

Appendix, Supplemental Digital Content 1: Strategy for Search and Review

Inclusion and exclusion criteria

Each article abstract was reviewed by at least two authors (PP, SV) to determine its relevance to the following factors: addressed at least one focus NCD or its risk factor, included PLHIV in the study, and took place in an LIMC. Articles were designated as 1) included if they addressed all three factors and presented the prevalence rate of the NCD among PLHIV, 2) applicable if they did not include prevalence data but discussed all relevant factors, or 3) excluded if they did not address one or more factors. This resulted in 377 included and 137 applicable articles, which were shared with all of authors to aid in writing the paper. Included articles were further reviewed to identify prevalence rates among PLHIV according to previously identified indicators for each NCD (Supplemental Table). 232 articles were further excluded, because they did not either present a prevalence specific to PLHIV or use one of the agreed upon NCD measurements. All other articles, 152 in total across all NCDs, were included and data was extracted from 141 to populate the Supplemental Table.

Variables of interest

HYPERTENSION

Systolic blood pressure (SBP) ≥ 140 and/or diastolic blood pressure (DBP) ≥ 90 or on hypertension treatment

DYSLIPIDEMIA (US National Cholesterol Education Program, Adult Treatment Panel III)

ATP III Classification of LDL, Total, and HDL Cholesterol (mg/dL)	
LDL Cholesterol – Primary Target of Therapy	
<100	Optimal
100-129	Near optimal/above optimal
130-159	Borderline high
160-189	High
≥ 190	Very high
Total Cholesterol	
<200	Desirable
200-239	Borderline high
≥ 240	High
HDL Cholesterol	
<40	Low
≥ 60	High

Based on ATP III, we defined dyslipidemia using the following conservative cut-offs:

Total Cholesterol: TC ≥ 200 mg/dl or 5.2 mmol/l

Elevated LDL: LDL-c ≥ 130 mg/dl or 3.4 mmol/l

Hypertriglyceridemia: TG ≥ 150 mg/dl or 1.7 mmol/l,

Low HDL: HDL-c < 40 mg/dl or 1 mmol/l

DIABETES

Fasting blood sugar ≥ 126 mg/dl or 7.0 mmol/l

Two hour plasma glucose ≥ 200 mg/dl or 11 mmol/l

Oral glucose tolerance test with glucose ≥ 200 mg/dl

Hemoglobin A1C $> 6\%$

CERVICAL CANCER

Invasive cervical cancer: stages I-IV

Cervical intraepithelial neoplasia: CIN I-III

Abnormal cytology: low-grade or high-grade squamous intraepithelial lesion

DEPRESSION

Depression as diagnosed using validated tools for depression screening in PLHIV in LMICs. These include the Kessler mental distress scales (6 & 10), the Hopkins Symptom Checklist (HSCL), the Patient Health Questionnaire-9 (PHQ-9), the Center for Epidemiological Studies Depression Scale (CES-D), and the Edinburgh Post-Natal Depression Scale (EPDS).

Search strategy

The bibliographic databases, PubMed/MEDLINE, Cochrane Library, and Scopus, were searched in February, April, and November 2015, March 2016, and January 2017 to identify peer-reviewed literature on PLWH and NCDs in SSA LMICs. Articles published from January 1, 2010 to December 31, 2016 were included. Search terms used included controlled vocabulary terms (i.e., Medical Subject Headings) and keywords recommended by subject matter experts and by reviewing key articles. Keywords included variations of each key concept: “people living with HIV”, NCDs (i.e., diabetes, cervical cancer, depression, and cardiovascular disease), LMICs in Sub-Saharan Africa, and awareness, behavior change, communication, or dissemination. In addition to literature searches, the bibliographies of key articles and systematic reviews were reviewed for additional relevant literature. EndNote X8 was used to collect, de- duplicate, and review citations.

PubMed/MEDLINE search strategies for each of the four NCDs are included below.

