problems - Final logistic regression main and interaction effects model (n=1674)

Individual level effects	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Main effects				
Age				
18 – 24 years	P<0.001	2.78	1.49	5.18
25 – 44 years	P<0.01	2.40	1.32	4.37
45 – 64 years	Not Sig.	1.04	0.54	2.03
65 and older	Ref.	--	--	--
Household income				
Not stated	Ref.	--	--	--
<10,000	P<0.02	1.38	1.02	1.86
$10 – 24,999	Not Sig.	0.89	0.62	1.26
$25,000 or more	Not Sig.	0.90	0.59	1.36
Run out of money for food				
No	Ref.	--	--	--
Yes	P<0.01	1.42	1.12	1.81
Someone to confide in				
No	P<0.01	1.48	1.14	1.93
Yes	Ref.	--	--	--
Household addiction problems				
No	Ref.	--	--	--
Yes	P<0.001	5.36	3.94	7.28
Interaction effects				
Sex	Not Sig.	1.38	0.65	2.94
In-community health service discrimination	P< 0.001	4.48	1.81	11.06
Sex X In-community health service discrimination	P<0.02	0.48	0.26	0.87

Multilevel logistic regression analysis

Table 14: Significant individual level predictors of drinking problems using "block entry" multilevel logistic regression (community N =16; n=1662)

Base and Domain	X^2 (df)	Level of Significance
Drinking problems null model		
Demographic	51.47 (4)	P = 0.000
Social-economic	26.50 (4)	P = 0.000
Social issues	103.82 (1)	P = 0.000
Discrimination	1.34 (1)	P = 0.247
Social support	3.46 (1)	P = 0.062
Step 1: Social issues Base		
Demographic	48.27 (4)	P = 0.000
Social-economic	18.87 (4)	P = 0.000
Discrimination	0.29 (1)	P = 0.590
Social support	6.14 (1)	P = 0.013
Step 2: Social issues + Demographic base		
Social-economic	21.38 (5)	P = 0.000
Discrimination	0.78 (1)	P = 0.941
Social support	6.46 (1)	P = 0.011
Step 3: Social issues + Demographic + Social-economic base		
Discrimination	0.29 (1)	P = 0.990
Social support	5.59 (1)	P = 0.018
Final Model	**5.59 (1)**	**P = 0.018**
Social issues		
Demographic		
Social-economic		
Social support		

Table 15: Drinking problems – Final multilevel logistic regression main effects model (n=1662)

Individual level effects	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Main effects				
Sex				
Male	Ref.			
Female	P<0.001	0.59	0.46	0.75
Age				
18 – 24 years	P<0.01	4.44	1.76	11.23
25 – 44 years	P<0.01	4.20	1.71	10.32
45 – 64 years	Not Sig.	1.80	0.70	4.61
65 and older	Ref.	--	--	--
Household income				
Not stated	Ref.	--	--	--
<10,000	P<0.05	1.45	1.06	2.00
$10 – 24,999	Not Sig.	0.89	0.62	1.29
$25,000 or more	Not Sig.	0.90	0.58	1.40
Run out of money for food				
No	Ref.	--	--	--
Yes	P<0.05	1.37	1.07	1.76
Someone to confide in				
No	Ref	--	--	--
Yes	P<0.02	0.73	0.56	0.96
Household addiction problems				
No	Ref.	--	--	--
Yes	P<0.001	4.14	3.05	5.61

Table 16: Multilevel logistic regression model of community effects associated with drinking problems (Community N=16, n=1662)

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Drinking problems null model	4838.42 (2)		
Geopolitical environment			
Geographic location	4887.62 (3)	5.09 (1)	P=0.024
Community isolation	4889.53 (3)	3.18 (1)	Not Sig.
Population environment			Not Sig.
Population change 1991-1996	4892.33 (4)	0.37 (2)	Not Sig.
Lone parent families	4891.02 (4)	1.68 (2)	Not Sig.
Female headed lone parent families	4888.08 (4)	4.63 (2)	Not Sig.
Male headed lone parent families	4888.08 (4)	4.63 (2)	Not Sig.
Age dependency (elders & children)	4890.39 (4)	2.31 (2)	Not Sig.
Cultural environment			Not Sig.
Individual use of Aboriginal language	4891.19 (4)	1.52 (2)	Not Sig.
Home use of Aboriginal language	4892.48 (4)	0.22 (2)	Not Sig.
Ceremonial and healing practices	4889.48 (4)	3.23 (2)	Not Sig.
Discrimination environment			
Attend residential school	4890.52 (4)	2.18 (2)	Not Sig.
In community health service discrimination	4885.31 (4)	7.40 (2)	P=0.025
Out-community health service discrimination	4892.20 (4)	0.50 (2)	Not Sig.
Housing & infrastructure environment			
Community infrastructure service disparity	4890.98 (4)	1.72 (2)	Not Sig.
Inadequate household plumbing facilities	4891.72 (4)	0.99 (2)	Not Sig.
Inadequate housing	4891.23 (4)	1.47 (2)	Not Sig.
Stock of older housing	4890.52 (4)	2.19 (2)	Not Sig.
Availability of alternative housing	4892.27 (4)	0.43 (2)	Not Sig.
New housing development	4888.14 (4)	4.56 (2)	Not Sig.
Social-economic environment			
Completed elementary education only	4892.59 (4)	0.11 (2)	Not Sig.
Completed secondary education	4892.70 (4)	0.01 (2)	Not Sig.
Women incomplete formal education	4891.19 (4)	1.52 (2)	Not Sig.
Men incomplete formal education	4892.58 (4)	0.12 (2)	Not Sig.
Women completed high school	4892.32 (4)	0.39 (2)	Not Sig.
Men completed high school	4892.49 (4)	0.22 (2)	Not Sig.
Women advanced education	4891.40 (4)	1.30 (2)	Not Sig.
Men advanced education	4890.69 (4)	2.02 (2)	Not Sig.
Individual income	4891.12 (4)	1.58 (2)	Not Sig.
Women individual income	4890.87 (4)	1.84 (2)	Not Sig.
Men individual income	4890.90 (4)	1.81 (2)	Not Sig.
Family income	4886.66 (4)	6.05 (2)	P=0.049
Female lone parent income	4890.90 (4)	1.81 (2)	Not Sig.

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Income derived from social assistance	4889.68 (4)	3.03 (2)	Not Sig.
Income derived from employment	4889.68 (4)	3.03 (2)	Not Sig.
Employment participation	4892.51 (4)	0.20 (2)	Not Sig.
Men employment participation	4892.26 (4)	0.45 (2)	Not Sig.
Women employment participation	4892.43 (4)	0.28 (2)	Not Sig.
Unemployment rate	4886.55 (4)	6.16 (2)	P=0.046
Women unemployment	4889.49 (4)	3.22 (2)	Not Sig.
Men unemployment	4887.22 (4)	5.49 (2)	Not Sig.
Primary industry participation	4889.17 (4)	3.54 (2)	Not Sig.
Secondary industry participation	4886.17 (4)	6.54 (2)	P=0.038
Tertiary industry participation	4890.58 (4)	2.12 (2)	Not Sig.
Community economic disparity	4888.14 (4)	4.56 (2)	Not Sig.
Perceived social-economic and infrastructure environment			
Infrastructure disparity	4888.44 (4)	4.26 (2)	Not Sig.
Education opportunities	4892.22 (4)	0.48 (2)	Not Sig.
Unemployment disparity	4887.11 (4)	5.59 (2)	Not Sig.
Food security problems	4891.65 (4)	1.06 (2)	Not Sig.
Social problem environment			
Addiction problems	4879.49 (4)	13.22(2)	P=0.001
Violence problems	4889.48 (4)	3.22 (2)	Not Sig.
Social support environment			
Personal trust environment	4891.84 (4)	0.86 (2)	Not Sig.
Personal caring environment	4891.38 (4)	1.32 (2)	Not Sig.
Risk behavior environment			
Smoking	4889.28 (4)	3.43 (2)	Not Sig.
Never smoked	4888.76 (4)	3.95 (2)	Not Sig.
Quit smoking	4883.79 (4)	8.91 (2)	P=0.012
Drinking problem history	4881.76 (4)	10.95(2)	P=0.004
Drinking problems	No Laplace	--	--
Stopped dinking	4888.79 (4)	3.92 (2)	Not Sig.
No positive dietary changes	4891.09 (4)	1.62 (2)	Not Sig.
Some positive dietary changes	4891.18 (4)	1.53 (2)	Not Sig.
High positive dietary changes	4892.27 (4)	0.43 (2)	Not Sig.
Normal body weight	4891.26 (4)	1.44 (2)	Not Sig.
Overweight	4888.74 (4)	3.97 (2)	Not Sig.
Obesity	4890.46 (4)	2.24 (2)	Not Sig.
Health status environment			
Diabetes	4892.13 (4)	0.58 (2)	Not Sig.
Hypertension	4892.61 (4)	0.10 (2)	Not Sig.
Suicide thoughts	4891.76 (4)	0.95 (2)	Not Sig.
Self-rated poor health	4892.00 (4)	0.70 (2)	Not Sig.

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Health service environment			
Type of community health center	4891.68 (4)	1.03 (2)	Not Sig.
Health transfer status	4892.44 (4)	0.26 (2)	Not Sig.
Need of physician services	4891.58 (4)	1.12 (2)	Not Sig.
Physician supply deficiency	4892.06 (4)	0.65 (2)	Not Sig.
Routine physical examination	4889.09 (4)	3.62 (2)	Not Sig.
Annual blood pressure checkup	4891.19 (4)	1.52 (2)	Not Sig.

Table 17: Multilevel logistic regression model of community effects independently associated with drinking problems (community N=16; n=1662)

Community level effects	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Geopolitical environment				
Geographic location				
South	Ref.			
North	P<0.05	1.81	1.15	2.85
Discrimination environment				
In-community health service discrimination				
Low levels	Not Sig.	1.58	0.93	2.68
Typical levels	Ref.			
High levels	P<0.01	2.29	1.33	3.92
Social-economic environment				
Family income				
Low levels	P<0.05	1.86	1.09	3.18
Typical levels	Ref.			
High levels	P<0.05	1.91	1.11	3.27
Secondary industry participation				
Low levels	Ref.			
Typical levels	Not Sig.	1.43	0.80	2.57
High levels	P<0.02	2.47	1.28	4.76
Unemployment				
Low levels	Not Sig.	1.42	0.76	2.67
Typical levels	P<0.02	2.17	1.21	3.86
High levels	Ref.	--	--	--
Social problem environment				
Household addiction problems				
Low levels	Ref.			
Typical levels	Not Sig.	1.60	0.99	2.52
High levels	P<0.001	2.96	1.81	4.83

Community level effects	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Risk behavior environment				
Drinking problem history				
Low levels	Ref.			
Typical levels	Not Sig.	1.46	0.89	2.40
High levels	P<0.01	2.86	1.66	4.94
Drinking problems				
Low levels	Ref.			
Typical levels	P<0.01	1.93	1.34	2.78
High levels	P<0.001	4.18	2.88	6.08
Quit smoking practices				
Low levels	P<0.01	2.76	1.54	4.94
Typical levels	Not Sig.	1.55	0.92	2.61
High levels	Ref.	--	--	--

Table 18: Multilevel logistic regression model of community effects independently associated with drinking problems after adjusting for individual level effects (community N=16; n=1662)

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Level one model	4709.327 (14)		
Geopolitical environment			
Geographic location	4703.33 (13)	6.00 (1)	P=0.014
Discrimination environment			
In community health service discrimination	4702.20 (12)	7.13 (2)	P=0.028
Social-economic environment			
Family income	4705.82 (12)	3.51 (2)	Not Sig.
Secondary industry participation	4705.14 (12)	4.18 (2)	Not Sig.
Unemployment	4704.11 (12)	5.22 (2)	Not Sig.
Social problem environment			
Addiction problems	4701.73 (12)	7.60 (2)	P= 0.022
Risk behavior environment			
Quit smoking	4702.94 (12)	6.38 (2)	P= 0.041
Drinking problem history	4702.27 (12)	7.05 (2)	P= 0.029

Table 19: Multilevel logistic regression model of community effects independently associated with drinking problems after Adjusting for individual level effects (community N=16; n=1662)

Community level effects	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Discrimination environment				
In-community health service discrimination				
Low levels	Not Sig.	1.57	0.96	2.58
Typical levels	Ref.	--	--	--
High levels	P<0.02	1.93	1.19	3.15
Social problem environment				
Household addiction problems				
Low levels	Ref.	--	--	--
Typical levels	Not Sig.	1.08	0.64	1.80
High levels	P<0.02	1.97	1.13	3.44
Risk behavior environment				
Drinking problem history				
Low levels	Ref.	--	--	--
Typical levels	Not Sig.	1.28	0.76	2.13
High levels	P<0.02	2.11	1.21	3.69
Quitting smoking practices				
Low levels	P<0.02	2.13	1.20	3.79
Typical levels	Not Sig.	1.54	0.92	2.58
High levels	Ref.	--	--	--

APPENDIX 6 - OVERWEIGHT

Logistic regression analysis

Table 1: Significant predictors of overweight identified using forward logistic regression (n=919)

Individual level variables	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Demographics				
Age				
18 – 24 years	Ref.	--	--	--
25 – 44 years	P < 0.001	2.62	1.93	3.58
45 – 64 years	P < 0.001	4.53	2.85	7.18
65 years and older	P < 0.05	2.19	1.18	4.07
Family roles				
Marital status				
Single	Ref.	--	--	--
Partner	P<0.001	3.31	1.82	6.00
Past partner	P < 0.05	1.41	1.01	1.97
Parenting history				
History	P<0.001	2.38	1.59	3.58
No history	Ref.	--	--	--
Cultural practices				
Language				
Aboriginal	P<0.01	1.64	1.25	2.16
Aboriginal & English	P<0.05	3.19	1.77	5.75
English only	Ref.	--	--	--
Social-economic				
Primary source of income				
Social assistance	P<0.001	0.46	0.31	0.70
Wages	Not Sig.	0.75	0.48	1.17
Other sources	Ref.	--	--	--
Social issues				
Household Overcrowding				
No	Ref.	--	--	--
Yes	P < 0.05	1.38	1.04	1.84
Perceived community economic disparity				
Low	Ref.	--	--	--
Typical	P < 0.01	1.68	1.13	2.48
High	P < 0.05	1.63	1.12	2.37

Table 2: Overweight – Best null model fitted using "block entry" logistic regression (n=938)

Individual level variables / domain	- 2 Log Likelihood	d.f.	R^2
Overweight	1286.450		
Demographics	1229.207	3	.079
Age			
Family roles	1243.861	3	.059
Marital status			
Parenting history			
Cultural practices	1260.678	3	.036
Language			
Social-economic	1267.242	2	.027
Primary source of income			
Social issues	1273.009	3	.019
Household overcrowding			
Perceived community economic disparity			

Table 3: Overweight - Best model fitted using "block entry" logistic regression (n=938)

Base and Domain	X^2 (df)	Level of Significance
Overweight Null Model		
Demographic	57.243 (3)	0.05 < P < 0.001
Family roles	42.588 (3)	0.05 < P < 0.001
Cultural practices	25.77 (3)	0.05 < P < 0.001
Social-economic	19.208 (3)	0.05 < P < 0.001
Social issues	13.440 (3)	0.05 < P < 0.001
Step 1: Demographics		
Family roles	31.636 (3)	0.05 < P < 0.001
Cultural practices	10.422 (2)	0.05 < P < 0.01
Social-economic	11.923 (2)	0.05 < P < 0.001
Social issues	9.65 (3)	0.05 < P < 0.01
Step 2: Demographics + Family roles		
Cultural practices	8.573 (2)	0.05 < P < 0.02
Social-economic	9.923 (2)	0.05 < P < 0.01
Social issues	7.696 (3)	Not Sig.
Step 3: Demographics + Family roles + Social-economic		
Cultural practices	**8.376 (2)**	**0.05 < P < 0.01**
Social issues	7.121 (3)	Not Sig.
Step 4: Demographics + Family roles + Social-economic + Cultural practices		
Social issues	7.391 (3)	Not Sig.
Final Model	**8.376 (2)**	**0.05 < P < 0.001**
Demographics		
Family roles		
Cultural practices		
Social-economic		

Table 4: Overweight - Final logistic regression main effects model (n=950)

Individual level effects	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Demographics				
Age				
18 – 24 years	Ref.	--	--	--
25 – 44 years	P<0.001	1.76	1.25	2.48
45 – 64 years	P<0.001	2.75	1.66	4.57
65 and older	Not Sig.	1.25	0.62	2.51
Family roles				
Marital status				
Single	Ref.	--	--	--
Past partner	P<0.05	2.05	1.07	3.95
Partner	Not Sig.	0.98	0.68	1.40
Parenting history				
History	P<0.001	0.42	0.27	0.63
No history	Ref.			
Cultural practices				
Language				
Aboriginal	Not Sig.	1.25	0.92	1.69
Aboriginal & English	P<0.001	2.29	1.24	4.25
English only	Ref.	--	--	--
Social-economic				
Primary source of income				
Social assistance	P<0.01	0.58	0.38	0.87
Wages	Not Sig.	0.79	0.50	1.24
Other sources	Ref.	--	--	--

Table 5: Test for age interactions within the domains of family roles, cultural practices, and social-economic using "block entry" logistic regression (n=950)

Domains and interaction terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Family roles			
Marital status main effects model:	1243.381 (3)		
Age			
Partner			
Past partner			
Marital status interaction effects model:	1233.659 (5)	9.722	Not Sig.
Age			
Partner			
Age X Partner			
Past partner			
Age X Past partner			
Parenting history main effect model:	1230.794 (2)		
Age			
Parenting history			
No Parenting history interaction effects model:	1230.788 (3)	0.006 (1)	Not Sig.
Age			
No Parenting history			
Age X No Parenting history			
Cultural practices			
Language main effect model:	1250.532 (3)		
Age			
Aboriginal			
Aboriginal and English			
Language interaction effects model:	1233.004 (5)	**17.528 (2)**	**0.05 < P < 0.001**
Age			
Aboriginal only			
Age X Aboriginal			
Aboriginal and English			
Age X Aboriginal and English			

Domains and interaction terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Social-economic			
Primary source of income main effects model	1239.457 (3)		
Age			
Wages			
Social assistance			
Primary source of income interaction effects model	1225.987 (5)	**13.47(2)**	**0.05 < P < 0.001**
Age			
Wages			
Age X Wage			
Social assistance			
Age X Social assistance			

Table 6: Overweight - Odds ratios in the presence of significant age by language and primary source of income interaction

*Age as an effect modifier	Language* and Overweight Ref. English language (n=463) and Normal weight **Aboriginal language only** Ref. English (n=375)	**Aboriginal and English** Ref. English (n=62)
18 – 24 Years	1.67 (0.96 – 2.92)	9.92 (1.14 - 86.72)
25 – 44 Years	1.40 (0.96 – 2.06)	1.26 (0.62 – 2.54)
45 – 64 Years	0.51 (0.18 – 1.48)	3.81 (0.40 – 35.9)
65 and Over	--	--

* There were no individuals age 65 years and older with wages and a normal body mass index. Because there was no comparative group, the age group was excluded in order to calculate the odds ratio for this indicator (n=900).

*Age as an effect modifier	Primary source of income and Overweight Ref. Other Source of Income (n=94) and Normal Weight **Wages** Ref. Other sources of income (n=269)	**Social assistance** Ref. Other sources of income (n=478)
18 – 24 Years	1.11 (0.46 - 2.71)	0.85 (0.40 – 1.79)
25 – 44 Years	0.70 (0.40 - 1.22)	0.49 (0.28 – 0.84)
45 – 64 Years	0.50 (0.12 - 2.02)	0.30 (0.08 – 1.10)
65 and Over	--	--

*There were no individuals aged 65 years and older who spoke both language and had a normal body mass index. Because there was no comparative group, this age group was excluded in order to calculate the odds ratio for this indicator (N=841).

Table 7: Overweight - Test for sex interactions within the domains of family roles, cultural practices, and social-economic using "block entry" logistic regression (n=950)

Domains and interaction terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Family roles			
Marital status main effects model:	1257.464 (3)		
Sex			
Partner			
Past partner			
Marital status interaction effects model	1252.899 (5)	4.565 (2)	Not Sig.
Sex			
Partner			
Sex X Partner			
Past partner			
Sex X Past partner			
Parenting history main effects model:	1253.951 (2)		
Sex			
Parenting history			
No Parenting history interaction effects model:	1248.140 (3)	**5.811 (1)**	**0.05 < P < 0.02**
Sex			
No Parenting history			
Sex X No Parenting history			
Cultural practices			
Language main effects model:	1275.003 (3)		
Sex			
Aboriginal			
Aboriginal and English			
Language interaction effects model:	1274.818 (5)	0.185 (2)	Not Sig.
Sex			
Aboriginal			
Sex X Aboriginal			
Aboriginal and English			
Sex X Aboriginal and English			

Domains and interaction terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Social-economic			
Primary source of income main effects model	1282.508 (3)		
Sex			
Wages			
Social assistance			
Other sources of income			
Primary source of income interaction effects	1281.380 (5)	1.128 (2)	Not Sig.
Sex			
Wages			
Sex X Wage			
Social assistance			
Sex X Social assistance			

Table 8: Overweight – Odds ratios in the presence of significant sex by no parenting history interactions (n=950)

Sex as an effect modifier	**Family roles – No Parenting history** Ref. No Parenting history and Normal weight (n=950)
Male	**0.23 (0.15 – 0.35)**
Female	0.60 (0.31 – 1.16)

Table 9: Overweight - Final logistic Regression Main and Interaction Effects Model (n=950)

Individual level effects	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Main effects				
Age				
18 – 24 years	Ref.	--	--	--
25 – 44 years	P<0.001	1.76	1.25	2.48
45 – 64 years	P<0.001	2.76	1.66	4.60
65 and older	Not Sig.	1.27	0.64	2.57
Marital status				
Single	Ref.	--	--	--
Past partner	P<0.05	1.93	1.00	3.75
Partner	Not Sig.	0.98	0.68	1.40
Language				
Aboriginal	Not Sig.	1.25	0.92	1.69
Aboriginal and English	P<0.001	2.26	1.22	4.21
English only	Ref.	--	--	--
Primary source of income				
Social assistance	Ref.	--	--	--
Wages	P<0.05	1.39	1.10	1.93
Other sources	P<0.01	1.81	1.18	2.75
Interaction effects				
Sex				
Male	Ref.	--	--	--
Female	Not Sig.	4.69	0.98	22.41
No Parenting history				
History	Ref.	--	--	--
No History	P<0.001	0.13	0.04	0.40
Sex X Parenting history	P<0.001	0.40	0.17	0.91

Multilevel logistic regression

Table 10: Block entry multilevel analysis revealed that marital status or parenting history (none) is a proxy measure for the other (community N=16; n=951)

Cross tabulation	No Parenting history	
Marital status	No Freq (%)	Yes Freq (%)
Single	157 (51.6)	147 (48.4)
Past partner	79 (94.0)	5 (6.0)
Partner	537 (95.4)	26 (4.6)
* P=0.000		

Logistic regression correlation matrix	Constant	Single	Past partner	No parenting history
Constant	1.000	-.459	-.304	-.107
Single	-.459	1.000	.170	-.488
Past partner	-.304	.170	1.000	-.024
No parenting history	-.107	-.488	-.024	1.000

Table 11: Significant individual level predictors of overweight using "block entry" multilevel logistic regression (community N=16; n=922)

Base and Domain	X^2 (df)	Level of Significance
Overweight null model		
Demographic	37.06 (4)	P = 0.000
Family roles (only parenting history included)	24.16 (1)	Not Sig.
Social-economic	6.96 (2)	P = 0.03
Cultural practices	21.95 (2)	P = 0.000
Step 1: Demographic Base		
Family roles	18.43 (2)	P = 0.000
Social-economic	3.14 (2)	P = 0.21
Cultural practices	10.13 (2)	P = 0.01
Step 2: Demographic + Family roles base		
Social-economic	2.75 (2)	Not Sig.
Cultural practices	9.18 (2)	P = 0.01
Step 3: Demographic + Family roles + Cultural practices Base		
Social-economic	2.83 (2)	Not Sig.
Final Model	**9.18 (2)**	**P = 0.01**
Demographic		
Family roles		
Cultural practices		

Table 12: Overweight - Test for sex interactions within the domains of family roles using "block entry" multilevel logistic regression (community N=16; n=922)

Domains and interaction terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Family roles			
Parenting history main effects model:	2938.64 (4)		
Sex			
Parenting history			
No parenting history interaction effects model:	2931.52 (5)	7.12 (1)	P = 0.01
Sex			
No parenting history			
Sex X No parenting history			

Table 13: Overweight – Final multilevel logistic regression main and interaction effects model (community N=16; n=922)

Individual level effects	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Main effects				
Age				
18 – 24 years	Ref.	--	--	--
25 – 44 years	P<0.01	1.65	1.16	2.33
45 – 64 years	P<0.001	2.58	1.58	4.21
65 and older	Not Sig.	1.61	0.91	1.67
Language				
Aboriginal	Not Sig.	1.23	0.91	1.67
Aboriginal and English	P<0.01	2.30	1.28	4.12
English Only	Ref.	--	--	--
Interaction effects				
Sex				
Male	Ref.	--	--	--
Female	P<0.05	4.57	3.11	6.03
Parenting history				
History	Ref.	--	--	--
No History	Not Sig.	0.77	0.56	1.02
Sex X No parenting history	P<0.02	0.37	0.17	0.81

Table 14: Multilevel logistic regression model of community effects independently associated with overweight – No effects found (Community N = 16; n=922)

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Overweight null model	2970.99		P<0.01
Geopolitical environment			
Geographic location	2970.66	0.33	N.S.
Community isolation	2970.83	0.16	N.S.
Population environment			
Population change 1991-1996	2968.50	2.49	N.S.
Lone parent families	2968.96	2.02	N.S.
Female headed lone parent families	2967.06	3.93	N.S.
Male headed lone parent families	2967.06	3.93	N.S.
Age dependency (elders & children)	2970.99	0.00	N.S.
Cultural environment			
Individual use of Aboriginal language	2969.54	1.45	N.S.
Home use of Aboriginal language	2968.73	0.09	N.S.
Ceremonial and healing practices	2969.54	0.39	N.S.
Discrimination environment			
Attend residential school	2970.69	0.30	N.S.
In-community health service discrimination	2970.76	0.23	N.S.
Out-community health service discrimination	2970.52	0.48	N.S.
Housing & infrastructure environment			
Community infrastructure service disparity	2970.39	0.60	N.S.
Inadequate household plumbing facilities	--	- -	N.S.
Inadequate housing	2968.60	2.39	N.S.
Stock of older housing	2968.45	2.54	N.S.
Availability of alternative housing	2969.87	1.12	N.S.
New housing development	2970.54	1.24	N.S.
Social-economic environment			
Completed elementary education only	2970.38	0.61	N.S.
Completed secondary education	2970.73	0.26	N.S.
Women incomplete formal education	2970.77	0.22	N.S.
Men incomplete formal education	2970.86	0.13	N.S.
Women completed high school	2970.39	0.60	N.S.
Men completed high school	2970.86	0.13	N.S.
Women advanced education	2969.77	1.22	N.S.
Men advanced education	2969.11	1.88	N.S.
Individual income	2970.31	0.68	N.S.
Women individual income	2969.18	1.81	N.S.
Men individual income	2970.30	0.69	N.S.
Family income	2969.31	1.68	N.S.
Female lone parent income	2968.95	2.04	N.S.

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Income derived from social assistance	2970.75	0.24	N.S.
Income derived from employment	2970.75	0.24	N.S.
Employment participation	2970.70	0.29	N.S.
Men employment participation	2970.78	0.21	N.S.
Women employment participation	2970.27	0.72	N.S.
Unemployment rate	2970.51	0.48	N.S.
Women unemployment	2967.54	0.72	N.S.
Men unemployment	2970.71	0.28	N.S.
Primary industry participation	2968.40	0.77	N.S.
Secondary industry participation	2970.62	0.55	N.S.
Tertiary industry participation	2970.07	0.92	N.S.
Community economic disparity	2970.65	0.34	N.S.
Perceived social-economic & infrastructure environment			
Infrastructure disparity	2970.84	0.15	N.S.
Education opportunities	2969.09	1.90	N.S.
Unemployment disparity	2969.74	1.25	N.S.
Food security problems	2970.53	0.46	N.S.
Social problem environment			
Addiction problems	2967.47	3.52	N.S.
Violence problems	2970.36	0.63	N.S.
Social support environment			
Personal trust environment	2970.16	0.83	N.S.
Personal caring environment	2970.70	0.29	N.S.
Risk behavior environment			
Smoking	2968.70	2.29	N.S.
Never smoked	2968.89	2.10	N.S.
Quit smoking	2969.01	1.98	N.S.
Drinking problem history	--	--	N.S.
Drinking problems	--	--	N.S.
Stopped drinking	--	--	N.S.
No positive dietary changes	2968.13	2.86	N.S.
Some positive dietary changes			N.S.
High positive dietary changes	2969.28	1.71	N.S.
Normal Body Weight	--	--	N.S.
Overweight	--	--	N.S.
Obesity	--	--	N.S.
Health status environment			
Diabetes	2969.84	1.15	N.S.
Hypertension	2970.05	0.94	N.S.
Self-rated poor health	2970.46	0.53	N.S.
Suicide thoughts	--	--	N.S.

