**Supplementary Appendix Table 1. Viral suppression among biologically confirmed ART users at four viral load thresholds in HAALSI**

|  |  |  |
| --- | --- | --- |
| **Threshold** | **Suppressed (%)** | **Detectable (%)** |
| VL<100 | 479 (72.4) | 183 (27.6) |
| VL<200 | 525 (79.3) | 137 (20.7) |
| VL<400 | 549 (82.9) | 113 (17.1) |
| VL<1000 | 594 (89.7) | 68 (10.3) |

\*VL = viral load

**Supplementary Appendix Table 2. Multivariate logistic regression results: Self-reported ART use and diabetes and hypertension diagnosis and preventive counseling in Agincourt, South Africa**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Ever Blood Pressure** | **Ever Sugar** | **Advised Change Diet** | **Told to Exercise** |
| Covariates | **aOR + 95% CI** | **aOR + 95% CI** | **aOR + 95% CI** | **aOR + 95% CI** |
| Age | 1.016\*\*\* | 1.015\*\*\* | 1.023\*\*\* | 1.003 |
|  | (1.009 - 1.022) | (1.009 - 1.021) | (1.013 - 1.033) | (0.990 - 1.016) |
| Female | 1.432\*\*\* | 1.173\*\* | 1.380\*\*\* | 0.927 |
|  | (1.242 - 1.652) | (1.028 - 1.338) | (1.107 - 1.720) | (0.695 - 1.237) |
| Overweight | 0.877 | 1.372\*\*\* | 1.190 | 1.240 |
|  | (0.744 - 1.035) | (1.176 - 1.600) | (0.910 - 1.557) | (0.867 - 1.773) |
| Obese | 1.025 | 1.495\*\*\* | 1.818\*\*\* | 1.819\*\*\* |
|  | (0.859 - 1.224) | (1.272 - 1.756) | (1.404 - 2.355) | (1.284 - 2.576) |
| Education 1-7 | 1.069 | 1.238\*\*\* | 1.379\*\*\* | 2.150\*\*\* |
|  | (0.906 - 1.260) | (1.064 - 1.441) | (1.084 - 1.754) | (1.510 - 3.062) |
| Education 8-11 | 1.117 | 1.446\*\*\* | 0.883 | 2.817\*\*\* |
|  | (0.872 - 1.432) | (1.149 - 1.820) | (0.582 - 1.340) | (1.772 - 4.477) |
| Education 12+ | 0.746\*\* | 1.247\* | 0.962 | 1.894\*\* |
|  | (0.582 - 0.957) | (0.984 - 1.580) | (0.642 - 1.441) | (1.135 - 3.163) |
| Wealth Quintile 2 | 1.059 | 1.054 | 0.794 | 0.892 |
|  | (0.858 - 1.306) | (0.864 - 1.287) | (0.557 - 1.133) | (0.528 - 1.507) |
| Wealth Quintile 3 | 1.260\*\* | 1.168 | 0.942 | 1.194 |
|  | (1.016 - 1.564) | (0.955 - 1.427) | (0.668 - 1.328) | (0.732 - 1.949) |
| Wealth Quintile 4 | 1.195 | 1.382\*\*\* | 1.115 | 1.393 |
|  | (0.962 - 1.485) | (1.128 - 1.693) | (0.796 - 1.561) | (0.865 - 2.244) |
| Wealth Quintile 5 | 1.476\*\*\* | 1.544\*\*\* | 1.526\*\* | 1.613\*\* |
|  | (1.174 - 1.857) | (1.251 - 1.906) | (1.093 - 2.131) | (1.004 - 2.592) |
| HIV+/No SR ART | 1.102 | 0.859 | 0.628\*\* | 0.539\*\* |
|  | (0.891 - 1.363) | (0.704 - 1.049) | (0.418 - 0.944) | (0.312 - 0.932) |
| HIV+/SR ART | 1.324\*\* | 1.513\*\*\* | 1.538\*\*\* | 1.704\*\*\* |
|  | (1.059 - 1.655) | (1.236 - 1.853) | (1.124 - 2.105) | (1.168 - 2.488) |
| Constant | 0.624\*\* | 0.195\*\*\* | 0.0152\*\*\* | 0.0188\*\*\* |
