The Health of Canadians on Welfare

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ABSTRACT

Background: Welfare programs provide income assistance to individuals whose resources are insufficient to meet their needs and who have exhausted all other avenues of support. With continued reductions in welfare in many provinces, the health of the nearly 2 million Canadians who rely on it may be compromised. This study examines the relationship between receipt of welfare and adult recipients' general, mental and social health, and selected chronic conditions.

Methods: We undertook a secondary analysis of data from the 1996/97 National Population Health Survey. To differentiate between disabled and non-disabled welfare recipients, we stratified our analysis by long-term disability status as defined by self-reported restricted activity.

Results: After controlling for the potentially confounding effects of age, sex, and education, regardless of whether or not they reported restricted activity, adults on welfare when compared to those not on welfare had significantly higher odds of reporting poor/fair health, poor functional health, depression, distress, and poor social support. Among those without restricted activity, welfare recipients had greater odds of heart disease when compared to those not on welfare; no associations were observed between welfare status and obesity, diabetes, or hypertension.

Interpretation: These findings indicate that adults on welfare struggle with a broad spectrum of health problems; the increasing inadequacy of welfare benefits may put them at even greater health risk. The impact of welfare program reforms on the health and well-being of recipients must be assessed and monitored.

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

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Welfare refers to a collection of long-standing social programs that provide income assistance to individuals whose resources are insufficient to meet their needs and who have exhausted all other avenues of support.¹ Common reasons for receiving welfare include: 1) unemployment due to disability, and 2) unemployment due to lack of work or inability to work for reasons other than disability.² Individuals receive welfare payments under different programs depending on the reason for assistance. Individuals unable to work due to disability receive "disability benefits", whereas others receive "general welfare benefits". Financial levels of welfare assistance differ by province and territory; however, disability benefits are typically several hundred dollars higher per month than general welfare benefits.¹

Over the past decade, both federal and provincial funding for welfare programs decreased substantially.^{1,3} As a result, welfare benefit levels across Canada have been reduced, and welfare recipients' access to special, supplementary benefits has been eliminated or severely curtailed.^{1,3} When welfare benefit levels fall below the cost of basic living needs,^{4,5} recipients' health may be compromised. In March 2001, an estimated 1,910,900 individuals or nearly 6.4% of Canada's population relied on welfare.⁶

The association between low income and health has been documented in Canada.⁷⁻¹² However, in comparison to other low-income groups such as the working poor, welfare recipients may be at greater risk for income-related health inequities. Welfare is an indicator of extreme poverty in Canada as it is generally granted to only those households with very minimal liquid assets.¹ Among households with children whose total household income fell below Statistics Canada's Low-Income Cut-Offs, households with welfare as their primary source of income had total average incomes several thousand dollars lower than households with earnings as their primary source of income.¹³

Research on the health status of welfare recipients in Canada has been limited and focussed primarily on the mental health of recipients.¹⁴⁻¹⁷ This study was undertaken to further contribute to an understanding of the health of welfare recipients through a secondary analysis of data from the

TABLE 1

Sociodemographic Profile of Analytic Sample by Activity Restriction Status and Welfare Status

Variable	Unrestricted Activity			Restricted Activity		
	Number	% Welfare (n=1,289)	% Non-welfare (n=41,334)	Number	% Welfare (n=675)	% Non-welfare (n=8,639)
Sex						
Male	21,221	1.8	98.2	4382	7.1	92.9
Female	21,402	4.2	95.8	4932	7.4	92.6
Age Group (years)						
20-39	20,125	4.2	95.8	2456	11.1	88.9
40-59	15,422	2.5	97.5	3359	10.1	89.9
≥60	7076	0.9	99.1	3499	1.8	98.2
Education Level						
No schooling/elementary/some secondary	8706	6.8	93.2	3174	9.4	90.6
Secondary school graduation	7419	2.8	97.2	1234	7.6	92.4
Some trade or college/other post-secondary	7555	3.2	96.8	1663	6.8	93.2
Diploma/certificate – college, trade, CEGEP	8526	1.8	98.2	1675	7.3	92.7
Some university	2770	1.6	98.4	527	3.6	96.4
Bachelor degree	5852	0.7	99.3	787	2.9	97.1
Master, PhD, medicine degree	1673	0.4	99.6	219	3.0	97.0
Not applicable/not stated	121	1.4	98.6	36	4.0	96.0
Area of Residence						
Atlantic Canada	3685	5.0	95.0	1061	8.8	91.2
Central Canada	26,682	3.5	96.5	4948	7.7	92.3
Western Canada	12,257	1.5	98.5	3305	6.1	93.9
Household Type						
Single	5996	5.6	94.4	1945	12.9	87.1
Single parent, children <age 25	2148	21.2	78.8	449	24.3	75.7
Couple alone	10,094	0.8	99.2	3035	1.8	98.2
Couple with children <age 25, with or without others	19,365	1.6	98.4	2582	6.4	93.6
Other household types	5017	2.0	98.0	1303	7.2	92.8
Not stated	3	18.0	82.0	0	–	–
Own Dwelling						
Yes	30,646	0.5	99.5	6288	2.8	97.2
No	11,878	9.5	90.5	2993	16.7	83.3
Don't know/refused/not stated	99	0.3	99.7	33	4.0	96.0