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Health service environment			
Type of community health center	2969.61	1.38	N.S.
Health transfer status	2970.57	0.42	N.S.
Need of physician services	--	--	N.S.
Physician supply deficiency	2969.74	1.25	N.S.
Routine physical examination	--	--	N.S.
Annual blood pressure checkup	--	--	N.S.

APPENDIX 7 - OBESITY

Logistic regression analysis

Table 1: Significant predictors of obesity using "forward" logistic regression (n=1360)

Individual level variables	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Demographics				
Age				
18 – 24 years	Ref.	--	--	--
25 – 44 years	P<0.001	2.67	1.91	3.70
45 – 64 years	P<0.001	4.74	3.23	6.96
65 and older	P<0.01	2.20	1.23	3.19
Sex				
Male	Ref.	--	--	--
Female	P<0.05	1.32	1.05	1.66
Family roles				
Marital status				
Single	Ref.	--	--	--
Partner	P<0.05	1.70	1.09	2.63
Past partner	P<0.001	1.72	1.031	2.26
No parenting history				
History	Not Sig.			
No history	Ref.			
Extended family parenting history				
No	Ref.	--	--	--
Yes	P<0.001	1.64	1.26	2.13
Lifetime of care giving				
None	Ref.			
One to three children	Not Sig.			
Four or more children	Not Sig.			
Single parent				
No	Not Sig.			
Yes	Ref.			
Household composition				
Currently live alone				
No	P<0.001	1.71	1.02	2.88
Yes	Ref.	--	--	--

Individual level variables	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Discrimination				
Attend residential school				
No	Not Sig.	--	--	--
Yes	P<0.01	1.59	1.17	2.16
Cultural practices				
Consume wild meat				
No	Ref.	--	--	--
Yes	P<0.05	1.34	1.07	1.73
Ceremonial and healing practices				
Low	Ref.	--	--	--
Typical	Not Sig.	0.93	0.71	1.20
High	P<0.05	1.38	1.04	1.84
Social-economic				
Worked in the past year				
No	Not Sig.			
Yes	Ref.			
Currently employed				
No	Not Sig.			
Yes	Ref.			
Primary source of income				
Social assistance	Ref.	--	--	--
Wages	P<0.001	1.93	1.51	2.46
Other sources	Not Sig.	1.38	0.97	1.95
Household income				
Not stated	Ref.			
< $10,000	Not Sig.			
$10 – 24,999	Not Sig.			
$25,000 or more	Not Sig.			

Table 2: Obesity – Best null model fitted using "block entry" logistic regression (N=1396)

Individual level variables / domains	- 2 Log Likelihood	d.f.	R^2
Obesity	1796.756		
Demographic	1723.204	4	.071
Age			
Sex			
Family roles	1764.807	3	.031
Marital status			
Extended family parenting history			
Household composition	1791.679	1	.005
Currently living alone			
Discrimination	1789.065	1	.008
Attend residential school			
Cultural practices	1783.562	3	.013
Consume wild meat			
Ceremonial and healing practices			
Social-economic	1766.771	2	.029
Primary source of income			

Table 3: Obesity - Best model fitted using "block entry" logistic regression (n=1396)

Base and Domain	X^2 (df)	Level of Significance
Obesity null model		
Demographic	73.552 (4)	0.05 > P > 0.001
Family roles	31.949 (3)	0.05 > P > 0.001
Household composition	5.077 (1)	0.05 > P > 0.010
Discrimination	7.691 (1)	0.05 > P > 0.010
Cultural practices	13.194 (1)	0.05 > P > 0.010
Social-economic	29.985 (2)	P = 0.05
Step 1: Demographic Base		
Family roles	8.854 (3)	P = 0.05
Household composition	6.271 (1)	0.05 > P > 0.02
Discrimination	0.027 (1)	Not Sig.
Cultural practices	8.896 (3)	P = 0.05
Social-economic	19.746 (2)	0.05 > P > 0.001

Base and Domain	X^2 (df)	Level of Significance
Step 2: Demographic + Social-economic Base		
Family roles	5.338 (3)	Not Sig.
Household composition	4.77 (1)	P = 0.05
Discrimination	0.038 (1)	Not Sig.
Cultural practices	7.673 (3)	Not Sig.
Final Model	**4.77 (1)**	**P = 0.05**
Demographic		
Social-economic		
Household composition		

Table 4: Obesity - Final logistic regression main effects model (n=1495)

Individual level effects	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Demographics				
Age				
18 – 24 years	Ref.	--	--	--
25 – 44 years	P<0.001	2.65	1.91	3.67
45 – 64 years	P<0.001	4.97	3.41	7.24
65 years and older	P<0.01	2.73	1.53	4.87
Sex				
Male	Ref.	--	--	--
Female	P<0.05	1.26	1.01	1.58
Household composition				
Currently living alone				
No	P<0.05	1.74	1.02	2.96
Yes	Ref.	--	--	--
Social-economic				
Primary source of income				
Social assistance	Not Sig.	0.94	0.67	1.33
Wages	P<0.01	1.68	1.19	2.39
Other sources	Ref.	--	--	--

Table 5: Test for Age Interactions within the Domains of Demographics, Household Composition and Social-economic Well-Being Using "Block Entry" Logistic Regression (n=1495)

Domains and interaction terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Demographics			
Demographic main effects model:	1893.963 (2)		
Age			
Sex			
Demographic interaction effects model:	1893.829 (3)	0.134 (1)	Not Sig.
Age			
Sex			
Age X Sex			
Household Composition			
Currently living alone main effects model:	1899.493 (2)		
Age			
Currently living alone			
Currently living along interaction effects model:	1899.452 (3)	0.041 (1)	Not Sig.
Age			
Currently living alone			
Age X Currently living alone			
Social-economic			
Primary source of income main effects model	1881.315 (3)		
Age			
Wages			
Social assistance			
Primary source of income interaction effects model	1874.576 (5)	**6.739 (2)**	**P < 0.05**
Age			
Wages			
Age X Wage			
Social assistance			
Age X Social assistance			

Table 6: Obesity - Odds ratios in the presence of significant age by primary source of primary source of income interaction (n=1495)

*Age as an effect modifier	Odds ratio: Primary source of income and Obesity Ref. Other sources of income and Not obese **Wages** Ref. Other sources of income (n=525)	**Social assistance** Ref. Other sources of income (n=521)
18 – 24 Years	1.31 (0.53 - 3.23)	0.62 (0.27 – 1.42)
25 – 44 Years	**2.24 (1.39 - 3.61)**	1.47 (0.90 – 2.39)
45 – 64 Years	2.05 (0.98 - 4.27)	1.08 (0.53 – 2.20)
65 and Over	--	--

*In the oldest age group, there were no individuals who were obese and had a source of income from wages. Because there was no comparative cohort, this age group was dropped to calculate the odds ratios for this indicator.

Table 7: Test for sex interactions within the domains of household composition and social-economic using "block entry" logistic regression (n=1495)

Domains and interaction terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Household composition			
Currently living alone main effects model:	1936.290 (2)		
Sex			
Currently living alone			
Currently living alone interaction effects model:	1934.351 (3)	1.939 (1)	Not Sig.
Sex			
Currently living alone			
Sex X Currently living alone			
Social-economic			
Primary source of income main effects model:	1916.310 (3)		
Sex			
Wages			
Social assistance			
Primary source of income interaction effects model	1916.063 (5)	0.247 (2)	Not Sig.
Sex			
Wages			
Sex X Wage			
Social assistance			
Sex X Social assistance			

Table 8: Obesity - Final logistic regression main effects model (n=1495)

Individual level effects	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Main effects				
Age				
17 – 24 years	Ref.	--	--	--
25 – 44 years	P<0.001	2.65	1.91	3.67
45 – 64 years	P<0.001	4.97	3.41	7.24
65 years and older	P<0.01	2.73	1.53	4.87
Sex				
Male	Ref.	--	--	--
Female	P<0.05	1.27	1.02	1.59
Currently living alone				
No	P<0.05	1.66	1.00	2.76
Yes	Ref.	--	--	--
Primary source of income				
Social assistance	Not Sig.	0.94	0.67	1.33
Wages	P<0.01	1.68	1.19	2.39
Other sources	Ref.	--	--	--

Multilevel logistic regression analysis

Table 9: Significant individual level predictors of obesity using "block entry" multilevel logistic regression (community=16; n=1504)

Base and Domain	X^2 (df)	Level of Significance
Obesity null model		
Demographic	80.45 (4)	P = 0.000
Household composition	0.25 (1)	Not Sig.
Social-economic	19.64 (2)	P = 0.000
Step 1: Demographic base		
Social-economic	11.60 (2)	P = 0.003
Household composition	0.51(1)	Not Sig.
Step 2: Demographic & Social-economic base		
Household composition	0.35(1)	Not Sig.
Final Model	**11.60 (2)**	**P = 0.003**
Demographic		
Social-economic		

Table 10: Test for age interactions within the domain of social-economic using "block entry" multilevel logistic regression (n=1504)

Domains and interaction terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Social-economic			
Primary source of income main effects model	4655.55 (7)		
Age			
Wages			
Social assistance			
Primary source of income interaction effects model	A near singularity occurred. Possible source was collinearity or multicollinearity among the predictors. Age was dropped from the analysis based on a cross tabulation that indicated no difference within age for social assistance and wages or across age for other sources of income.		
Age			
Wages			
Age X Wage			
Social assistance			
Age X Social assistance			

Table 11: Obesity – Final multilevel logistic regression main effects model (n=1504)

Individual level effects	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Main effects				
Sex				
Male	Ref.			
Female	P<0.01	1.34	1.08	1.66
Primary source of Income				
Social Assistance	P<0.01	0.85	0.60	1.19
Wages	P<0.02	1.46	1.03	2.06
Other Sources	Ref.	--	--	--

Table 12: Significant community level predictors of obesity using multilevel logistic regression (n=1504)

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Obesity null model	4744.08 (2)		
Geopolitical environment			
Geographic location	4741.40 (3)	2.68 (1)	0.1019
Community isolation	4741.76 (3)	2.32 (1)	0.1275
Population environment			
Population change 1991-1996	4741.37 (4)	2.71 (2)	0.2580
Lone parent families	4742.52 (4)	1.56 (2)	0.4579
Female headed lone parent families	4739.95 (4)	4.13 (2)	0.1270
Male headed lone parent families	4739.95 (4)	4.13 (2)	0.1270
Age dependency (elders & children)	4742.77 (4)	1.31 (2)	0.5197
Cultural environment			
Individual use of Aboriginal language	4741.58 (4)	2.50 (2)	0.2870
Home use of Aboriginal language	4742.71 (4)	1.37 (2)	0.5050
Ceremonial and healing practices	4741.83 (4)	2.25 (2)	0.3242
Discrimination environment			
Attended residential school	4743.66 (4)	0.42 (2)	0.8098
In-community health service discrimination	4740.07 (4)	4.01 (2)	0.1345
Out-community health service discrimination	4739.25 (4)	4.83 (2)	0.0893
Housing and infrastructure environment			
Community infrastructure service disparity	4740.46 (4)	3.62 (2)	0.1636
Inadequate household plumbing facilities	4742.73 (4)	1.36 (2)	0.5078
Inadequate housing	4744.00 (4)	0.09 (2)	0.9584
Stock of older housing	4742.49 (4)	1.59 (2)	0.4510
Availability of alternative housing	4736.55 (4)	7.54 (2)	0.0231
New housing development	4742.45 (4)	1.63 (2)	0.4419
Social-economic environment			
Completed elementary education only	4743.92 (4)	0.17 (2)	0.9204
Completed secondary education	4744.02 (4)	0.06 (2)	0.9689
Women incomplete formal education	4744.06 (4)	0.02 (2)	0.9880
Men incomplete formal education	4743.24 (4)	0.84 (2)	0.6570
Women completed high school	4743.22 (4)	0.86 (2)	0.6517
Men completed high school	4744.05 (4)	0.03 (2)	0.9864
Women advanced education	4740.90 (4)	3.18 (2)	0.2039
Men advanced education	4744.06 (4)	0.02 (2)	0.9879
Individual income	4743.00 (4)	1.09 (2)	0.5810
Women individual income	4742.27 (4)	1.81 (2)	0.4038
Men individual income	4743.15 (4)	0.93 (2)	0.6287
Family income	4739.29 (4)	4.79 (2)	0.0913
Female lone parent income	4739.37 (4)	4.71 (2)	0.0947

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Income derived from social assistance	4736.36 (4)	7.72 (2)	0.0211
Income derived from employment	4736.36 (4)	7.72 (2)	0.0211
Employment participation	4736.01 (4)	8.07 (2)	0.0177
Men employment participation	4739.50 (4)	4.58 (2)	0.1012
Women employment participation	4737.95 (4)	6.13 (2)	0.0466
Unemployment	4743.84 (4)	0.24 (2)	0.8852
Women unemployment	4743.92 (4)	0.16 (2)	0.9237
Men unemployment	4743.99 (4)	0.09 (2)	0.9537
Primary industry participation	4740.42 (4)	3.66 (2)	0.1605
Secondary industry participation	4742.89 (4)	1.19 (2)	0.5518
Tertiary industry participation	4739.29 (4)	4.79 (2)	0.0910
Community economic disparity	4742.26 (4)	1.82 (2)	0.4033
Perceived social-economic & infrastructure environment			
Infrastructure disparity	4743.53 (4)	0.55 (2)	0.7598
Education opportunities	4740.14 (4)	3.94 (2)	0.1396
Unemployment disparity	4743.88 (4)	0.21 (2)	0.9022
Food security problems	4743.52 (4)	0.56 (2)	0.7544
Social problem environment			
Addiction problems	4741.43 (4)	2.65 (2)	0.2660
Violence problems	4741.74 (4)	2.34 (2)	0.3110
Social support environment			
Personal trust environment	4742.61 (4)	1.47 (2)	0.4792
Personal caring environment	4743.16 (4)	0.92 (2)	0.6303
Risk behavior environment			
Smoking	4740.63 (4)	3.45 (2)	0.1780
Never smoked	4739.52 (4)	4.56 (2)	0.1020
Quit smoking	4743.81 (4)	0.27 (2)	0.8725
Drinking problem history	4741.32 (4)	2.76 (2)	0.2517
Drinking problems	4740.51 (4)	3.57 (2)	0.1675
Stopped drinking	4743.11 (4)	0.97 (2)	0.6149
No positive dietary changes	4744.05 (4)	0.03 (2)	0.9864
Some dietary changes	4741.09 (4)	2.99 (2)	0.2238
High positive dietary changes	4743.12 (4)	0.96 (2)	0.6191
Normal body weight	4736.94 (4)	7.15 (2)	0.0281
Overweight	4743.85 (4)	0.23 (2)	0.8909
Obesity	No Laplace	--	--
Health status environment			
Diabetes	4741.45 (4)	2.63 (2)	0.2686
Hypertension	4743.23 (4)	0.85 (2)	0.6528
Self-Rated poor health	4744.04 (4)	0.04 (2)	0.9788
Suicide thoughts	4742.99 (4)	1.09 (2)	0.5803

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Health service environment			
Type of community health center	4741.77 (4)	2.31 (2)	0.3154
Health transfer status	4741.57 (4)	2.51 (2)	0.2844
Need of physician services	4743.94 (4)	0.14 (2)	0.9322
Physician supply deficiency	4739.12 (4)	4.96 (2)	0.0838
Routine physical examination	4738.03 (4)	6.05 (2)	0.0486
Annual blood pressure checkup	4742.96 (4)	1.12 (2)	0.5710

Table 13: Multilevel logistic regression model of community effects independently associated with obesity (Community N=16; n=1504)

Community level effects	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Social-economic environment				
Income derived from social assistance				
Low levels	Ref.	--	--	--
Typical levels	Not Sig.	1.07	1.00	1.16
High levels	P<0.01	1.13	1.04	1.23
Income derived from employment				
Low levels	P<0.01	1.73	1.18	2.54
Typical levels	Not Sig.	1.38	0.98	1.94
High levels	Ref.	--	--	--
Employment participation				
Low levels	P<0.01	1.75	1.20	2.55
Typical levels	Not Sig.	1.38	0.99	1.99
High levels	Ref.	--	--	--
Women employment participation				
Low levels	P<0.01	1.61	1.09	2.40
Typical levels	P<0.02	1.43	1.00	2.04
High levels	Ref.	--	--	--
Risk behavior environment				
Normal body weight				
Low levels	P<0.02	1.69	1.14	2.50
Typical levels	P<0.05	1.45	1.02	2.05
High levels	Ref.	--	--	--
Health service environment				
Routine physical examination				
Low levels	P<0.05	1.44	1.02	2.33
Typical levels	Ref.	--	--	--
High levels	Not Sig.	1.40	0.98	2.00

Table 14: Multilevel logistic regression model of community effects independently associated with obesity after adjusting for individual level effects (Community N=16; n=1504)

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Level one model	4716.47 (9)		
Social-economic environment			
Income derived from social assistance	4706.13 (9)	10.34 (2)	0.006
Income derived from employment	4706.13 (7)	10.34 (2)	0.006
Employment participation	4708.61 (9)	9.39 (2)	0.009
Women employment participation	4708.61 (7)	7.86 (2)	0.020
Risk behavior environment			
Normal body weight	4711.46 (9)	5.01 (2)	Not Sig.
Health service environment			
Routine physical examination	4711.12 (7)	5.35 (2)	Not Sig.

Table 15: Multilevel logistic regression model of community effects independently associated with obesity after Adjusting for individual level effects (community N=16; n=1504)

Community level effects	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Social-economic environment				
Income derived from social assistance				
Low levels	Ref.	--	--	--
Typical levels	P<0.05	1.45	1.05	1.99
High levels	P<0.01	1.86	1.29	2.67
Income derived from employment				
Low levels	P<0.05	1.86	1.09	3.16
Typical levels	P<0.05	1.45	1.04	2.02
High levels	Ref.	--	--	--
Employment participation				
Low levels	P<0.01	1.81	1.26	2.62
Typical levels	P<0.06	1.46	1.06	2.03
High levels	Ref.	--	--	--
Women employment participation				
Low levels	P<0.01	1.70	1.08	2.14
Typical levels	P<0.02	1.52	1.10	2.02
High levels	Ref.	--	--	--

APPENDIX 8 - SELF-RATED POOR HEALTH

Logistic regression analysis

Table 1: Significant predictors of self-rated poor health using forward logistic regression (n=1537)

Individual level variables	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Demographics				
Age				
17 – 24 years	Ref.	--	--	--
25 – 44 years	Not Sig.	1.22	0.95	1.57
45 – 64 years	P<0.001	2.94	2.11	4.09
65 and older	P<0.001	3.15	1.87	5.30
Sex				
Male	Ref.	--	--	--
Female	P<0.001	1.73	1.41	2.12
Family roles				
Biological parenting history				
No	Ref.			
Yes	Not Sig.			
Lifetime of care giving				
None	Ref.	--	--	--
One to three children	Not Sig.	1.05	.79	1.40
Four or more children	P<0.001	1.79	1.33	2.41
Discrimination				
Attend residential school				
No	Ref.	--	--	--
Yes	P<0.001	2.45	1.82	3.32
Social-economic				
Education				
Elementary or less	Not Sig.	1.42	0.99	2.04
Some junior high school	P<0.05	1.35	1.05	1.75
High school or more	Ref.	--	--	--
Worked in the past year				
No	P<0.001	1.55	1.19	2.03
Yes	Ref.	--	--	--
Primary source of income				
Social assistance	Not Sig.	1.35	0.97	1.88
Wages	P<0.001	1.82	1.29	2.57
Other sources	Ref.	--	--	--

Individual level variables	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Household income				
Not stated	Ref.			
< $10,000	Not Sig.			
$10 – 24,999	Not Sig.			
$25,000 or more	Not Sig.			
Worse off than other households				
No	Ref.	--	--	--
Yes	P<0.001	0.70	0.57	0.867
Social Issues				
Perceived community economic disparity				
Low	Ref.			
Typical	Not Sig.			
High	Not Sig.			

Table 2: Self-rated poor health – Best null model using logistic regression (n=1537)

Individual level variables / Domain	- 2 Log Likelihood	d.f.	R^2
Self-rated poor health	2128.863		
Demographic	2042.698	4	.073
Age			
Sex			
Family roles	2102.300	2	.023
Lifetime of care giving			
Discrimination	2092.199	1	.031
Attend residential school			
Social-economic	2086.196	6	.037
Education			
Worked in the past year			
Primary source of income			
Worse off than other households			
Social issues	2124.338	2	.004
Perceived community economic disparity			

Table 3: Self-rated poor health - Best model fitted using "block entry" logistic regression (n=1537)

Base and Domain	X^2 (df)	Level of Significance
Self-rated poor health null model		
Demographic	86.165 (4)	0.05 > P > 0.001
Family roles	26.563 (2)	0.05 > P > 0.001
Discrimination	36.664 (1)	0.05 > P > 0.001
Social-economic	42.667 (6)	0.05 > P > 0.001
Step 1: Demographic Base		
Family roles	6.337 (2)	P = 0.042
Discrimination	5.545 (1)	P = 0.019
Social-economic	38.448 (6)	0.05 > P > 0.001
Step 2: Demographic + Social-economic Base		
Family roles	4.786 (2)	Not Sig.
Discrimination	4.944 (1)	P = 0.026
Final Model	**4.944 (1)**	**P = 0.026**
Demographic		
Social-economic		
Discrimination		

Table 4: Self-Rated Poor Health – Final logistic regression main effects model (n=1614)

Individual level effects	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Demographics				
Age				
17 – 24 years	Ref.	--	--	--
25 – 44 years	Not Sig.	1.24	0.95	1.61
45 – 64 years	P<0.001	2.83	1.88	4.27
65 and older	P<0.001	3.67	1.97	6.84
Sex				
Male	Ref.			
Female	P<0.001	1.61	1.30	1.99
Discrimination				
Attend residential school				
No	Ref.	--	--	--
Yes	P<0.05	1.50	1.05	2.16
Social-economic				
Worked in the past year				
No	P<0.05	1.39	1.05	1.84
Yes	Ref.	--	--	--
Primary source of income				
Social assistance	P < 0.05	1.58	1.12	2.22
Wages	P<0.001	1.84	1.28	2.64
Other sources	Ref.	--	--	--
Worse off than other households				
No	Ref.			
Yes	P<0.01	0.68	0.55	0.85

Table 5: Self-rated poor health - Test for age interactions within the domains of demographics, discrimination and social-economic using "block entry" logistic regression (n=1614)

Domains and interaction terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Demographics			
Demographic main effects model:	2137.433 (2)		
Age			
Sex			
Demographic interaction effects model:	2132.119 (3)	**5.314 (1)**	**P < 0.025**
Age			
Sex			
Age X Sex			
Discrimination			
Attend residential school main effects model:	2152.322 (2)		
Age			
Attend residential school			
Attend residential school interaction effects model	2152.309 (3)	0.013 (1)	Not Sig.
Age			
Attend residential school			
Age X Attend residential school			
Social-economic			
Worked in the past year main effects model	2143.581 (2)		
Age			
Worked in the past year			
Worked in the past year interaction effects model	2143.130 (3)	0.451 (1)	Not Sig.
Age			
Worked in the past year			
Age X Worked in the past Year			

Domains and interaction terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Primary source of income main effects model Age Social Assistance Wages	2147.376 (3)		
Primary source of income interaction effects Age Social assistance Age X Social assistance Wages Age X Wages	2141.732 (5)	5.644 (2)	Not Sig.
Worse off than other households main effects model Age Worse off than other households	2149.638 (2)		
Worse off than other households interaction effects model Age Worse off than other households Age X Worse off than other households	2149.623 (3)	0.015 (1)	Not Sig.

Table 6: Self-Rated Poor Health - Odds Ratios in the Presence of Significant Age by Sex (n=1614)

Age as an effect modifier	Odds ratio: Sex and Self-rated poor health Ref. Male and Good Health Status
18 – 24 Years	2.73 (1.81 – 4.13)
25 – 44 Years	1.40 (1.07 – 1.84)
45 – 64 Years	2.12 (1.27 – 3.54)
65 and Over	0.51 (0.20 – 1.30)

Table 7: Self-rated poor health - Test for sex interactions within the domains of discrimination and social-economic using "block entry" logistic regression (n=1614)

Domains and interaction terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Discrimination			
Attend residential school main effects model:	2162.662 (2)		
Sex			
Attend residential school			
Attend residential school interaction effects model	2162.662 (3)	0.000 (1)	Not Sig.
Sex			
Attend residential school			
Sex X Attend residential school			
Social-economic			
Worked in the past year main effects model:	2181.060 (2)		
Sex			
Worked in the past year			
Worked in the past year interaction effects	2179.887 (3)	1.173 (2)	Not Sig.
Sex			
Worked in the past year			
Sex X Worked in the past year			
Primary source of income main effects model	2183.855 (3)		
Sex			
Social assistance			
Wages			
Primary source of income interaction effects model	2182.503 (5)	1.352 (2)	Not Sig.
Sex			
Social assistance			
Sex X Social assistance			
Wages			
Sex X Wages			

Domains and interaction terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Worse off than other households Main Effects	2183.030 (2)		
Sex			
Worse off than Other Households			
Worse off than other households interaction effects model	2184.177 (3)	1.147 (1)	Not Sig.
Sex			
Worse off than other households			
Sex X Worse off than other households			

Table 8: Self-rated poor health - Final logistic regression main and interaction effects model (n=1614)

Individual level effects	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Main effects				
Attend residential school				
No	Ref.	--	--	--
Yes	P<0.05	1.48	1.04	2.10
Worked in the past year				
No	P<0.01	1.47	1.12	1.91
Yes	Ref.	--	--	--
Primary source of income				
Social assistance	P<0.02	1.46	1.05	2.02
Wages	P<0.05	1.90	1.34	2.70
Other sources	Ref.	--	--	--
Worse off than other households				
No	P<0.001	1.46	1.18	1.81
Yes	Ref.	--	--	--
Interaction effects				
Age	P<0.001	0.98	0.97	0.99
Sex				
Male	Ref.	--	--	--
Female	P<0.001	3.08	1.73	5.48
Age X Sex	P < 0.02	1.06	1.03	1.08

Multilevel Logistic Regression Analysis

Table 9: No significant community level variation in self-rated poor health using multilevel logistic regression

Community Variation in the Outcome	Deviance (df)	Level of Significance
Self-rated poor health null model	- -	Not Sig.

APPENDIX 9 - SUICIDE THOUGHTS

Logistic regression analysis

Table 1: Significant predictors of Suicide thoughts identified using forward logistic regression (n=1520)

Individual level variables	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Demographics				
Age				
18 – 24 years	P<0.001	2.35	1.59	3.54
25 – 44 years	P<0.001	2.20	1.59	3.05
45 years and older	Ref.	--	--	--
Family roles				
Primary caregiver				
No	Ref.	--	--	--
Yes	P<0.01	1.41	1.13	1.75
Cultural Practices				
Language				
Aboriginal only	Ref.	--	--	--
Aboriginal & English	P<0.02	1.64	1.08	2.51
English only	P<0.01	2.40	1.87	3.08
Ceremonial and healing practices				
Low	Ref.	--	--	--
Typical	P<0.05	1.26	0.96	1.64
High	P<0.01	2.17	1.63	2.88
Discrimination				
Out-community health service discrimination				
No	Ref.	--	--	--
Yes	P<0.001	1.87	1.47	2.38
Social-economic				
Education				
Elementary or less	Ref.	--	--	--
Some junior high school	P<0.001	3.34	2.12	5.28
High school or more	P<0.001	4.20	2.56	6.91
Worked in the past year				
No	Ref.	--	--	--
Yes	P<0.001	1.61	1.27	2.05

Individual level variables	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Worse off than other households				
No	P<0.001	1.51	1.19	1.92
Yes	Ref.	--	--	--
Run out of money for food				
No	Ref.	---	--	--
Yes	P<0.001	1.46	1.15	1.85
Social issues				
Household addiction problems				
No	Ref.	--	--	--
Yes	P<0.001	2.76	2.12	3.60
Perceived community economic disparity				
Low	Ref.	--	--	--
Typical	Not Sig.	1.13	0.79	1.63
High	P<0.02	1.53	1.08	2.15

Table 2: Suicide thoughts – Best null model identified using "block entry" logistic regression (n=1612)

Individual level variables / domain	- 2 Log Likelihood	d.f.	R^2
Suicide thoughts			
Demographic	1852.604	3	0.054
Age			
Family roles	1902.202	1	0.011
Primary caregiver			
Discrimination	1886.584	1	0.025
Out-community health service discrimination			
Cultural Practices	1820.120	4	0.082
Language			
Ceremonial and healing practices			
Social-economic	1817.627	5	0.084
Education			
Worked in the past year			
Primary source of income			
Worse off than other households			
Run out of money for food			
Social issues	1832.127	3	0.072
Household addiction problems			
Perceived community social-economic disparity			

Table 3: Suicide thoughts - Best model fitted using "block entry" logistic regression (n=1612)

Base and Domain	X^2 (df)	Level of Significance
Suicide thoughts null model		
Demographics	62.444 (2)	0.05 > P > 0.001
Cultural practices	94.929 (4)	0.05 > P > 0.001
Family roles	12.847(1)	0.05 > P > 0.001
Discrimination	28.465 (1)	0.05 > P > 0.001
Social-economic	97.422 (5)	0.05 > P > 0.001
Social issues	82.921 (3)	0.05 > P > 0.001
Step 1: Cultural practices Base		
Demographics	35.197 (2)	0.05 > P > 0.001
Family roles	5.103 (1)	P=0.024
Discrimination	16.220 (3)	0.05 > P > 0.001
Social-economic	55.324 (5)	0.05 > P > 0.001
Social issues	60.682 (3)	0.05 > P > 0.001
Step 2: Cultural practices + Social Issues Base		
Demographics	30.554 (2)	0.05 > P > 0.001
Family roles	3.821 (1)	Not Sig.
Discrimination	10.239 (1)	0.05 > P > 0.001
Social-economic	43.236 (5)	0.05 > P > 0.001
Step 3: Cultural practices + Social issues + Social-economic Base		
Demographics	11.138 (2)	0.05 > P > 0.01
Family roles	1.075 (1)	Not Sig.
Discrimination	10.120 (1)	0.05 > P > 0.001
Step 4: Cultural practices + Social issues + Social-economic + Demographic Base	1.049 (1)	Not Sig.
Family roles	1.049 (1)	Not Sig.
Discrimination	10.467 (1)	0.05 > P > 0.001
Step 5: Cultural practices + Social issues + Social-economic + Demographic + Discrimination Base		
Family roles	1.062 (1)	Not Sig.

