S1 Table A: Risk factors associated with diagnosis of diabetes by oral glucose tolerance test (OGTT) (n=1190)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Crudea**  RR (95% CI) | p value | **Partially Adjustedb**  RR (95% CI) | p value | **Fully Adjusted**  **Model 1c**  RR (95% CI) | p value | **Fully Adjusted**  **Model 2d**  RR (95% CI) | p value |
| Age (years) | 1.05 (1.04-1.06) | <0.001 | 1.05 (1.04-1.06) | <0.001 | 1.05 (1.03-1.06) | <0.001 | 1.05 (1.03-1.06) | <0.001 |
| Women | 2.14 (1.41-3.25) | <0.001 | 1.57 (1.10-2.26) | 0.013 | 1.23 (0.67-2.26) | 0.29 | 1.39 (0.80-2.56) | 0.29 |
| BMI (kg/m2) | 1.04 (1.03-1.05) | <0.001 | 1.03 (1.02-1.03) | <0.001 | - | - | 1.02 (1.01-1.04) | 0.001 |
| Waist circumference (cm) | 1.04 (1.03-1.04) | <0.001 | 1.02 (1.02-1.03) | <0.001 | 1.02 (1.01-1.03) | 0.001 | - | - |
| Systolic blood pressure (mmHg) | 1.02 (1.01-1.02) | <0.001 | 1.01 (1.00-1.01) | 0.018 | 1.00 (0.99-1.02) | 0.71 | 1.00 (0.99-1.02) | 0.78 |
| Diastolic blood pressure (mmHg) | 1.03 (1.02-1.03) | <0.001 | 1.01 (1.00-1.02) | 0.032 | 1.00 (0.98-1.02) | 0.82 | 1.01 (0.98-1.16) | 0.86 |
| Haemoglobin (g/dl) | 0.95 (0.88-1.02) | 0.17 | 1.08 (0.96-1.21) | 0.23 | 0.99 (0.87-1.13) | 0.91 | 1.01 (0.88-1.16) | 0.86 |
| Total cholesterol (mmol/l) | 1.08 (1.03-1.13) | 0.002 | 1.08 (1.04-1.13) | <0.001 | 1.16 (0.71-3.03) | 0.30 | 1.45 (0.69-3.04) | 0.32 |
| Triglycerides (mmol/l) | 1.01 (1.00-1.03) | 0.072 | 1.02 (0.99-1.04) | 0.18 | 1.16 (0.86-1.56) | 0.33 | 1.21 (0.90-1.63) | 0.20 |
| LDL (mmol/l) | 1.86 (1.62-2.13) | <0.001 | 1.26 (1.08-1.47) | 0.003 | 1.69 (0.30-1.58) | 0.37 | 0.72 (0.31-1.66) | 0.44 |
| HDL (mmol/l) | 0.66 (0.41-1.08) | 0.10 | 0.60 (0.35-1.04) | 0.07 | 0.45 (0.17-1.23) | 0.12 | 0.37 (0.13-1.03) | 0.06 |
| HIV positive | 0.47 (0.33-0.66) | <0.001 | 0.78 (0.53-1.14) | 0.20 | 0.96 (0.62-1.49) | 0.84 | 0.89 (0.57-1.39) | 0.60 |
| Family history of diabetes | 2.93 (2.17-3.95) | <0.001 | 2.84 (1.68-4.81) | <0.001 | 2.36 (1.67-3.34) | <0.001 | 2.45 (1.73-3.48) | <0.001 |
| Current smoker | 0.53 (0.33-0.86) | 0.009 | 1.00 (0.73-1.38) | 0.99 | 1.36 (0.75-2.50) | 0.31 | 1.33 (1.01-1.84) | 0.044 |
| Alcohol user | 0.51 (0.29-0.90) | 0.02 | 1.09 (0.88-1.36) | 0.43 | 1.30 (0.70-2.41) | 0.41 | 1.28 (0.69-2.39) | 0.43 |
| Low fruit and vegetables | 1.12 (0.74-1.69) | 0.58 | 1.41 (0.86-2.33) | 0.18 | 1.59 (0.94-2.70) | 0.09 | 1.58 (0.92-2.70) | 0.10 |
| Low physical activity | 1.50 (1.11-2.03) | 0.008 | 1.06 (0.81-1.39) | 0.66 | 1.15 (0.79-1.65) | 0.47 | 1.21 (0.83-1.75) | 0.33 |