|  | (0.394 - 0.989) | (0.126 - 0.300) | (0.00728 - 0.0316) | (0.00696 - 0.0509) |
|  |  |  |  |  |
| Observations | 4,145 | 4,145 | 4,145 | 4,143 |

95% CI in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Supplementary Appendix Table 3. Multivariate logistic regression results: Self-reported ART use and diabetes and hypertension awareness and care in Agincourt, South Africa**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Told Hypertension** | **Told Diabetes** | **Treated Hypertension** | **Treated Diabetes** |
| Covariates | **aOR + 95% CI** | **aOR + 95% CI** | **aOR + 95% CI** | **aOR + 95% CI** |
| Age | 1.030\*\*\* | 1.013 | 1.038\*\*\* | 1.014 |
|  | (1.022 - 1.039) | (0.994 - 1.032) | (1.030 - 1.047) | (0.995 - 1.033) |
| Female | 1.682\*\*\* | 0.991 | 1.766\*\*\* | 0.967 |
|  | (1.399 - 2.023) | (0.647 - 1.517) | (1.475 - 2.115) | (0.632 - 1.481) |
| Overweight | 1.597\*\*\* | 1.061 | 1.655\*\*\* | 1.092 |
|  | (1.285 - 1.984) | (0.616 - 1.828) | (1.335 - 2.052) | (0.634 - 1.879) |
| Obese | 2.232\*\*\* | 1.036 | 2.295\*\*\* | 1.121 |
|  | (1.779 - 2.800) | (0.611 - 1.758) | (1.840 - 2.862) | (0.662 - 1.900) |
| Education 1-7  | 1.193 | 1.096 | 1.076 | 1.068 |
|  | (0.963 - 1.478) | (0.694 - 1.729) | (0.875 - 1.323) | (0.677 - 1.684) |
| Education 8-11 | 0.813 | 0.952 | 0.794 | 0.933 |
|  | (0.588 - 1.125) | (0.439 - 2.064) | (0.575 - 1.096) | (0.430 - 2.023) |
| Education 12+ | 0.932 | 1.632 | 0.800 | 1.592 |
|  | (0.661 - 1.314) | (0.735 - 3.625) | (0.572 - 1.119) | (0.722 - 3.511) |
| Wealth Quintile 2 | 0.977 | 0.887 | 0.989 | 0.907 |
|  | (0.738 - 1.292) | (0.419 - 1.878) | (0.747 - 1.308) | (0.428 - 1.922) |
| Wealth Quintile 3 | 1.389\*\* | 1.133 | 1.265 | 1.110 |
|  | (1.044 - 1.849) | (0.542 - 2.367) | (0.955 - 1.675) | (0.531 - 2.321) |
| Wealth Quintile 4 | 1.490\*\*\* | 1.145 | 1.485\*\*\* | 1.098 |
|  | (1.121 - 1.982) | (0.555 - 2.362) | (1.123 - 1.964) | (0.532 - 2.266) |
| Wealth Quintile 5 | 1.833\*\*\* | 1.552 | 1.822\*\*\* | 1.535 |
|  | (1.361 - 2.469) | (0.737 - 3.270) | (1.363 - 2.435) | (0.728 - 3.236) |
| HIV+/No SR ART | 1.085 | 1.117 | 1.057 | 1.099 |
|  | (0.804 - 1.463) | (0.529 - 2.357) | (0.787 - 1.419) | (0.522 - 2.314) |
| HIV+/SR ART | 1.852\*\*\* | 1.318 | 1.987\*\*\* | 1.293 |
|  | (1.289 - 2.661) | (0.621 - 2.798) | (1.404 - 2.812) | (0.612 - 2.731) |
| Constant | 0.0990\*\*\* | 0.389 | 0.0411\*\*\* | 0.341 |
|  | (0.0523 - 0.187) | (0.0901 - 1.681) | (0.0218 - 0.0777) | (0.0789 - 1.470) |
|  |  |  |  |  |
| Observations | 2,393 | 428 | 2,394 | 427 |