Base and Domain	X^2 (df)	Level of Significance
Final Model	**10.467 (1)**	**0.05 > P > 0.001**
Cultural practices		
Social issues		
Social-economic		
Demographic		
Discrimination		

Table 4: Significant predictors of suicide thoughts identified using block entry Logistic Regression (n=1612)

Individual level effects	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Demographics				
Age				
18– 24 years	P<0.02	1.67	1.09	2.54
25 – 44 years	P<0.001	1.65	1.14	2.39
45 years and older	Ref.	--	--	--
Cultural Practices				
Language				
Aboriginal only	Ref.	--	--	--
Aboriginal & English	Not Sig.	1.26	0.78	2.02
English only	P<0.001	1.75	1.33	2.31
Ceremonial and healing practices				
Low	Ref.	--	--	--
Typical	P<0.001	1.11	0.85	1.46
High	P<0.001	1.74	1.28	2.37
Discrimination				
Out-community health service discrimination				
No	Ref.	--	--	--
Yes	P<0.001	1.55	1.19	2.01
Social-economic				
Education				
Elementary or less	Ref.	--	--	--
Some junior high school	P<0.01	1.89	1.16	3.08
High school or more	P<0.01	2.15	1.24	3.72
Worked in the past year				
No	Ref.	--	--	--
Yes	P<0.01	1.43	1.11	1.85

Individual level effects	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Worse off than other households				
No	P<0.01	1.41	1.101	1.81
Yes	Ref.	--	--	--
Social issues				
Household addiction problems				
No	Ref.	--	--	--
Yes	P<0.001	2.41	1.84	3.16

Table 5: Suicide thoughts - Test for age interactions within the domains of social issues, discrimination and social-economic using "block entry" logistic regression (n=1620)

Domains and interaction terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Ceremonial and healing practices			
Language main effects model	1811.928		
Age			
Aboriginal and English			
English only			
Language Interaction effects model	1808.711	3.857 (2)	Not Sig.
Age			
Aboriginal and English			
Age X Aboriginal and English			
Age			
English only			
Age X English only			
Ceremonial and healing practices main effects model	1814.951		
Age			
Typical Practices			
High Practices			
Ceremonial and healing practices interaction effects model	1811.869	2.722 (2)	Not Sig.
Age			
Typical Practices			
Age X Typical Practices			
Age			
High Practices			
Age X High Practices			

Domains and interaction terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Social issues			
Household addiction problems main effect model	1779.446		
Age			
Household addiction problems			
Household addiction problems interaction effects model Model:	1778.012	1.434 (1)	Not Sig.
Age			
Age X Household addiction problems			
Discrimination			
Out-community Health Service discrimination main effects model	1824.422		
Age			
Out-community health service discrimination			
Out-community Health Service discrimination interaction effects model	1823.991	0.432 (1)	Not Sig.
Age			
Out-community health service discrimination			
Age X Out-community health service discrimination			
Social-economic			
Worked in the past year main effects model	1832.777		
Age			
Worked in the past year			
Worked in the past year interaction effects model	1827.258	**5.519 (1)**	**P = 0.02**
Age			
Worked in the past year			
Age X Worked in the past year			

Domains and interaction terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Education main effects model	1826.397		
Age			
Some junior high school			
High School or more			
Education interaction effects model	1809.595	**16.803 (2)**	**0.05 < P < 0.001**
Age			
Some junior high school			
Age X Some junior high school			
High school or more			
Age X High school or more			
Worse off than other households Main effects model	1838.571		
Age			
Worse off than other households			
Worse off than other households interaction effects model	1838.414	0.157 (1)	Not Sig.
Age			
Worse off than other households			
Age X Worse off than other households			

Table 6: Suicide thoughts – Odds ratios in the presence of significant age by worked in the past year and education interactions (n=1620)

	Education Ref. *Elementary or less (n=228) and Suicide thoughts (n=1620)	
Age as an effect modifier	**Some junior high school** Ref. Elementary or less (n=290)	**High school or more** Ref. Elementary or less (n=121)
18 – 24 years	1.16 (0.69 – 1.96)	0.79 (0.46 – 1.37)
25 – 44 years	1.59 (0.90 – 2.82)	1.31 (0.96 – 1.79)
45 years and older	0.94 (0.70 – 1.27)	**7.92 (3.44 – 18.26)**

*Not sufficient cell size in the 18-24 years old group that reports elementary education and mental health.

	Worked in the past year Ref. Not worked in the past year (n=852) and Suicide thoughts (n=1620)
***Age as an effect modifier**	
18 – 24 years	1.15 (0.70 – 1.88)
25 – 44 years	**1.64 (1.22 – 2.20)**
45 years & older	**2.90 (1.61 – 5.21)**

* No longer significant in the final logistic regression model

Table 7: Suicide thoughts – Final logistic regression main and interaction effects model (n=1620)

Individual level effects	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Main effects				
Language				
Aboriginal only	Ref.	--	--	--
Aboriginal & English	Not Sig.	1.26	0.78	2.02
English only	P<0.001	1.75	1.33	2.31
Ceremonial and healing practices				
Low	Ref.	--	--	--
Typical	Not Sig.	1.11	0.85	1.46
High	P<0.001	1.74	1.28	2.37
Out-community health service discrimination				
No	Ref.	--	--	--
Yes	P<0.001	1.55	1.19	2.01
Household addiction problems				
No	Ref.	--	--	--
Yes	P<0.001	2.41	1.84	3.16
Worse off than other households				
No	P<0.01	1.41	1.10	1.81
Yes	Ref.	--	--	--
Education				
Elementary or less	Ref.	--	--	--
Some junior high school	P<0.01	1.89	1.16	3.08
High school or more	P<0.01	2.15	1.24	3.72
Interaction effects				
Worked in the past year				
18 – 24 Years X Worked	Not Sig.	1.15	0.70	1.88
25 – 44 Years X Worked	P < 0.001	1.64	1.22	2.20
45 Year and Older X Worked	P < 0.001	2.90	1.61	5.21

Multilevel logistic regression analysis

Table 8: Significant individual level predictors of suicide thoughts using "block entry" multilevel logistic regression (community N = 16; n=1620)

Base and Domain	X^2 (df)	Level of Significance
Suicide thoughts null model		
Demographics	37.147 (2)	0.05 > P > 0.001
Cultural practices	46.982 (4)	0.05 > P > 0.001
Discrimination	17.497 (1)	0.05 > P > 0.001
Social-economic	53.906 (4)	0.05 > P > 0.001
Social issues	67.892 (1)	0.05 > P > 0.001
Step 1: Social issues Base		
Demographics	37.196 (2)	0.05 > P > 0.001
Cultural practices	37.267 (4)	0.05 > P > 0.001
Discrimination	11.283 (1)	0.05 > P > 0.001
Social-economic	46.132 (4)	0.05 > P > 0.001
Step 2: Social issues + Social-economic Base		
Demographics	18.329 (2)	0.05 > P > 0.001
Cultural practices	25.097 (4)	0.05 > P > 0.001
Discrimination	11.126 (1)	0.05 > P > 0.001
Step 3: Social issues + Social-economic + Cultural practices Base		
Demographics	12.523 (2)	0.05 > P > 0.002
Discrimination	8.621(1)	0.05 > P > 0.01
Step 4: Social issues+ Social-economic + Cultural practices + Demographics Base		
Discrimination	8.48 (1)	0.05 > P > 0.01
Final Model	**8.48 (1)**	**0.05 > P > 0.01**
Social issues		
Social-economic		
Cultural practices		
Demographic		
Discrimination		

Table 9: Suicide thoughts - Test for age interactions within the social-economic domain using "block entry" multilevel logistic regression (n=1620)

Domain and interaction effects	Deviance	X^2 (d.f.)	Level of Significance
Social-economic			
Worked in the past year main effects model	4749.35		
Age			
Worked in the past year			
Worked in the past year interaction effects model	4745.38	3.98 (1)	Not Sig.
Age			
Worked in the past year			
Age X Worked in the past year			

Table 10: Suicide thoughts – Final multilevel logistic regression main effects model (n=1620)

Individual level effects	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Main effects				
Age				
18– 24 years	P<0.001	2.12	1.36	3.32
25 – 44 years	P<0.002	1.82	1.26	2.64
45 years and older	Ref.	--	--	--
Language				
Aboriginal only	Ref.	--	--	--
Aboriginal & English	Not Sig.	1.27	0.80	2.30
English only	P<0.001	1.53	1.21	2.01
Ceremonial and healing practices				
Low	Ref.	--	--	--
Typical	Not Sig.	1.15	0.87	1.54
High	P<0.001	1.67	1.21	2.30
Out-community health service discrimination				
No	Ref.	--	--	--
Yes	P<0.01	1.48	1.14	2.94
Education				
Elementary or less	Ref.	--	--	--
Some junior high school	P<0.05	1.79	1.07	3.00
High school or more	P<0.05	2.01	1.43	2.81
Worked in the past year				
No	Ref.	--	--	--
Yes	P<0.02	1.39	1.07	1.80
Worse off than other households				
No	Ref.	--	--	--
Yes	P < 0.001	0.65	0.51	0.84
Household addiction problems				
No	Ref.	--	--	--
Yes	P<0.001	2.60	1.98	3.43

Table 11: Multilevel logistic regression model of community effects independently associated with suicide thoughts (community N = 16; n=1620)

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Suicide thoughts null model	4808.18 (2)		
Geopolitical environment			
Geographic location	4804.60 (3)	3.59 (1)	Not Sig.
Community isolation	4800.78 (3)	7.39 (1)	0.007
Population environment			
Population change 1991-1996	4806.37 (4)	1.81 (2)	Not Sig.
Lone parent families	4807.24 (4)	0.93 (2)	Not Sig.
Female headed lone parent families	4805.28 (4)	2.89 (2)	Not Sig.
Male headed lone parent families	4805.28 (4)	2.89 (2)	Not Sig.
Age dependency (elders & children)	4804.68 (4)	3.50 (2)	Not Sig.
Cultural environment			
Individual use of Aboriginal language	4799.86 (4)	8.31 (2)	0.002
Home use of Aboriginal language	4797.96 (4)	10.22 (2)	0.006
Ceremonial and healing practices	4806.62 (4)	1.56 (2)	Not Sig.
Discrimination environment			
Attend residential school	4805.41 (4)	2.76 (2)	Not Sig.
In-community health service discrimination	4805.28 (4)	2.90 (2)	No Sig.
Out-community health service discrimination	4796.71 (4)	11.47 (2)	0.003
Housing & infrastructure environment			
Community infrastructure service disparity	4798.94 (4)	9.23 (2)	0.010
Inadequate household plumbing facilities	4803.34 (4)	4.84 (2)	Not Sig.
Inadequate housing	4804.83 (4)	3.35 (2)	Not Sig.
Stock of older housing	4808.00 (4)	0.18 (2)	Not Sig.
Availability of alternative housing	4801.95 (4)	6.23 (2)	0.044
New housing development	4804.42 (4)	3.76 (2)	Not Sig.
Social-economic environment			
Completed elementary education only	4803.04 (4)	5.14 (2)	Not Sig.
Completed secondary education	4798.74 (4)	9.44 (2)	0.009
Women incomplete formal education	4798.07 (4)	10.10 (2)	0.006
Men incomplete formal education	4804.72 (4)	3.45 (2)	No Sig.
Women completed high school	4797.25 (4)	10.93 (2)	0.004
Men completed high school	4803.67 (4)	4.51 (2)	Not Sig.
Women advanced education	4796.32 (4)	11.86 (2)	0.003
Men advanced education	4799.77 (4)	8.41 (2)	0.015
Individual income	4803.70 (4)	4.48 (2)	Not Sig.
Women individual income	4807.54 (4)	0.64 (2)	Not Sig.
Men individual income	4803.78 (4)	4.40 (2)	No Sig.
Family income	4807.58 (4)	0.59 (2)	Not Sig.
Female lone parent income	4805.94 (4)	2.23 (2)	Not Sig.

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Income derived from social assistance	4805.17 (4)	3.01 (2)	Not Sig.
Income derived from employment	4805.17 (4)	3.01 (2)	Not Sig.
Employment participation	4800.93 (4)	7.25 (2)	0.027
Men employment participation	4804.13 (4)	4.05 (2)	Not Sig.
Women employment participation	4803.56 (4)	4.62 (2)	Not Sig.
Unemployment rate	4807.65 (4)	0.53 (2)	Not Sig.
Women unemployment	4806.76 (4)	1.42 (2)	Not Sig.
Men unemployment	4807.52 (4)	0.66 (2)	Not Sig.
Primary industry participation	4808.02 (4)	0.15 (2)	Not Sig.
Secondary industry participation	4807.56 (4)	0.62 (2)	Not Sig.
Tertiary industry participation	4807.35 (4)	0.83 (2)	Not Sig.
Community economic disparity	4802.66 (4)	5.51 (2)	Not Sig.
Perceived social-economic and infrastructure environment			
Infrastructure disparity	4806.96 (4)	1.22 (2)	Not Sig.
Education opportunities	4807.22 (4)	0.96 (2)	Not Sig.
Unemployment disparity	4806.79 (4)	1.38 (2)	Not Sig.
Food security problems	4807.26 (4)	0.91 (2)	Not Sig.
Social problem environment			
Addiction problems	4807.60 (4)	0.58 (2)	Not Sig.
Violence problems	4808.06 (4)	0.12 (2)	Not Sig.
Social support environment			
Personal trust environment	4806.80 (4)	1.37 (2)	Not Sig.
Personal caring environment	4804.92 (4)	3.26 (2)	Not Sig.
Risk behavior environment			
Smoking	4804.65 (4)	3.52 (2)	Not Sig.
Never smoked	4804.38 (4)	3.80 (2)	Not Sig.
Quit smoking	4807.26 (4)	0.92 (2)	Not Sig.
Drinking problem history	4807.86 (4)	0.32 (2)	Not Sig.
Drinking problem	4804.95 (4)	3.23 (2)	Not Sig.
Stopped drinking	4805.47 (4)	2.71 (2)	Not Sig.
No positive dietary changes	4798.68 (4)	9.50 (2)	0.009
Some positive dietary changes	4804.51 (4)	3.67 (2)	Not Sig.
High positive dietary changes	4803.48 (4)	4.70 (2)	Not Sig.
Normal body weight	4804.89 (4)	3.29 (2)	Not Sig.
Overweight	4799.77 (4)	8.41 (2)	0.015
Obesity	4807.38 (4)	0.79 (2)	Not Sig.
Health status environment			
Diabetes	4803.32 (4)	4.86 (2)	Not Sig.
Hypertension	4805.75 (4)	2.42 (2)	Not Sig.
Self-rated poor health	4803.95 (4)	4.23 (2)	Not Sig.
Suicide thoughts	No Laplace	--	--

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Health service environment			
Type of community health centre	4804.16 (4)	4.02 (2)	Not Sig.
Health transfer status	4808.18 (4)	0.00 (2)	Not Sig.
Need of physician services	4807.57 (4)	0.61 (2)	Not Sig.
Physician supply deficiency	4807.06 (4)	1.12 (2)	Not Sig.
Routine physical examination	4807.80 (4)	0.37 (2)	Not Sig.
Annual blood pressure checkup	4805.19 (4)	2.98 (2)	Not Sig.

Table 12: Multilevel logistic regression model of community effects independently associated with suicide thoughts (community N= 16; n=1620)

Community level effects	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Geopolitical environment				
Community isolation				
Not isolated	Ref.	--	--	--
Isolated	P<0.01	0.47	0.28	0.80
Cultural environment				
Individual use of Aboriginal language				
Low levels	P < 0.01	3.04	1.44	6.44
Typical levels	Not Sig.	1.62	0.90	2.91
High levels	Ref.	--	--	--
Home use of Aboriginal language				
Low levels	P < 0.01	3.23	1.65	6.33
Typical levels	P < 0.01	2.50	1.43	4.39
High levels	Ref.	--	--	--
Discrimination environment				
Out-community health service discrimination				
Low levels	Ref.	--	--	--
Typical levels	P < 0.01	2.98	1.64	5.39
High levels	P < 0.01	2.05	1.04	4.04
Housing & infrastructure environment				
Community infrastructure service disparity				
Low levels	Ref.	--	--	--
Typical levels	Not Sig.	1.64	0.91	2.94
High levels	P < 0.01	2.93	1.54	5.57
Availability of Alternative Housing				
Low levels	Ref.	--	--	--
Typical levels	P < 0.02	2.69	1.21	5.97
High levels	Not Sig.	1.74	0.86	3.52
Social-economic environment				
Completed secondary education				
Low levels	P<0.01	2.61	1.37	4.97
Typical levels	P<0.01	2.87	1.39	5.92
High levels	Ref.	--	--	--
Women incomplete formal education				
Low levels	Ref	--	--	--
Typical levels	P<0.01	2.91	1.55	5.47
High levels	P<0.05	2.29	1.11	4.70

Community level effects	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Women completed high school				
Low levels	P<0.001	4.19	2.73	6.23
Typical levels	Not Sig.	1.11	0.78	1.58
High levels	Ref.	--	--	--
Women advanced education				
Low levels	Ref	--	--	--
Typical levels	P < 0.01	2.46	1.32	4.60
High levels	P < 0.01	3.19	1.71	5.94
Men advanced education				
Low levels	Ref	--	--	--
Typical levels	P<0.01	2.59	1.37	4.89
High levels	Not Sig.	2.21	1.00	4.87
Employment participation				
Low levels	Ref.	--	--	--
Typical levels	P<0.02	2.40	1.22	4.75
High levels	P<0.02	2.41	1.10	5.25
Men employment participation				
Low levels	P<0.01	3.04	1.59	5.81
Typical levels	Not Sig.	1.12	0.64	1.96
High levels	Ref.	--	--	--
Risk behavior environment				
No positive dietary changes				
Low levels	Ref.	--	--	--
Typical levels	P < 0.01	2.59	1.36	4.94
High levels	P < 0.01	2.91	1.41	6.03
Overweight				
Low levels	Ref.	--	--	--
Typical levels	Not Sig.	1.64	0.86	3.75
High levels	P<0.02	2.38	1.38	4.98

Table 13: Multilevel logistic regression model of community effects independently associated with suicide thoughts after adjusting for individual effects (community N=16; n=1620) – No community effects

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Level one model	4648.05 (14)		
Geopolitical environment			
Community isolation	4644.75 (15)	3.30 (1)	Not Sig.
Cultural environment			
Individual use of Aboriginal language	No Laplace	--	--
Discrimination environment			
Out-community health service discrimination	No Laplace	--	--
Housing & infrastructure environment			
Community Infrastructure Service Disparity	No Laplace	--	--
Social-economic environment			
Completed secondary education	No Laplace	--	--
Women incomplete formal education	No Laplace	--	--
Women completed high school	No Laplace	--	--
Women advanced education	No Laplace	--	--
Men advanced education	No Laplace	--	--
Employment participation	No Laplace	--	--
Risk behavior environment			
No positive dietary changes	No Laplace	--	--
Overweight	No Laplace	--	--

APPENDIX 10 - HYPERTENSION

Logistic Regression Analysis

Table 1: Significant predictors of hypertension identified using forward logistic regression (n=1487)

Individual level variables	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Demographics				
Age				
18 – 24 years	Ref.	--	--	--
25 – 44 years	P<0.01	1.84	1.21	2.81
45 – 64 years	P<0.001	5.75	3.65	9.06
65 and older	P<0.01	11.29	5.84	21.80
Sex				
Male	Ref.	--	--	--
Female	P<0.001	1.55	1.19	2.03
Family roles				
Marital status				
Single	Ref.	--	--	--
Partner	P<0.01	1.90	1.19	3.05
Past partner	Not Sig.	0.93	0.66	1.31
No parenting history				
History	Not Sig.			
No history	Ref.			
Biological parenting history				
No	Ref.			
Yes	Not Sig.			
Lifetime of care giving				
None	Ref.	--	--	--
One to three children	Not Sig.	1.79	1.10	2.93
Four or more children	P<0.01	2.69	1.62	4.45
Extended family parenting history				
No	Ref.			
Yes	Not Sig.			
Primary care giver				
No	P<0.02	1.36	1.05	1.77
Yes	Ref.	--	--	--

Individual level variables	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Household composition				
Number of children				
None	Ref	--	--	--
One to three	P<0.05	0.71	0.53	0.96
Four or more	P<0.001	0.53	0.36	0.78
Number of adults				
One	Ref.			
Two	Not Sig.			
Three or more	Not Sig.			
Discrimination				
Attended residential school				
No	Ref.	--	--	--
Yes	P<0.001	3.22	2.37	4.38
Cultural practices				
Language				
Aboriginal only	P<0.05	1.35	1.04	1.75
Aboriginal & English	P<0.01	1.77	1.18	2.66
English only	Ref.	--	--	--
Social-economic				
Education				
Elementary or less	P<0.001	3.01	2.00	4.54
Some junior high school	P<0.05	1.50	1.07	2.09
High school or more	Ref.	--	--	--
Worked in the past year				
No	Not Sig.			
Yes	Ref.			
Social support				
Someone that loves you				
No	Ref.			
Yes	Not Sig.			
Social issues				
Household violence problems				
No	Ref.	--	--	--
Yes	P<0.01	1.56	1.15	2.12

Table 2: Hypertension – Best null model fitted using "block entry" logistic regression (n=1516)

Individual level variables / domain	- 2 Log Likelihood	d.f.	R^2
Hypertension	1591.181		
Demographic	1474.869	4	.114
Age			
Sex			
Family roles	1550.025	2	.041
Marital status			
Lifetime of care giving			
Primary caregiver			
Household composition	1581.549	2	.010
Number of children			
Discrimination	1538.660	1	.052
Attended residential school			
Cultural practices	1581.614	2	.010
Language			
Social-economic	1561.805	2	.030
Education			
Social issues	1582.868	1	.008
Household violence problems			

Table 3: Hypertension - Best model fitted using "block entry" logistic regression (n=1516)

Base and Domain	X^2 (df)	Level of Significance
Hypertension null model		
Demographic	116.312 (4)	0.05 > P > 0.001
Family roles	41.157 (5)	0.05 > P > 0.001
Discrimination	52.521 (1)	0.05 > P > 0.001
Household composition	9.632 (2)	0.05 > P > 0.010
Cultural practices	9.568 (2)	0.05 > P > 0.010
Social-economic	29.377 (2)	0.05 > P > 0.001
Social issues	8.313 (1)	0.05 > P > 0.010
Step One: Demographic Base		
Family roles	10.638 (5)	Not Sig.
Discrimination	1.423 (2)	Not Sig.
Household composition	5.795 (1)	P = 0.016
Cultural practices	3.260 (2)	Not Sig.
Social-economic	1.779 (2)	Not Sig.
Social issues	9.029 (1)	P = 0.003
Step Two: Demographic +Social issues Base		
Family roles	10.638 (5)	Not Sig.
Household composition	1.549 (2)	Not Sig.
Discrimination	5.415 (1)	P = 0.020
Cultural practices	4.712 (2)	Not Sig.
Social-economic	1.463 (2)	Not Sig.
Final Model	**5.415 (1)**	**P = 0.020**
Demographic		
Social issues		
Discrimination		

Table 4: Significant predictors of hypertension using "block entry" logistic regression (n=1603)

Individual level effects	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Demographics				
Age				
18 – 24 years	Ref.	--	--	--
25 – 44 years	P<0.001	1.95	1.29	2.95
45 – 64 years	P<0.001	6.14	3.94	9.57
65 years and older	P<0.001	11.35	6.08	21.20
Sex				
Male	Ref.	--	--	--
Female	P<0.001	1.52	1.17	1.97
Discrimination				
Attended residential school				
No	Ref.	--	--	--
Yes	P<0.001	3.32	2.47	4.46
Social issues				
Household violence problems				
No	Ref.	--	--	--
Yes	P<0.001	1.62	1.21	2.18

Table 5: Hypertension - Test for age interactions within the domains of demographics, discrimination and social issues using "block entry" logistic regression (n=1603)

Individual level variables / domain	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Demographics			
Demographic main effects model:	1530.288 (2)		
Age			
Sex			
Demographic interaction effects model	1529.242 (3)	1.046 (1)	Not Sig.
Age			
Sex			
Age X Sex			
Discrimination			
Residential school main effects model:	1532.690 (2)		
Age			
Attended residential school			
Attended residential school interaction effects:	1532.679 (3)	0.011 (1)	Not Sig.
Age			
Attended residential school			
Age X Attended residential school			
Social issues			
Household violence main effects model	1530.886 (3)		
Age			
Household violence effects			
Household violence interaction effects model	1525.855 (5)	5.031 (2)	Not Sig.
Age			
Household violence problems			
Age X Household violence problems			

Table 6: Hypertension - Test for sex interactions within the domains of discrimination and social issues using "block entry" logistic regression (n=1603)

Individual level variables / domain	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Discrimination			
Attended residential school main effects model:	1638.918 (2)		
Sex			
Attended residential school			
Residential school interaction effects model:	1627.086 (3)	**11.832 (1)**	**0.05 < P < 0.001**
Sex			
Attended residential school			
Sex X Attended residential school			
Social issues			
Household violence problems main effects model	1730.360 (3)		
Sex			
Household violence problems			
Household violence interaction effects model	1729.095 (5)	1.265 (2)	Not Sig.
Sex			
Household violence problems			
Sex X Household violence problems			

Table 7: Hypertension - Odds ratios in the presence of a significant sex by attended residential school interaction (N=1603)

Sex as an effect modifier	**Discrimination – Attended residential school** Ref. No residential school attendance and No hypertension (n=1603)
Male	7.22 (4.80 – 10.87)
Female	2.66 (1.78 – 3.98)

Table 8: Hypertension - Final logistic regression main and interaction effects model (n=1603)

Individual level effects	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Main effects				
Age				
18 – 24 years	Ref.	--	--	--
25 – 44 years	P<0.001	1.82	1.19	2.78
45 – 64 years	P<0.001	4.62	2.81	7.59
65 and older	P<0.001	9.23	4.70	18.12
Household violence				
No	Ref.	--	--	--
Yes	P<0.001	1.63	1.19	2.25
Interaction effects				
Sex				
Male	Ref.	--	--	--
Female	P < 0.001	0.20	0.09	0.43
Attended residential school				
No	Ref.	--	--	--
Yes	P < 0.001	9.03	3.47	23.47
Sex X Attended residential school	P < 0.05	0.38	0.21	0.69

Multilevel Logistic Modeling

Table 9: Significant individual level predictors of hypertension using "block entry" multilevel logistic regression (community N = 16; n =1589)

Base and Domain	X^2 (df)	Level of Significance
Hypertension null model		
Demographic	127.12 (4)	P = 1.60926E-26
Discrimination	47.82 (1)	P = 4.67875E-12
Social issues	7.68 (1)	P = 0.006
Step 1: Demographic Base		
Discrimination	2.80 (1)	P = 0.094
Social issues	8.89 (1)	P = 0.003
Step 2: Demographic & Social issues Base		
Discrimination	2.92 (1)	Not Sig.
Final Model	8.89 (1)	P = 0.003
Demographic		
Social issues		

Table 10: Hypertension - Final multilevel logistic regression main effects model (N=1589)

Individual level effects	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Main Effects				
Age				
18 – 24 years	Ref.	--	--	--
25 – 44 years	P<0.01	1.99	1.31	3.02
45 – 64 years	P<0.01	6.19	3.95	9.71
65 and older	P<0.001	11.92	6.30	22.58
Sex				
Male	Ref.	--	--	--
Female	P<0.001	1.50	1.15	1.95
Household violence problems				
No	Ref.	--	--	--
Yes	P<0.001	1.66	1.20	2.31

Table 11: Multilevel logistic regression model of community effects associated with hypertension (community N =16; n=1589)

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Hypertension null model	4576.70		P = 0.000
Geopolitical environment			
Geographic location	4576.70 (3)	0.00 (1)	Not Sig.
Community isolation	4576.67 (3)	0.02 (1)	Not Sig.
Population environment			
Population change 1991-1996	4574.69 (4)	2.01 (2)	Not Sig.
Lone parent families	4572.93 (4)	3.77 (2)	Not Sig.
Female headed lone parent families	4575.97 (4)	0.72 (2)	Not Sig.
Male headed lone parent families	4575.97 (4)	0.72 (2)	Not Sig.
Age dependency (elders & children)	4575.56 (4)	1.14 (2)	Not Sig.
Cultural environment			
Individual use of Aboriginal language	4565.34 (4)	11.36 (2)	P = 0.003
Home use of Aboriginal language	4574.79 (4)	1.91 (2)	Not Sig.
Ceremonial and healing practices	4575.65 (4)	1.05 (2)	Not Sig.
Discrimination environment			
Attended residential school	4562.60 (4)	14.10 (2)	P = 0.001
In-community health service discrimination	4575.24 (4)	1.45 (2)	Not Sig.
Out-community health service discrimination	4575.13 (4)	1.57 (2)	Not Sig.