RR=Risk Ratio. 95% CI=95% confidence interval. OGTT=oral glucose tolerance test. FPG=fasting plasma glucose. BMI=body mass index. WC=waist circumference. LDL=low-density lipoprotein. HDL=high-density lipoprotein.

**a**Crude=univariable poisson regression between risk factor and diabetes. **b**Partially Adjusted=multivariable poisson regression adjusted for age, sex and clustering at the planning unit cluster and household level.

**c**Fully adjusted model 1 (no BMI)=multivariable poisson regression adjusted for age, sex, waist circumference, blood pressure, haemoglobin, lipids, HIV infection, family history of diabetes, smoking status, alcohol use, physical activity and clustering at the planning unit cluster and household level

**d**Fully adjusted model 2 (no waist circumference)=multivariable poisson regression adjusted for age, sex, BMI (not waist circumference), blood pressure, haemoglobin, lipids, HIV infection, family history of diabetes, smoking status, alcohol use, physical activity and clustering at the planning unit cluster and household level

S1 Table B: Risk factors associated with diagnosis of diabetes by fasting plasma glucose (FPG) (n=1190)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Crudea**  RR (95% CI) | p value | **Partially Adjustedb**  RR (95% CI) | p value | **Fully Adjusted**  **Model 1c**  RR (95% CI) | p value | **Fully Adjusted**  **Model 2d**  RR (95% CI) | p value |
| Age (years) | 1.05 (1.04-1.06) | <0.001 | 1.05 (1.04-1.06) | <0.001 | 1.04 (1.03-1.06) | <0.001 | 1.05 (1.03-1.06) | <0.001 |
| Women | 2.26 (1.44-3.53) | <0.001 | 1.71 (1.28-2.30) | <0.001 | 1.34 (0.70-2.55) | 0.38 | 1.53 (0.80-2.93) | 0.20 |
| BMI (kg/m2) | 1.04 (1.03-1.05) | <0.001 | 1.03 (1.03-1.04) | <0.001 |  | - | 1.01 (0.99-1.04) | 0.001 |
| Waist circumference (cm) | 1.04 (1.03-1.04) | <0.001 | 1.03 (1.02-1.03) | <0.001 | 1.02 (1.01-1.03) | 0.001 |  | - |
| Systolic blood pressure (mmHg) | 1.02 (1.02-1.03) | <0.001 | 1.00 (1.00-1.01) | 0.05 | 1.00 (0.99-1.02) | 0.61 | 1.00 (0.99-1.02) | 0.67 |
| Diastolic blood pressure (mmHg) | 1.03 (1.02-1.04) | <0.001 | 1.01 (1.00-1.02) | 0.055 | 1.00 (0.98-1.02) | 0.99 | 1 .00 (0.98-1.03) | 0.71 |
| Haemoglobin (g/dl) | 0.95 (0.88-1.03) | 0.21 | 1.08 (0.94-1.24) | 0.27 | 1.01 (0.87-1.16) | 0.93 | 1.03 (0.89-1.19) | 0.70 |
| Total cholesterol (mmol/l) | 1.08 (1.03-1.13) | 0.002 | 1.08 (1.01-1.25) | 0.001 | 1.61 (0.76-3.39) | 0.21 | 1.58 (0.75-3.33) | 0.23 |
| Triglycerides (mmol/l) | 1.01 (1.00-1.03) | 0.075 | 1.02 (0.99-1.04) | 0.21 | 1.12 (0.82-1.53) | 0.48 | 1.18 (0.87-1.61) | 0.28 |
| LDL (mmol/l) | 1.83 (1.58-2.12) | <0.001 | 1.26 (1.10-1.44) | 0.001 | 0.61 (0.26-1.43) | 0.26 | 0.65 (0.28-1.53) | 0.33 |
| HDL (mmol/l) | 0.76 (0.48-1.20) | 0.24 | 0.59 (0.41-0.85) | 0.005 | 0.42 (0.15-1.2) | 0.11 | 0.36 (0.13-0.96) | 0.04 |
| HIV positive | 0.46 (0.33-0.66) | <0.001 | 0.75 (0.52-1.08) | 0.12 | 0.93 (0.59-1.47) | 0.76 | 0.86 (0.54-1.37) | 0.53 |
| Family history of diabetes | 3.17 (2.31-4.35) | <0.001 | 3.19 (1.78-5.69) | <0.001 | 2.69 (1.87-3.87) | <0.001 | 2.80 (1.94-4.03) | <0.001 |
| Current smoker | 0.58 (0.36-0.95) | 0.03 | 0.98 (0.70-1.35) | 0.88 | 1.41 (0.75-2.66) | 0.29 | 1.36 (0.72-2.57) | 0.34 |
| Alcohol user | 0.56 (0.32-0.99) | 0.048 | 0.86 (0.69-1.07) | 0.17 | 1.03 (0.51-2.05) | 0.94 | 0.99 (0.51-1.93) | 0.98 |
| Low fruit and vegetables | 1.33 (0.84-2.12) | 0.22 | 1.30 (0.80-2.11) | 0.29 | 1.47 (0.86-2.53) | 0.16 | 1.44 (0.86-2.44) | 0.17 |
| Low physical activity | 1.56 (1.14-2.15) | 0.005 | 1.19 (0.88-1.30) | 0.52 | 1.14 (0.78-1.68) | 0.49 | 1.20 (0.82-1.75) | 0.34 |