95% CI in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Supplementary Appendix Table 4. Multivariate logistic regression results: Virally suppressed ART users and diabetes and hypertension diagnosis and preventive counseling in Agincourt, South Africa**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Ever Blood Pressure** | **Ever Sugar** | **Advised Change Diet** | **Told to Exercise** |
| Covariates | **aOR + 95% CI** | **aOR + 95% CI** | **aOR + 95% CI** | **aOR + 95% CI** |
| Age | 1.016\*\*\* | 1.015\*\*\* | 1.022\*\*\* | 1.003 |
|  | (1.009 - 1.022) | (1.009 - 1.021) | (1.013 - 1.032) | (0.990 - 1.016) |
| Female | 1.443\*\*\* | 1.182\*\* | 1.378\*\*\* | 0.938 |
|  | (1.251 - 1.665) | (1.036 - 1.349) | (1.105 - 1.717) | (0.704 - 1.251) |
| Overweight | 0.869\* | 1.346\*\*\* | 1.174 | 1.192 |
|  | (0.737 - 1.025) | (1.154 - 1.569) | (0.898 - 1.535) | (0.835 - 1.702) |
| Obese | 1.022 | 1.479\*\*\* | 1.802\*\*\* | 1.756\*\*\* |
|  | (0.856 - 1.221) | (1.259 - 1.738) | (1.392 - 2.332) | (1.241 - 2.484) |
| Education 1-7 | 1.079 | 1.248\*\*\* | 1.390\*\*\* | 2.236\*\*\* |
|  | (0.915 - 1.273) | (1.072 - 1.452) | (1.092 - 1.769) | (1.566 - 3.193) |
| Education 8-11 | 1.129 | 1.462\*\*\* | 0.892 | 2.954\*\*\* |
|  | (0.880 - 1.447) | (1.162 - 1.840) | (0.588 - 1.353) | (1.853 - 4.709) |
| Education 12+ | 0.752\*\* | 1.255\* | 0.964 | 1.998\*\*\* |
|  | (0.586 - 0.964) | (0.991 - 1.590) | (0.644 - 1.444) | (1.194 - 3.341) |
| Wealth Quintile 2 | 1.055 | 1.048 | 0.794 | 0.918 |
|  | (0.855 - 1.301) | (0.859 - 1.279) | (0.557 - 1.133) | (0.541 - 1.558) |
| Wealth Quintile 3 | 1.262\*\* | 1.164 | 0.930 | 1.223 |
|  | (1.017 - 1.567) | (0.952 - 1.423) | (0.659 - 1.312) | (0.745 - 2.005) |
| Wealth Quintile 4 | 1.201 | 1.378\*\*\* | 1.106 | 1.398 |
|  | (0.965 - 1.493) | (1.124 - 1.689) | (0.790 - 1.548) | (0.863 - 2.264) |
| Wealth Quintile 5 | 1.469\*\*\* | 1.533\*\*\* | 1.499\*\* | 1.610\* |
|  | (1.168 - 1.848) | (1.241 - 1.892) | (1.074 - 2.092) | (0.997 - 2.600) |
| HIV+/Detectable | 1.169 | 1.001 | 0.742 | 0.494\*\* |
|  | (0.945 - 1.447) | (0.822 - 1.219) | (0.506 - 1.088) | (0.281 - 0.869) |
| HIV+/ART/Suppressed | 1.255\*\* | 1.305\*\* | 1.392\*\* | 1.772\*\*\* |
|  | (1.002 - 1.572) | (1.063 - 1.602) | (1.007 - 1.925) | (1.215 - 2.584) |
| Constant | 0.612\*\* | 0.194\*\*\* | 0.0158\*\*\* | 0.0179\*\*\* |
|  | (0.386 - 0.969) | (0.126 - 0.298) | (0.00761 - 0.0330) | (0.00657 - 0.0486) |
|  |  |  |  |  |
| Observations | 4,134 | 4,134 | 4,134 | 4,132 |

95% CI in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Supplementary Appendix Table 5. Multivariate logistic regression results: Virally suppressed ART users and diabetes and hypertension awareness and care in Agincourt, South Africa**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Told Hypertension** | **Told Diabetes** | **Treated Hypertension** | **Treated Diabetes** |