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Housing & infrastructure environment			
Community infrastructure service disparity	4570.03 (4)	6.67 (2)	P = 0.036
Inadequate household plumbing facilities	4572.31 (4)	4.38 (2)	Not Sig.
Inadequate housing	4571.95 (4)	4.75 (2)	Not Sig.
Stock of older housing	4568.25 (4)	8.45 (2)	P = 0.015
Availability of alternative housing	4573.93 (4)	2.77 (2)	Not Sig.
New housing development	4576.58 (4)	0.12 (2)	Not Sig.
Social-economic environment			
Completed elementary education only	4575.16 (4)	1.54 (2)	Not Sig.
Completed secondary education	4573.36 (4)	3.34 (2)	Not Sig.
Women incomplete formal education	4576.06 (4)	0.64 (2)	Not Sig.
Men incomplete formal education	4573.35 (4)	3.34 (2)	Not Sig.
Women completed high school	4571.54 (4)	5.15 (2)	Not Sig.
Men completed high school	4573.40 (4)	3.30 (2)	Not Sig.
Women advanced education	4574.18 (4)	2.52 (2)	Not Sig.
Men advanced education	4573.33 (4)	3.37 (2)	Not Sig.
Individual income	4570.29 (4)	6.40 (2)	P = 0.041
Women individual income	4569.05 (4)	7.65 (2)	P = 0.022
Men individual income	4573.17 (4)	3.54 (2)	Not Sig.
Family income	4574.25 (4)	2.44 (2)	Not Sig.
Female lone parent income	4574.80 (4)	1.89 (2)	Not Sig.
Income derived from social assistance	4572.91 (4)	3.78 (2)	Not Sig.
Income derived from employment	4572.91 (4)	3.78 (2)	Not Sig.
Employment participation	4574.50 (4)	2.19 (2)	Not Sig.
Men employment participation	4576.53 (4)	0.87 (2)	Not Sig.
Women employment participation	4570.89 (4)	5.81 (2)	Not Sig.
Unemployment rate	4575.83 (4)	0.87 (2)	Not Sig.
Women unemployment	4575.81 (4)	0.88 (2)	Not Sig.
Men unemployment	4575.07 (4)	1.62 (2)	Not Sig.
Primary industry participation	4576.64 (4)	0.06 (2)	Not Sig.
Secondary industry participation	4575.92 (4)	0.78 (2)	Not Sig.
Tertiary industry participation	4576.46 (4)	0.23 (2)	Not Sig.
Community economic disparity	4571.40 (4)	5.29 (2)	Not Sig.
Perceived social-economic & infrastructure environment			
Infrastructure disparity	4572.75 (4)	3.95 (2)	Not Sig.
Education opportunities	4575.83 (4)	0.87 (2)	Not Sig.
Unemployment disparity	4570.35 (4)	6.34 (2)	P = 0.042
Food security problems	4573.57 (4)	3.12 (2)	Not Sig.
Social problem environment			
Addiction problems	4574.81 (4)	1.89 (2)	Not Sig.
Violence problems	4571.14 (4)	5.56 (2)	Not Sig.

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Social support environment			
Personal trust environment	4572.15 (4)	4.54 (2)	Not Sig.
Personal caring environment	4575.94 (4)	0.76 (2)	Not Sig.
Risk behavior environment			
Smoking	4574.66 (4)	2.04 (2)	Not Sig.
Never smoked	4573.03 (4)	3.66 (2)	Not Sig.
Quit smoking	4575.79 (4)	0.91 (2)	Not Sig.
Drinking problem history	4561.09 (4)	15.61(2)	P = 0.000
Drinking problems	4571.29 (4)	5.41 (2)	Not Sig.
Stopped dinking	4571.55 (4)	5.15 (2)	Not Sig.
No positive dietary changes	4575.28 (4)	1.42 (2)	Not Sig.
Some positive dietary changes	4575.10 (4)	1.60 (2)	Not Sig.
High positive dietary changes	4574.38 (4)	2.32 (2)	Not Sig.
Normal body weight	4573.97 (4)	2.72 (2)	Not Sig.
Overweight	4573.45 (4)	3.24 (2)	Not Sig.
Obesity	4575.42 (4)	1.28 (2)	Not Sig.
Health status environment			
Diabetes	4568.51 (4)	8.18 (2)	P = 0.017
Hypertension	4558.81 (4)	17.89 (2)	P = 0.000
Self-rated poor health	4574.71 (4)	1.99 (2)	Not Sig.
Suicide thoughts	4571.82 (4)	4.88 (2)	Not Sig.
Health service environment			
Type of community health center	4574.45 (4)	2.24 (2)	Not Sig.
Health transfer status	4576.18 (4)	0.52 (2)	Not Sig.
Need of physician services	4574.47 (4)	2.23 (2)	Not Sig.
Physician supply deficiency	4576.36 (4)	0.34 (2)	Not Sig.
Routine physical examination	4574.21 (4)	2.49 (2)	Not Sig.
Annual blood pressure Checkup	4571.18 (4)	5.52 (2)	Not Sig.

Table 12: Multilevel logistic regression model of community effects independently associated with hypertension (community N =16; n=1589)

Community level effects	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Cultural environment				
Individual use of Aboriginal language				
Low levels	P < 0.01	1.77	1.22	2.58
Typical levels	Ref.	--	--	--
High levels	Not Sig.	1.21	0.78	1.85
Discrimination environment				
Attended residential school				
Low levels	Ref.	--	--	--
Typical levels	Not Sig.	1.79	1.18	2.74
High levels	P < 0.01	1.81	1.10	2.96
Housing & infrastructure environment				
Community infrastructure service disparity				
Low levels	Not Sig.	1.25	0.83	1.88
Typical levels	Ref.	--	--	--
High levels	P < 0.01	1.75	1.20	2.55
Stock of older housing				
Low levels	P < 0.01	2.06	1.30	3.25
Typical levels	P < 0.05	1.58	1.06	2.34
High levels	Ref.	--	--	--
Social-economic environment				
Individual income				
Low levels	P 0.05	1.76	1.12	2.76
Typical levels	Not Sig.	1.08	0.72	1.61
High levels	Ref.	--	--	--
Women individual income				
Low levels	P < 0.05	1.65	1.04	6.68
Typical levels	Ref.	--	--	--
High levels	Not Sig.	1.01	0.67	1.53
Perceived social-economic & infrastructure environment				
Unemployment disparity				
Low levels	P < 0.02	1.98	1.17	3.33
Typical levels	Not Sig.	1.33	0.84	2.11
High levels	Ref.	--	--	--
Risk behavior environment				
Drinking problem history				
Low levels	Ref.	--	--	--
Typical levels	Not Sig.	1.93	0.91	4.05
High levels	P < 0.05	2.24	1.12	4.49

Community level effects	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Health status environment				
Diabetes				
Low levels	Ref.	--	--	--
Typical levels	Not Sig.	1.12	0.74	1.69
High levels	P < 0.01	1.86	1.20	2.91
Hypertension				
Low levels	Ref.	--	--	--
Typical levels	P < 0.05	1.44	1.00	2.08
High levels	P < 0.001	2.30	1.53	3.46

Table 13: Multilevel logistic regression model of community effects independently associated with hypertension after adjusting for individual level effects (community N = 16; n =1589)

Community level effects	Deviance (df)	X^2 (df)	Level of significance
Level one model	4440.69 (7)		
Cultural environment			
Individual use of Aboriginal language	4436.35 (9)	4.34 (2)	Not Sig.
Discrimination environment			
Attended residential school	4431.42 (9)	9.27 (2)	P = 0.010
Housing & infrastructure environment			
Community infrastructure service disparity	4433.57 (9)	7.12 (2)	P = 0.028
Stock of older housing	4431.71 (9)	8.98 (2)	P = 0.011
Social Economic Environment			
Individual Income	4433.83 (9)	6.86 (2)	P = 0.032
Women individual income	4438.03 (9)	2.66 (2)	Not Sig.
Perceived social-economic and infrastructure environment			
Unemployment disparity	4437.61 (9)	3.08 (2)	Not Sig.
Risk behavior environment			
Drinking problem history	4426.99 (9)	13.70 (2)	P = 0.001
Health status environment			
Diabetes	4431.26 (9)	9.43 (2)	P = 0.009
Hypertension	4426.53 (9)	14.16 (2)	P = 0.001

Table 14: Multilevel logistic regression model of community effects independently associated with hypertension after adjusting for individual level effects (community N = 16; n=1589)

Community level effects	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Discrimination environment				
Attended residential school				
Low levels	Ref.	--	--	--
Typical levels	P < 0.01	1.88	1.23	2.88
High levels	P < 0.01	1.95	1.19	3.19
Housing & infrastructure environment				
Community infrastructure service disparity				
Low levels	Not Sig.	1.29	0.83	1.99
Typical levels	Ref.	--	--	--
High levels	P < 0.01	1.79	1.18	2.70
Stock of older housing				
Low levels	P < 0.05	2.14	1.33	3.44
Typical levels	P < 0.05	1.62	1.07	2.44
High levels	Ref.	--	--	--
Social-economic environment				
Individual income				
Low levels	P >0.02	1.81	1.12	2.93
Typical levels	Not Sig.	1.09	0.71	1.67
High levels	Ref.	--		--
Risk behavior environment				
Drinking problem history				
Low levels	Ref.	--	--	--
Typical levels	P >0.01	1.98	1.33	2.95
High levels	P < 0.001	2.34	1.52	3.59
Health status environment				
Diabetes				
Low levels	Ref.	--	--	--
Typical levels	Not Sig.	1.17	0.77	1.78
High levels	P < 0.01	2.00	1.27	3.15
Hypertension				
Low levels	Ref.	--	--	--
Typical levels	P < 0.05	1.48	1.02	2.15
High levels	P < 0.001	2.45	1.62	3.69

APPENDIX 11 - DIABETES

Logistic Regression Analysis

Table 1: Significant predictors of diabetes identified using forward logistic regression (n=1509)

Individual level variables	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Demographics				
Age				
18 – 24 years	Ref.	--	--	--
25 – 44 years	P<0.01	2.25	1.32	3.82
45 – 64 years	P<0.001	10.06	5.80	17.45
65 and older	P<0.001	8.71	4.13	18.40
Sex				
Male	Ref.	--	--	--
Female	P<0.001	2.18	1.59	2.97
Family roles				
Marital status				
Single	Ref.	--	--	--
Partner	P<0.01	2.17	1.28	3.68
Past partner	Not Sig.	1.20	.81	1.77
No parenting history				
History	Not Sig.			
No History	Ref.			
Extended family parenting history				
No	Ref.			
Yes	P<0.001	1.81	1.33	2.46
Lifetime of care giving				
None	Ref.	--	--	--
One to three children	Not Sig.	1.74	.97	3.12
Four or more children	P<0.01	2.22	1.21	4.08
Household composition				
Number of children				
None	Ref			
One to three	Not Sig.			
Four or more	Not Sig.			
Discrimination				
Attended residential school				
No	Ref.	--	--	--
Yes	P<0.001	3.03	2.19	4.19

Individual level variables	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Cultural practices				
Language				
Aboriginal only	P<0.02	1.42	1.06	1.90
Aboriginal & English	P<0.001	2.13	1.37	3.29
English only	Ref.	--	--	--
Social-economic				
Education				
Elementary or less	P<0.001	3.34	2.09	5.33
Some junior high school	P<0.01	1.78	1.21	2.61
High school or more	Ref.	--	--	--
Household run out of money for food				
No	P<0.05	0.71	0.53	0.94
Yes	Ref.	--	--	--
Social Issues				
Household addition problems				
No	Ref.			
Yes	Not Sig.			

Table 2: Diabetes – Best null model fitted using "block entry" logistic regression (n=1525)

Individual level variables / domains	- 2 Log Likelihood	d.f.	R^2
Diabetes	1393.041		
Demographic	1241.230	4	.158
Age			
Sex			
Family roles	1346.387	5	.050
Marital status			
Lifetime of care giving			
Primary caregiver			
Discrimination	1350.336	1	0.46
Attended residential school			
Cultural practices	1380.335	2	.014
Language			
Social-economic	1363.301	3	.032
Education			
Household runs out of money for food			

Table 3: Diabetes - Best model fitted using "block entry" logistic regression (n=1525)

Base and Domain	X^2 (df)	Level of Significance
Diabetes null model		
Demographic	151.811 (4)	0.05 > P > 0.001
Family roles	46.724 (5)	0.05 > P > 0.001
Discrimination	42.775 (1)	0.05 > P > 0.001
Cultural practices	12.776 (2)	0.05 > P > 0.010
Social-economic	29.810 (3)	0.05 > P > 0.001
Step One: Demographic Base		
Family roles	8.653 (5)	Not Sig.
Discrimination	0.377 (1)	Not Sig.
Cultural practices	6.311 (2)	P = 0.043
Social-economic	6.171 (3)	Not Sig.
Final Model	**6.311 (2)**	**P = 0.043**
Demographic		
Cultural practices		

Table 4: Diabetes – Final logistic regression main effects model (n=1676)

Individual level effects	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Demographics				
Age				
18 – 24 years	Ref.	--	--	--
25 – 44 years	P<0.01	2.09	1.33	3.28
45 – 64 years	P<0.001	10.58	6.65	16.85
65 years and older	P<0.001	8.86	5.03	15.59
Sex				
Male	Ref.	--	--	--
Female	P<0.01	1.97	1.50	2.59
Cultural practices				
Language				
Aboriginal	P<0.001	1.62	1.23	2.12
Aboriginal and English	P<0.001	2.70	1.76	4.14
English Only	Ref.	--	--	--

Table 5: Diabetes - Test for age interactions within the domains of demographics and cultural practices using "block entry" logistic regression (n=1676)

Domains and interaction terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Demographics			
Demographic main effects model:	1391.534 (2)		
Age			
Sex			
Demographic interaction effects model	1390.341 (3)	1.193 (1)	Not Sig.
Age			
Sex			
Age X Sex			
Cultural practices			
Language main effects model:	1403.668 (3)		
Age			
Aboriginal only			
Aboriginal and English			
Language interaction effects model:	1384.808 (5)	18.86 (2)	$0.05 < P < 0.001$
Age			
Aboriginal only			
Age X Aboriginal only			
Age			
Aboriginal and English			
Age X Aboriginal & English			

Table 6: Diabetes - Odds ratios in the presence of a significant age by language interactions (N=1676)

Age as an effect modifier	Cultural practices – Language Ref. English (n=810) and No diabetes **Aboriginal** Ref. English (n=738)	**Aboriginal and English** Ref. English (n=129)
18 – 24 Years	0.99 (0.38 – 2.56)	3.40 (0.68 – 16.9)
25 – 44 Years	0.90 (0.58 – 1.39)	1.24 (0.62 – 2.50)
45 – 64 Years	0.62 (0.35 – 1.10)	1.32 (0.58 – 2.99)
65 and Over	**0.23 (0.05 – 0.99)**	***1.25 (0.15 – 10.70)**

*Insufficient cell sizes accounts for this inflated odds ratio.

Table 7: Diabetes - Test for sex interactions within the domain of cultural practices using "block entry" logistic regression (n=1676)

Domain and interaction terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Cultural practices			
Language main effects model:	1509.922 (3)		
Sex			
Aboriginal Only			
Aboriginal and English			
Language interaction effects model:	1503.481 (5)	6.441 (2)	$P < 0.05$
Sex			
Aboriginal only			
Sex X Aboriginal only			
Aboriginal and English			
Sex X Aboriginal and English			

Table 8: Diabetes - Odds ratios in the presence of significant sex by language interactions (n=1676)

*Sex as an effect modifier	Cultural practices – Language Ref. English (n=810) and No diabetes **Aboriginal** Ref. English (n=738)	**Aboriginal and English** Ref. English (n=129)
Male	1.33 (0.90 – 1.97)	3.01 (1.75 – 5.17)
Female	1.46 (1.05 – 2.04)	1.56 (0.85 – 2.88)

* When assessed in the final model this interaction term was not significant.

Table 9: Diabetes – Final logistic regression main and interaction effects model (n=1676)

Individual level effects	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Main effects				
Age				
18 – 24 years	Ref.	--	--	--
25 – 44 years	P<0.01	2.09	1.33	3.28
45 – 64 years	P<0.001	10.58	6.65	16.85
65 years and older	P<0.001	8.86	5.03	15.59
Sex				
Male	Ref.	--	--	--
Female	P<0.01	1.97	1.50	2.59
Language				
Aboriginal only	P<0.001	1.62	1.23	2.12
Aboriginal and English	P<0.001	2.70	1.76	4.14
English only	Ref.	--	--	--

Multilevel logistic regression analysis

Table 10: Significant individual level predictors of diabetes using "Block Entry" Multilevel Logistic Regression (Community N =16; N=1660)

Base and Domain	X^2 (df)	Probability
Diabetes Null Model		
Demographic	169.33 (4)	P = 1.45456 E -35
Cultural practices	22.88 (2)	P = 107755 E -05
Step 1: Demographic Base		
Cultural practices	4.53 (2)	Not Sig.
Final Model	**169.33 (4)**	**P = 0.000**
Demographic		

Table 11: Diabetes – Final multilevel logistic regression main effects model (n=1668)

Individual level effects	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Demographics				
Age				
18 – 24 Years	Ref.	--	--	--
25 – 44 Years	P<0.001	2.46	1.47	4.13
45 – 64 Years	P<0.001	11.76	6.77	19.71
65 and Older	P<0.001	9.21	4.49	18.89
Sex				
Male	Ref.	--	--	--
Female	P<0.01	2.11	1.57	2.85

Table 12: Multilevel logistic regression model of community effects independently associated with diabetes (community N = 15; n=1668)

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Diabetes null model	4569.68 (2)		
Geopolitical environment			
Geographic location	4566.66 (3)	3.01 (1)	Not Sig.
Community isolation	4563.13 (3)	6.54 (1)	P = 0.011
Population environment			
Population change 1991-1996	4563.88 (4)	5.79 (2)	Not Sig.
Lone parent families	4565.54 (4)	4.14 (2)	Not Sig.
Female headed lone parent families	4565.05 (4)	4.63 (2)	Not Sig.
Male headed lone parent families	4565.05 (4)	4.63 (2)	Not Sig.
Age dependency (elders & children)	4568.41 (4)	1.27 (2)	Not Sig.
Cultural environment			
Individual use of Aboriginal language	No Laplace	--	--
Home use of Aboriginal language	4558.77 (4)	10.90 (2)	P = 0.004
Ceremonial and healing practices	4568.82 (4)	0. 85 (2)	Not Sig.
Discrimination environment			
Attended residential school	4567.64 (4)	2.03 (2)	Not Sig.
In-community health service discrimination	4565.28 (4)	4.39 (2)	Not Sig.
Out-community health service discrimination	4569.54 (4)	0.13 (2)	Not Sig.
Housing & infrastructure environment			
Community infrastructure service disparity	No Laplace	--	--
Inadequate household plumbing facilities	4555.96 (4)	13.72 (2)	P = 0.001
Inadequate housing	4569.02 (4)	0.65 (2)	Not Sig.
Stock of older housing	4568.21 (4)	1.43 (2)	Not Sig.
Availability of alternative housing	4564.39 (4)	5.29 (2)	Not Sig.
New housing development	4561.93 (4)	7.74 (2)	P = 0.021
Social-economic environment			
Completed elementary education only	4565.77 (4)	3.91 (2)	Not Sig.
Completed secondary education	No Laplace	--	--
Women incomplete formal education	4563.87 (4)	5.81 (2)	Not Sig.
Men incomplete formal education	No Laplace	--	--
Women completed high school	No Laplace	--	--
Men completed high school	No Laplace	--	--
Women advanced education	4560.45 (4)	9.22 (2)	P = 0.01
Men advanced education	4564.90 (4)	4.77 (2)	Not Sig.
Individual income	4567.60 (4)	2.07 (2)	Not Sig.
Women individual income	4569.17 (4)	0.50 (2)	Not Sig.
Men individual income	4560.79 (4)	8.88 (2)	P = 0.021
Family income	4567.21 (4)	2.47 (2)	Not Sig.
Female lone parent income	4567.52 (4)	2.15 (2)	Not Sig.

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Income derived from social assistance	4568.90 (4)	0.77 (2)	Not Sig.
Income derived from employment	4568.90 (4)	0.77 (2)	Not Sig.
Employment participation	4567.69 (4)	1.98 (2)	Not Sig.
Men employment participation	4567.39 (4)	2.28 (2)	Not Sig.
Women employment participation	4568.68 (4)	1.00 (2)	Not Sig.
Unemployment rate	4569.15 (4)	0.52 (2)	Not Sig.
Women unemployment	4567.56 (4)	2.11 (2)	Not Sig.
Men unemployment	4567.31 (4)	2.36 (2)	Not Sig.
Primary industry participation	4568.78 (4)	0.90 (2)	Not Sig.
Secondary industry participation	4566.99 (4)	2.68 (2)	Not Sig.
Tertiary industry participation	4563.64 (4)	6.03 (2)	P = 0.049
Community economic disparity	4562.05 (4)	7.63 (2)	P = 0.022
Perception of social-economic & infrastructure environment			
Infrastructure disparity	4565.15 (4)	4.52 (2)	Not Sig.
Education opportunities	4568.72 (4)	0.95 (2)	Not Sig.
Unemployment disparity	4568.33 (4)	1.35 (2)	Not Sig.
Food security problems	4563.28 (4)	6.39 (2)	P = 0.041
Social problem environment			
Addiction problems	4568.70 (4)	0.98 (2)	Not Sig.
Violence problems	4568.94 (4)	0.74 (2)	Not Sig.
Social support environment			
Personal trust environment	4568.50 (4)	1.17 (2)	Not Sig.
Personal caring environment	4566.52 (4)	3.16 (2)	Not Sig.
Risk behavior environment			
Smoking	4567.14 (4)	2.54 (2)	Not Sig.
Never smoked	4566.04 (4)	3.63 (2)	Not Sig.
Quit smoking	4568.19 (4)	1.48 (2)	Not Sig.
Drinking problem history	4565.49 (4)	4.19 (2)	Not Sig.
Drinking problems	4568.20 (4)	1.47 (2)	Not Sig.
Stopped drinking	4561.98 (4)	7.70 (2)	P = 0.021
No positive dietary changes	4564.46 (4)	5.21 (2)	Not Sig.
Some positive dietary changes	4569.67 (4)	0.00 (2)	Not Sig.
High positive dietary changes	4561.76 (4)	7.92 (2)	P = 0.019
Normal body weight	4567.69 (4)	1.98 (2)	Not Sig.
Overweight	4565.16 (4)	4.51 (2)	Not Sig.
Obesity	4564.15 (4)	5.53 (2)	Not Sig.
Health status environment			
Diabetes	No Laplace	--	--
Hypertension	4567.62 (4)	2.06 (2)	Not Sig.
Self-rated poor health	4568.82 (4)	0.86 (2)	Not Sig.
Suicide thoughts	4563.21 (4)	6.47 (2)	P = 0.039

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Health service environment			
Type of community health center	4559.66 (4)	10.02 (2)	P = 0.007
Health transfer status	4567.48 (4)	2.19 (2)	Not Sig.
Need of physician services	4569.40 (4)	0.27 (2)	Not Sig.
Physician supply deficiency	4565.39 (4)	4.28 (2)	Not Sig.
Routine physical examination	4569.41 (4)	0.26 (2)	Not Sig.
Annual blood pressure checkup	4564.10 (4)	5.57 (2)	Not Sig.

Table 13: Multilevel logistic regression model of community effects independently associated with diabetes (community N = 15; n=1668)

Community level effects	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Geopolitical environment				
Community isolation				
Not isolated	Ref.	--	--	--
Isolated	P<0.02	0.64	0.44	0.91
Cultural environment				
Home use of Aboriginal language				
Low levels	P<0.01	2.17	1.55	3.95
Typical levels	Not Sig.	1.43	0.93	2.19
High levels	Ref.	--	--	--
Housing & infrastructure environment				
Inadequate household plumbing facilities				
Low levels	P<0.001	2.48	1.55	3.95
Typical levels	P<0.01	1.77	1.14	2.74
High levels	Ref.	--	--	--
New housing development				
Low levels	P<0.02	1.97	1.06	3.64
Typical levels	P<0.05	1.81	1.00	3.27
High levels	Ref.	--	--	--
Social-economic environment				
Women advanced education				
Low levels	Ref.	--	--	--
Typical levels	Not Sig.	1.35	0.87	2.08
High levels	P<0.01	1.93	1.26	2.95
Men individual income				
Low levels	P<0.05	1.58	1.04	2.40
Typical levels	Not Sig.	0.89	0.61	1.32
High levels	Ref.	--	--	--

Community level effects	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Tertiary industry participation				
Low levels	P<0.05	1.77	1.02	3.08
Typical levels	P<0.05	1.74	1.06	2.85
High levels	Ref.	--	--	--
Community economic disparity				
Poor	Not Sig.	1.12	0.67	1.86
Typical disparity	P<0.01	1.63	1.16	2.30
High disparity	Ref.	--	--	--
Perception of social-economic & infrastructure environment				
Food security problems				
Low levels	P<0.02	1.68	1.12	2.51
Typical levels	Ref.	--	--	--
High levels	Not Sig.	1.15	0.76	1.74
Risk behavior environment				
Stopped drinking				
Low levels	Ref.	--	--	--
Typical levels	P<0.05	1.57	1.00	2.34
High levels	P<0.01	1.98	1.22	3.21
High positive dietary changes				
Low levels	Ref.	--	--	--
Typical levels	P<0.05	1.55	0.98	2.43
High levels	P<0.01	1.97	1.22	3.17
Health status environment				
Suicide thoughts				
Low levels	Ref.	--	--	--
Typical levels	Not Sig.	1.06	0.70	2.61
High levels	P<0.05	1.69	1.07	2.65
Health service environment				
Type of community health center				
Community health representative office	P<0.01	2.12	1.30	3.46
Community health center	P<0.02	1.87	1.14	3.05
Nursing station	Ref.	--	--	--

Table 14: Multilevel logistic regression model of community effects independently associated with diabetes after adjusting for individual level effects (community N = 15; n=1668)

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Level one model	4397.34 (6)		
Geopolitical environment			
Community isolation	4389.32 (7)	8.02 (1)	P = 0.018
Cultural environment			
Home use of Aboriginal language	4386.40 (8)	10.93 (2)	P = 0.004
Housing & infrastructure environment			
Inadequate household plumbing facilities	No Laplace	--	--
New housing development	4386.95 (8)	10.39 (2)	P = 0.006
Social-economic environment			
Women advanced education	No Laplace	--	--
Men individual income	4387.64 (8)	9.69 (2)	P = 0.008
Tertiary industry participation	4391.75 (8)	5.58 (2)	Not Sig.
Community economic disparity	4390.78 (8)	6.55 (2)	P = 0.038
Perception of social-economic & infrastructure environment			
Food security problems	4390.18 (8)	7.16 (2)	P = 0.028
Risk behavior environment			
Stopped drinking	4392.54 (8)	4.79 (2)	Not Sig.
High positive dietary changes	4391.60 (8)	2.78 (2)	Not Sig.
Health status environment			
Suicide thoughts	4392.39 (8)	4.95 (2)	Not Sig.
Health service environment			
Type of community health center	No Laplace	--	--

Table 15: Multilevel logistic regression model of community effects independently associated with diabetes after adjusting for individual level effects (community N = 15; n = 1668)

Community level effects	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Geopolitical environment				
Community isolation				
Not isolated	Ref.	--	--	--
Isolated	P<0.02	0.59	0.41	0.85
Cultural environment				
Home use of Aboriginal language				
Low levels	P<0.01	2.31	1.44	3.70
Typical levels	Not Sig.	1.53	0.98	2.37
High levels	Ref.	--	--	--
Housing & infrastructure environment				
New housing development				
Low levels	P<0.02	2.27	1.34	3.84
Typical levels	P<0.05	1.99	1.22	3.24
High levels	Ref.	--	--	--
Social-economic environment				
Men individual income				
Low levels	P<0.05	1.70	1.10	2.64
Typical levels	Not Sig.	0.92	0.61	1.37
High levels	Ref.	--	--	--
Community economic disparity				
Poor	Not Sig.	1.31	0.74	2.32
Typical disparity	P<0.02	1.66	1.13	2.44
High disparity	Ref.	--	--	--
Perceived social-economic & infrastructure environment				
Food security problems				
Low levels	P<0.02	1.69	1.04	2.73
Typical levels	Ref.	--	--	--
High levels	Not Sig.	0.97	0.62	1.50

APPENDIX 12 - ROUTINE PHYSICAL EXAMINATION

Logistic regression analysis

Table 1: Significant predictors of routine physical examination identified using forward logistic regression (n=1524)

Individual level variables	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Demographics				
Age				
18 – 24 years	Ref.	--	--	--
25 – 44 years	Not Sig.	0.93	0.70	1.21
45 – 64 years	P<0.001	2.54	1.75	3.67
65 and older	P<0.01	2.84	1.43	5.64
Sex				
Male	Ref.			
Female	P<0.001	1.85	1.50	2.30
Family roles				
Marital status				
Single	Ref.			
Partner	Not Sig.			
Past partner	Not Sig.			
No parenting history				
History	Not Sig.			
No history	Ref.			
Extended family parenting history				
No	Ref.	--	--	--
Yes	P<0.05	1.34	1.03	1.75
Lifetime of care giving				
None	Ref.	--	--	--
One to three children	Not Sig.	1.08	0.80	1.47
Four or more children	P<0.05	1.43	1.03	1.99
Discrimination				
Attended residential school				
No	Ref.	--	--	--
Yes	P<0.001	2.30	1.64	3.21
In-community health service discrimination				
No	Ref.			
Yes	Not Sig.			

