**Table S1. Median (Q1, Q3) interview duration and questionnaire length by participant characteristics, ZAMPHIA 2016, SHIMS2 2016-2017, and LePHIA 2016-2017**

|  | **Interview duration (minutes)** | **Questionnaire length (number questions)**  |
| --- | --- | --- |
| **ZAMPHIA 2016** | **SHIMS2 2016-2017** | **LePHIA 2016-2017** | **ZAMPHIA 2016** | **SHIMS2 2016-2017** | **LePHIA 2016-2017** |
| **Total** | 19 (12,27) | 12 (8,18) | 16 (11,23) | 85 (63,115) | 62 (49,80) | 79 (63,97) |
|   |   |   |   |   |   |   |
| **Residence** |   |   |   |   |   |   |
| Urban | 18 (12,26) | 12 (8,16) | 17 (11,23) | 81 (57,112) | 62 (54,75) | 79 (64,96) |
| Peri-urban |   |   | 16 (12,23) |   |   | 78 (60,95) |
| Rural | 19 (13,27) | 13 (8,18) | 16 (11,22) | 88 (67,118) | 62 (45,81) | 79 (63,98) |
|   |   |   |   |   |   |   |
| **Gender** |   |   |   |   |   |   |
| Male | 16 (10,22) | 12 (8,17) | 15 (11,22) | 71 (54,87) | 58 (41,69) | 72 (59,86) |
| Female | 21 (14,30) | 13 (9,19) | 17 (11,23) | 104 (74,129) | 69 (53,87) | 86 (66,103) |
|   |   |   |   |   |   |   |
| **Age** |   |   |   |   |   |   |
| 15-24 | 14 (9,21) | 9 (6,14) | 12 (8,18) | 60 (41,91) | 43 (33,62) | 64 (48,83) |
| 25-34 | 22 (15,30) | 14 (10,20) | 18 (13,24) | 102 (76,131) | 71 (58,88) | 87 (72,105) |
| 35-44 | 23 (16,31) | 15 (11,20) | 19 (14,26) | 103 (82,129) | 72 (62,87) | 88 (74,103) |
| 45-59 | 20 (15,27) | 14 (10,19) | 17 (12,24) | 86 (72,102) | 65 (57,76) | 80 (68,94) |
|   |   |   |   |   |   |   |
| **Marital Status** |   |   |   |   |   |   |
| Never Married | 12 (8,18) | 10 (6,15) | 12 (8,18) | 53 (39,71) | 53 (35,68) | 59 (48,76) |
| Married or living together | 22 (16,30) | 15 (11,20) | 19 (14,25) | 104 (82,128) | 74 (63,90) | 90 (77,105) |
| Divorced, Separated, Widowed | 21 (15,29) | 14 (10,20) | 18 (13,25) | 91 (71,114) | 66 (54,81) | 83 (67,98) |
|   |   |   |   |   |   |   |
| **Self-reported HIV status** |   |   |   |   |   |   |
| HIV Positive | 29 (22,38) | 17 (13,23) | 22 (16,29) | 121 (102,146) | 76 (68,95) | 98 (85,114) |
| HIV Negative | 20 (14,27) | 12 (8,16) | 15 (11,21) | 93 (71,121) | 60 (50,76) | 77 (63,93) |
| Unknown | 12 (8,19) | 8 (5,12) | 12 (7,17) | 55 (39,78) | 34 (27,51) | 58 (44,72) |
|   |   |   |   |   |   |   |
| **Ever Had sex** |   |   |   |   |   |   |
| Ever had sex | 20 (14,28) | 14 (10,19) | 17 (13,24) | 92 (71,120) | 69 (57,84) | 83 (68,99) |
| Never had sex | 8 (6,11) | 6 (4,8) | 8 (5,11) | 38 (31,43) | 33 (28,36) | 44 (37,50) |
|   |   |   |   |   |   |   |
| **Household Size** |   |   |   |   |   |   |