1996-97 National Population Health Survey (NPHS). Our specific objective was to examine the likelihood that adults in households whose main source of income was welfare would report poor general, mental, and social health, and selected chronic conditions.

METHODS

This study was conducted with data from the public use microdata health file for the household survey of the Cycle 2 (1996/97) NPHS, but included only respondents who were over 19 years of age ($n = 66,435$). We chose this Cycle of NPHS because it has a five-fold larger sample size than Cycle 3 and includes variables of particular interest (e.g., Social Support Index, Health Utility Index). A detailed description of the survey design and methodology appears elsewhere.^{10,18-21}

Determination of welfare status

Respondents' main source of household income in the past 12 months was reported as employment, welfare/unemployment insurance/workers' compensation, seniors' benefits, other source, not applicable, or

not stated. Although the main source of income for 76% of those in the welfare/unemployment insurance/workers' compensation category was welfare,²² the data available to us did not permit the differentiation of these households. Further differentiation of welfare recipients was achieved by examining household income levels. A review of provincial welfare benefit levels in 1997 indicated that welfare incomes typically fell in the lowest or low middle category of income adequacy, as defined by Statistics Canada.²³ (See Appendix 1 for the definition of this variable.) For the purposes of this study, all households who reported welfare/unemployment insurance/workers' compensation as their main source of income and reported household incomes in the lowest or low middle category of income adequacy were classed as "on welfare", while those with higher incomes and those who reported employment, seniors' benefits, or other source as their main source of household income were classed as "not on welfare". Because welfare recipients receiving disability benefits have higher benefit levels and would, a priori, be expected to have poorer health than non-disabled welfare recipients,

an examination of the relationship between welfare and health requires the differentiation of these two groups. The NPHS data did not include a direct measure of disability status in relation to welfare benefits, so we stratified our analysis by long-term disability status as defined by self-reported restricted activity to differentiate disabled from non-disabled welfare recipients. Restricted activity was defined as having any long-term disabilities or handicaps and/or any long-term physical or mental condition or health problem that limits the kind or amount of activity that one can do at home/school/work/other activities.

The 21.8% of adult respondents for whom main source of income, income adequacy or activity restriction status was not stated were excluded from the analyses. Our final analytic sample thus consisted of 51,938 respondents.

Health variables

Self-reported health was assessed for one randomly selected person in each participating household using a self-rated health scale, a functional health index, a depression index, a distress index, and a social

TABLE II

Odds of Adult Respondents with Unrestricted Activity Supported by Welfare Reporting Poor General, Mental and Social Health, and Selected Chronic Conditions