Individual level variables	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Out-community health service discrimination				
No	Ref.			
Yes	Not Sig.			
Social-economic				
Education				
Elementary or less	P<0.05	1.79	1.24	2.57
Some junior high school	Not Sig.	1.13	0.88	1.45
High school or more	Ref.	--	--	--
Household runs out of money for food				
No	Ref.			
Yes	Not Sig.			
Social support				
Someone to confide in				
No	Ref.	--	--	--
Yes	P<0.001	1.90	1.52	2.38
Someone that loves you				
No	Ref.			
Yes	Not Sig.			
Social issues				
Household addiction problems				
No	Ref.			
Yes	Not Sig.			

Table 2: Routine physical examination – Best null model using "block entry" logistic regression (n=1572)

Individual level variables / domains	- 2 Log Likelihood	d.f.	R^2
Routine physical examination			
Demographic	2023.222	4	.070
Age			
Sex			
Family roles	2089.593	3	.015
Extended parenting history			
Lifetime of care giving			
Discrimination	2078.378	1	.024
Attended residential school			
Social-economic	2096.259	2	.005
Household income			
Social Support	2075.707	1	.026
Someone to confide in			

Table 3: Routine physical examination - Best model fitted using "block entry" logistic regression (n=1572)

Base and Domain	X^2 (df)	Level of Significance
Routine physical examination null model		
Demographic	83.158 (4)	0.05 > P > 0.001
Family roles	17.147 (3)	0.05 > P > 0.001
Discrimination	28.362 (1)	0.05 > P > 0.001
Social-economic	10.481 (2)	0.05 > P > 0.010
Social support	31.033 (1)	0.05 > P > 0.001
Step One: Demographic Base		
Family roles	4.330 (3)	Not Sig.
Discrimination	3.148 (1)	Not Sig.
Social-economic	0.363 (2)	Not Sig.
Social support	32.520 (1)	0.05 > P > 0.001
Final Model	**32.52 (1)**	**0.05 > P > 0.001**
Demographic		
Social support		

Table 4: Routine Physical Examination – Final logistic regression main effects model (n=1693)

Individual level effects	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Demographics				
Age				
18 – 24 Years	Ref.	--	--	--
25 – 44 Years	Not Sig.	1.09	0.86	1.38
45 – 64 Years	P<0.001	3.00	2.15	4.18
65 and Older	P<0.01	50.7	2.85	9.03
Sex				
Male	Ref.	--	--	--
Female	P<0.001	1.67	1.37	2.05
Social Support				
Someone to confide in				
No	Ref.	--	--	--
Yes	P<0.001	1.88	1.52	2.32

Table 5: Routine Physical Examination - Test for age interactions within the domains of demographics and social support using "block entry" logistic regression (n=1693)

Domains and interaction terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Demographics			
Demographic main effects model	2173.077 (2)		
Age			
Sex			
Demographic interaction effects model	2159.828 (3)	**13.248 (1)**	**0.05 < P < 0.001**
Age			
Sex			
Age X Sex			
Social support			
Social support main effects model	2152.653 (2)		
Age			
Someone to confide in			
Social support interaction effects model	2151.301 (3)	1.352 (1)	Not Sig.
Age			
Someone to confide in			
Age X Someone to confide in			

Table 6: Routine physical examination - Odds ratios in the presence of a significant age by sex interaction (N=1693)

Age as an effect modifier	**Demographics – Age and Sex** Ref. Male and No Routine Physical Examination (n=1603)
18 – 24 years	2.19 (1.48 – 3.25)
25 – 44 years	1.91 (1.46 – 2.50)
45 to 65 years	0.77 (0.45 – 1.32)
65 years and older	0.61 (0.20 – 1.86)

Table 7: Routine physical examination - Test for sex interactions within the domain of social support using "block entry" logistic regression (n=1693)

Domains and interaction terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Social support			
Social support main effect model	2231.629 (2)		
Sex			
Someone to confide in			
Social support interaction effects model	2231.537 (3)	0.092 (1)	Not Sig.
Sex			
Someone to confide in			
Sex X Someone to confide in			

Table 8: Routine physical examination – Final logistic regression main and interaction effects model (n=1693)

Individual level effects	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Main effects				
Someone to confide in				
No	Ref.			
Yes	P<0.001	2.11	1.68	2.64
Interaction effects				
Age	P<0.001	1.09	1.06	1.12
Sex				
Male	Ref	--	--	--
Female	P<0.001	4.72	2.64	8.44
Age X Sex[1]	P<0.001	0.97	0.95	0.98

[1] First Nations women between the ages of 18 to 24 years (2.19 OR) and 25 to 44 years (1.91 OR), as opposed to men in the same age groups and women and men in the older age groups, were more likely to have had a routine physical examination.

Multilevel Logistic Regression Analysis

Table 9: Significant individual predictors of routine physical examination using "block entry" multilevel logistic regression (Community N = 16; n =1693)

Base and Domain	X^2 (df)	Level of Significance
Routine physical examination null model		
Demographic	87.59 (4)	P = 4.27103E-18
Social support	41.03 (1)	P = 1.49908E-10
Step 1: Demographic Base		
Social support	38.65 (1)	P = 2.05942E-08
Final model	**38.65 (1)**	**P = 2.05942E-08**
Demographic		
Social Support		

Table 10: Routine Physical Examination - Test for sex interactions within demographics using "block entry" multilevel logistic regression (community N = 16; n=1693)

Domains and interaction terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Demographic			
Sex main effect model	5258.17 (6)		
Sex			
Age			
Sex interaction effects model	5258.09 (7)	0.08 (1)	Not Sig.
Sex			
Age			
Sex X Age			

Table 11: Routine Physical Examination – Final multilevel logistic regression main effects model (Community N = 16; n=1693)

Individual level effects	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Age				
17 – 24 Years	Ref.	--	--	--
25 – 44 Years	Not Sig.	0.98	0.73	1.31
45 – 64 Years	P<0.001	2.67	1.81	3.94
65 and Older	P<0.001	3.87	1.88	7.97
Sex				
Male	Ref.	--	--	--
Female	P<0.001	1.67	1.34	2.12
Someone to confide in				
No	Ref.	--	--	--
Yes	P<0.001	2.09	1.62	2.70

Table 12: Multilevel logistic regression model of community effects independently associated with routine physical examinations (community N = 16; n=1693)

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Routine physical examination null model	5345.77		P = 0.000
Geopolitical environment			
Geographic location	5345.74 (3)	0.02 (1)	Not Sig.
Community isolation	5345.58 (3)	0.18 (1)	Not Sig.
Population environment			
Population change 1991-1996	5335.63 (4)	10.13 (2)	P =0.006
Lone parent families	5344.99 (4)	0.77 (2)	Not Sig.
Female headed lone parent families	5343.94 (4)	1.82 (2)	Not Sig.
Male headed lone parent families	5343.94 (4)	1.82 (2)	Not Sig.
Age dependency (elders & children)	5339.59 (4)	6.18 (2)	P =0.046
Cultural environment			
Individual use of Aboriginal language	5345.12 (4)	0.65 (2)	Not Sig.
Home use of Aboriginal language	5343.83 (4)	1.94 (2)	Not Sig.
Ceremonial and healing practices	5343.67 (4)	2.10 (2)	Not Sig.
Discrimination environment			
Attended residential school	5344.05 (4)	1.72 (2)	Not Sig.
In-community health service discrimination	5337.46 (4)	8.30 (2)	P =0.016
Out-community health service discrimination	5344.64 (4)	1.13 (2)	Not Sig.

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Housing & infrastructure environment			
Community infrastructure service disparity	5345.60 (4)	0.17 (2)	Not Sig.
Inadequate household plumbing facilities	5342.80 (4)	2.96 (2)	Not Sig.
Inadequate housing disparity	5344.50 (4)	1.27 (2)	Not Sig.
Stock of older housing	5335.24 (4)	10.52 (2)	P =0.005
Availability of alternative housing	5345.53 (4)	0.24 (2)	Not Sig.
New housing development	5339.40 (4)	6.37 (2)	P =0.041
Social-economic environment			
Completed elementary education only	5344.76 (4)	1.01 (2)	Not Sig.
Completed secondary education	5345.52 (4)	0.24 (2)	Not Sig.
Women incomplete formal education	5343.81 (4)	1.96 (2)	Not Sig.
Men incomplete formal education	5344.19 (4)	1.58 (2)	Not Sig.
Women completed high school	5345.50 (4)	0.27 (2)	Not Sig.
Men completed high school	5345.14 (4)	0.63 (2)	Not Sig.
Women advanced education	5345.31 (4)	0.46 (2)	Not Sig.
Men advanced education	5342.90 (4)	2.87 (2)	Not Sig.
Individual income	5344.89 (4)	0.88 (2)	Not Sig.
Women individual income	5345.53 (4)	0.23 (2)	Not Sig.
Men individual income	5344.82 (4)	0.95 (2)	Not Sig.
Family income	5335.53 (4)	10.24 (2)	P =0.006
Female lone parent income	5342.93 (4)	2.83 (2)	Not Sig.
Income derived from social assistance	5344.14 (4)	1.63 (2)	Not Sig.
Income derived from employment	5344.14 (4)	1.63 (2)	Not Sig.
Employment participation	5343.33 (4)	2.44 (2)	Not Sig.
Men employment participation	5345.58 (4)	0.18 (2)	Not Sig.
Women employment participation	5341.54 (4)	4.22 (2)	Not Sig.
Unemployment rate	5344.28 (4)	1.48 (2)	Not Sig.
Women unemployment	5343.20 (4)	2.57 (2)	Not Sig.
Men unemployment	5344.34 (4)	1.42 (2)	Not Sig.
Primary industry participation	5344.65 (4)	1.11 (2)	Not Sig.
Secondary industry participation	5344.25 (4)	1.51 (2)	Not Sig.
Tertiary industry participation	5344.51 (4)	1.26 (2)	Not Sig.
Community economic disparity	5338.36 (4)	7.40 (2)	P =0.025
Perceived social-economic & infrastructure environment			
Infrastructure disparity	5334.00 (4)	11.77 (2)	P =0.003
Education opportunities	5342.09 (4)	3.67 (2)	Not Sig.
Unemployment disparity	5345.72 (4)	0.05 (2)	Not Sig.
Food security problems	5345.40 (4)	0.37 (2)	Not Sig.
Social problem environment			
Addiction problems	5343.26 (4)	2.51 (2)	Not Sig.
Violence Problems	5345.30 (4)	0.47 (2)	Not Sig.

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Social support environment			
Personal trust environment	5345.11 (4)	0.66 (2)	Not Sig.
Personal caring environment	5344.98 (4)	0.78 (2)	Not Sig.
Risk behavior environment			
Smoking	5342.17 (4)	3.59 (2)	Not Sig.
Never smoked	5340.07 (4)	5.69 (2)	Not Sig.
Quit smoking	5343.77 (4)	2.00 (2)	Not Sig.
Drinking problem history	5343.46 (4)	2.31 (2)	Not Sig.
Drinking problems	5344.31 (4)	1.46 (2)	Not Sig.
Stopped drinking	5344.02 (4)	1.75 (2)	Not Sig.
No positive dietary changes	5343.49 (4)	2.27 (2)	Not Sig.
Some positive dietary changes	5345.60 (4)	0.16 (2)	Not Sig.
High positive dietary changes	5344.25 (4)	1.51 (2)	Not Sig.
Normal body weight	5344.28 (4)	1.48 (2)	Not Sig.
Overweight	5345.72 (4)	0.04 (2)	Not Sig.
Obesity	5337.53 (4)	8.24 (2)	P =0.016
Health status environment			
Diabetes	5343.17 (4)	2.59 (2)	Not Sig.
Hypertension	5344.46 (4)	1.31 (2)	Not Sig.
Self-rated poor health	5344.29 (4)	1.48 (2)	Not Sig.
Suicide thoughts	5345.08 (4)	0.69 (2)	Not Sig.
Health service environment			
Type of community health center	5342.39 (4)	3.38 (2)	Not Sig.
Health transfer status	5345.34 (4)	0.42 (2)	Not Sig.
Need of physician services	5344.60 (4)	1.16 (2)	Not Sig.
Physician supply deficiency	5344.67 (4)	1.10 (2)	Not Sig.
Routine physical examination	No Laplace	--	--
Annual blood pressure checkup	5342.85 (4)	2.91 (2)	Not Sig.
Pap test in the last 2 years	5341.10 (4)	4.67 (2)	P = 0.035
Nurse availability (perceived)	5345.68 (4)	0.09 (2)	Not Sig.
Medical transportation availability (perceived)	5340.78 (4)	4.99 (2)	P=0.022

Table 13: Multilevel logistic regression model of community effects independently associated with routine physical examination (community N = 16; n = 1693)

Community level effects	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Population environment				
Population change 1991-1996				
Low levels	Ref.	--	--	--
Typical levels	P<0.01	2.01	1.38	2.93
High levels	Not Sig.	1.37	0.90	2.09
Age dependency (elders & children)				
Low levels	P<0.01	1.79	1.18	2.74
Typical levels	P<0.02	1.81	1.10	2.96
High levels	Ref.	--	--	--
Discrimination environment				
In-community health service discrimination				
Low levels	P<0.01	2.06	1.30	3.25
Typical levels	P<0.03	1.58	1.06	2.34
High levels	Ref.	--	--	--
Housing & infrastructure environment				
Stock of older housing				
Low levels	P < 0.02	1.55	1.08	2.23
Typical levels	P<0.001	2.16	1.60	2.93
High levels	Ref.	--	--	--
New housing development				
Low levels	Ref.	--	--	--
Typical levels	P<0.01	1.74	1.15	2.62
High levels	Not Sig.	1.15	0.79	3.17
Social-economic environment				
Family income				
Low levels	P<0.01	1.89	1.26	2.83
Typical levels	Ref.	--	--	--
High levels	Not Sig.	1.48	0.99	2.20
Community economic disparity				
Poor	Ref.	--	--	--
Typical disparity	P<0.01	2.01	1.22	3.31
High disparity	Not Sig.	1.18	0.72	1.93
Perceived social-economic & infrastructure environment				
Infrastructure disparity				
Low levels	P<0.05	1.61	1.04	2.49
Typical levels	P<0.01	2.91	1.31	2.79
High levels	Ref.	--	--	--

Community level effects	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Risk behavior environment				
Obesity				
Low levels	P<0.02	1.82	1.13	2.94
Typical levels	P<0.01	1.79	1.20	2.68
High levels	Ref.	--	--	--
Health service environment				
Pap test in the last two years				
Low levels	Not Sig.	1.12	0.73	1.51
Typical levels	Ref.	--	--	--
High levels	P < 0.05	1.58	1.19	1.96
Medical transportation availability (perceived)				
Low levels	Ref.	--	--	--
Typical levels	P < 0.05	1.58	1.23	1.93
High levels	P < 0.05	1.63	1.17	2.09

Table 14: Multilevel logistic regression model of community effects independently associated with routine physical examination after adjusting for individual level effects (community N = 16; n=1693)

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Level one null model	5219.520606 (7)		
Population environment			
Population change 1991-1996	5208.066517 (9)	11.45 (2)	P = 0.003
Age dependency (elders & children)	5213.927872 (9)	5.59 (2)	Not Sig.
Discrimination environment			
In-community health service discrimination	5214.137066 (9)	5.38 (2)	Not Sig.
Housing & infrastructure environment			
Stock of older housing	5203.615933 (9)	15.90 (2)	P = 0.000
New housing development	5212.587091 (9)	6.93 (2)	P = 0.031
Social-economic environment			
Family income	5210.384428 (9)	9.14 (2)	P = 0.01
Community economic disparity	5215.334367 (9)	4.19 (2)	Not Sig.
Perceived social-economic & infrastructure environment			
Infrastructure disparity	5211.259054 (9)	8.26 (2)	P = 0.016
Risk behavior environment			
Obesity	5211.366087 (9)	8.15 (2)	P = 0.017
Health service environment			
Pap test in the last 2 years	5215.356922 (9)	4.16 (2)	Not Sig.
Medical transportation availability (perceived	5215.899549 (9)	3.62 (2)	Not Sig.

Table 15: Multilevel logistic regression model of community effects independently associated with routine physical examinations after adjusting for individual level effects (community N = 16; n=1693)

Community level effects	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Population environment				
Population change 1991-1996				
Low levels	Ref.	--	--	--
Typical levels	P<0.01	2.01	1.43	2.84
High levels	Not Sig.	1.37	0.93	2.01
Housing & infrastructure environment				
Stock of older housing				
Low levels	Ref.	--	--	--
Typical levels	P<0.02	1.55	1.11	2.16
High levels	P<0.001	2.16	1.64	2.85
New housing development				
Low levels	P<0.02	1.74	1.19	2.53
Typical levels	Ref.	--	--	--
High levels	Not Sig.	1.18	0.75	1.85
Social-economic environment				
Family income				
Low levels	P<0.01	1.89	1.31	2.73
Typical levels	Ref.	--	--	--
High levels	P<0.05	1.48	1.03	2.13
Perceived social-economic & infrastructure environment				
Infrastructure disparity				
Low levels	P<0.05	1.64	1.19	5.17
Typical levels	P<0.05	2.01	1.52	7.43
High levels	Ref.	--	--	--
Risk behavior environment				
Obesity				
Low levels	P<0.02	1.82	1.17	2.82
Typical levels	P<0.01	1.79	1.24	2.58
High levels	Ref.	--	--	--

APPENDIX 13 - ANNUAL BLOOD PRESSURE CHECK-UP

Logistic regression analysis

Table 1: Significant predictors of annual blood pressure check-up identified using forward logistic regression (n=1534)

Individual level variables	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Demographics				
Age				
18 – 24 years	Ref.	--	--	--
25 – 44 years	P<0.001	1.59	1.23	2.06
45 – 64 years	P<0.001	5.10	3.45	7.54
65 and older	P<0.001	4.57	2.47	8.44
Sex				
Male	Ref.	--	--	--
Female	P<0.001	2.01	1.61	2.51
Family roles				
Marital status				
Single	Ref.	--	--	--
Partner	P<0.01	2.12	1.31	3.45
Past partner	Not Sig.	1.04	0.78	1.37
No parenting history				
History	Not Sig.			
No history	Ref.			
Biological parenting history				
No	Ref.			
Yes	Not Sig.			
Extended family parenting history				
No	Ref.	--	--	--
Yes	P<0.05	1.45	1.09	1.93
Lifetime of care giving				
None	Ref.	--	--	--
One to three children	Not Sig.	1.34	0.97	1.87
Four or more children	P<0.001	2.07	1.41	1.37
Primary care giver				
No	Not Sig.			
Yes	Ref.			

Individual level variables	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Discrimination				
Attended residential school				
No	Ref.	--	--	--
Yes	P<0.001	3.29	2.25	4.82
In-community health service discrimination				
No	Ref.	--	--	--
Yes	P<0.05	1.40	1.05	1.88
Cultural practices				
Language				
Aboriginal	P<0.05	1.25	1.00	1.56
Aboriginal & English	P<0.05	1.55	1.02	2.36
English only	Ref.	--	--	--
Social-economic				
Education				
Elementary or less	Not Sig.			
Some junior high school	Not Sig.			
High school or more	Ref.			
Household income				
Not stated	Ref.	--	--	--
< $10,000	Not Sig.	1.30	0.99	1.70
$10 – 24,999	Not Sig.	1.31	0.97	1.78
$25,000 or more	P<0.001	2.10	1.46	3.01
Social support				
Someone to confide in				
No	Ref.			
Yes	Not Sig.			
Someone that loves you				
No	Ref.			
Yes	Not Sig.			
Social issues				
Household addiction problems				
No	Ref.	--	--	--
Yes	P<0.001	1.51	1.21	1.87
Household violence problems				
No	Ref.			
Yes	Not Sig.			
Household Overcrowding				
No	Ref.			
Yes	Not Sig.			

Table 2: Annual blood pressure check-up – Best null model fitted using logistic regression (n=1553)

Individual level variables / domains	- 2 Log Likelihood	d.f.	R^2
Annual Blood Pressure Check-up	1986.285		
Demographic	1859.945	4	.108
Age			
Sex			
Family roles	1928.796	5	.050
Marital status			
Extended parenting history			
Lifetime of care giving			
Discrimination	1933.781	2	.046
Attended residential school			
In-community health service discrimination			
Cultural practices	1979.781	2	.006
Language			
Social-economic	1970.492	3	.014
Household income			
Social Issues	1972.861	1	.012
Household addiction problems			

Table 3: Annual blood pressure check-up - Best model fitted using "block entry" logistic regression (n=1553)

Base and Domain	X^2 (df)	Level of Significance
Annual blood pressure check-up null model		
Demographic	126.340 (4)	0.05 > P > 0.001
Family roles	57.489 (5)	0.05 > P > 0.001
Discrimination	52.505 (2)	0.05 > P > 0.001
Cultural practices	6.605 (2)	P = 0.039
Social-economic	15.793 (3)	0.05 > P > 0.001
Social issues	13.425 (1)	0.05 > P > 0.001
Step 1: Demographic Base		
Family roles	9.149 (5)	Not Sig.
Discrimination	11.44 (2)	0.05 > P > 0.01
Cultural practices	1.220 (2)	Not Sig.
Social-economic	14.652 (3)	0.05 > P > 0.01
Social issues	18.173 (1)	0.05 > P > 0.001
Step 2: Demographic +Social issues Base		
Family roles	7.04 (5)	Not Sig.
Discrimination	9.354 (2)	0.05 > P > 0.01
Cultural practices	.795 (2)	Not Sig.
Social-economic	14.645 (3)	0.05 > P > 0.01
Step 3: Demographic + Social issues + Social-economic Base		
Family roles	5.933 (5)	Not Sig.
Discrimination	7.733 (2)	P = 0.021
Cultural practices	.438 (2)	Not Sig.
Final Model	**7.733 (2)**	**P = 0.021**
Demographic		
Social issues		
Social economic		
Discrimination		

Table 4: Annual Blood Pressure Check-up - Logistic Regression main effects model (n=1647)

Individual level effects	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Demographics				
Age				
18 – 24 years	Ref.	--	--	--
25 – 44 years	P<0.05	1.35	1.04	1.76
45 – 64 years	P<0.001	3.08	2.46	5.88
65 years and older	P<0.001	4.00	2.12	7.56
Sex				
Male	Ref.	--	--	--
Female	P<0.001	2.09	1.67	2.62
Discrimination				
Attended residential school				
No	Ref.	--	--	--
Yes	P<0.03	1.62	1.04	1.52
Social-economic				
Household income				
Not stated	Ref.	--	--	--
< $10,000	Not Sig.	1.16	0.88	1.54
$10 – 24,999	Not Sig.	1.21	0.88	1.67
$25,000 or more	P<0.001	1.99	1.35	2.92
Social issues				
Household addiction problems				
No	Ref.	--	--	--
Yes	P<0.001	1.61	1.28	2.03

Table 5: Annual blood pressure check-up - Test for age interactions within the domains of demographics, discrimination, social-economic and social issues using "block entry" logistic regression (n=1647)

Domains and interaction terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Demographics			
Demographic main effects model:	1961.939 (2)		
Age			
Sex			
Demographic interaction effects model	1960.462 (3)	1.477 (1)	Not Sig.
Age			
Sex			
Age X Sex			
Discrimination			
Attended residential school main effects model	1989.264 (2)		
Age			
Attended residential school			
Attended residential school interaction effect model	1988.841 (3)	0.423	Not Sig.
Age			
Attended residential school			
Age X Attended residential school			
Social-economic			
Household income main effects model	1986.074 (4)		
Age			
< $10,000			
$10 – 24,999			
$25,000 or more			
Household income interaction effects model:	1984.822 (7)	1.918 (3)	Not Sig.
Age			
< $10,000			
Age X < $10,000			
$10 – 24,999			
Age X $10 – 24,999			
$25,000 or more			
Age X $25,000 or more			

Domains and interaction terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Social issues			
Household addiction problems main effects model	1980.739 (2)		
Age			
Household addiction problems			
Household addiction problems interaction effects model:	1975.654 (3)	**5.085 (1)**	**P < 0.05**
Age			
Household addiction problems			
Age X Household addiction problems			

Table 6: Annual blood pressure check-up - Odds ratio in the presence of a significant age by discrimination and social issue interaction (n=1647)

Age as an effect modifier	**Social issues – Age and Household addiction problems** Ref. No household addiction problems and No blood pressure check-up (n=1647)
18 – 24 years	1.81 (1.20 – 2.73)
25 – 44 years	1.75 (1.30 – 2.35)
45 to 65 years	1.04 (0.54 – 1.99)
65 years & older	0.48 (0.15 – 1.53)

Table 7: Annual blood pressure check-up - Test for sex interactions within the domains of demographics, discrimination, social-economic and social issues using "block entry" logistic regression (n=1647)

Domains and interaction terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Discrimination			
Attended residential school main effects model	2006.563 (2)		
Sex			
Attended residential school			
Attended residential school interaction effects model	2000.900 (3)	**5.663 (1)**	**0.05 < P < 0.02**
Sex			
Attended residential school			
Sex X Attended residential school			
Social-economic			
Household income main effect model:	2048.535 (4)		
Sex			
< $10,000			
$10 – 24,999			
$25,000 or more			
Household income interaction effects model:	2045.157 (7)	3.378 (3)	Not Sig.
Sex			
< $10,000			
Sex X < $10,000			
$10 – 24,999			
Sex X $10 – 24,999			
$25,000 or more			
Sex X $25,000 or more			

Domains and interaction terms	- 2 Log Likelihood (d.f.)	X^2 (d.f.)	Level of Significance
Social issues			
Household addiction problems main effect model:	2054.147 (2)		
Sex			
Household addiction problems			
Household addiction interaction effects model:	2053.196 (3)	0.951 (1)	Not Sig.
Sex			
Household addiction problems			
Sex X Household addiction problems			

Table 8: Annual blood pressure check-up - Odds ratios in the presence of a significant age by discrimination and social issue interactions (n=1647)

Sex as an effect modifier	Discrimination – Sex and Attend residential school Ref. No attendance of residential school and No annual blood pressure check-up (n=1647)
Men	5.57 (3.28 – 9.46)
Women	2.23 (1.32 – 3.79)

Table 9: Annual blood pressure check-up – Final logistic regression main and interaction effects model (N=1647)

Individual level effects	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Main effects				
Income				
Not stated	Ref.			
< $10,000	Not Sig.	1.18	0.90	1.54
$10 – 24,999	Not Sig.	1.30	0.95	1.77
$25,000 or more	P<0.001	1.95	1.35	2.83
Interaction Effects				
Sex				
Male	Ref.	--	--	--
Female	P < 0.001	5.79	2.46	13.64
Attended residential school				
No	Ref.	--	--	--
Yes	P < 0.01	7.18	2.14	24.08
Sex X Attended residential school	P < 0.05	0.38	0.18	0.81
Age	P < 0.001	1.07	1.04	1.10
Household addiction problems				
No	Ref.	--	--	--
Yes	P < 0.001	3.45	1.84	6.49
Age X Household addiction problems	P < 0.01	0.98	0.96	0.99

Multilevel logistic regression analysis

Table 10: Annual blood pressure check-up – Significant individual predictors using "block entry" multilevel logistic regression (community N = 16; n =1647)

Base and Domain	X^2 (df)	Level of Significance
Annual blood pressure check-up null model		
Demographic	123.02 (4)	P = 1.20876E-25
Discrimination	39.24 (1)	P = 3.75126E-10
Social issues	0.68 (1)	Not Sig.
Social-economic	7.40 (2)	P = 0.007
Step 1: Demographic Base		
Discrimination	3.34 (1)	Not Sig.
Social issues	1.29 (1)	Not Sig.
Social-economic	8.86 (3)	P = 0.031
Final Model	**8.86 (3)**	**P = 0.031**
Demographic		
Social-economic		

Table 11: Annual Blood Pressure Check-up – Final multilevel logistic regression main effects model (n = 1722)

Individual level effects	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Main Effects				
Age				
18 – 24 Years	Ref.	--	--	--
25 – 44 Years	Not Sig.	1.29	0.98	1.69
45 – 64 Years	P<0.01	4.65	3.16	6.83
65 and Older	P<0.001	4.46	2.28	8.73
Sex				
Male	Ref.	--	--	--
Female	P<0.001	2.66	1.82	2.80
Household income				
Not stated	Ref.	--	--	--
< $10,000	P<0.02	1.39	1.06	1.83
$10 – 24,999	Not Sig.	1.27	0.94	1.73
$25,000 or more	P<0.001	1.78	1.22	2.61

Table 12: Multilevel logistic regression model of community effects independently associated with annual blood pressure check-up (community N=16; n = 1722)

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Annual blood pressure check-up null model	5340.33 (2)		P = 0.000
Geopolitical environment			
Geographic location	5340.32 (3)	0.01 (1)	Not Sig.
Community isolation	5340.28 (3)	0.05 (1)	Not Sig.
Population environment			
Population change 1991-1996	5340.12 (4)	0.20 (2)	Not Sig.
Lone parent families	5338.20 (4)	2.13 (2)	Not Sig.
Female headed lone parent families	5336.29 (4)	4.03 (2)	Not Sig.
Male headed lone parent families	5336.29 (4)	4.03 (2)	Not Sig.
Age dependency (elders & children)	5336.81 (4)	3.51 (2)	Not Sig.
Cultural environment			
Individual use of Aboriginal language	5338.36 (4)	1.97 (2)	Not Sig.
Home use of Aboriginal language	5339.34 (4)	0.99 (2)	Not Sig.
Ceremonial and healing practices	5340.16 (4)	0.17 (2)	Not Sig.
Discrimination environment			
Attended residential school	5336.76 (4)	3.57 (2)	Not Sig.
In-community health service discrimination	5335.54 (4)	4.79 (2)	Not Sig.
Out-community health service discrimination	5339.79 (4)	0.54 (2)	Not Sig.
Housing & infrastructure environment			
Community infrastructure service disparity	5334.91 (4)	5.41 (2)	Not Sig.
Inadequate household plumbing facilities	5338.89 (4)	1.43 (2)	Not Sig.
Inadequate housing	5335.62 (4)	4.71 (2)	Not Sig.
Stock of older housing	5335.79 (4)	4.54 (2)	Not Sig.
Availability of alternative housing	5339.48 (4)	0.84 (2)	Not Sig.
New housing development	5337.81 (4)	2.51 (2)	Not Sig.
Social-economic environment			
Completed elementary education only	5338.17 (4)	2.16 (2)	Not Sig.
Completed secondary education	5339.41 (4)	0.92 (2)	Not Sig.
Women incomplete formal education	5339.60 (4)	0.73 (2)	Not Sig.
Men incomplete formal education	5339.72 (4)	0.60 (2)	Not Sig.
Women completed high school	5338.89 (4)	1.43 (2)	Not Sig.
Men completed high school	5339.61 (4)	0.71 (2)	Not Sig.
Women advanced education	5340.08 (4)	0.25 (2)	Not Sig.
Men advanced education	5339.91 (4)	0.42 (2)	Not Sig.
Individual income	5339.65 (4)	0.68 (2)	Not Sig.
Women individual income	5338.92 (4)	1.41 (2)	Not Sig.
Men individual income	5339.14 (4)	1.19 (2)	Not Sig.