| 1 | 16 (11,22) | 12 (9,17) | 15 (10,21) | 69 (57,84) | 61 (55,71) | 71 (59,84) |
| 2 | 17 (12,23) | 13 (9,18) | 16 (11,21) | 78 (65,91) | 62 (55,73) | 75 (63,89) |
| 3 | 19 (13,26) | 12 (9,17) | 17 (12,22) | 84 (69,110) | 65 (53,80) | 81 (66,98) |
| 4 | 19 (13,27) | 13 (8,18) | 16 (12,23) | 89 (69,116) | 63 (49,81) | 83 (66,100.5) |
| 5 | 20 (13,28) | 13 (8,18) | 17 (11,24) | 92 (69,122) | 64 (44,83) | 84 (64,102) |
| 6+ | 19 (12,27) | 12 (8,18) | 16 (11,23) | 85 (56,118) | 61 (41,83) | 79 (58,100) |
|   |   |   |   |   |   |   |
| **Employment** |   |   |   |   |   |   |
| Worked in the past 12 months | 20 (14,27) | 14 (10,19) | 18 (13,25) | 84 (69,110) | 66 (57,80) | 83 (69,98) |
| Did not work in the past 12 months | 18 (11,27) | 11 (7,17) | 15 (10,21) | 86 (57,118) | 58 (39,79) | 76 (57,96) |
|   |   |   |   |   |   |   |
| **Number of Children**  |   |   |   |   |   |   |
| Reported on 0 children | 14 (9,20) | 11 (7,16) | 14 (10,20) | 67 (46,81) | 56 (39,66) | 69 (55,82) |
| 1+ | 24 (18,33) | 16 (12,22) | 20 (15,26) | 118 (98,136) | 87 (75,101) | 99 (86,113) |
|   |   |   |   |   |   |   |
| **Household head** |   |   |   |   |   |   |
| Household head | 20 (14,27) | 14 (10,19) | 18 (13,24) | 84 (71,105) | 69 (59,84) | 84 (69,100) |
| Not household head | 18 (11,27) | 11 (7,17) | 15 (10,21) | 86 (53,121) | 58 (38,75) | 74 (55,93) |
|   |   |   |   |   |   |   |
| **Food insecurity** |   |   |   |   |   |   |
| Food insecure | 20 (13,29) | 13 (8,19) | 17 (11,23) | 86 (63,117) | 63 (43,82) | 80 (62,99) |
| Not food insecure | 18 (12,26) | 12 (8,18) | 16 (11,22) | 85 (62,115) | 62 (50,78) | 79 (63,96) |
|   |   |   |   |   |   |   |
| **Wealth Quintile** |   |   |   |   |   |   |
| Lowest | 19 (13,27) | 13 (8,19) | 15 (10,22) | 90 (68,120) | 63 (42,83) | 81 (63,100) |
| Second | 19 (13,27) | 13 (8,18) | 16 (11,23) | 90 (68,119) | 63 (47,82) | 80 (63,99) |
| Middle | 19 (13,27) | 13 (8,18) | 16 (11,23) | 88 (66,116) | 62 (46,79) | 79 (62,97) |
| Fourth | 19 (13,27) | 12 (8,17) | 16 (12,23) | 85 (61,116) | 63 (52,77) | 79 (63,95) |
| Highest | 18 (11,25) | 12 (8,16) | 17 (12,23) | 76 (53,106) | 61 (53,75) | 78 (63,93) |
|   |   |   |   |   |   |   |
| **Education** |   |   |   |   |   |   |
| No education | 21 (13,28) | 15 (11,20) | 16 (11,23) | 94 (69,123) | 67 (54,80) | 74 (61,89) |
| Primary | 20 (13,28) | 13 (8,19) | 17 (11,23) | 93 (69,123) | 65 (50,82) | 83 (66,99) |
| Secondary | 17 (11,25) | 12 (8,18) | 15 (10,22) | 78 (53,107) | 61 (40,81) | 77 (58,96) |