| Covariates | **aOR + 95% CI** | **aOR + 95% CI** | **aOR + 95% CI** | **aOR + 95% CI** |
| Age | 1.030\*\*\* | 1.013 | 1.038\*\*\* | 1.014 |
|  | (1.022 - 1.039) | (0.995 - 1.032) | (1.030 - 1.047) | (0.995 - 1.033) |
| Female | 1.698\*\*\* | 0.995 | 1.776\*\*\* | 0.973 |
|  | (1.411 - 2.042) | (0.650 - 1.524) | (1.483 - 2.128) | (0.636 - 1.490) |
| Overweight | 1.578\*\*\* | 1.061 | 1.626\*\*\* | 1.092 |
|  | (1.270 - 1.961) | (0.615 - 1.828) | (1.312 - 2.016) | (0.634 - 1.880) |
| Obese | 2.220\*\*\* | 1.041 | 2.270\*\*\* | 1.128 |
|  | (1.769 - 2.786) | (0.613 - 1.768) | (1.820 - 2.832) | (0.665 - 1.913) |
| Education 1-7  | 1.225\* | 1.111 | 1.111 | 1.085 |
|  | (0.988 - 1.520) | (0.702 - 1.758) | (0.903 - 1.366) | (0.686 - 1.715) |
| Education 8-11 | 0.823 | 0.964 | 0.807 | 0.947 |
|  | (0.594 - 1.139) | (0.444 - 2.095) | (0.584 - 1.114) | (0.436 - 2.058) |
| Education 12+ | 0.955 | 1.674 | 0.822 | 1.641 |
|  | (0.677 - 1.346) | (0.748 - 3.745) | (0.588 - 1.150) | (0.738 - 3.646) |
| Wealth Quintile 2 | 0.970 | 0.892 | 0.985 | 0.913 |
|  | (0.733 - 1.284) | (0.421 - 1.888) | (0.744 - 1.303) | (0.431 - 1.936) |
| Wealth Quintile 3 | 1.381\*\* | 1.144 | 1.269\* | 1.123 |
|  | (1.037 - 1.840) | (0.547 - 2.394) | (0.958 - 1.681) | (0.536 - 2.351) |
| Wealth Quintile 4 | 1.476\*\*\* | 1.154 | 1.468\*\*\* | 1.109 |
|  | (1.109 - 1.964) | (0.559 - 2.381) | (1.109 - 1.942) | (0.537 - 2.290) |
| Wealth Quintile 5 | 1.793\*\*\* | 1.544 | 1.777\*\*\* | 1.528 |
|  | (1.330 - 2.417) | (0.734 - 3.250) | (1.329 - 2.377) | (0.726 - 3.217) |
| HIV+/Detectable | 1.103 | 1.015 | 1.073 | 0.976 |
|  | (0.810 - 1.502) | (0.448 - 2.297) | (0.792 - 1.455) | (0.432 - 2.207) |
| HIV+/ART/Suppressed | 1.792\*\*\* | 1.375 | 1.920\*\*\* | 1.371 |
|  | (1.256 - 2.558) | (0.680 - 2.783) | (1.366 - 2.699) | (0.681 - 2.761) |
| Constant | 0.0977\*\*\* | 0.379 | 0.0409\*\*\* | 0.330 |
|  | (0.0516 - 0.185) | (0.0873 - 1.643) | (0.0216 - 0.0772) | (0.0761 - 1.430) |
|  |  |  |  |  |
| Observations | 2,387 | 428 | 2,388 | 427 |

95% CI in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Supplementary Appendix Table 6. Univariate Relationships between age, sex, body mass index, education, wealth and HIV/ART status and utilization of care for diabetes and hypertension**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Ever BP** | **Ever Sugar** | **Change Diet** | **Told Exercise** |
| Age | 1.01 (1.01 - 1.02) | 1.01 (1.00 - 1.01) | 1.02 (1.01 - 1.02) | 0.99 (0.98 - 1.00) |
| Female | 1.34 (1.18 - 1.52) | 1.22 (1.09 - 1.38) | 1.53 (1.26 - 1.86) | 1.08 (0.84 - 1.40) |