	Number (%)†	Crude OR (95% CI)	Adjusted OR (95% CI) Model 1‡	Adjusted OR (95% CI) Model 2§
General Health				
Poor/fair self-rated health	1900			
Non-welfare	(4.2%)	1.0	1.0	1.0
Welfare	(12.0%)	3.1 (2.1-4.4)	4.0 (2.8-5.7)	3.1 (2.1-4.5)
Poor functional health	2432			
Non-welfare	(5.5%)	1.0	1.0	1.0
Welfare	(14.4%)	2.9 (2.1-4.0)	3.7 (2.7-5.1)	3.3 (2.4-4.6)
Mental Health				
Major depression	1348			
Non-welfare	(3.1%)	1.0	1.0	1.0
Welfare	(7.8%)	2.7 (1.7-4.1)	2.0 (1.3-3.2)	2.0 (1.2-3.2)
Distress	3325			
Non-welfare	(7.5%)	1.0	1.0	1.0
Welfare	(26.4%)	4.4 (3.4-5.9)	3.7 (2.8-5.0)	3.3 (2.5-4.5)
Social Health				
Poor social support	5495			
Non-welfare	(12.9%)	1.0	1.0	1.0
Welfare	(23.9%)	2.1 (1.6-2.8)	2.9 (2.1-3.9)	2.6 (1.9-3.5)
Selected Chronic Conditions				
Heart disease	891			
Non-welfare	(2.1%)	1.0	1.0	1.0
Welfare	(3.3%)	1.6 (0.6-4.5)	3.7 (1.3-10.6)	3.7 (1.3-10.6)
Diabetes	980			
Non-welfare	(2.3%)	1.0	1.0	1.0
Welfare	(2.7%)	1.2 (0.5-2.8)	2.5 (1.0-5.9)	2.3 (1.0-5.5)
Hypertension	3835			
Non-welfare	(9.1%)	1.0	1.0	1.0
Welfare	(7.4%)	0.8 (0.5-1.2)	1.6 (1.0-2.4)	1.5 (1.0-2.3)
Obesity	4114			
Non-welfare	(12.0%)	1.0	1.0	1.0
Welfare	(11.8%)	1.2 (0.7-1.4)	1.1 (0.8-1.6)	1.0 (0.7-1.4)

OR = odds ratio; CI = confidence interval.

† Number represents the total number of respondents who reported the condition. Calculations include those respondents who answered affirmatively or negatively to the item, but omit non-respondents and those for whom the item was not applicable.

‡ Adjusted for age group and sex.

§ Adjusted for age group, sex, and education level.

support index. Four chronic conditions were also considered: heart disease, diabetes, hypertension, and obesity. For each measure, we constructed a dichotomous variable to differentiate individuals with responses indicative of poor health (see Appendix 2).

Statistical methods

All analyses were performed with SAS version 8.0 (SAS Institute, Cary, NC). Cross-tabulations were calculated to provide a sociodemographic profile of our analytic sample stratified by restricted activity and welfare status.

A sequence of three logistic regression models was run to estimate the odds that an individual in a household whose main source of income was welfare would report poor health and selected chronic health conditions. Individuals in households not supported by welfare were used as the reference category for calculations of all odds ratios. Unadjusted odds were obtained from the first model. Age group and sex were includ-

ed in the second model to control for their potentially confounding effects, given the wide spectrum of ages in our sample²² and the research documenting the age- and sex-related differences in various health measures considered.^{27,29,30,34-39} Significant associations have also been documented between income adequacy and education level and the various health measures considered here.^{11,25,30,34-41} Because receipt of welfare is associated with low income, and education is tightly linked to income, this variable was included in the third regression model to examine whether there was an association between welfare and health independent of education level. It is emphasized that unlike some other research in this area,¹⁴ our analysis was not intended to explore hypothesized causal relationships between receipt of welfare and specific health outcomes. Thus other sociodemographic variables associated with welfare (e.g., single parenthood) and individual-level characteristics that might link to the health measures considered (e.g., smoking status, alcohol or drug use) were not includ-

ed in our regression models. Our objective was simply to estimate the odds that someone in a household on welfare would report health problems.

All sample weights were re-scaled prior to each analysis by dividing the original weight by the average weight of respondents included in the specific analysis.¹⁹ To account for the effects of stratification and clustering on variance estimates, all confidence intervals were calculated using bootstrap resampling techniques, with a set of 500 bootstrap weights created by Statistics Canada to reflect the sampling design used in the survey.⁴²

RESULTS

A sociodemographic profile of our sample stratified by activity restriction and welfare status is presented in Table I.

Among those with no restricted activity (Table II), welfare recipients were more likely to report poor/fair health, poor functional health, depression, distress, and poor social support in comparison to non-welfare recipients; no associations were found between heart disease, diabetes, hypertension, obesity, and welfare status. After adjusting for age and sex, welfare recipients were more likely to report heart disease in comparison to non-welfare recipients. Adjusting for education level did not alter the statistical significance of the observed associations.

