Supplementary Materials

Temporal stability of HIV prevalence in high burden areas regardless of declines in national HIV prevalence in Malawi and Zimbabwe

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Supplementary results

Supplementary tables

Table S1 - Description of the identified HIV clusters in the Demographic and Health Survey conducted in Malawi in 2010 (MDHS 2010)¹ and 2015 (MDHS 2015)², and in Zimbabwe in 2010 (ZDHS 2010)³ and 2015 (ZDHS 2015)⁴

Country	Cluster radius (Km)	Number of DHS data points	Percentage of the population within the cluster (95% CI)	Percentage of the population that live in urban settings within the cluster (95% CI)
Malawi				
MDHS 2010	162	301	34.9 (34.1 – 35.7)	16.9 (15.9 – 18.0)
MDHS 2015	162	332	38.6 (37.8 – 39.5)	20.7 (19.6 – 21.8)
Zimbabwe				
ZDHS 2010	168	99	21.8 (21.1 – 22.5)	40.3 (38.8 – 42.1)
ZDHS 2015	168	104	25.8 (25.1 – 26.5)	51.4 (49.9 – 52.9)

Table S2 – Description of socio-economic and demographic variables within and outside of the HIV clusters identified in Malawi 2010 (MDHS 2010)^{1,5} and 2015 (MDHS 2015)²

Variable	MDHS 2010		MDHS 2015	
	Percentage of individuals within clusters (95% CI)	Percentage of individuals outside clusters (95% CI)	Percentage of individuals within clusters (95% CI)	Percentage of individuals outside clusters (95% CI)
Type of place of residence				
<i>Urban</i>	16.2 (15.1 – 17.8)	11.7(11.2 – 12.2)	20.6 (19.5 - 21.7)	22.3 (21.5 – 23.3)
<i>Rural</i>	83.8 (82.1 – 85.5)	88.3(87.8 – 88.7)	79.4 (78.2 – 80.4)	77.7 (76.7 – 78.5)
Age				
<i>Average</i>	28.3 (28.1 – 28.5)	28.4 (28.3 -28.5)	28.9 (28.7 – 29.1)	28.5 (28.3 – 28.7)
Highest educational level				
<i>No education</i>	12.0 (11.3 – 12.6)	13.1 (12.6 – 13.6)	9.2 (8.3 – 9.9)	8.8 (8.0 – 9.6)
<i>Primary</i>	65.3 (64.4 – 66.2)	66.5 (65.9 – 67.2)	59.6 (58.3 – 60.9)	58.9 (57.9 – 59.9)
<i>Secondary</i>	20.4 (19.6 – 21.2)	19.1 (18.4 – 19.6)	28.3 (27.2 – 29.6)	28.5 (27.6 – 29.5)
<i>Higher</i>	2.3 (2.1 – 2.7)	1.3 (1.1 – 1.5)	2.9 (2.4 – 3.3)	3.8 (3.5 – 4.3)
Wealth index				
<i>Poorest</i>	15.6 (14.9 – 16.3)	20.5 (20.0 – 21.1)	16.0 (15.0 – 17.0)	16.0 (15.2 – 16.8)
<i>Poorer</i>	19.5 (18.7 – 20.2)	19.9 (19.3 – 20.4)	19.0 (17.9 – 20.1)	18.8 (18.0 – 19.7)
<i>Middle</i>	20.6 (19.9 – 21.5)	20.4 (19.8 – 21.0)	19.7 (18.7 – 20.8)	18.7 (17.9 – 19.6)
<i>Richer</i>	21.7 (20.7 – 22.5)	20.1 (19.5 – 20.7)	20.8 (19.7 – 21.9)	20.0 (19.2 – 20.9)
<i>Richest</i>	22.6 (21.8 – 23.4)	19.1 (18.6 – 19.7)	24.5 (23.3 – 25.6)	26.5 (25.5 – 27.4)

Marital Status				
<i>Never in union</i>	23.9 (23.1 – 24.7)	24.0 (23.3 – 24.5)	29.4 (28.2 – 30.6)	29.6 (28.6 – 30.6)
<i>Currently in union</i>	63.0 (62.1 – 64.0)	66.3 (65.6 – 66.9)	61.0 (59.7 – 62.3)	62.4 (61.3 – 63.4)
<i>Formerly in union</i>	13.1 (12.4 – 13.7)	9.7 (9.4 – 10.3)	9.6 (8.8 – 10.4)	8.0 (7.4 – 8.7)
Number of sexual partners last year				
<i>0 partners</i>	19.7 (19.0 – 20.5)	20.0 (19.4 – 20.6)	20.1 (19.5 – 20.8)	20.8 (20.2 – 20.7)
<i>1 partner</i>	69.2 (68.3 – 70.1)	68.8 (68.2 – 69.5)	67.8 (67.1 – 70.5)	66.9 (66.3 – 68.3)
<i>2 partners</i>	4.1 (3.7 – 4.5)	3.7 (3.4 – 4.0)	4.3 (3.9 – 4.7)	3.9 (3.5 – 4.3)
<i>More than 2 partners</i>	7.0 (6.5 – 7.5)	7.5 (7.2 – 7.9)	7.8 (7.2 – 8.3)	8.4 (7.8 – 8.9)
Ever been tested for HIV				
<i>no</i>	29.3 (28.4 – 30.2)	31.1 (30.4 – 31.7)	20.9 (19.8 – 21.9)	22.5 (21.6 – 23.4)
<i>yes</i>	70.3 (69.4 – 71.2)	68.5 (67.9 – 69.2)	79.1 (78.0 – 80.2)	77.5 (76.6 – 78.4)
<i>don't know</i>	0.4 (0.3 – 0.5)	0.4 (0.3 – 0.5)	0	0