RR=Risk Ratio. 95% CI=95% confidence interval. OGTT=oral glucose tolerance test. FPG=fasting plasma glucose. BMI=body mass index. WC=waist circumference. LDL=low-density lipoprotein. HDL=high-density lipoprotein.

**a**Crude=univariable poisson regression between risk factor and diabetes. **b**Partially Adjusted=multivariable poisson regression adjusted for age, sex and clustering at the planning unit cluster and household level.

**c**Fully adjusted model 1 (no BMI)=multivariable poisson regression adjusted for age, sex, waist circumference, blood pressure, haemoglobin, lipids, HIV infection family history of diabetes, smoking status, alcohol use, physical activity and clustering at the planning unit cluster and household level

**d**Fully adjusted model 2 (no waist circumference)=multivariable poisson regression adjusted for age, sex, BMI (not waist circumference), blood pressure, haemoglobin, lipids, HIV infection, family history of diabetes, smoking status, alcohol use, physical activity and clustering at the planning unit cluster and household level

S1 Table C: Risk factors associated with diagnosis of diabetes by HbA1c (n=1190)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Crudea**  RR (95% CI) | p value | **Partially Adjustedb**  RR (95% CI) | p value | **Fully Adjusted**  **Model 1c**  RR (95% CI) | p value | **Fully Adjusted**  **Model 2d**  RR (95% CI) | p value |
| Age (years) | 1.05 (1.04-1.06) | <0.001 | 1.05 (1.04-1.06) | <0.001 | 1.04 (1.03-1.06) | <0.001 | 1.04 (1.03-1.06) | <0.001 |
| Women | 2.14 (1.41-3.25) | <0.001 | 1.62 (1.19-2.21) | 0.002 | 1.14 (0.61-2.11) | 0.68 | 1.30 (0.70-2.41) | 0.41 |
| BMI (kg/m2) | 1.04 (1.03-1.05) | <0.001 | 1.03 (1.03-1.04) | <0.001 |  | - | 1.02 (1.01-1.04) | 0.001 |
| Waist circumference (cm) | 1.04 (1.03-1.04) | <0.001 | 1.03 (1.02-1.03) | <0.001 | 1.02 (1.01-1.03) | <0.001 |  | - |
| Systolic blood pressure (mmHg) | 1.02 (1.01-1.02) | <0.001 | 1.00 (1.00-1.01) | 0.028 | 1.00 (0.99-1.01) | 0.98 | 1.00 (0.99-1.01) | 0.90 |
| Diastolic blood pressure (mmHg) | 1.03 (1.02-1.03) | <0.001 | 1.01 (1.00-1.02) | 0.036 | 1.00 (0.98-1.02) | 0.74 | 1.01 (0.99-1.03) | 0.50 |
| Haemoglobin (g/dl) | 0.95 (0.88-1.02) | 0.17 | 1.07 (0.92-1.24) | 0.40 | 0.98 (0.85-1.12) | 0.72 | 0.99 (0.87-1.14) | 0.94 |