Among those with restricted activity (Table III), welfare recipients were more likely to report poor/fair health, poor functional health, depression, distress, poor social support, and obesity, and less likely to report heart disease, in comparison to non-welfare recipients; no associations were found between diabetes or hypertension and welfare status. After adjusting for age and sex, welfare recipients appeared more likely to report diabetes in comparison to non-welfare recipients, and there was no significant relationship between heart disease and welfare status. Adjusting for education level did not alter the statistical significance of any of the observed associations.

DISCUSSION

Although other Canadian studies have reported poor mental health among wel-

fare recipients,¹⁴⁻¹⁶ our findings show that receipt of welfare is also associated with poorer physical health and a lack of social support. Differences in welfare policies and programs limit the comparability of findings across countries, but it is noteworthy that poorer health has been documented among welfare recipients in the other countries as well. In an analysis of British, German, and U.S. survey data, unemployed individuals on welfare-type benefits had higher odds of self-reported poorer health when compared to employed individuals and unemployed individuals supported by insurance-type benefits.⁴³ More chronic conditions,⁴⁴ poorer mental health,⁴⁴⁻⁴⁸ poorer social support^{46,47} or social integration,⁴⁴ and greater odds of hospitalization⁴⁹ have also been reported among U.S. welfare recipients.

The finding that welfare recipients were more likely to report heart disease is of concern because this condition is likely to be prevented or managed, at least in part, by lifestyle modifications. The financial hardship that welfare recipients experience has been extensively documented,^{1,3-5,13,50} as has their particular vulnerability to problems of food insecurity and hunger.^{21,32,51-55} Affording special diets, exercise, medications and medical supplies not covered by government programs, may be problematic for welfare recipients since many of these healthy lifestyle choices are associated with increased costs.⁵⁶

The cross-sectional nature of our findings makes it impossible to draw causal inferences about the nature of the relationship between welfare and health. While it might be argued that receipt of welfare predisposes individuals to poor health, the reverse could also be true. Longitudinal data are required to ascertain the true nature of this relationship. It is noteworthy, however, that welfare was associated with poorer health across a wide spectrum of measures, suggesting that whatever the association between health and welfare is, it is not condition-specific. Our analyses are further limited by the absence of direct, objective measures of health and welfare status. Although we endeavoured to identify welfare recipients indirectly by considering both source of income and income adequacy, some misclassification error must be associated with this variable definition. Further, we have no measure of the

TABLE III

Odds of Adult Respondents with Restricted Activity Supported by Welfare Reporting Poor General, Mental and Social Health, and Selected Chronic Conditions

	Number (%)†	Crude OR (95% CI)	Adjusted OR (95% CI) Model 1‡	Adjusted OR (95% CI) Model 2§
General Health				
Poor/fair self-rated health	3359			
Non-welfare	(34.1%)	1.0	1.0	1.0
Welfare	(61.3%)	3.1 (2.2-4.2)	4.4 (3.2-6.0)	3.9 (2.8-5.3)
Poor functional health	4450			
Non-welfare	(47.4%)	1.0	1.0	1.0
Welfare	(57.7%)	1.5 (1.1-2.1)	2.1 (1.5-3.0)	2.0 (1.4-2.8)
Mental Health				
Major depression	860			
Non-welfare	(8.8%)	1.0	1.0	1.0
Welfare	(24.9%)	3.5 (2.4-5.0)	2.7 (1.9-3.9)	2.7 (1.9-4.0)
Distress	1869			
Non-welfare	(19.7%)	1.0	1.0	1.0
Welfare	(44.4%)	3.3 (2.4-5.4)	3.1 (2.2-4.3)	2.7 (2.0-3.8)
Social Health				
Poor social support	1679			
Non-welfare	(18.0%)	1.0	1.0	1.0
Welfare	(35.4%)	2.5 (1.8-3.4)	2.8 (2.0-3.9)	2.6 (1.9-3.7)
Selected Chronic Conditions				
Heart disease	1346			
Non-welfare	(14.9%)	1.0	1.0	1.0
Welfare	(9.0%)	0.6 (0.4-0.9)	1.2 (0.7-1.9)	1.1 (0.7-1.8)
Diabetes	896			
Non-welfare	(9.4%)	1.0	1.0	1.0
Welfare	(12.9%)	1.4 (0.8-2.5)	2.4 (1.3-4.4)	2.4 (1.3-4.4)
Hypertension	2128			
Non-welfare	(23.4%)	1.0	1.0	1.0
Welfare	(16.2%)	0.6 (0.4-0.9)	1.1 (0.7-1.7)	1.1 (0.7-1.6)
Obesity	1130			
Non-welfare	(17.8%)	1.0	1.0	1.0
Welfare	(25.7%)	1.6 (1.1-2.4)	1.7 (1.1-2.5)	1.6 (1.1-2.3)

OR = odds ratio; CI = confidence interval.