Cardiovascular

(PLWH* OR PLWHA* OR "people living with HIV" OR "people living with HIV/AIDS" OR "people living with" OR "people living with aids" OR "people living with hiv" OR "people living with hiv/aids" OR "people living with hiv/aids plwha" OR "people living with hiv/aids plwhas" OR "people living with hiv aids" OR "people living with hiv aids plwha" OR "people living with hiv aids plwhas" OR "people living with hiv and aids" OR "people living with hiv infection" OR "people living with hivs" OR "people living with human immunodeficiency virus" OR "people living with human immunodeficiency virus/acquired immunodeficiency syndrome" OR "people living with human immunodeficiency virus acquired immunodeficiency syndrome" OR "people living with hiv" OR "HIV Infections"[mesh] OR "HIV infection" OR "HIV infections" OR PLWHIV OR "HIV positive" OR "HIV-positive" OR "HIV+" OR "HIV infected" OR "HIV-infected" OR "HIV seropositivity"[mesh] OR "HIV seropositivity") AND (LMIC OR LMICs OR "low- and middle- income countries" OR "low- and middle- income country" OR "low and middle income" OR "low- and middle- income" OR "lower middle income" OR "lmics" OR "lower middle income" OR "lower middle income countries" OR "lower middle income country" OR "lower middle income economies" OR "lower middle income setting" OR "lower middle income settings" OR Cote d'Ivoire[mesh] OR Ethiopia[mesh] OR Kenya[mesh] OR Malawi[mesh] OR South Africa[mesh] OR Uganda[mesh] OR Zambia[mesh] OR Ivory Coast[tiab] OR Cote d'Ivoire[tiab] OR Ethiopia[tiab] OR Kenya[tiab] OR Malawi[tiab] OR South Africa[tiab] OR Uganda[tiab] OR Zambia[tiab] OR "sub Saharan Africa" OR "sub-saharan Africa" OR Africa[tiab] OR Africa[mesh] OR "sub saharan Africa" OR "developing country" OR "developing countries" OR Cameroon[tiab] OR Central African Republic[tiab] OR Chad[tiab] OR Congo[tiab] OR Equatorial Guinea[tiab] OR Gabon[tiab] OR Democratic Republic of the Congo[tiab] OR Burundi[tiab] OR Djibouti[tiab] OR Ethiopia[tiab] OR Kenya[tiab] OR Rwanda[tiab] OR Somalia[tiab] OR Sudan[tiab] OR Tanzania[tiab] OR Uganda[tiab] OR Angola[tiab] OR Botswana[tiab] OR Lesotho[tiab] OR Malawi[tiab] OR Mozambique[tiab] OR Namibia[tiab] OR South Africa[tiab] OR Swaziland[tiab] OR Zambia[tiab] OR Zimbabwe[tiab] OR Benin[tiab] OR Burkina Faso[tiab] OR Cote D'ivoire OR Gambia OR Ghana OR Guinea OR Guinea-Bissau OR Liberia OR Mali OR Mauritania