| More than secondary | 19 (14,26) | 12 (9,17) | 17 (13,23) | 83 (68,109) | 61 (51,76) | 79 (66,94) |
|   |   |   |   |   |   |   |
| **Language** |   |   |   |   |   |   |
| English | 17 (12,25) | 13 (9,17) | 16 (11,22) | 73 (52,100) | 61 (41,78) | 77 (64,93) |
| Sesotho |   |   | 16 (11,23) |   |   | 79 (63,97) |
| Siswati |   | 12 (8,18) |   |   | 62 (49,80) |   |
| Bemba | 18 (12,26) |   |   | 85 (64,117) |   |   |
| Nyanja | 17 (12,24) |   |   | 87 (65,117) |   |   |
| Lozi | 27 (19,40) |   |   | 93 (70,120) |   |   |
| Tonga | 22 (15,32) |   |   | 95 (69,122) |   |   |
| Lunda | 21 (13,29) |   |   | 86 (64,112) |   |   |
| Luvale | 20 (14,26.5) |   |   | 87 (65,109) |   |   |
| Kaonde | 24 (15,33) |   |   | 95 (69,121) |  |  |
| Other | 17 (10,22) |   |   | 101 (69,127) |  |  |

**Table S2. Blood Test Participation Rates by Additional Demographic Characteristics, ZAMPHIA 2016, SHIMS2 216-2017, and LePHIA 2016-2017**

|  | **ZAMPHIA** **2016** | **SHIMS2** **2016-2017** | **LePHIA** **2016-2017** |
| --- | --- | --- | --- |
| **Blood test participation (%)** | **N** | **Blood test participation (%)** | **N** | **Blood test participation (%)** | **N** |
| **Residence** |  |  |  |  |  |  |
| Urban | 90.3 | 9,142 | 90.5 | 2,347 | 87.7 | 5,126 |
| Peri-urban |  |  |  |  | 88.9 | 895 |
| Rural | 90.4 | 11,798 | 94.7 | 7,871 | 93.7 | 6,974 |
| χ2 (p-value) | 0.0 (0.92) | 53.8 (<0.01) | 134.8 (<0.01) |
|  |  |  |  |  |  |  |
| **Age** |  |  |  |  |  |  |
| 15-24 | 90.9 | 7,980 | 95.1 | 3,814 | 91.7 | 4,482 |
| 25-34 | 89.3 | 5,694 | 91.7 | 2,833 | 88.9 | 3,679 |
| 35-44 | 89.8 | 4,106 | 93.4 | 1,828 | 90.6 | 2,413 |
| 45-59 | 91.5 | 3,160 | 94.6 | 1,743 | 93.3 | 2,421 |
| χ2 (p-value) | 15.5 (<0.01) | 34.8 (<0.01) | 39.2 (<0.01) |
|  |  |  |  |  |  |  |
| **Marital Status** |  |  |  |  |  |  |
| Never Married | 90.1 | 7,044 | 93.5 | 5,580 | 89.4 | 4,851 |
| Married or living together | 90.2 | 11,728 | 93.8 | 3,792 | 91.5 | 6,234 |
| Divorced, Separated, Widowed | 91.9 | 2,168 | 95.2 | 846 | 93.3 | 1,910 |
| χ2 (p-value) | 7.0 (0.03) | 3.4 (0.18) | 28.2 (<0.01) |
|  |  |  |  |  |  |  |
| **Ever Had sex** |  |  |  |  |  |  |
| Ever had sex | 90.6 | 18,153 | 93.3 | 8,250 | 91 | 11,379 |
| Never had sex | 88.4 | 2,787 | 95.6 | 1,968 | 90.8 | 1,616 |
| χ2 (p-value) | 13.8 (<0.01) | 14.6 (<0.01) | 0.1 (0.76) |
|  |  |  |  |  |  |  |
| **Household Size** |  |  |  |  |  |  |
| 1 | 87.6 | 533 | 89.3 | 981 | 88.1 | 1,466 |
| 2 | 89.9 | 1,134 | 92.4 | 1,044 | 89.5 | 1,697 |
| 3 | 90.5 | 2,083 | 91.7 | 1,089 | 89.7 | 2,144 |