| Overweight | 0.94 (0.84 - 1.09) | 1.46 (1.27 - 1.69) | 1.27 (0.98 - 1.65) | 1.26 (0.90 - 1.78) |
| Obese | 1.14 (0.98 - 1.34) | 1.64 (1.42 - 1.90) | 2.06 (1.64 - 2.60) | 1.95 (1.43 - 2.65) |
| Education 1-7 | 0.97 (0.84 - 1.12) | 1.22 (1.07 - 1.39) | 1.28 (1.04 - 1.57) | 2.08 (1.53 - 2.83) |
| Education 8-11 | 0.97 (0.78 - 1.20) | 1.25 (1.03 - 1.52) | 0.71 (0.50 - 1.02) | 2.67 (1.80 - 3.96) |
| Education 12+ | 0.63 (0.50 - 0.80) | 1.08 (0.86 - 1.35) | 1.00 (0.69 - 1.45) | 2.99 (1.96 - 4.58) |
| Wealth Quintile 2 | 1.12 (0.92 - 1.36) | 1.10 (0.92 - 1.33) | 0.82 (0.60 - 1.13) | 1.06 (0.67 - 1.70) |
| Wealth Quintile 3 | 1.41 (1.15 - 1.72) | 1.36 (1.14 - 1.65) | 0.98 (0.73 - 1.34) | 1.47 (0.95 - 2.27) |
| Wealth Quintile 4 | 1.20 (0.98 - 1.46) | 1.52 (1.27 - 1.83) | 1.22 (0.91 - 1.63) | 1.59 (1.03 - 2.44) |
| Wealth Quintile 5 | 1.38 (1.13 - 1.68) | 1.79 (1.49 - 2.16) | 1.52 (1.14 - 2.01) | 2.27 (1.51 - 3.39) |
| HIV+/No ART | 0.96 (0.76 - 1.21)  | 0.76 (0.62 - 0.95) | 0.54 (0.35 - 0.83) | 0.23 (0.09 - 0.57) |
| HIV+/ART | 1.07 (.89 - 1.28) | 1.02 (0.86 - 1.19) | 0.84 (0.63 - 1.11) | 1.46 (1.06 - 2.00) |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  | **Told Hypertension** | **Treated Hypertension** | **Told Diabetes** | **Treated Diabetes** |
| Age | 1.02 (1.02 - 1.03) | 1.02 (1.02 -1.04) | 1.01 (0.99 - 1.02) | 1.00 (0.98 - 1.02) |
| Female | 1.82 (1.56 - 2.14) | 1.85 (1.59 - 2.17) | 0.90 (0.63 - 1.28) | 0.92 (0.65 - 1.31) |
| Overweight | 1.58 (1.29 - 1.92) | 1.57 (1.29 - 1.91) | 1.23 (0.74 - 2.03) | 1.16 (0.72 - 1.91) |
| Obese | 2.44 (1.99 - 2.98) | 2.33 (1.92 - 2.82) | 1.13 (0.71 - 1.80) | 1.25 (0.79 - 1.96) |
| Education 1-7 | 1.14 (0.95 - 1.37) | 1.02 (0.86 - 1.22) | 0.95 (0.64 - 1.39) | 1.18 (0.81 - 1.73) |
| Education 8-11 | 0.66 (0.50 - 0.86) | 0.62 (0.47 - 0.81) | 0.98 (0.51 - 1.91) | 1.09 (0.57 - 2.07) |
| Education 12+ | 0.72 (0.52 - 0.98) | 0.49 (0.36 - 0.66) | 2.07 (0.98 - 4.36) | 1.62 (0.84 - 3.11) |
| Wealth Quintile 2 | 1.17 (0.92 - 1.51) | 1.17 (0.91 - 1.49) | 0.88 (0.46 - 1.68) | 0.97 (0.51 - 1.84) |
| Wealth Quintile 3 | 1.50 (1.16 - 1.94) | 1.33 (1.03 - 1.70) | 0.95 (0.50 - 1.79) | 0.90 (0.48 - 1.67) |
| Wealth Quintile 4 | 1.58 (1.23 - 2.03) | 1.54 (1.21 - 1.96) | 1.04 (0.56 - 1.93) | 0.79 (0.43 - 1.45) |
| Wealth Quintile 5 | 1.84 (1.43 - 2.37) | 1.68 (1.32 - 2.14) | 1.62 (0.87 - 3.00) | 1.25 (0.69 - 2.25) |
| HIV+/No ART | 0.79 (0.57 - 1.10) | 0.74 (0.54 - 1.02) | 0.72 (0.32 - 1.68) | 0.66 (0.65 - 1.54) |
| HIV+/ART | 1.11 (0.85 - 1.47) | 1.05 (0.81 - 1.37) | 1.04 (0.58 - 1.87) | 1.04 (0.58 - 1.87) |
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