OR Niger[tiab] OR Nigeria[tiab] OR Senegal[tiab] OR Sierra Leone[tiab] OR Togo[tiab] OR Cameroon[mesh] OR Central African Republic[mesh] OR Chad[mesh] OR Congo[mesh] OR Equatorial Guinea[mesh] OR Gabon[mesh] OR Democratic Republic of the Congo[mesh] OR Burundi[mesh] OR Djibouti[mesh] OR Ethiopia[mesh] OR Kenya[mesh] OR Rwanda[mesh] OR Somalia[mesh] OR Sudan[mesh] OR Tanzania[mesh] OR Uganda[mesh] OR Angola[mesh] OR Botswana[mesh] OR Lesotho[mesh] OR Malawi[mesh] OR Mozambique[mesh] OR Namibia[mesh] OR South Africa[mesh] OR Swaziland[mesh] OR Zambia[mesh] OR Zimbabwe[mesh] OR Benin[mesh] OR Burkina Faso[mesh] OR Cote D'ivoire[mesh] OR Gambia[mesh] OR Ghana[mesh] OR Guinea[mesh] OR Guinea-Bissau[mesh] OR Liberia[mesh] OR Mali[mesh] OR Mauritania[mesh] OR Niger[mesh] OR Nigeria[mesh] OR Senegal[mesh] OR Sierra Leone[mesh] OR Togo[mesh] OR "Africa, Central"[Mesh] OR "Africa, Eastern"[Mesh] OR "Africa, Southern"[Mesh] OR "Africa, Western"[Mesh]) AND (Cardiovascular Diseases[mesh] OR Heart Diseases[mesh] OR hypertension[mesh] OR stroke[mesh] OR cardiovascular OR "heart disease" OR hypertension OR "high blood pressure" OR stroke OR "heart attack" OR "Coronary Disease"[Mesh] OR "Cerebrovascular Disorders"[Mesh] OR "Pulmonary Embolism"[Mesh] OR "Peripheral Arterial Disease"[Mesh] OR "Peripheral Vascular Diseases"[Mesh] OR "Rheumatic Heart Disease"[Mesh] OR "Venous Thrombosis"[Mesh] OR "coronary disease" OR "pulmonary embolism" OR "cerebrovascular disorder" OR "cerebrovascular disease" OR "peripheral arterial disease" OR "rheumatic heart disease" OR "deep vein thrombosis" OR "ischemic heart disease" OR "heart failure" OR "coronary heart disease" OR "cardiovascular disease" OR "Inflammation"[Mesh] OR inflammation OR inflame* OR "Atherosclerosis"[Mesh] OR atherosclerosis OR "Metabolic Syndrome X"[Mesh] OR "metabolic cardiovascular syndrome" OR "metabolic syndrome" OR "metabolic syndrome X" OR "insulin resistance syndrome X" OR "metabolic X syndrome" OR "cardiovascular biomarker" OR "inflammation biomarker" OR "endothelial function" OR "Interleukin-6"[Mesh] OR IL-6 OR "C-Reactive Protein"[Mesh] OR "C Reactive Protein" OR "C-Reactive Protein" OR "Carotid Intima-Media Thickness"[Mesh] OR "carotid intima media thickness" OR "carotid intima-media thickness" OR "Cholesterol"[Mesh] OR cholesterol OR "Angiography"[Mesh] OR angiography OR "Hydroxymethylglutaryl-CoA Reductase Inhibitors"[Mesh] OR "Hydroxymethylglutaryl CoA Reductase Inhibitors" OR "HMG-CoA Statins" OR "HMG-CoA Reductase Inhibitors" OR "Fluorodeoxyglucose F18"[Mesh] OR 18F-FDG OR "18F FDG" OR "Fluorodeoxyglucose F 18" OR "2-Fluoro-2-deoxy-D-glucose" OR "Venous Thromboembolism"[Mesh] OR "venous thromboembolism" OR cardiometabolic OR "Myocardial Infarction"[Mesh] OR "myocardial infarction" OR "myocardial infarct" OR "Vascular Diseases"[Mesh] OR "vascular disease" OR "Coronary Artery Disease"[Mesh] OR "coronary artery disease" OR "Myocarditis"[Mesh] OR myocarditis OR "Cardiomyopathies"[Mesh] OR cardiomyopathy OR cardiomyopathies OR "cardiac disease" OR "cardiac arrhythmias" OR "Arrhythmias, Cardiac"[Mesh] OR arrhythmia* OR "myocardial disease" OR "myocardial diseases" OR myocardiopathy OR myocardiopathies OR carditis OR "dyslipidemias"[MeSH] OR dyslipidemia OR hyperlipidemia OR hypercholesterolemia OR hypertriglyceridemia OR triglyceride OR triglycerides OR HDL OR LDL OR VLDL OR "Lipoproteins, HDL"[Mesh] OR "Lipoproteins, LDL"[Mesh] OR "Lipoproteins, VLDL"[Mesh] OR hyperlipoproteinemia OR lipoprotein(a) OR hyperlipidaemia OR hypercholesterolaemia OR hypertriglyceridaemia OR "Blood Pressure"[MeSH] OR "blood pressure" OR "systolic blood pressure" OR "diastolic blood pressure" OR SBP[tiab] OR DBP[tiab])