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Family income	5338.67 (4)	1.66 (2)	Not Sig.
Female lone parent income	5335.39 (4)	4.93 (2)	Not Sig.
Income derived from social assistance	5338.49 (4)	1.84 (2)	Not Sig.
Income derived from employment	5338.49 (4)	1.84 (2)	Not Sig.
Employment participation	5339.74 (4)	0.59 (2)	Not Sig.
Men employment participation	5339.99 (4)	0.34 (2)	Not Sig.
Women employment participation	5337.66 (4)	2.67 (2)	Not Sig.
Unemployment rate	5338.25 (4)	2.08 (2)	Not Sig.
Women unemployment	5339.59 (4)	0.74 (2)	Not Sig.
Men unemployment	5336.06 (4)	4.27 (2)	Not Sig.
Primary industry participation	5339.46 (4)	0.87 (2)	Not Sig.
Secondary industry participation	5336.63 (4)	3.70 (2)	Not Sig.
Tertiary industry participation	5339.02 (4)	1.31 (2)	Not Sig.
Community economic disparity	5328.76 (4)	11.57 (2)	P = 0.003
Perceived social-economic & infrastructure disparity			
Infrastructure disparity	5333.60 (4)	6.73 (2)	P = 0.035
Education opportunities	5338.37 (4)	1.96 (2)	Not Sig.
Unemployment disparity	5339.89 (4)	0.43 (2)	Not Sig.
Food security problems	5340.14 (4)	0.19 (2)	Not Sig.
Social problem environment			
Household addiction problems	5336.47 (4)	3.85 (2)	Not Sig.
Household violence problems	5338.70 (4)	1.62 (2)	Not Sig.
Social support environment			
Personal trust environment	5339.19 (4)	1.13 (2)	Not Sig.
Personal caring environment	5340.07 (4)	0.26 (2)	Not Sig.
Risk behavior environment			
Smoking	5338.52 (4)	1.81 (2)	Not Sig.
Never smoked	5337.56 (4)	2.77 (2)	Not Sig.
Quit smoking	5339.71 (4)	0.62 (2)	Not Sig.
Drinking problem history	5333.30 (4)	7.03 (2)	P = 0.030
Drinking problems	5335.35 (4)	4.98 (2)	Not Sig.
Stopped drinking	5331.67 (4)	8.66 (2)	P = 0.014
No positive dietary changes	5334.47 (4)	5.85 (2)	Not Sig.
Some positive dietary changes	5339.25 (4)	1.08 (2)	Not Sig.
High positive dietary changes	5337.49 (4)	2.84 (2)	Not Sig.
Normal body weight	5334.47 (4)	5.85 (2)	Not Sig.
Overweight	5337.98 (4)	2.35 (2)	Not Sig.
Obesity	5335.10 (4)	5.23 (2)	Not Sig.
Health status environment			
Diabetes	5325.35 (4)	14.97 (2)	P = 0.000
Hypertension	5336.93 (4)	3.39 (2)	Not Sig.
Self-rated poor health	5340.19 (4)	0.14 (2)	Not Sig.

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Suicide thoughts	5339.17 (4)	1.15 (2)	Not Sig.
Health service environment			
Type of community health center	5339.86 (4)	0.46 (2)	Not Sig.
Health transfer status	5340.23 (4)	0.10 (2)	Not Sig.
Need of physician services	5334.78 (4)	5.55 (2)	Not Sig.
Physician supply deficiency	5340.05 (4)	0.28 (2)	Not Sig.
Routine physical examination	5334.14 (4)	6.19 (2)	P = 0.045
Annual blood pressure check-up	5320.79 (4)	19.54 (2)	P = 0.000
Pap test in the last 2 years	5336.51 (4)	3.84 (2)	Not Sig.
Availability of nurses (perceived)	5339.33 (4)	1.00 (2)	Not Sig.
Availability of medical transportation (perceived)	5337.12 (4)	3.21 (2)	Not Sig.

Table 13: Multilevel logistic regression model of community effects independently associated with annual blood pressure check-up (community N=16; n = 1722)

Community level effects	Level of Significance	Odds Ratio	95% C.I Lower	Upper
Social-economic environment				
Community economic disparity				
Poor	Not Sig.	0.77	0.41	1.43
Typical disparity	P < 0.01	2.10	1.35	3.26
High disparity	Ref.	--	--	--
Perceived social-economic & infrastructure environment				
Infrastructure disparity				
Low levels	Not Sig.	1.74	0.88	3.42
Typical levels	P<0.01	2.20	1.22	3.95
High levels	Ref.	--	--	--
Risk behavior environment				
Drinking problem history				
Low levels	Ref.	--	--	--
Typical levels	Not Sig.	1.44	0.82	2.55
High levels	P<0.01	2.48	1.28	4.79
Stopped drinking				
Low levels	Ref.	--	--	--
Typical levels	Not Sig.	1.26	0.73	2.19
High levels	P<0.01	2.59	1.36	4.92
Health status environment				
Diabetes				
Low levels	Ref.	--	--	--
Typical levels	Not Sig.	1.17	0.74	1.84
High levels	P<0.001	3.00	1.75	5.13
Health service environment				
Routine physical examination				
Low levels	Ref.	--	--	--
Typical levels	Not Sig.	1.39	0.78	2.50
High levels	P<0.02	2.39	1.20	4.75
Annual blood pressure check-up				
Low levels	Ref.	--	--	--
Typical levels	P<0.01	1.82	1.25	2.65
High levels	P<0.001	3.70	2.35	5.82

Table 14: Multilevel logistic regression model of community effects independently associated with annual blood pressure check-up after adjusting for individual level effects (Community N = 16; n = 1722)

Community level effects	Deviance (df)	X^2 (df)	Level of Significance
Level one null model	5190.36 (9)		P = 0.000
Social-economic environment			
Community economic disparity	5179.79 (11)	10.57 (2)	P = 0.005
Perceive social-economic & infrastructure environment			
Infrastructure disparity	5183.73 (11)	6.63 (2)	P = 0.036
Risk behavior environment			
Drinking problem history	5182.97 (11)	7.38 (2)	P = 0.025
Stopped drinking	5181.51 (11)	8.85 (2)	P = 0.012
Health status environment			
Diabetes	5179.02 (11)	11.33 (2)	P = 0.000
Health service environment			
Routine physical examination	5184.64 (11)	5.71 (2)	Not Sig.
Annual blood pressure check-up	5174.35 (11)	16.00 (2)	P = 0.01

Table 15: Multilevel logistic regression model of community effects independently associated with annual blood pressure check-up after adjusting for individual level effects (community N = 16; n = 1722)

Community level effects	Level of Significance	Odds Ratio	95% C.I Lower	95% C.I Upper
Social-economic environment				
Community economic disparity				
Poor	Not Sig.	0.83	0.44	1.56
Typical disparity	P < 0.01	2.08	1.33	3.26
High disparity	Ref.	--	--	--
Perceived social-economic & infrastructure environment				
Infrastructure disparity				
Low levels	Not Sig.	1.62	0.83	3.16
Typical levels	P<0.02	2.17	1.21	3.87
High levels	Ref.	--	--	--
Risk behavior environment				
Drinking problem history				
Low levels	Ref.	--	--	--
Typical levels	Not Sig.	1.53	0.88	2.66
High levels	P<0.01	2.51	1.32	4.76
Stopped drinking				
Low levels	Ref.	--	--	--
Typical levels	Not Sig.	1.14	0.66	1.96
High levels	P<0.01	2.46	1.31	4.62
Health status environment				
Diabetes				
Low levels	Ref.	--	--	--
Typical levels	Not Sig.	1.11	0.67	1.82
High levels	P<0.001	2.64	1.46	4.75
Health service environment				
Annual blood pressure check-up				
Low levels	Ref.	--	--	--
Typical levels	P<0.01	1.80	1.18	2.73
High levels	P<0.001	3.42	2.07	5.65

APPENDIX 14 - SUMMARY OF FINDINGS

Table 1: Individual level predictors of health risk factors from the multilevel logistic regression level one models

Individual Level Characteristics ♣ P < 0.001 ♥ P < 0.02 ♦ P < 0.01 ♠ P < 0.05	Smoking N=1647	Drinking Problem N=1613	Overweight N=922	Obesity N=1504
Age				
18 – 24 years	9.14 (4.81 – 17.36) ♣	4.44 (1.76 – 11.23) ♦	Ref.	
25 – 44 years	5.03 (2.78 – 9.10) ♣	4.20 (1.71 – 10.32) ♦	1.65 (1.16 – 2.33) ♣	
45 – 64 years	2.17 (1.16 – 4.06) ♥	Not Sig.	2.48 (1.58 – 4.21) ♦	
65 years and older	Ref.	Ref.	Not Sig.	
Sex				
Male		Ref.	Ref.	Ref.
Female		0.59 (0.46 – 0.75) ♣	4.57 (3.11 – 6.03) ♠	1.34 (1.08 – 1.66) ♦
Ceremonial and healing practices				
Low	Ref.			
Typical	1.34 (1.03 – 1.74) ♠			
High	1.57 (1.14 – 2.16) ♦			
Language				
Aboriginal only			Not Sig.	
Aboriginal & English			2.30 (1.28 – 4.12) ♦	
English only			Ref	

Individual Level Characteristics ♣ P < 0.001 ♥ P < 0.02 ♦ P < 0.01 ♠ P < 0.05	Smoking N=1647	Drinking Problem N=1613	Overweight N=922	Obesity N=1504
Household income				
Not Stated		Ref.		
<$10,000		1.45 (1.06 – 2.00) ♠		
$10 – 24.999		Not Sig.		
$25,000 or more		Not Sig.		
Sources of income				
Social Assistance				Not Sig.
Wages				1.46 (1.03 – 2.06) ♦
Other sources				Ref.
Run out of money for food				
No		Ref.		
Yes		1.37 (1.07 – 1.76) ♠		
Someone to confide				
No		Ref.		
Yes		0.73 (0.56 – 0.96) ♥		
Household addiction problems				
No	Ref.	Ref.		
Yes	1.64 (1.29 – 2.07) ♣	4.14 (3.05 – 5.61) ♣		
No parenting history				
History			1.30 (0.98 – 1.79)	
No History			Ref.	
Sex X Parenting history			2.70 (1.23 – 5.88) ♥	

Table 2: Findings of the multilevel logistic regression models on the influence of the social environment on health risk factors after adjusting for individual factors

Community Level Characteristics	Smoking	Drinking Problem	Obesity
♣ P < 0.001 ♥ P < 0.02 ♦ P < 0.01 ♠ P < 0.05	N = 16	N = 16	N = 16
Home use Aboriginal language			
Low	3.13 (1.38 – 7.11) ♦		
Typical	Not Sig.		
High	Ref.		
Ceremonial and healing practices			
Low	Ref.		
Typical	2.33 (1.21 – 4.49) ♥		
High	2.94 (1.46 – 5.91) ♦		
In-community health service discrimination			
Low		Not Sig.	
Typical		Ref.	
High		1.93 (1.19 – 3.15) ♥	
Income derived from social assistance			
Low			Ref.
Typical			1.45 (1.05 – 1.99) ♠
High			1.86 (1.29 – 2.67) ♣
Income derived from employment			
Low			1.86 (1.09 – 3.16) ♣
Typical			1.45 (1.04 – 2.20) ♠
High			Ref.

Community Level Characteristics ♣ P < 0.001 ♥ P < 0.02 ♦ P < 0.01 ♠ P < 0.05	Smoking N = 16	Drinking Problem N = 16	Obesity N = 16
Employment participation			
Low			1.81 (1.26 – 2.62) ♣
Typical			1.46 (1.06 – 2.03) ♠
High			Ref.
Women employment participation			
Low	Ref.		1.70 (1.08 – 2.14) ♣
Typical	2.51 (1.21 – 5.22) ♥		1.52 (1.10 – 2.02) ♥
High	Not Sig.		Ref.
Community economic disparity			
Poor	Ref.		
Typical disparity	2.98 (1.20 – 7.40) ♠		
High disparity	Not Sig.		
Suicide thoughts			
Low	Ref.		
Typical	2.25 (1.14 – 4.45) ♥		
High	3.20 (1.40 – 7.07) ♦		
Normal body weight			
Low	3.37 (1.68 – 6.78) ♦		
Typical	2.34 (1.28 – 4.28) ♥		
High	Ref.		
Smoking			
Low	Ref.		
Typical	2.51 (1.60 – 3.95) ♣		
High	5.17 (3.01 – 8.88) ♣		

Community Level Characteristics ♣ P < 0.001 ♥ P < 0.02 ♦ P < 0.01 ♠ P < 0.05	Smoking N = 16	Drinking Problem N = 16	Obesity N = 16
Never smoked			
Low	4.91 (2.74 – 8.78) ♣		
Typical	2.60 (1.60 – 4.23) ♣		
High	Ref.		
Quit smoking practices			
Low		2.13 (1.20 – 3.79) ♥	
Typical		Not Sig.	
High		Ref.	
Drinking problems			
Low	Ref.		
Typical	3.08 (1.62 – 5.86) ♦		
High	2.50 (1.21 – 5.19) ♥		
Drinking problem history			
Low		Ref.	
Typical		Not Sig.	
High		2.11 (1.21 – 3.69) ♥	
Household addiction problems			
Low		Ref.	
Typical		Not Sig.	
High		1.97 (1.13 – 3.44) ♥	

Table 3: Individual level predictors of health status from the multilevel logistic regression level one models

Individual Level Characteristics ♣ P < 0.001 ♥ P < 0.02 ♦ P < 0.01 ♠ P < 0.05	Suicide Thoughts N=1620	Diabetes N=1668	Hypertension N=1589
Age			
18 – 24 years	2.12 (1.36 - 3.32) ♣		
25 – 44 years	1.82 (1.26 - 2.64) ♣		
45 years and older	Ref.		
Age			
18 – 24 years		Ref.	Ref.
25 – 44 years		2.46 (1.47 – 4.13) ♣	1.99 (1.31 – 3.02) ♦
45 – 64 years		11.75 (6.77 – 19.71) ♣	6.19 (3.95 – 9.71) ♦
65 years and older		9.21 (4.49 – 18.89) ♣	11.92 (6.30 – 22.58) ♣
Sex			
Male		Ref.	Ref.
Female		2.11 (1.57 – 2.85) ♦	1.50 (1.15 – 1.95) ♣
Ceremonial and healing practices			
Low	Ref.		
Typical	Not Sig.		
High	1.67 (1.21 – 2.30) ♣		
Language			
Aboriginal only	Ref.		
Aboriginal & English	Not Sig.		
English Only	1.53 (1.21 – 2.01) ♣		
Education			
Elementary or less	Ref.		
Some junior high school	1.79 (1.07 – 3.00) ♠		
High school or more	2.01 (1.43 – 2.81) ♠		

Individual Level Characteristics ♣ P < 0.001 ♥ P < 0.02 ♦ P < 0.01 ♠ P < 0.05	Suicide Thoughts N=1620	Diabetes N=1668	Hypertension N=1589
Worked in the past year			
No	Ref.		
Yes	1.39 (1.07 – 1.80) ♠		
Worse off than other households			
No	Ref.		
Yes	0.65 (0.51 – 0.84) ♣		
Out-community health service discrimination			
No	Ref.		
Yes	1.48 (1.14 – 2.94) ♥		
Household violence problems			
No			Ref.
Yes			1.66 (1.20 – 2.31) ♣
Household addiction problems			
No	Ref.		
Yes	2.60 (1.98 – 3.43) ♣		

Table 4: Findings of the multilevel logistic regression models on the influence of the social environment on health status, after adjusting for individual factors

Social Environment	Diabetes	Hypertension
♣ P < 0.001 ♥ P < 0.02 ♦ P < 0.01 ♠ P < 0.05	N = 15	N = 16
Community isolation		
Not isolated	Ref.	
Isolated	0.59 (0.41 – 0.85) ♥	
Home use Aboriginal language		
Low levels	2.31 (1.44 – 3.70) ♦	
Typical levels	Not Sig.	
High levels	Ref.	
Attend residential school		
Low levels		Ref.
Typical levels		1.88 (1.23 – 2.88) ♦
High levels		1.95 (1.19 – 3.19) ♦
Community infrastructure disparity		
Low levels		Not Sig.
Typical levels		Ref.
High levels		1.79 (1.18 – 2.70) ♦
Stock of older housing		
Low levels		2.14 (1.33 – 3.44) ♠
Typical levels		1.62 (1.07 – 2.44) ♠
High levels		Ref.
New housing development		
Low levels	2.27 (1.34 – 3.84) ♥	
Typical levels	1.99 (1.22 – 3.24) ♠	
High levels	Ref.	

Social Environment ♣ P < 0.001 ♥ P < 0.02 ♦ P < 0.01 ♠ P < 0.05	Diabetes N = 15	Hypertension N = 16
Individual income		
Low levels		1.81 (1.12 – 2.93) ♥
Typical levels		Not Sig.
High levels		Ref.
Men's income		
Low levels	1.70 (1.10 – 2.64) ♠	
Typical levels	Not Sig.	
High levels	Ref.	
Community economic disparity		
Poor	Not Sig.	
Typical disparity	1.66 (1.13 – 2.44) ♥	
High disparity	Ref.	
Food security problems		
Low levels	1.69 (1.04 – 2.73) ♥	
Typical levels	Not Sig.	
High levels	Ref.	
Drinking problem history		
Low levels		Ref.
Typical levels		1.98 (1.33 – 2.95) ♦
High levels		2.34 (1.52 – 3.59) ♣

Social Environment ♣ P < 0.001 ♥ P < 0.02 ♦ P < 0.01 ♠ P < 0.05	Diabetes N = 15	Hypertension N = 16
Diabetes		
Low levels		Ref.
Typical levels		Not Sig.
High levels		2.00 (1.27 – 3.15) ♦
Hypertension		
Low levels		Ref.
Typical levels		1.48 (1.02 – 2.15) ♠
High levels		2.45 (1.62 – 3.69) ♣

Table 5: Individual level predictors of preventative health practices from the multilevel logistic regression level one models

Individual characteristics ♣ P < 0.001 ♥ P < 0.02 ♦ P < 0.01 ♠ P < 0.05	Routine Physical Examination N=1693	Annual Blood Pressure Check-up N=1722
Age		
18 – 24 years	Ref.	Ref.
25 – 44 years	Not Sig.	Not Sig.
45 – 64 years	2.67 (1.81 – 3.94) ♣	4.65 (3.86 – 6.83) ♣
65 years and older	3.87 (1.88 – 7.97) ♣	4.46 (2.28 – 8.73) ♣
Sex		
Male	Ref.	Ref.
Female	1.67 (1.34 – 2.12) ♣	2.66 (1.82 – 2.80) ♦
Household income		
Not stated		Ref.
<$10,000		1.39 (1.06 – 1.83) ♥
$10 – 24.999		Not Sig.
$25,000 or more		1.78 (1.22 – 2.61) ♣
Someone to confide in		
No	Ref.	
Yes	2.09 (1.62 – 2.70) ♣	

Table 6: Findings of the multilevel logistic regression models on the influence of the social environment on preventative health practices after adjusting for individual effects

Social Environment ♣ P < 0.001 ♥ P < 0.02 ♦ P < 0.01 ♠ P < 0.05	Routine Physical Examination N = 16	Annual Blood Pressure Checkup N = 16
Population change 1991-1996		
Low levels	Ref.	
Typical levels	2.01 (1.43 – 2.84) ♦	
High levels	Not Sig.	
Perceived infrastructure disparity		
Low levels	1.64 (1.19 – 5.17) ♠	Not Sig.
Typical levels	2.01 (1.52 – 7.43) ♠	2.17 (1.21 – 3.87) ♦
High levels	Ref.	Ref.
Stock of older housing		
Low levels	1.55 (1.11 – 2.16) ♥	2.14 (1.33 – 3.44) ♠
Typical levels	2.16 (1.64 – 2.85) ♣	1.62 (1.07 – 2.44) ♠
High levels	Ref.	Ref.
New housing development		
Low levels	Ref.	
Typical levels	1.74 (1.19 – 2.53) ♥	
High levels	Not Sig.	
Family income		
Low levels	1.89 (1.31 – 2.73) ♦	
Typical levels	Ref.	
High levels	1.48 (1.03 – 2.13) ♠	

Social Environment ♣ P < 0.001 ♥ P < 0.02 ♦ P < 0.01 ♠ P < 0.05	Routine Physical Examination N = 16	Annual Blood Pressure Checkup N = 16
Community economic disparity		Not Sig.
Poor		2.08 (1.33 – 3.26) ♦
Typical disparity		Ref.
High disparity		
Stopped drinking		
Low levels		Ref.
Typical levels		Not Sig.
High levels		2.46 (1.31 – 4.62) ♦
Drinking problem history		
Low levels		Ref.
Typical levels		1.98 (1.33 – 2.95) ♦
High levels		2.34 (1.52 – 3.59) ♣
Diabetes		
Low levels		Ref.
Typical levels		Not Sig.
High levels		2.64 (1.46 – 4.75) ♦
Obesity		
Low levels	1.82 (1.17 – 2.82) ♥	
Typical levels	1.79 (1.24 – 2.58) ♦	
High levels	Ref.	
Annual blood pressure check-up		
Low levels		Ref.
Typical levels		1.80 (1.18 – 2.73) ♦
High levels		3.42 (2.07 – 5.65) ♣