Table S3 – Description of socio-economic and demographic variables within and outside of the HIV clusters identified in Zimbabwe 2010 (ZDHS 2010)^{3,5} and 2015 (ZDHS 2015)⁴

Variable	ZDHS 2010		ZDHS 2015	
	Percentage of individuals within clusters (95% CI)	Percentage of individuals outside clusters (95% CI)	Percentage of individuals within clusters (95% CI)	Percentage of individuals outside clusters (95% CI)
Type of place of residence				
<i>Urban</i>	52.0 (50.4 – 53.6)	31.1 (30.3 – 31.9)	51.5 (49.9 – 52.9)	38.4 (37.5 – 39.2)
<i>Rural</i>	48.0 (46.3 – 49.6)	68.9 (68.1 – 69.7)	48.5 (47.0 – 50.1)	61.6 (60.8 – 62.5)
Age				
<i>Average</i>	28.1 (27.8 – 28.4)	27.5 (23.4 -31.6)	28.2 (27.9 – 28.5)	28.9 (28.3 – 29.3)
Highest educational level				
<i>No education</i>	1.7 (1.3 – 2.1)	2.0 (1.8 – 2.2)	0.5 (0.3 – 0.7)	0.9 (0.8 – 1.2)
<i>Primary</i>	27.9 (26.5 – 29.4)	27.1 (26.4 – 27.9)	24.0 (22.8 – 25.4)	23.9 (23.1 – 24.2)
<i>Secondary</i>	64.3 (62.8 – 65.8)	65.8 (65.0 – 66.7)	65.0 (63.5 – 66.4)	66.7 (66.1 – 67.7)
<i>Higher</i>	6.1 (5.3 – 6.9)	5.1 (4.7 – 5.4)	10.5 (9.5 – 11.4)	8.5 (8.0 – 9.0)
Wealth index				
<i>Poorest</i>	21.8 (20.5 – 23.2)	16.9 (16.2 – 17.5)	14.1 (13.1 – 15.2)	15.5 (14.9 – 16.2)
<i>Poorer</i>	11.2 (10.2 – 12.2)	19.2 (18.5 – 19.6)	14.0 (13.0 – 15.1)	16.2 (15.5 – 16.8)
<i>Middle</i>	11.3 (10.3 – 12.4)	20.0 (19.3 – 20.7)	13.5 (12.5 – 14.5)	18.4 (17.7 – 19.1)
<i>Richer</i>	22.3 (20.9 – 23.6)	22.6 (21.9 – 23.3)	24.7 (23.4 – 26.1)	25.2 (24.5 – 26.0)
<i>Richest</i>	33.4 (31.9 – 35.0)	21.3 (20.6 – 22.0)	33.6 (32.2 – 35.0)	24.7 (23.9 – 25.5)

Marital Status				
<i>Never in union</i>	43.8 (42.2 – 45.4)	31.1 (30.3 – 31.9)	43.3 (41.8 – 44.8)	31.5 (30.7 – 32.4)
<i>Currently in union</i>	46.0 (44.3 – 47.6)	59.3 (58.5 – 60.2)	47.6 (46.1 – 49.1)	59.0 (58.1 – 59.8)
<i>Formerly in union</i>	10.2 (9.3 – 11.2)	9.6 (9.0 – 10.5)	9.1 (8.3 – 10.0)	19.0 (18.3 – 19.7)
Number of sexual partners last year				
<i>0 partners</i>	32.5 (30.8 – 33.8)	30.5 (29.8 – 31.3)	27.3 (25.9 – 28.6)	28.6 (27.8 – 29.4)
<i>1 partner</i>	60.0 (59.0 – 62.1)	63.3 (62.4 – 64.1)	65.1 (63.7 – 66.7)	64.5 (63.6 – 65.3)
<i>2 partners</i>	4.3 (3.4 – 4.7)	4.6 (4.3 – 5.0)	6.4 (5.6 – 7.1)	5.9 (5.5 – 6.4)
<i>More than 2 partners</i>	5.2 (4.7 – 6.2)	1.6 (1.4 – 1.8)	1.2 (0.9 – 1.6)	1.0 (0.8 – 1.2)
Ever been tested for HIV				
<i>no</i>	47.2 (46.8 – 50.1)	49.1 (48.2 – 50.0)	24.5 (23.2 – 25.8)	24.9 (24.1 – 25.6)
<i>yes</i>	51.0 (50.0 – 53.2)	49.1 (48.2 – 50.0)	75.5 (74.2 – 76.8)	75.1 (74.4 – 75.9)
<i>don't know</i>	1.8 (1.4 – 2.3)	1.8 (1.0 – 2.4)	0	0

Figure S1. Province-level incidence rate in 2013⁶ (A) and antiretroviral therapy (ART) coverage in 2016 (B) in Zimbabwe⁷

References

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