Mental Health

(PLWH* OR PLWHA* OR "people living with HIV" OR "people living with HIV/AIDS" OR "people living with" OR "people living with aids" OR "people living with hiv" OR "people living with hiv/aids" OR "people living with hiv/aids plwha" OR "people living with hiv/aids plwhas" OR "people living with hiv aids" OR "people living with hiv aids plwha" OR "people living with hiv aids plwhas" OR "people living with hiv and aids" OR "people living with hiv infection" OR "people living with hivs" OR "people living with human immunodeficiency virus" OR "people living with human immunodeficiency virus/acquired immunodeficiency syndrome" OR "people living with human immunodeficiency virus acquired immunodeficiency syndrome" OR "people livnig with hiv" OR "HIV Infections"[mesh] OR "HIV infection" OR "HIV infections" OR PLWHIV OR "HIV positive" OR "HIV-positive" OR "HIV+" OR "HIV infected" OR "HIV-infected" OR "HIV

seropositivity"[mesh] OR "HIV seropositivity") AND (LMIC OR LMICs OR "low- and middle- income countries" OR "low- and middle- income country" OR "low and middle income" OR "low- and middle- income" OR "lower middle income" OR "lmics" OR "lower middle income" OR "lower middle income countries" OR "lower middle income country" OR "lower middle income economies" OR "lower middle income setting" OR "lower middle income settings" OR Cote d'Ivoire[mesh] OR Ethiopia[mesh] OR Kenya[mesh] OR Malawi[mesh] OR South Africa[mesh] OR Uganda[mesh] OR Zambia[mesh] OR Ivory Coast[tiab] OR Cote d'Ivoire[tiab] OR Ethiopia[tiab] OR Kenya[tiab] OR Malawi[tiab] OR South Africa[tiab] OR Uganda[tiab] OR Zambia[tiab] OR "sub Saharan Africa" OR "sub-saharan Africa" OR Africa[tiab] OR Africa[mesh] OR "sub saharan Africa" OR "developing country" OR "developing countries" OR Cameroon[tiab] OR Central African Republic[tiab] OR Chad[tiab] OR Congo[tiab] OR Equatorial Guinea[tiab] OR Gabon[tiab] OR Democratic Republic of the Congo[tiab] OR Burundi[tiab] OR Djibouti[tiab] OR Ethiopia[tiab] OR Kenya[tiab] OR Rwanda[tiab] OR Somalia[tiab] OR Sudan[tiab] OR Tanzania[tiab] OR Uganda[tiab] OR Angola[tiab] OR Botswana[tiab] OR Lesotho[tiab] OR Malawi[tiab] OR Mozambique[tiab] OR Namibia[tiab] OR South Africa[tiab] OR Swaziland[tiab] OR Zambia[tiab] OR Zimbabwe[tiab] OR Benin[tiab] OR Burkina Faso[tiab] OR Cote D'ivoire OR Gambia OR Ghana OR Guinea OR Guinea-Bissau OR Liberia OR Mali OR Mauritania OR Niger[tiab] OR Nigeria[tiab] OR Senegal[tiab] OR Sierra Leone[tiab] OR Togo[tiab] OR Cameroon[mesh] OR Central African Republic[mesh] OR Chad[mesh] OR Congo[mesh] OR Equatorial Guinea[mesh] OR Gabon[mesh] OR Democratic Republic of the Congo[mesh] OR Burundi[mesh] OR Djibouti[mesh] OR Ethiopia[mesh] OR Kenya[mesh] OR Rwanda[mesh] OR Somalia[mesh] OR Sudan[mesh] OR Tanzania[mesh] OR Uganda[mesh] OR Angola[mesh] OR