APPENDIX 15 – ADDITIONAL MAPS

Figure 1: Map of the Province of Manitoba

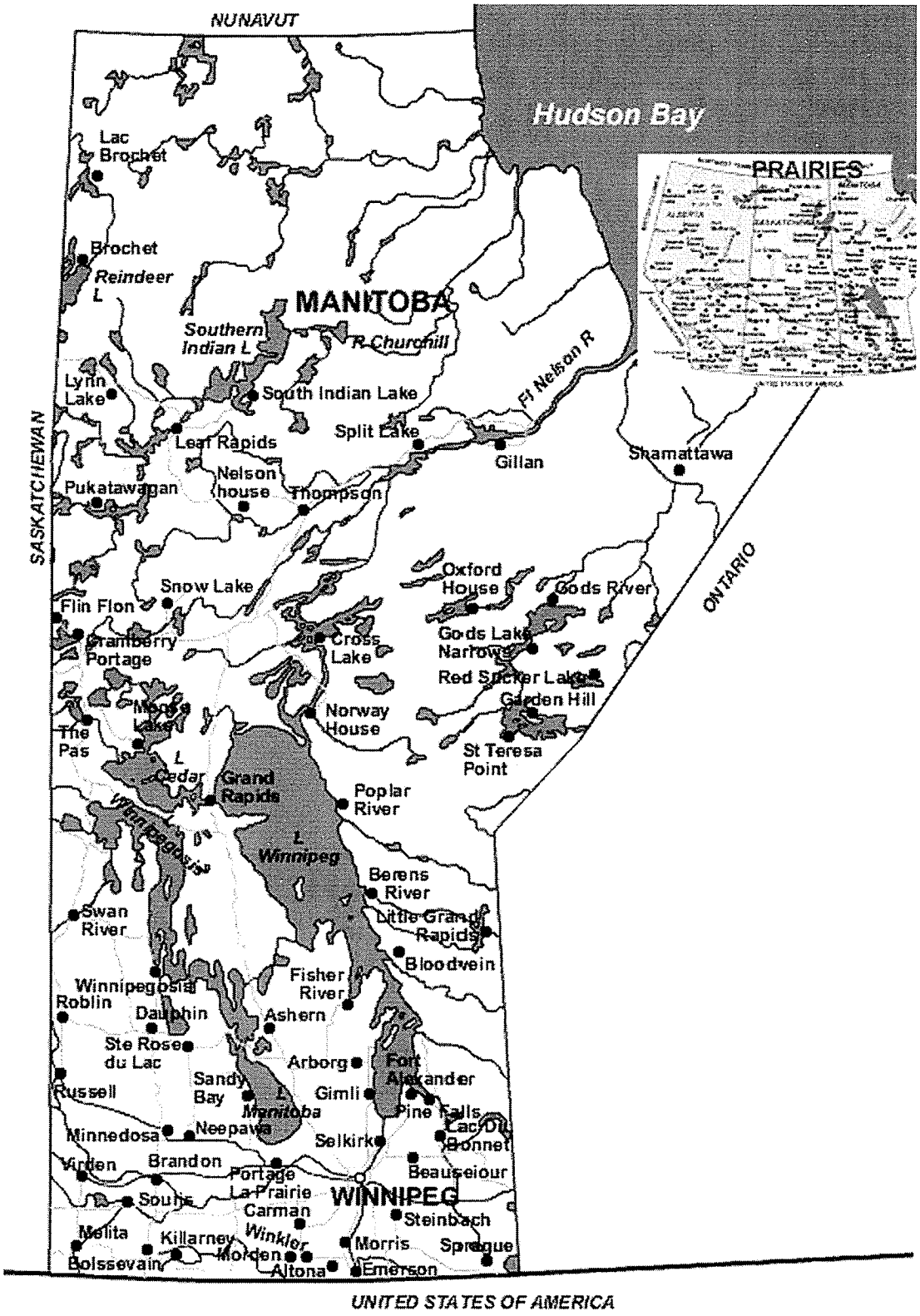


Figure 2: Manitoba First Nations communities in relation to major highways

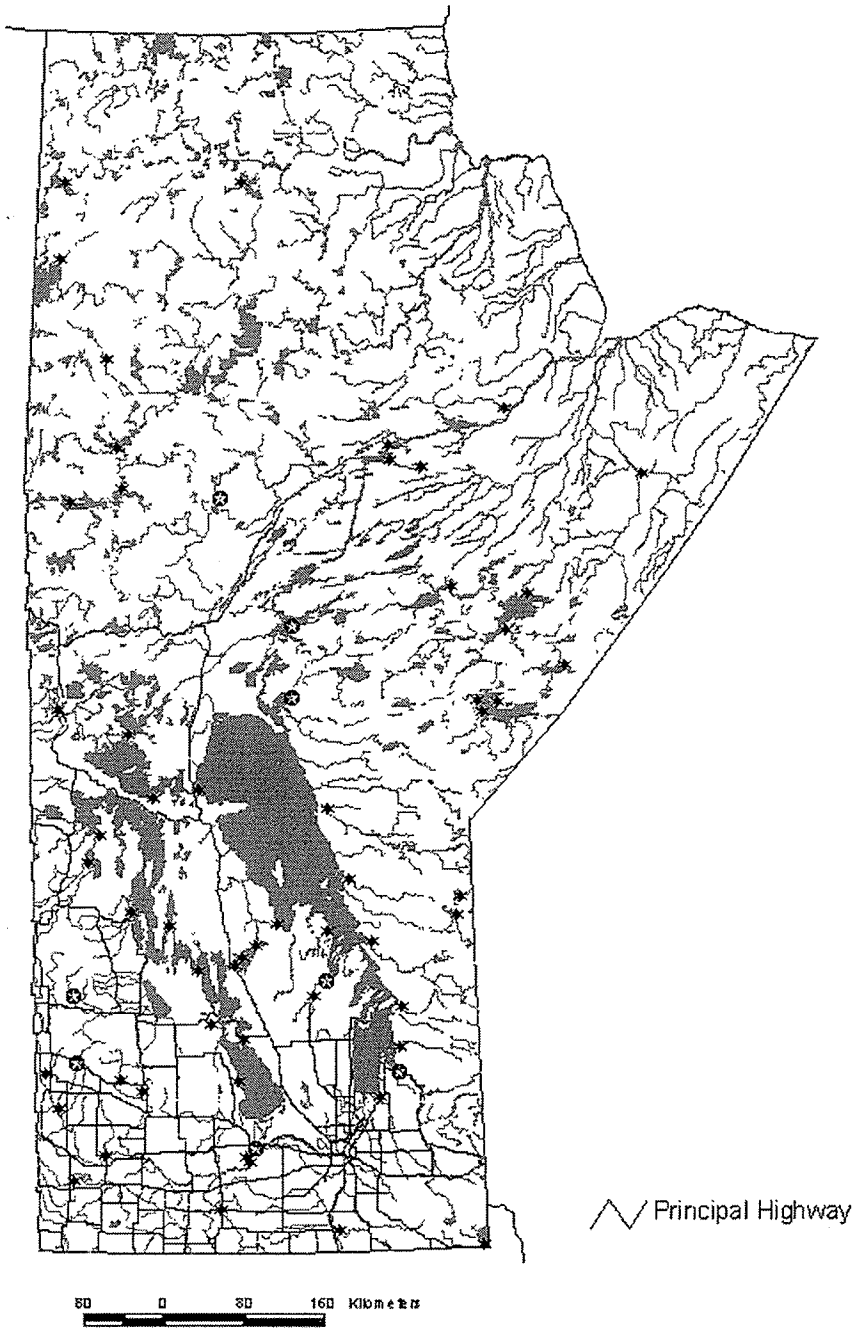
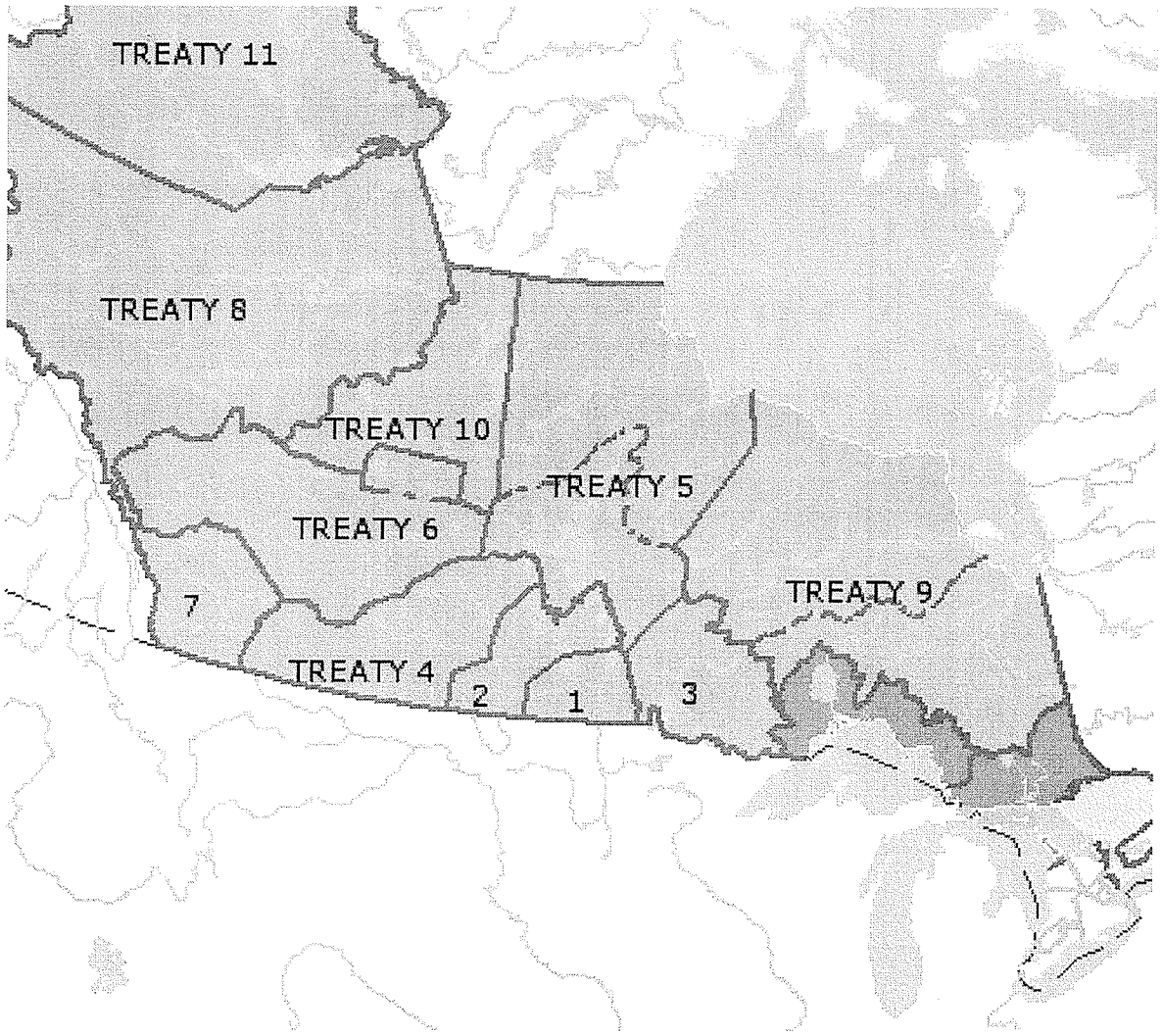


Figure 3: Manitoba First Nations treaty areas



APPENDIX 16 – MANITOBA FIRST NATIONS REGIONAL LONGITUDINAL HEALTH SURVEY

MANITOBA FIRST NATIONS REGIONAL HEALTH SURVEY

A Joint Initiative of the
Assembly of Manitoba Chiefs,
Manitoba Keewatinowi Okimakanak
and the *Northern Health Research Unit,*
The University of Manitoba

RESPONDENT INFORMATION SHEET

First Nation peoples of Manitoba are rapidly assuming authority over health programs and services which serve their needs. At all levels, First Nation governments are developing expertise and information systems necessary for the evolution of health policy and programs grounded in the realities of First Nation community priorities. One component of health information system development is the Manitoba First Nations Regional Health Survey, which is a joint initiative of the *Assembly of Manitoba Chiefs, Manitoba Keewatinowi Okimakanak,* and the *Northern Health Research Unit* of *The University of Manitoba*. The intent of the Regional Health Survey is to develop an understanding of Manitoba First Nation health priorities such as current health status and health service delivery. Overall, the survey will investigate "wellness" from a holistic perspective, focusing on social, emotional, physical and spiritual well-being. Your participation in this survey will greatly assist First Nations governments in developing policies and programs that reflect the needs of both this community and other First Nation communities in Manitoba and across Canada. A Steering Committee consisting of representatives from each of the Tribal Councils, MKO, and AMC will control how this information is best disseminated and communicated to others.

All the information you share with us will be kept strictly confidential by members of the project team. Your name will not be used in anyway to identify what you had said about certain issues. The information you provide in this survey will be used in a general way to best reflect the health priorities of this community.

To better understand health status in this community and to demonstrate how health services are delivered, we are also seeking your permission to link information collected during this interview with provincial health information such as past and continuing use to hospitals, clinics, physician's services or other services provided by the province. First Nations governments need this kind of information to ensure that First Nations people receive a fair share of provincial services. This information will be used for statistical purposes only and names will be removed from all service data before it is made available to the project team. To facilitate record linkage, we need your Treaty Number and Manitoba Provincial Health Care Number.

If you would like to contact us in the future, please call:

Doreen Sanderson (AMC): 1-204-789-3867

[TEAR OFF INFORMATION SHEET AND GIVE IT TO THE RESPONDENT]

TO BE FILLED OUT BEFORE THE START OF THE INTERVIEW

MANITOBA FIRST NATIONS REGIONAL HEALTH SURVEY

A Joint Initiative of the
Assembly of Manitoba Chiefs,
Manitoba Keewatinowi Okimakanak
and the *Northern Health Research Unit,*
The University of Manitoba

Survey Consent Form

I, _____ *(Print Full Name of Respondent)*, understand the goals and objectives of the Manitoba First Nations Regional Health Survey, as explained to me by the Community Research Assistant.

I agree to participate in this Regional Health Survey. I understand that I can refuse to answer any questions or withdraw from the survey interview at any time, and understand that everything I say will be treated as confidential and will only be used in a general way.

✓ _____ _____
Signature of Respondent Date

I also consent to having my (and the child interviewed) Treaty number and Manitoba Provincial Health Care Number used for data linkage purposes providing that all care and due diligence is taken to secure confidentiality.

✓ _____ _____
Signature of Respondent Date

✗ _____ _____
Signature of Community Researcher (Witness) Date

[PLACE CONSENT FORM IN THE CONFIDENTIAL MATERIAL ENVELOPE]

Confidential Information

The information, in this section, will be separated from the questionnaire and kept together with the consent form.

Interviewer: For this Survey, enter the name of the First Nation Community and Province:

L1 **Legal Name of First Nation:** _____ L1ra _____

L2 **Province/Territory:** _____

For this survey, it is important that we ask you for your full name as it appears on your treaty and health insurance card.

A1 _____ **First Name** (Print) _____ **Middle Initials** (Print) _____ **Last Name** (Print)

A2 **Present place of residence** *Enter complete mailing address, including postal code, where the respondent is presently living (i.e., where the respondent has been living for at least three months)*

A2a **Box No. (or Street):** _____

A2b Community / **Prov. :** _____ Community _____ Province

A2c **Postal Code :** _____ - _____

A2d Telephone Number or Contact Number _____

A3R IF RESPONDENT HAS AGREED TO PROVIDE THEIR TREATY NUMBER AND MANITOBA HEALTH INSURANCE NUMBER, PLEASE FILL IN THE FOLLOWING:

Treaty Number: _____

Manitoba Health Insurance Number: _____

If respondent's current address is different from the Health Insurance Number, also fill in the address that appears on their health insurance number:

A4Ra Box No. (or Street): _____

A4Rb Community / Prov. : _____ Community _____ Province

A4Rc Postal Code : _____ - _____

Manitoba First Nations
Regional Health Survey
1997

Prepared by the Northern Health Research Unit of the University of Manitoba under the direction of the Manitoba First Nation Regional Health Survey Steering Committee.

Manitoba First Nations
Regional Health Survey Steering Committee

Audrey Leader, AMC
Jennie Wastesicoot, MKO
Marilyn Tanner-Spence, MKO
Laura Sanderson, Keewatin Tribal Council
Gary Munroe/Jerry Henderson, Cree Nation Tribal Health Centre
Eleanor Shorting, Interlake Reserves Tribal Council
Marge Roscelli, Dakota Ojibway Tribal Council
Larry Starr, Southeast Resource Development Council
Pauline Wood-Steinman, Island Lake Tribal Council
Designate, West Region Tribal Council

University of Manitoba
Northern Health Research Unit

John O'Neil (UM)
Doreen Sanderson (AMC)
Jeff Reading (UM)

The survey includes questions developed at both the national and regional level. In this Survey, questions have been identified in the following way to distinguish Manitoba regional questions from national core questions used by First Nations in other regions across Canada.

National Core Questions:

Bold print, like this, represents a National Core Question and/or instructions. The core questions are numbered as follows:

Example: **B5 represents the core question number 5 of Section B.**

Instructions will appear like this.

Manitoba Regional Questions:

Unbolded print, like this, represents a Manitoba Regional Question and/or instructions to help the interviewer. The Manitoba Regional Questions are numbered as follows:

Example: BR1 represents the regional question number 1 of Section B.

Instructions will appear like this.

Respondent Information

I would like to start by asking you some basic questions about yourself and other members of the household:

B1a Date of Survey _____/_____/_____
day month year

B1b Household identification (please enter the number or another description of house):

_____

B2 What is your birth date? *(Enter day, month, and year of birth of the respondent).*

Birth date: _____/_____/_____ *(Birth date that appears on the health card)*
day month year

B3 In which community was your mother living at the time of your birth. *If the respondent doesn't know, write in DON'T KNOW. If the respondent was born out on the land, write in "BORN ON THE LAND".*

Birthplace: _____ _____ [office use code]

B4 **Sex** *(Circle one response)*:

1. **Female**
2. **Male**

B5 In Which community are you a registered band member (i.e., home community)?

Name of First Nation home community _____

Enter the legal name of the respondent's First Nation home community in which they are a registered band member. If the respondent doesn't know the legal name, enter in the name with which they are familiar.

B5R _____ [office use code]

B6 **Present Marital Status** *(Circle one response)*:

1. Married
2. Common Law
3. Separated
4. Divorced
5. Widow
6. Single

B7 All together, how many children have you had under your care (biological, adopted, fostered, and extended family members)?

B7ar_____ Number of biological children (live births)

B7br_____ Number of adopted children

B7cr_____ Number of foster children

B7dr_____ Number of extended family (i.e. cousins, nephews, sisters, etc.)

B7 _____ **Total Number of children**

Enter the total number of children that the respondent has ever had, include all biological, adopted, fostered, and extended family.

B8 **How many [~~of your~~] children (under 18 years old) are currently living in your household?**

_____ Total Number of Children under 18 years old

Enter the total number of children, include all biological, adopted, fostered, and extended family, currently living in the respondents household.

BR1 How many adults (over the age of 18), including yourself, live in this household (only adults who consider this house their primary residence)

_____ Total Number of Adults over the age of 18

If respondent doesn't know or doesn't want to answer, circle one of the following:

90. Don't Know
91. No Answer

B9 Can you tell me all the languages that you can speak [*Cree, Saultaux, Island Lake, Ojibway, Oji-Cree, Dene, English, French, etc*]

Languages spoken:

B9a _____

B9b _____ Not Applicable

B9c _____ Not Applicable

B9d _____ Not Applicable

B9R Which language do you feel most comfortable speaking? *[write in]*

_____ _____ *[Office use code]*

B10 Can you tell me all the languages that you can write [*Cree, Saultaux, Island Lake, Ojibway, Oji-Cree, Dene, English, French, etc*]

Languages written: *Circle NONE if respondent cannot write in any language*

B10a _____ NONE

B10b _____ Not Applicable

B10c _____ Not Applicable

B10d _____ Not Applicable

B10r Which language do you feel most comfortable reading? *[Write in]*

_____ _____ [Office use code]

If respondent cannot read in any language, circle the Not Applicable response.

99. Not applicable

B11 Can you tell me which language you use most often on a day to day basis? ***Write in only one language that is used most often by the respondent on a day to day basis*** *(eg. Cree, Saultaux, Island Lake, Ojibway, Oji-Cree, Dene, English, French, etc.).*

Language most often used in daily life: _____ [office use code] _____

B12 **What is the highest grade that you completed in elementary** or **secondary school** *(Circle the highest grade ever attained by the respondent)***?**

0 (never attended) 1 2 3 4 5 6 7 8 9 10 11 12 13

B13 **<u>How many years</u> of full-time study (or its equivalent if part-time) have you completed in a vocational or technical school** *(e.g. Red River Community College, Keewatin Community College, and any other vocational or technical training such as child care, plumbing, mechanics, administration, computer software, bookkeeping, heavy equipment operator, etc.)*?

If courses taken ranged from 1 day to 1 year of part-time training, circle number 1 which represents 1 year or less. When training exceeds 1 year, have the respondent estimate the number of years of full time study using the following values and circle the best approximation.

Circle <u>only</u> one response:

0 (never attended) 1 2 3 4 5 6 years

B14 **How many years of full-time study (or its equivalent if part-time) have you completed in university** *(e.g. University of Manitoba, University of Winnipeg, Inter-University North, Brandon University, etc.)* **or college?** *[if different from Manitoba's technical or vocational schools]*

If courses taken ranged from 1 day to 1 year of training, circle number 1 which represents 1 year or less. When training exceeds 1 year, have the respondent estimate the number of years of full time study using the following values and circle the best approximation.

Circle <u>only</u> one response:

0 (never attended) 1 2 3 4 5 6 7 8 9 10

Health Services

D1 **Do you believe that First Nations/Inuit people have the same level of health services as the rest of Canada** *(Circle one response)*?

1. Yes
2. No
3. Don't know
4. No Answer

D2 **What aspect of health services is in need of improvement** *(Circle appropriate response for each)*?

HEALTH SERVICE	YES	NO	DON'T KNOW	NO ANSWER
D2a Kidney dialysis	1	2	3	4
D2b Translation services	1	2	3	4
D2c Pediatricians, medical specialists for children	1	2	3	4
D2d Dental services	1	2	3	4
D2e More staff at clinics and local hospitals	1	2	3	4
D2f Chronic care facilities	1	2	3	4
D2g Elderly homes	1	2	3	4
D2h Home care	1	2	3	4
D2I Awareness sessions for patients on medications	1	2	3	4
D2j Awareness sessions for patients on disease prevention	1	2	3	4
D2k Diabetes education-awareness programs	1	2	3	4
D2l Eye specialists	1	2	3	4
D2m Mental health services	1	2	3	4
D2n Other	1	2	3	4
D2na List Other:				

DR3 When did you last have your blood pressure checked by a health professional? *(Do not read list, circle the most appropriate response)*

1. Less than one month ago
2. 6 months to a year ago
3. 1 year to less than 2 years ago
4. 2 years to less than 5 years ago
5. 5 years or more ago
6. Never
7. Don't Know
8. No Answer

DR4 During the past 12 months, was there ever a time when you needed health care but did not receive it *(Circle one response)*?

1. Yes
2. No ..... *If no, don't know or no answer, go to question DR6*
3. Don't Know
4. No Answer

DR5 If yes, thinking of the most recent time when you needed health care but did not receive it, what was the type of care that was needed *(Circle one response)*?

1. Treatment of a physical health problem?
2. Treatment of an emotional or mental health problem?
3. Can't remember
5. No Answer
9. Not Applicable

DR6 Thinking about your last contact with a health professional in your community, do you feel that you were treated poorly because you are an Aboriginal/Native Person *(Circle one response)*?

1. No, not at all
2. Somewhat poorly
3. Very Poorly
4. Can't Remember
5. No Response
9. Not applicable - has never seen a health professional inside the community

DR7 Thinking about your last contact with a health professional outside your community, do you feel that you were treated poorly because you are an Aboriginal/Native Person *(Circle one response)*?

1. No, not at all
2. Somewhat poorly
3. Very poorly
4. Can't remember
5. No Answer
9. Not applicable - has never seen a health professional outside the community

DR8 When seeing a doctor or a nurse in a hospital, did you ever require a translator. *(Circle one response)*

1. Yes
2. No
9. Not applicable (never had to see a doctor or nurse in a hospital or outside community)

DR9 Have health services been transferred to Band control in your community? *(Circle one response)*

1. Yes
2. No
3. Partially
4. Don't Know

DR10 Please indicate how well the following services or programs are provided in your community?

For each service or program asked, please circle one of the following responses:

1. Not At All Provided
2. Needs Improvement
3. Satisfactory
4. Don't know
5. No Answer

COMMUNITY SERVICES OR PROGRAMS	NOT AT ALL PROVIDED	NEEDS IMPROVEMENT	SATISFACTORY	DON'T KNOW	NO ANSWER
DR11a AVAILABILITY OF DOCTORS	1	2	3	4	5
DR11b AVAILABILITY OF NURSES	1	2	3	4	5
DR11c AVAILABILITY OF DENTISTS	1	2	3	4	5
DR11c AVAILABILITY OF MEDICAL SPECIALISTS (e.g. Pediatrician)	1	2	3	4	5
DR11d MEDICAL TRANSPORT	1	2	3	4	5
DR11e POLICING SERVICES	1	2	3	4	5
DR11f SOCIAL SERVICES	1	2	3	4	5

Comments:

_____

_____

DR12 Please indicate how well the following services or programs are provided in your community?
For each service or program asked, please circle one of the following responses:

1. Not At all Provided
2. Needs Improvement
3. Adequate
4. Don't know
5. No Answer

SERVICES PROVIDED	NOT AT ALL PROVIDED	NEEDS IMPROVEMENT	ADEQUATE	DON'T KNOW	NO ANSWER
DR12a ALCOHOL / DRUG ABUSE COUNSELING	1	2	3	4	5
DR12b MENTAL HEALTH SERVICES	1	2	3	4	5
DR12c HOME SUPPORT SERVICES	1	2	3	4	5
DR12d DAY CARE SERVICES	1	2	3	4	5
DR12e NUTRITIONAL COUNSELING	1	2	3	4	5
DR12f ACCESS TO SAFE HOUSES FOR VICTIMS OF DOMESTIC ABUSE	1	2	3	4	5
DR12g ACCESS TO COUNSELING FOR SEXUAL ABUSE	1	2	3	4	5
DR12h AVAILABILITY OF INTERPRETERS	1	2	3	4	5

Comments:

_____

_____

_____

_____

_____

Tobacco

E1 **Have you ever used tobacco in *non-traditional* ways** (i.e., **smoking cigarettes, cigars, a pipe, or used smokeless tobacco such as snuff or chewing tobacco)** *(Circle one response)*?

1. Yes
2. No ..... *If no, skip to Section Environmental Tobacco Smoke* → →

E6 **If you presently *[currently]* do not smoke, at what age did you quit smoking cigarettes daily?**

_____ **(years old)**

99. Not Applicable

E2 **At the present time *[currently]* do you use tobacco in the following ways:**

E2a. **Smoke cigarettes** *(Circle one response)*

1. Yes
2. No .....*If no, go to Question E2ba.*
9. Not Applicable

E2b ... If yes, how many cigarettes per day _____ *(estimate for occasional)*

99. Not Applicable

E5 ... If yes, at what age did you begin to smoke cigarettes daily?

_____ **(years old)**

99. Not Applicable

E2ba. **Smokeless tobacco / snuff** *(Circle one response)*

1. Yes
2. No .....*If no, go to Question E2ca.*
9. Not Applicable

E2bb ... If yes, how much per day _____ *(estimate)*

99. Not Applicable

→ **E2ca.** **Chewing tobacco** ←

1. Yes
2. No
9. Not Applicable

E2cb ... **If yes, how much per day** _____ *(estimate)*

99. Not Applicable

Environmental Tobacco Smoke and Control/Restrictions

E3 **Are there any controls or restrictions on smoking in your community** *(Circle one response)*?

1. Yes
2. No
3. Don't know

E4 If you smoke .... **have any controls or restrictions on smoking affected how much you smoke each day** *(Circle one response)*?

1. Yes
2. No
9. Not Applicable - don't smoke

F2 **How many people from your household, excluding yourself, smoke daily?**

_____ Total number of people

99. Not Applicable - Respondent is the only household member ..... *go to F3* →

F1 **Does anyone in your household smoke regularly inside the house** *(Circle one ... Enter not applicable if the only household member is the respondent)*?

1. Yes
2. No
9. Not Applicable - Respondent is the only household member

→ F3 **Do you <u>ever feel unpleasant effects</u> from the cigarette smoke of others** *(Circle one response)*? ←

1. Yes
2. No
3. Don't Know
4. No Answer

F4R. Has this household ever attempted to control or restrict smoking in the house, or part of the house *(Circle one response)*?

1. Yes
2. No ..... *<u>If no, don't answer or no answer</u>, go to the next section.* →
3. Don't Know
4. No Answer

→ F4Ra <u>If yes</u>, why were these restrictions introduced *(Circle the most important reason ... Do not read responses)*

1. Pregnant woman(s) in house
2. To protect children
3. To protect people with respiratory illness
4. No one smokes in the house
5. Don't like the smell
6. Prevent fires
7. Unpleasant for the non-smokers
8. Other _____
9. Don't Know
10. No Answer
99. Not Applicable

Medical Conditions, including Diabetes

G1 **Have you been told by a health care professional that you have** *(Circle one response for each item).*

If yes to any response, ask the respondent at what age they were told.

If they can't remember the age when they were told, then enter 98 for Can't Remember.

If the respondent answered no to any response, enter 99 for Not Applicable in the If Yes column.

	YES	NO	DON'T KNOW	IF YES, AT WHAT AGE ... *Enter 98 if respondent can't remember or 99 if not applicable*
G1a High blood pressure	1	2	3	
G1b Arthritis or rheumatism	1	2	3	
G1c Heart problems	1	2	3	
G1d Breathing problems	1	2	3	
G1e Asthma	1	2	3	
G1f Tuberculosis (TB)	1	2	3	
G1g Cancer	1	2	3	
G1h Diabetes	1	2	3	
G1I Other Conditions	1	2	3	
G1ib List Other:				

IF YOU ANSWERED NO TO DIABETES, *go to Question GR4*

IF YOU ANSWERED YES TO DIABETES, *ask Questions G2 and G3 and then continue with the rest of the questions in this section.*

G2 **Are you currently attending a diabetes clinic or seeing someone for diabetes education** *(Circle one response)***?**

1. Yes
2. No
9. Not Applicable

G3 **If Respondent is a FEMALE, were you diagnosed with diabetes during pregnancy** *(Circle one response)***?**

1. Yes
2. No
9. Not Applicable

GR4 Do you eat wild food (e.g. meat, fish, birds)? *(Circle one response)*

1. Yes
2. No ..... *If no, go to Question GR9* →

GR5 If yes, how much of the meat, fish and birds that you eat is wild? *(Circle one response)*

1. None
2. Some
3. Half
4. Most
5. All
6. Don't Know
7. No Answer
9. Not Applicable

GR6 How often do you eat wild foods? *(Circle one response)*

1. Everyday
2. Several times per week
3. Several times per month
4. Several time per year
5. Never
6. Don't know
7. No Answer
9. Not Applicable

GR7 During the past year has not having enough wild food to eat been a problem for you? *(Circle one response)*

1. Yes
2. No ..... *If no or no answer, go to Question GR9*
3. No Answer
9. Not Applicable

GR8 If yes, what is the most important reason as to why you are not able to get enough wild food? *(Don't read response ... Circle the most appropriate response)*

1. No time to hunt or fish
2. Too expensive for hunting gear, supplies, and vehicles
3. No relatives to share food
4. No wild food near home community
5. Disability or sickness limits ability to hunt or fish
6. Contaminants in wild food are too high
7. Provincial hunting/fishing restrictions
8. Can't store it properly
9. Other_____
10. Don't Know
11. No Answer
99. Not Applicable

GR9 Does your household ever run out of money to buy food? *(Circle one response)*

1. Yes
2. No..... *If no, don't know or no answer, go to Question GR11*
3. Don't Know
4. No Answer

GR10 If yes, how often does this happen? *[Do not read response, circle most appropriate answer - only one response]*

1. A few times each year
2. At least once a month
3. More than two days every month
4. Once a week
5. More than once a week
7. Don't Know
8. No Answer
9. Not Applicable

GR11 Have you ever tried to make any of the following changes in your diet? (*For each item, circle one response).*

CHANGES	YES	NO	NO ANSWER
a. Eat less meat	1	2	3
b. Eat less salt	1	2	3
c. Eat less fat	1	2	3
d. Eat less sugar	1	2	3
e. Eat less candy or pop	1	2	3
f. Eat more fruits	1	2	3
g. Eat more vegetables	1	2	3
h. Eat less junk food	1	2	3

Comments:

_____

_____

GR12 Comparing your present physical activity level to other people your age in the community would you say you're ... *(Circle one response)*

1. More active
2. About the same
3. Less active
4. Don't Know
5. No Answer

Disability and Activity Limitation

H1R Do you have a long term physical condition or health problem - one that has lasted or is expected to last 6 months or more - which limits the kinds or amounts of activity that you can do? *(Circle one response)*

1. Yes
2. No ..... *If no, go to Question H7*

H1 If yes .... **At your home, are you limited in the kinds or amount of activity you can do because of a long-term physical condition or health problem — one that has lasted or is expected to last 6 months or more** *(Circle one response)*?

1. Yes
2. No
9. Not Applicable

H2 **Because of your condition or health problem, do you need help with your personal care, such as washing, grooming, dressing and feeding yourself** *(Circle one response)*?

1. Yes
2. No ..... *If no, go to Question H4*
9. Not Applicable

H3 If yes, **are you getting the help you need with your personal care, such as washing, grooming, dressing and feeding yourself** *(Circle one response)*?

1. Yes, get all the help needed
2. Yes, sometime, but need more help
3. No
9. Not Applicable

H4 Do you **have difficulty leaving your residence to take short trips, that is trips to work, shopping, or any other local trips under 80 km or 50 miles** *(Circle one response)*?

1. Yes
2. No
9. Not Applicable

H5 Do you **consider yourself house-bound, that is unable to leave your home** *(Circle one response)*?

1. **Yes**
2. **No**
9. Not Applicable

H6 Do you **require an attendant or companion to accompany you on short trips** *(Circle one response)*?

1. **Yes**
2. **No**
9. Not Applicable

→ H7 **Do you have any difficulty hearing what is said when you are having a conversation with one other person** *(Circle one response)*? ←

1. **Yes, have difficulty**
2. **No**

Residential Schools and Relocation

I would now like to ask you some general and some personal questions on the residential school system. If you are uncomfortable with any question, you don't have to answer it.

I1 **Did you attend residential school** *(Circle one response)*?