† Number represents total number of respondents who reported the condition. Calculations include those who answered affirmatively or negatively to the item, but omit non-respondents and those for whom the item was not applicable.

‡ Adjusted for age group and sex.

§ Adjusted for age group, sex, and education level.

duration of a household's reliance on welfare. In addition, the use of self-reported activity restrictions as a means to identify individuals in households receiving disability benefits must certainly have resulted in the misclassification of some individuals between these two groups, because disability status is assessed differently by welfare officials and our measure of activity restrictions is based on one adult in the household – not necessarily the person whose disability status would be the determinant of benefit eligibility in multi-person households. Nevertheless, the consistency of findings within and between strata defined by the presence or absence of reported activity restrictions suggests that adults in households reliant on welfare are more likely to report poorer health than others, irrespective of their disability status.

In conclusion, our results indicate that adults supported by welfare struggle with a broad spectrum of health problems. The financial hardship experienced by households on welfare^{1,3-5,13,50} can only make

coping with health problems more difficult and serve to exacerbate any existing medical conditions. Further cuts to welfare benefit levels, as announced in British Columbia in January 2002,¹ may put recipients at even greater health risk. As welfare programs continue to be reformed, the impact of program changes on recipients' health and well-being needs to be assessed and monitored. By design, welfare programs should protect – not jeopardize – the health of recipients.

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RÉSUMÉ

Contexte : Les programmes d'aide sociale fournissent un soutien du revenu aux personnes dont les ressources sont insuffisantes pour répondre à leurs besoins et qui ont épuisé toutes les autres possibilités de soutien. Avec les compressions continues des budgets de l'aide sociale dans de nombreuses provinces, la santé des près de deux millions de Canadiens qui sont dépendants de cette aide pourrait être compromise. La présente étude porte sur la relation entre le statut d'assisté social, la santé générale, mentale et sociale des bénéficiaires adultes et certains états chroniques.

Méthode : Nous avons entrepris une deuxième analyse des données de l'Enquête nationale sur la santé de la population (1996-1997). Pour différencier les assistés sociaux atteints d'invalidité des assistés sociaux non atteints, nous avons stratifié l'analyse en fonction de l'état d'invalidité de longue durée, défini d'après les limitations fonctionnelles déclarées par les intéressés.

Résultats : Compte tenu des facteurs confusionnels que peuvent représenter l'âge, le sexe et le niveau d'instruction, et peu importe que les répondants aient ou non déclaré des limitations fonctionnelles, les assistés sociaux adultes étaient de manière significative plus susceptibles que les non-assistés de faire état d'une santé mauvaise ou moyenne, de problèmes de santé fonctionnelle, de dépression, de détresse et d'un piètre soutien social. Chez les personnes sans limitation fonctionnelle, les assistés sociaux avaient davantage tendance à être atteints de cardiopathies que les non-bénéficiaires de l'aide sociale; aucune association n'a été observée entre le statut d'assisté social et l'obésité, le diabète ou l'hypertension artérielle.

Interprétation : Ces constatations indiquent que les assistés sociaux adultes sont aux prises avec un vaste éventail de problèmes de santé; l'insuffisance croissante des prestations d'aide sociale pourrait les exposer à des risques sanitaires encore plus grands. L'incidence des réformes aux programmes d'aide sociale sur la santé et le bien-être des bénéficiaires doit donc faire l'objet d'une évaluation et d'un suivi.