| Total cholesterol (mmol/l) | 1.08 (1.03-1.13) | 0.002 | 1.08 (1.03-1.13) | 0.001 | 1.42 (0.69-2.90) | 0.34 | 1.40 (0.68-2.88) | 0.36 |
| Triglycerides (mmol/l) | 1.01 (1.00-1.03) | 0.072 | 1.02 (0.99-1.04) | 0.21 | 1.19 (0.89-1.59) | 0.24 | 1.25 (0.94-1.67) | 0.13 |
| LDL (mmol/l) | 1.86 (1.62-2.13) | <0.001 | 1.29 (1.10-1.50) | 0.001 | 0.70 (0.31-1.60) | 0.40 | 0.74 (0.32-1.70) | 0.48 |
| HDL (mmol/l) | 0.66 (0.41-1.08) | 0.10 | 0.48 (0.30-0.79) | 0.004 | 0.46 (0.17-1.22) | 0.12 | 0.37 (0.14-1.01) | 0.05 |
| HIV positive | 0.41 (0.29-0.59) | <0.001 | 0.65 (0.50-0.85) | 0.002 | 0.79 (0.50-1.23) | 0.29 | 0.73 (0.46-1.14) | 0.17 |
| Family history of diabetes | 2.93 (2.17-3.95) | <0.001 | 2.93 (1.75-4.91) | <0.001 | 2.44 (1.73-3.46) | <0.001 | 2.54 (1.79-3.59) | <0.001 |
| Current smoker | 0.53 (0.33-0.86) | 0.009 | 0.85 (0.64-1.12) | 0.25 | 1.27 (0.68-2.38) | 0.45 | 1.24 (0.66-2.31) | 0.50 |
| Alcohol user | 0.51 (0.29-0.90) | 0.02 | 0.78 (0.60-0.99) | 0.042 | 0.94 (0.48-1.86) | 0.87 | 0.93 (0.47-1.83) | 0.84 |
| Low fruit and vegetables | 1.12 (0.74-1.69) | 0.58 | 1.11 (0.75-1.64) | 0.61 | 1.18 (0.73-1.90) | 0.51 | 1.17 (0.72-1.9) | 0.54 |
| Low physical activity | 1.50 (1.11-2.03) | 0.008 | 1.03 (0.81-1.32) | 0.80 | 1.04 (1.03-1.06) | 0.75 | 1.04 (1.03-1.06) | 0.58 |

RR=Risk Ratio. 95% CI=95% confidence interval. OGTT=oral glucose tolerance test. FPG=fasting plasma glucose. BMI=body mass index. WC=waist circumference. LDL=low-density lipoprotein. HDL=high-density lipoprotein.

**a**Crude=univariable poisson regression between risk factor and diabetes. **b**Partially Adjusted=multivariable poisson regression adjusted for age, sex and clustering at the planning unit cluster and household level.

**c**Fully adjusted model 1 (no BMI)=multivariable poisson regression adjusted for age, sex, waist circumference, blood pressure, haemoglobin, lipids, family history of diabetes, smoking status, alcohol use, physical activity and clustering at the planning unit cluster and household level

**d**Fully adjusted model 2 (no waist circumference)=multivariable poisson regression adjusted for age, sex, BMI (not waist circumference), blood pressure, haemoglobin, lipids, family history of diabetes, smoking status, alcohol use, physical activity and clustering at the planning unit cluster and household level