1. Yes
2. No ..... *If no, go to Question IR4*

I2 If yes, **at what age did you start to attend residential school** _____ **(years)**

98. Can't Remember

99. Not Applicable

I3 ..... **at what age did you leave residential school** _____ **(years)**

98. Can't Remember

99. Not Applicable

IR4 What effect do you think the residential school system has had on your community? *(Circle one response)*

1. Negative Effect
2. Neutral or no effect
3. Positive effect
4. Don't Know
5. No Answer

IR5 What effect do you think the residential school system had on your life? *(Circle one response)*

1. Negative Effect
2. Neutral or no effect
3. Positive effect
4. Don't Know
5. No Answer

IR6 Were you relocated (i.e., forced to move by government decision) to your current community from another place without your consent? *(Circle one response)*

1. Yes
2. No
3. Don't Know
4. No Answer

IR7 Were your parents or grandparents relocated to your current community from another place without their consent? *(Circle one response)*

1. Yes
2. No
3. Don't Know
4. No Answer

IR8 *If yes to either Questions IR6 or IR7*, what effect do you think the relocation of yourself or family members had on your life? *(Circle one response)*

1. Negative effect
2. Neutral or no effect
3. Positive
4. Don't Know
5. No Answer
9. Not applicable

WELLNESS

I would now like to ask you a number of questions concerning traditional and general health issues.

JR1 Do you use any plants to prevent or cure sickness? *(Circle one response)*

1. Yes
2. No
3. No Answer

JR2 Do you go to anyone in your community for advice about using traditional plants for traditional medicine? *(Circle one response)*

1. Yes
2. No
3. No Answer

JR3 Have you ever been to a Traditional Healer? *(Circle one response)*

1. Yes
2. No
3. No Answer

JR4 Do you think that a Traditional Healer Program should be offered as a health service? *(Circle one response)*

1. Yes
2. No
3. Don't Know
4. No Answer

JR5 Have you attended native cultural activities such as pow-wows, etc.? *(Circle one response)*

1. Yes
2. No
3. No Answer

JR6 Have you participated in native spiritual ceremonies? *(Circle one response)*

1. Yes
2. No
3. No Answer

JR7 *If respondent is an elder ask*, "Do you feel that you are treated with respect in your community?" *(Circle one response)*

1. Yes
2. No
3. No Answer
9. Not Applicable

J1 **Do you think a return to traditional ways is a good idea for promoting community wellness?** *(Circle one response)*

1. Yes
2. No ..... *If no, don't know or no answer, go to Question J3*
3. Don't Know
4. No Answer

J2 **If yes, thinking about the past two years, in which of the following areas has there been progress in your community?** *(Circle one response for each item)*

	NO PROGRESS	SOME PROGRESS	GOOD PROGRESS	NOT A GOOD IDEA	DON'T KNOW	NO RESPONSE	NOT APPLICABLE
J2a Traditional approaches to healing	1	2	3	4	5	6	9
J2b Renewal of native spirituality	1	2	3	4	5	6	9
J2c Revival of traditional roles of women	1	2	3	4	5	6	9
J2d Revival of traditional roles of men	1	2	3	4	5	6	9
J2e Traditional ceremonial activity	1	2	3	4	5	6	9

→ J3 Factors have been identified by First Nations and Inuit people as important for community wellness. Thinking about the past two years, do you feel that there has been any progress in any of the following areas in your community? *(Circle one response for each item)* ←

	NO PROGRESS	SOME PROGRESS	GOOD PROGRESS	NOT A GOOD IDEA	DON'T KNOW	NO RESPONSE
J3a First Nations & Inuit controlled programs	1	2	3	4	5	6
J3b Return to traditional ways	1	2	3	4	5	6
J3c Use of Elders	1	2	3	4	5	6
J3d Personal commitment to healing	1	2	3	4	5	6
J3e Renewed relationship with the land	1	2	3	4	5	6
J3f Networking among communities	1	2	3	4	5	6
J3g Use of First Nations or Inuit language	1	2	3	4	5	6
J3h Training in the health field	1	2	3	4	5	6
J3I Reduction in alcohol & drug abuse	1	2	3	4	5	6
J3j Availability of First Nations & Inuit health professionals	1	2	3	4	5	6
J3k Cultural awareness programs in schools	1	2	3	4	5	6
J3l Education & training opportunities	1	2	3	4	5	6
J3m Employment opportunities	1	2	3	4	5	6
J3n Housing quality	1	2	3	4	5	6
J3o Water & Sewage facilities	1	2	3	4	5	6
J3p Other (List):						

J4 **In general , how would you rate your health?** *(Circle one response)*

1. **Excellent**
2. **Very good**
3. **Fair** *(i.e., good)*
4. **Poor**
5. **Don't know**
6. No response

JR8 Approximately how tall are you? _____Feet _____ Inches *[estimate respondent's height]*

[Office use: Convert value for Data Entry _____ inches]

JR9 Approximately how much do you weigh? _____ lbs.

995. Don't know

996. No Answer

JR10 Do you think you are overweight? *(Circle one response)*

1. Yes
2. No
3. Don't Know
4. No Answer

JR11 Do you go to the clinic for a regular check up once a year? *(Circle one response)*

1. Yes
2. No
3. No Answer

JR12 If respondent is a man, have you ever had a rectal exam? *(Circle one response)*

1. Yes
2. No
3. Don't Know
4. No Answer
9. Not Applicable

JR12 How is your hearing ... *(Circle one response)*

1. Excellent
2. Good
3. Fair
4. Poor
5. Totally deaf
6. No Answer

JR13 How is your eyesight (without glasses or contacts)? *(Circle one response)*

1. Excellent
2. Good
3. Fair
4. Poor
5. No Answer

Dental Health

K1 **When was the last time you had any dental care?** *(Circle one response)*

1. **Less than 1 year**
2. **More than 1 year**
3. **Can't remember**
4. Never had dental care
5. No Answer
9. Not Applicable - No Teeth

K2 **Do you need dental treatment at this time?** *(Circle one response)*

1. **Yes**
2. **No**..... *If no, don't know or no answer, go to Question K4*
3. **Don't know**
4. No Answer
9. Not Applicable - No Teeth

K3 **If yes, what type of treatment do you need?**

Please explain: _____

(If respondent answers Don't Know or the question is Not Applicable, circle the one that applies)

Don't Know

Not Applicable

K4 **Have you experienced problems with your teeth or experienced any dental pain in the last month?** *(Circle one response)*

1. **Yes**
2. **No**
3. **Don't know**
9. Not Applicable - no teeth.

Employment Factors and Health

I would now like to ask you a number of questions that tell us about the overall employment situation of Aboriginal people. These questions are important to see if people's health is linked to their work or to how much money they make. This information is strictly confidential.

HR1 What do you consider to be your current main activity (For example, working for pay, homemaker, etc.)? *(Do not read list and circle only one response that applies)*

1. Homemaker
2. Working for pay full-time
3. Working for pay part-time
4. Homemaker and working for pay
5. Hunting or fishing without income
6. Trapping
7. Going to school
8. Recovering from illness/or disability
9. Looking for work
10. Retired
11. Other

HR2 Have you worked for income at any time in the past 12 months? *(Circle one response)*

1. Yes
2. No
3. No Answer

HR3 AMC/MKO is interested in finding out if health is affected by how much money people have. This information is strictly confidential. Please estimate the total income from all sources for this household in the past year. Is it... *(Circle the response that best reflects income level)*

1. Less than $10,000
2. $10,000 to $24,999
3. $25,000 to $49,999
4. $50,000 to $74,999
5. $75,000 to $100,000
6. Over $100,000
7. Don't Know
8. No Answer

HR4 How many people in this household received a social assistance cheque (welfare) last month?

_____ Total Number of People

20. Don't Know
21. No Answer

HR5 In the past year, what was your primary source of income? *(Circle one response)*

1. Social Assistance
2. Wages or salary from a job
3. Sale of Crafts
4. Trapping (Sale of Furs)
5. Fishing (Sale of Catch)
6. Old Age Pension
7. Disability Pension
8. Other _____
9. Don't Know
10. No Answer

HR6 Do you feel that your household brings in enough money to meet all of your basic needs? *(Circle one response)*

1. Yes
2. Sometimes
3. No
4. Don't Know
5. No Answer

HR7 How would you compare your financial status, all the money available in this household, with that of other households in this community? *(Circle one response)*

1. Worse off than most other households
2. About the same as most other households
3. Better than most other households
4. Don't know
5. No Answer

Other Factors and Health

There are other factors related to health such as housing, education, and access to water and sewer. The following questions deal with these issues.

OR1 Please indicate whether any of the following factors are a problem in your community?

For each factor asked, please circle one of the following responses:

1. Not a Problem
2. Minor Problem
3. Major Problem
4. Don't Know
5. No Answer

FACTORS	NOT A PROBLEM	MINOR PROBLEM	MAJOR PROBLEM	DON'T KNOW	NO ANSWER
OR1 UNEMPLOYMENT	1	2	3	4	5
OR2 HOUSING AVAILABILITY	1	2	3	4	5
OR3 AVAILABILITY OF DRINKING WATER	1	2	3	4	5
OR4 COST OF FOOD	1	2	3	4	5
OR5 ROAD CONDITIONS	1	2	3	4	5
OR6 EDUCATION OPPORTUNITIES	1	2	3	4	5
OR7 SEWAGE DISPOSAL	1	2	3	4	5
OR8 OTHER (list)	1	2	3	4	5

Comments:

_____

_____

_____

_____

_____

OR2 Please indicate whether any of these factors have changed in your community in the past two years? *(For each factor asked, please circle one of the following responses):*

1. Worse
2. Same
3. Better
4. Don't Know
5. No Answer

FACTORS	WORSE	SAME	BETTER	DON'T KNOW	NO ANSWER
OR2a UNEMPLOYMENT	1	2	3	4	5
OR2b HOUSING AVAILABILITY	1	2	3	4	5
OR2c AVAILABILITY OF DRINKING WATER	1	2	3	4	5
OR2d COST OF FOOD	1	2	3	4	5
OR2e ROAD CONDITIONS	1	2	3	4	5
OR2f EDUCATION OPPORTUNITIES	1	2	3	4	5
OR2g SEWAGE DISPOSAL	1	2	3	4	5
OR2h OTHER (list)	1	2	3	4	5

Comments:

_____

_____

_____

_____

_____

Confidential Questions

This section of the survey deals with some very sensitive issues that Aboriginal people have been facing with great strength. Alcohol abuse, depression, infectious diseases, violence, and lack of communication have occurred in many of our communities. Each year, there are success stories and stories of struggles that show us that there is both community wellness and a path to healing. We would like to ask you several questions about these sensitive issues. If you feel uncomfortable answering a certain question, you don't have to answer it, and I will move on to the next question.

CQR1 Have you or a member of your current household ever had a drinking problem? *(Circle one response)*

1. Yes, I have
2. Yes, my spouse
3. Yes, another member of immediate family (children, siblings, parents, other relatives)
4. Both myself and a member of my immediate family
5. No
6. No Answer

CQR2 At this time, do you drink alcohol? *(Circle one response)*

1. Yes
2. No ……*If no or no answer, go to Question CQR4*
3. No Answer

CQR3 If yes… in the past 12 months, have you felt that you needed to cut down on drinking? *(Circle one response)*

1. Yes
2. No
3. No Answer
9. Not applicable

CQR4 Have you ever stopped drinking altogether for a period of time? *(Circle one response)*

1. Yes
2. No …… *If no, never drank, or no answer, go to Question CQR6*
3. Never drank
4. No Answer

CQR5 I'm going to read a list of reasons why people reduce drinking or quit drinking altogether. For each, tell me if it was a reason for you. Did you reduce or quit drinking because...*(For each reason, circle one response)*

	YES	NO	DON'T KNOW	NO ANSWER	NOT APPLICABLE
CQR5a You were pregnant	1	2	3	4	9
CQR5b You thought you were drinking too much / or had a drinking problem	1	2	3	4	9
CQR5c It was affecting your work, studies or employment opportunities	1	2	3	4	9
CQR5d It was interfering with your family or home life	1	2	3	4	9
CQR5e It was for spiritual or religious reasons	1	2	3	4	9

Comments:

_____

_____

→ CQR6 Have you ever used any NNADAP Addiction Prevention Services? *(Circle one response)* ←

1. Yes
2. No ..... *If no, go to Question CQR9* →
3. Don't Know
4. No Answer
9. Not Applicable

→ CQR7 <u>If yes</u>, were they helpful? *(Circle one response)*

1. Yes ..... *Go to Question CQR9* →
2. No ..... *<u>If no</u>, go to Question CQR8*
3. Don't Know
4. No Answer..... *<u>If don't know or no answer</u>, to Question CQR9* →
9. Not applicable

→ CQR8 <u>If not helpful</u>, what is the most important reason as to why they were not helpful? ←
(Don't read list ..... write in response)

Write in: _____

1. Lack of confidentiality
2. Didn't trust staff
3. Low skill level of staff
4. Located away from community
5. Inadequate child care
6. Language difficulties
7. Gender of counselors
8. Not motivated
9. Not culturally sensitive
10. Other_____
11. Don't Know
12. No Answer
99. Not applicable

→ CQR9 Have you ever been admitted to an Addiction Treatment Centre? ←

1. Yes ..... *If yes, go to Question CQR10*
2. No ..... *Go to Question CQR12* →
3. Don't Know
4. No Answer..... *<u>If don't know or no answer</u>, go to Question CQR12* →
9. Not applicable - Never Drank

→ CQR10 <u>If yes</u>, was the service helpful? *(Circle one response)*

1. Yes .....*Go to Question CQR12* →
2. No .....*If no, answer Question CQR11*
3. Don't Know
4. No Answer .....*<u>If don't know or no answer</u>, go to Question CQR12* →
9. Not applicable

→ CQR11 <u>If no</u>, what is the most important reason as to why they were not helpful ... *(Do not read list ... write in response)*

Write in : _____

1. Lack of confidentiality
2. Didn't trust staff
3. Low skill level of staff
4. Located away from community
5. Inadequate child care
6. Language difficulties
7. Gender of counselors
8. Not motivated
9. Not culturally sensitive
10. Other_____
11. Don't Know
12. No Answer
99. Not applicable

→→ CQR12 Have you ever used any of the following drugs or solvents? *(For each item, circle one response)* ←←

DRUG/SUBSTANCE	YES	NO	DON'T KNOW	NO ANSWER
CQR12a LSD	1	2	3	4
CQR12B COCAINE	1	2	3	4
CQR12C MARIJUANA	1	2	3	4
CQR12D GLUE	1	2	3	4
CQR12E HAIRSPRAY	1	2	3	4
CQR12F LYSOL	1	2	3	4
CQR12G GASOLINE	1	2	3	4

CQR13 Are you currently using any of the following drugs or solvents? *(For each item circle one response)*

DRUG - SUBSTANCE	YES	NO	DON'T KNOW	NO ANSWER
CQR13a LSD	1	2	3	4
CQR13b COCAINE	1	2	3	4
CQR13c MARIJUANA	1	2	3	4
CQR13d GLUE	1	2	3	4
CQR13e HAIRSPRAY	1	2	3	4
CQR13f LYSOL	1	2	3	4
CQR13g GASOLINE	1	2	3	4

Comments:

_____

_____

CQ14 Do you believe that alcohol has an effect on the development of a baby still in the mother's womb? *(Circle one response)*

1. Yes
2. No
3. Don't Know
4. No Answer

CQ15 Do you believe that solvents have an effect on the development of a baby still in the mother's womb? *(Circle one response)*

1. Yes
2. No
3. Don't Know
4. No Answer

There have been times in peoples lives when they feel alone and depressed. The next few questions ask about mental health. There are some questions that you may feel uncomfortable answering. If so, let me know and I will go to the next question.

CQR16 Do you have anyone you can confide in, or talk to about your private feelings? *(Circle one response)*

1. Yes
2. No
3. Don't Know
4. No Answer

CQR17 Do you have someone that makes you feel loved and cared for? *(Circle one response)*

1. Yes
2. No
3. Don't Know
4. No Answer

CQR18 Have you ever felt suicidal? *(Circle one response)*

1. Yes ..... *If yes, ask CQR19, CQR20 and CQR21 as well*
2. No ..... *Go to Question CQR22* →
3. Don't Know
4. No Answer ..... *If don't know or no answer, go to Question CQR22* →

CQR19 If yes .... When you felt that way, where did you go for help? *(Circle one response)*

1. No where
2. Family member
3. Friend
4. Health professional in community
6. Other_____
7. No Answer
9. Not applicable

CQR20 Did you ever attempt suicide? *(Circle one response)*

1. Yes
2. No .....*If no, go to Question CQR22* →
3. No Answer
9. Not applicable

CQR21 Did this happen during the past twelve months? *(Circle one response)*

1. Yes
2. No
3. Can't remember
4. No Answer
9. Not applicable

→→ CQR22 Our communities are dealing with many social concerns. Can you tell which of the following social concerns are a problem in your household? *For each social concern asked, please circle one of the following responses.* ←←

1. Not a Problem
2. Minor Problem
3. Major Problem
4. Don't Know
5. No Answer

SOCIAL CONCERN	NOT A PROBLEM	MINOR PROBLEM	MAJOR PROBLEM	DON'T KNOW	NO ANSWER
CQR22a Gambling	1	2	3	4	5
CQR22b Drinking	1	2	3	4	5
CQR22c Drug use	1	2	3	4	5
CQR22d Physical abuse of children	1	2	3	4	5
CQR22e Violence towards women	1	2	3	4	5
CQR22f Abuse of elderly persons	1	2	3	4	5
CQR22g Neglect of children	1	2	3	4	5
CQR22h Overcrowding	1	2	3	4	5
CQR22I Other	1	2	3	4	5

Comments:

_____

_____

CQR23 Please indicate whether any of the following problems have changed in the past two years in your household.*(Circle only one response. If no problem, circle NO PROBLEM):*

1. Worse
2. Same
3. Better
4. Don't Know
5. No Answer
6. No Problem

SOCIAL CONCERN	WORSE	SAME	BETTER	DON'T KNOW	NO ANSWER	NO PROBLEM
CR23a GAMBLING	1	2	3	4	5	6
CR23b DRINKING	1	2	3	4	5	6
CR23c DRUG USE	1	2	3	4	5	6
CR23d PHYSICAL ABUSE OF CHILDREN	1	2	3	4	5	6
CR23e VIOLENCE TOWARDS WOMEN	1	2	3	4	5	6
CR23f ABUSE OF ELDERLY PERSONS	1	2	3	4	5	6
CR23g NEGLECT OF CHILDREN	1	2	3	4	5	6
CR23h COMMUNICATION AMONG FAMILY MEMBERS	1	2	3	4	5	6
CR23I OVERCROWDING	1	2	3	4	5	6
CR23j OTHER (list):	1	2	3	4	5	6

CQR24 Do you think that HIV / AIDS is likely to become a major health problem in this community? *(Circle one response)*

1. Yes
2. No
3. Don't Know
4. No Answer

CQR25 Do you think that more HIV / AIDS education is needed in this community? *(Circle one response)*

1. Yes ..... *If yes, don't know or no answer, go to Question CQR27*
2. No ..... *If no, go to Question CQR26*
3. Don't Know
4. No Answer

CQR26 If no, why is HIV / AIDS education not needed? *(Circle only one response)*

1. HIV / AIDS not a health problem in First Nations communities
2. Everybody already knows about AIDS
3. Not appropriate to talk about in public
4. Against religious beliefs
5. Too personal
6. Other_____
9. Not applicable

CQR27 Do you believe you are safe from HIV / AIDS? *(Circle one response)*

1. Yes
2. No
3. Don't Know
4. No Answer

CQR28 In the past year, when you have had sexual intercourse, did you/your partner use a condom... *(Circle one response)*

1. Always
2. Sometimes
3. No or Never
4. Don't Know
5. No Answer
9. Not Applicable (No sex, or no sex with men)

Children's Health *(If there are no Children, skip to the next Section as per instructions)*

Interviewer Instructions:

The following questions are for the mother or the person who is most responsible for the children. This individual will answer the Children's health questions on behalf of the child that is randomly selected. If there are no children in this household and the respondent is a woman, skip to the Section titled Women's Health. If there are no children in this household and the respondent is a male, skip to the Interviewer Section.

Selection Instructions:

1. ***Selecting Person Most Responsible**: Only one child should be randomly selected for each household. Please ask household members to identify one person who is most responsible for the children's well being. This person will complete the questions concerning Children's health*
2. ***Randomly selecting the Child**: For the purpose of the survey, a child is anyone under the age of 18 years. Please use the following two-step method to randomly select one child:*
   a) *First make a list of all the adult respondent's children (under age 18) living in this household and number them starting with the oldest. For example, if the family has 7 children under the age of 18, each child would be assigned a number. The possible range of numbers for the children in this household would be as follows:*

      The oldest child would be number 1 and the youngest child would be number 7.

   b) *Select a set of numbered cards that correspond to the number of children in this household (e.g. 7 numbered cards, ranging from numbers 1 to 7, that correspond to the 7 children in this household). To randomly select one child, toss all the numbered cards into a hat, box or bag and select one. Compare the number on the selected card to the numbers assigned to the children in currently living in this household. The questions on Children's Health will apply to the child who's number matches the one that was randomly selected.*

The following questions concern the physical, emotional, social and cultural health of {child's name}. We would like you to answer these questions the best you can.

C1 **What is { child's name } date of birth?** _____/_____/_____
day **month** **year**
[exact date - see health care if possible]

Circle one of the following if respondent doesn't know exact birth date or if the question is not applicable...

97. Respondent Doesn't know

99. Not Applicable - Section Skipped

C1R What is { child's name } Age _____ *(approximate if exact age not known).*

99. Not Applicable Section Skipped

If consent was given to provide Treaty and Manitoba Health Insurance Numbers, ask:

C1RA What is { child's name } Treaty Number _____

999. Not Applicable Section Skipped

C1RB What is { child's name } Manitoba Health Insurance Number _____

999999. Not Applicable

C2 **What is the sex of your child** *(circle one response)*?

1. **Female**
2. **Male**
9. Not applicable - Section Skipped

C3 **What was the birth weight of your child?** (Approximate if exact not known)

C3a _____ pounds C3a1_____ ounces; or C3b_____ grams

Circle one of the following if ...

997. Don't Know
999. Not Applicable - Section Skipped

C4 **Was { child's name } breast-fed** *(Circle one response)*?

1. Yes
2. No..... *If no or don't know, go to Question C5* →
3. Don't Know
9. Not Applicable - Section Skipped

If Yes, for how many months? C4a _____

Circle one of the following if number of months are not known or if not applicable...

97. Don't Know
99. Not Applicable

→ C5 **In general , how would you rate { child's name } health** (*Circle the response that best reflects the current general well-being of child*)? ←

1. **Excellent**
2. **Very Good**
3. **Fair** *(good)*
4. **Poor**
5. **Don't Know**
9. Not Applicable

C6 **Which, if any, of the following long-term conditions or health problems does your child have?** [*A long-term condition means a condition that has lasted at least 6 months*] *For each long-term condition, circle the most appropriate response.*

Long term Condition or health problem	YES	NO	DON'T KNOW	NOT APPLICABLE
C6a Allergies	1	2	3	9
C6b Bronchitis	1	2	3	9
C6c Asthma	1	2	3	9
C6d Tuberculosis	1	2	3	9
C6e Heart condition or problem	1	2	3	9
C6f Kidney Problems	1	2	3	9
C6g Epilepsy	1	2	3	9
C6h Diabetes	1	2	3	9
C6I Overweight or obese	1	2	3	9
C6j Psychological or nervous difficulties	1	2	3	9
C6k Ear infection & ear problems	1	2	3	9
C6l Other long term problems	1	2	3	9
C6LA If other long term problems, list problems:				

C7 **Has { child's name } ever had a** serious accident or injury such as a/an: *For each long-term condition, circle the most appropriate response.*

	YES	NO	DON'T KNOW	NOT APPLICABLE
C7a Serious head injury?	1	2	3	9
C7b Serious burn?	1	2	3	9
C7c Accident/injury causing broken bones or fractures?	1	2	3	9
C7d Accident where he/she almost drowned or needed to be rescued?	1	2	3	9
C7e Serious cold weather injury such as frostbite, hypothermia?	1	2	3	9
C7f Accident/injury causing loss of limb(s), vision or hearing?	1	2	3	9

C8 **During the past 6 months, do you think that { child's name } has had more emotional or behavioral problems than other boys/girls of his/her age?** *(Circle one response)*

1. **Yes**
2. **No**
3. **Don't know**
4. No Answer
9. Not Applicable - Section Skipped

C9 **During the past 6 months, how well has { child's name } gotten along with the family?** *(Circle one response)*

1. **Very well, no problems**
2. **Quite well, hardly any problems**
3. **Pretty well, occasional problems**
4. **Not too well, frequent problems**
5. **Not well at all, constant problems**
6. Don't Know
7. No Answer
9. Not Applicable - Section Skipped

C10 **How satisfied are you with { child's name } knowledge of Native culture?** *(Circle one response)*

1. **Very satisfied**
2. **Satisfied**
3. **Unsatisfied**
4. **Very unsatisfied**
5. No Answer
9. Not Applicable - Section Skipped

CR11 We would like to know if you have any concerns about {child's name} development (e.g., his/her mental, emotional, or social maturity). Would you say that {child's name} level of development is *(Circle only one response)*:

1. Slower than other children his/her age.
2. Same as other children his/her age.
3. Ahead of other children his/her age.
5. Don't Know
6. No Answer
9. Not applicable - Section Skipped

CR12 Does {child's name} use any of the following? *(Circle one response for each substance)*

If the Child is under 4 years old, skip this question..

SUBSTANCE	NOT AT ALL	SOMETIMES	ALL THE TIME	DON'T KNOW	NO ANSWER	NOT APPLICABLE
CR12a Cigarettes	1	2	3	4	5	9
CR12b Alcohol	1	2	3	4	5	9
CR12c Illegal Drugs	1	2	3	4	5	9
CR12d Solvents	1	2	3	4	5	9

Comments:

_____

_____

CR13 Approximately, how tall is {child's name}

_____ Feet _____ Inches [Convert height for data entry _____ Inches]

Circle one of the following if respondent Doesn't Know or if question is Not Applicable...

997. Don't Know
999. Not Applicable - Section Skipped

CR14 Approximately how much does {child's name} weigh _____ lbs.

Circle one of the following if respondent Doesn't Know or if question is Not Applicable ...

997. Don't Know
999. Not Applicable - Section Skipped

CR15 How often does {child's name} eat wild food *(Circle one response)*?

1. Everyday
2. Several times per week
3. Several times per month
4. Several times per year
5. Never
6. Don't Know
7. No Answer
9. Not Applicable - Section Skipped

CR16 Compared with other children his or her age, how physically active is { child's name } *(Circle one response)*

1. More active
2. Same as others
3. Less active
4. Don't Know
5. No Answer
6. Not Applicable - Section Skipped

The following question applies to all of the children currently living in this household.

CR17 How many of the children living in this household have had dental extractions under a general anesthetic (freezing)?

_____Number

96	Too many to remember
97	Don't Know
98	No Answer
99	Not Applicable - Section Skipped

Women's Health *(IF RESPONDENT IS MALE, SKIP TO INTERVIEWER SECTION)*

RW1 Have you ever had a baby? *(Circle one response)*

1. Yes
2. No ..... *If no, go to Question RW8 - Mammogram)*
9. Not Applicable - Section Skipped

RW2 If yes, have you ever had to leave the community for childbirth? *(Circle one response)*

1. Yes
2. No ..... *If no, go to Question RW6 - Last Pregnancy*
9. Not applicable

RW3 If yes, please tell us how you feel about leaving the community for childbirth? *(Circle one response)*

1. Very stressful
2. Somewhat Stressful
3. Not at all stressful
9. Not applicable

RW4 Thinking about the last time you had a baby, did your absence from the community cause any problems for your family? *(Circle one response)*

1. Major Problems
2. Minor Problems
3. No Problems ..... *If no problems, go to Question RW6*
9. Not applicable

RW5 If problems occurred, who was most affected? *(Circle one response)*

1. Your children
2. Your partner
3. Both my children and my partner
4. Other family members
9. Not Applicable

RW6 During your last pregnancy, did you... *(Circle one response)*

1. Drink as much as usual
2. Cut down
3. Didn't drink at all
4. Question doesn't apply, never have drank alcohol in your life
5. Don't Know
6. No Answer
9. Not Applicable

RW7 During your last pregnancy, did you ... *(Circle one response)*

1. Smoke as mush as usual
2. Cut down on smoking
3. Quit smoking
4. Not Applicable, don't smoke
5. No Answer
9. Not Applicable

RW8 Have you ever had a mammogram *(e.g., breast X-ray)*? *(Circle one response)*

1. Yes..... *If yes, go to Question RW9*
2. No ..... *If no, don't know or no response, go to Question RW10*
3. Don't Know
4. No Answer
9. Not applicable

RW9 If yes, why did you have your last mammogram? *(Circle one response)*

1. Breast problem
2. Check-up, no particular problem
3. Other_____
4. Don't Know
5. No Answer
9. Not applicable

RW10 Have you had a PAP smear test in the last two years? *(Circle one response)*

1. Yes ..... *If yes, go to Question RW11*
2. No ..... *If no, don't know or no answer, interview is over. To Interviewer Section*
3. Don't Know
4. No Answer
9. Not applicable

RW11 <u>If yes</u>, where did you have the PAP smear test done? *(Circle one response)*

1. Nursing Station in community
2. Doctor's Office (located outside of community)
3. Hospital
4. Can't Remember
9. Not Applicable

Interviewer Section -- To be completed by Interviewer only

L3 **Interviewer's Name:** _____ L3R _____

THANK YOU FOR PARTICIPATING IN THIS STUDY

At the end of the interview and in front of the respondent(s),

1) Tear off the information sheet, consent form and confidential form.
2) Put the consent form and the confidential form in the "confidential material envelope".
3) Put each questionnaire in a separate envelop and seal it.
4) Ensure the respondent(s) that all the information they provided will be confidential.
5) Give the information sheet to the respondent(s).