Appendix 1**Category Definitions for Income Adequacy Variable**

Income Adequacy	Category Definition
Lowest income	< \$10,000 if 1-4 persons < \$15,000 if 5+ persons
Lower middle income	\$10,000-\$14,999 if 1-2 persons \$10,000-\$19,999 if 3-4 persons \$15,000-\$29,999 if 5+ persons
Middle income	\$15,000-\$29,999 if 1-2 persons \$20,000-\$39,999 if 3-4 persons \$30,000-\$59,999 if 5+ persons
Upper middle income	\$30,000-\$59,999 if 1-2 persons \$40,000-\$79,999 if 3-4 persons \$60,000-\$79,999 if 5+ persons
Highest income	≥ \$60,000 if 1-2 persons ≥ \$80,000 if 3+ persons

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Appendix 2**Description of Variables Used to Indicate General, Mental, and Social Health****General Health Measures****Poor/fair self-rated health**

Respondents were asked to rate their own health according to one of five categories: poor, fair, good, very good, and excellent. A dichotomous variable was constructed to denote those who did and did not rate their own health as poor/fair.

Poor functional health

This variable is derived from the Health Utility Index (HUI),²⁴ a generic measure of health status. The HUI provides a description of an individual's overall functional health based on eight attributes: vision, hearing, speech, ambulation, dexterity, emotion, cognition, and pain, with 5 or 6 levels per attribute. A score between zero and one is assigned for all possible combinations of levels of these eight self-reported health attributes. In this analysis, those with a HUI score of 0.83 or greater were classified as not having poor functional health, while those with a HUI score of less than 0.83 were classified as having poor functional health. This cut-point was based on the clinical judgement and consensus of others.²⁵ For example, an individual who requires mechanical support for walking (e.g., cane), but does not have any pain or other limitations would obtain a score of 0.830 and would not be classified as having poor functional health here; an individual with difficulty walking and pain that restricts at least some activities would obtain a score of 0.814 and would be classified as having poor functional health.²⁵

Mental Health Measures**Major depression**

This variable is derived from the University of Michigan-Composite International Diagnostic Interview-Short Form (UM-CIDI-SF), a brief questionnaire to predict the occurrence of major depression.^{26,27} The UM-CIDI-SF predicts caseness based on two central features of depression: feeling sad, blue, or depressed; losing interest in most things.²⁷ If respondents reported experiencing either feature at least most of the day, almost every day, for a period of two weeks in the previous 12 months, they were then asked to answer 'yes' or 'no' to a series of symptoms.²⁷ According to developers' validation data, there is a 90% probability of major depression (in the preceding 12 months) in subjects reporting 5 or more depressive symptoms in response to UM-CIDI-SF questions.²⁸ As in other studies,^{26,29-31} a cut-point of 5 has been used here to categorize respondents as having or not having major depression.

Distress

This variable is derived from the Distress Index, which is based on six questions: "During the past month, how often did you feel: so sad that nothing could cheer you up? nervous? restless or fidgety? hopeless? worthless? that everything was an effort?" The response options – all of the time, most of the time, some of the time, a little of the time, and none of the time – were given weights of 5, 4, 3, 2, and 1, respectively.³² The index was the sum of the assigned weights from the six questions.³² A higher score indicates greater distress. Since over 85% of those who responded to questions on the Distress Index scored under 7 out of 24, a cut-point of 7 was used here to categorize respondents as having or not having distress. This cut-point has been used by others.³²

Social Health Measure**Poor social support**

This variable is derived from the Social Support Index, a four-item index that measures perceived social support. Respondents were prompted to answer yes or no to whether they had someone who they could confide in, count on, could give them advice, and who makes them feel loved. A score of 1 was given for an answer of 'yes' to each question, and a score of 0 for an answer of 'no', with a maximum possible score of 4. Since over 85% of those who responded to questions on the Social Support Index scored 4 out of 4, a cut-point of 4 was used here to categorize respondents as having or not having poor social support.

Selected Chronic Conditions**Heart Disease**

Respondents were classed as having heart disease if they reported that the condition had lasted or was expected to last for six months or longer and that it had been diagnosed by a health professional.

Diabetes

Respondents were classed as having diabetes if they reported that the condition had lasted or was expected to last for six months or longer and that it had been diagnosed by a health professional.

Hypertension

Respondents were classed as having hypertension (high blood pressure) if they reported that the condition had lasted or was expected to last for six months or longer and that it had been diagnosed by a health professional.

Obesity

Body weight and height were collected through self-reports and were used to construct the BMI for respondents ages 20-64 yrs, excluding pregnant women. Obesity was defined as a BMI ≥30.0 kg/m².³³