| 4 | 87.7 | 2,761 | 94.1 | 1,328 | 91.7 | 2,288 |
| 5 | 90.1 | 3,296 | 94.4 | 1,347 | 91.7 | 1,908 |
| 6+ | 91.2 | 11,133 | 95.3 | 4,429 | 92.8 | 3,492 |
| χ2 (p-value) | 36.7 (<0.01) | 62.3 (<0.01) | 40.4 (<0.01) |
|  |  |  |  |  |  |  |
| **Employment** |  |  |  |  |  |  |
| Worked in the past 12 months | 89.8 | 6,749 | 91.6 | 4,233 | 87.9 | 4,754 |
| Has not worked in the past 12 months | 90.6 | 14,191 | 95.3 | 5,985 | 92.8 | 8,241 |
| χ2 (p-value) | 2.9 (0.09) | 57.9 (<0.01) | 88.8 (<0.01) |
| **Number of Children in Household** |  |  |  |  |  |  |
| Reported on 0 children | 90.1 | 11,611 | 93.1 | 7,162 | 89.8 | 8,387 |
| 1+ | 90.6 | 9,329 | 95.4 | 3,056 | 93.1 | 4,608 |
| χ2 (p-value) | 1.3 (0.26) | 19.0 (<0.01) | 37.4 (<0.01) |
|  |  |  |  |  |  |  |
| **Household head** |  |  |  |  |  |  |
| Household head | 89.8 | 6,803 | 92.3 | 3,767 | 90.6 | 5,869 |
| Not household head | 90.6 | 14,137 | 94.6 | 6,451 | 91.3 | 7,126 |
| χ2 (p-value) | 4.0 (0.05) | 22.4 (<0.01) | 2.1 (0.15) |
|  |  |  |  |  |  |  |
| **Food insecurity** |  |  |  |  |  |  |
| Food insecure | 91 | 3,503 | 96.1 | 3,625 | 93.4 | 4,184 |
| Not food insecure | 90.2 | 17,437 | 92.5 | 6,593 | 89.8 | 8,811 |
| χ2 (p-value) | 1.9 (0.16) | 52.0 (<0.01) | 43.3 (<0.01) |
|  |  |  |  |  |  |  |
| **Wealth Quintile** |  |  |  |  |  |  |
| Lowest | 88.8 | 3,317 | 97.3 | 2,264 | 94.9 | 2,515 |
| Second | 90.2 | 3,869 | 95.5 | 2,145 | 94.2 | 2,561 |
| Middle | 92 | 4,252 | 94.5 | 2,376 | 91.9 | 2,574 |
| Fourth | 90.8 | 4,497 | 92.2 | 1,689 | 89.7 | 2,629 |
| Highest | 89.7 | 5,005 | 87.5 | 1,744 | 84.7 | 2,716 |
| χ2 (p-value) | 25.9 (<0.01) | 185.7 (<0.01) | 217.3 (<0.01) |
|  |  |  |  |  |  |  |
| **Education** |  |  |  |  |  |  |
| No education | 85.7 | 1,093 | 97.1 | 382 | 92.1 | 621 |
| Primary | 90.9 | 9,061 | 97.4 | 2,812 | 94 | 5,260 |
| Secondary | 91.2 | 9,131 | 95.7 | 3,104 | 90.8 | 5,725 |
| More than secondary | 85.8 | 1,655 | 89.2 | 3,920 | 79.8 | 1,389 |
| χ2 (p-value) | 76.5 (<0.01) | 232 (<0.01) | 272.8 (<0.01) |
|  |  |  |  |  |  |  |
| **Language** |  |  |  |  |  |  |
| English | 88.6 | 3,433 | 83 | 312 | 88.1 | 345 |
| Sesotho |  |  |  |  | 91.1 | 12,650 |
| Siswati |  |  | 94.1 | 9,906 |  |  |
| Bemba | 90 | 8,913 |  |  |  |  |
| Nyanja | 91.9 | 4,188 |  |  |  |  |
| Lozi | 89.1 | 1,008 |  |  |  |  |
| Tonga | 92.5 | 1,831 |  |  |  |  |
| Lunda | 92.3 | 582 |  |  |  |  |
| Luvale | 88.7 | 415 |  |  |  |  |
| Kaonde | 89.5 | 497 |  |  |  |  |
| Other | 86.3 | 73 |  |  |  |  |
| χ2 (p-value) | 43.1 (<0.01) | 63.5 (<0.01) | 3.5 (0.06) |