Botswana[mesh] OR Lesotho[mesh] OR Malawi[mesh] OR Mozambique[mesh] OR Namibia[mesh] OR South Africa[mesh] OR Swaziland[mesh] OR Zambia[mesh] OR Zimbabwe[mesh] OR Benin[mesh] OR Burkina Faso[mesh] OR Cote D'ivoire[mesh] OR Gambia[mesh] OR Ghana[mesh] OR Guinea[mesh] OR Guinea-Bissau[mesh] OR Liberia[mesh] OR Mali[mesh] OR Mauritania[mesh] OR Niger[mesh] OR Nigeria[mesh] OR Senegal[mesh] OR Sierra Leone[mesh] OR Togo[mesh] OR "Africa, Central"[Mesh] OR "Africa, Eastern"[Mesh] OR "Africa, Southern"[Mesh] OR "Africa, Western"[Mesh]) AND (mental health[mesh] OR "mental health" OR "mental illness" OR mental disorders[mesh] OR "mental disorders" OR "mental disorder" OR depression OR depression[mesh] OR "depressive disorder"[mesh] OR depressed OR "psychiatric illness" OR "psychiatric disorder" OR "mood disorder" OR "mood disorders" OR "psychosocial stress" OR Schizophrenia OR "psychiatric illness" OR "neuropsychiatric disorder" OR "neuropsychiatric disorders" OR "common mental disorders" OR psychosis OR "psychotic disorder" OR "HIV dementia" OR "HIV encephalopathy" OR "mental hospital" OR "psychiatric hospital" OR "Trauma and Stressor Related Disorders"[Mesh] OR "Mood Disorders"[Mesh] OR "Anxiety"[Mesh] OR "Suicide"[Mesh] OR "Suicidal Ideation"[Mesh] OR "Schizophrenia Spectrum and Other Psychotic Disorders"[Mesh] OR "Schizophrenia"[Mesh] OR "Anxiety Disorders"[Mesh] OR "Adjustment Disorders"[Mesh] OR "Psychotic Disorders"[Mesh] OR "AIDS Dementia Complex"[Mesh] OR "Mental Health Services"[Mesh] OR "Community Mental Health Services"[Mesh] OR "Hospitals, Psychiatric"[Mesh] OR "Substance-Related Disorders"[Mesh] OR "substance abuse" OR "drug abuse" OR "drug dependence" OR "substance addiction" OR MINI OR CIDI OR PHQ-9 OR "Mini International Neuropsychiatric Interview" OR "Composite International Diagnostic Interview" OR "Beck Depression Inventory" OR "bdi depression scores" OR "bdi depression" OR "Patient Health Questionnaire" OR "Patient Health Questionnaire 9" OR "drug addiction" OR anxiety OR suicide OR "suicide ideation" OR "adjustment disorder" OR "adjustment disorders" OR "psychiatric disorder" OR "psychiatric disorders" OR "AIDS dementia complex" OR "mental health services" OR "substance related disorder" OR "substance related disorders" OR "community mental health services" OR "counseling" OR "medication adherence" OR "medication compliance" OR "Medication Adherence"[Mesh] OR "Counseling"[Mesh])

Diabetes

("Diabetes Mellitus"[Mesh] OR diabetes[tiab] OR "Type 1 diabetes" OR "Type 2 diabetes" OR hyperglycaemia OR gestational diabetes OR "fasting blood sugar" OR "endocrine disorder" OR A1C OR "A1C test" OR "hemoglobin A1C" OR "glycohemoglobin test" OR HbA1c OR "Endocrine System Diseases"[Mesh] OR "Metabolic Syndrome X"[Mesh] OR "metabolic cardiovascular syndrome" OR "metabolic syndrome" OR

“metabolic syndrome X” OR “insulin resistance syndrome X” OR “metabolic X syndrome”) AND (PLWH* OR PLWHA* OR "people living with HIV" OR "people living with HIV/AIDS" OR "people living with" OR "people living with aids" OR "people living with hiv" OR "people living with hiv/aids" OR "people living with hiv/aids plwha" OR "people living with hiv/aids plwhas" OR "people living with hiv aids" OR "people living with hiv aids plwha" OR "people living with hiv aids plwhas" OR "people living with hiv and aids" OR "people living with hiv infection" OR "people living with hivs" OR "people living with human immunodeficiency virus" OR "people living with human immunodeficiency virus/acquired immunodeficiency syndrome" OR "people living with human immunodeficiency virus acquired immunodeficiency syndrome" OR "people livnig with hiv" OR “HIV Infections”[mesh] OR “HIV infection” OR “HIV infections” OR PLWHIV OR “HIV positive” OR “HIV-positive” OR “HIV+” OR “HIV infected” OR “HIV-infected” OR “HIV seropositivity”[mesh] OR “HIV seropositivity”) AND (LMIC OR LMICs OR "low- and middle- income countries" OR "low- and middle-income country" OR "low and middle income" OR "low- and middle- income" OR "lower middle income" OR "lmics" OR "lower middle income" OR "lower middle income countries" OR "lower middle income country" OR "lower middle income economies" OR "lower middle income setting" OR "lower middle income settings" OR Cote d’Ivoire[mesh] OR Ethiopia[mesh] OR Kenya[mesh] OR Malawi[mesh] OR South Africa[mesh] OR Uganda[mesh] OR Zambia[mesh] OR Ivory Coast[tiab] OR Cote d’Ivoire[tiab] OR Ethiopia[tiab] OR Kenya[tiab] OR Malawi[tiab] OR South Africa[tiab] OR Uganda[tiab] OR Zambia[tiab] OR "sub Saharan Africa" OR "sub-saharan Africa" OR Africa[tiab] OR Africa[mesh] OR “sub saharan Africa” OR “developing country” OR “developing countries” OR Cameroon[tiab] OR Central African Republic[tiab] OR Chad[tiab] OR Congo[tiab] OR Equatorial Guinea[tiab] OR Gabon[tiab] OR Democratic Republic of the Congo[tiab] OR Burundi[tiab] OR Djibouti[tiab] OR Ethiopia[tiab] OR Kenya[tiab] OR Rwanda[tiab] OR Somalia[tiab] OR Sudan[tiab] OR Tanzania[tiab] OR Uganda[tiab] OR Angola[tiab] OR Botswana[tiab] OR Lesotho[tiab] OR Malawi[tiab] OR Mozambique[tiab] OR Namibia[tiab] OR South Africa[tiab] OR Swaziland[tiab] OR Zambia[tiab] OR Zimbabwe[tiab] OR Benin[tiab] OR Burkina Faso[tiab] OR Cote D’Ivoire OR Gambia OR Ghana OR Guinea OR Guinea-Bissau OR Liberia OR Mali OR Mauritania OR Niger[tiab] OR Nigeria[tiab] OR Senegal[tiab] OR Sierra Leone[tiab] OR Togo[tiab] OR Cameroon[mesh] OR Central African Republic[mesh] OR Chad[mesh] OR Congo[mesh] OR Equatorial Guinea[mesh] OR Gabon[mesh] OR Democratic Republic of the Congo[mesh] OR Burundi[mesh] OR Djibouti[mesh] OR Ethiopia[mesh] OR Kenya[mesh] OR Rwanda[mesh] OR Somalia[mesh] OR Sudan[mesh] OR Tanzania[mesh] OR Uganda[mesh] OR Angola[mesh] OR Botswana[mesh] OR Lesotho[mesh] OR Malawi[mesh] OR Mozambique[mesh] OR Namibia[mesh] OR South Africa[mesh] OR Swaziland[mesh] OR Zambia[mesh] OR Zimbabwe[mesh] OR Benin[mesh] OR Burkina Faso[mesh] OR Cote D’Ivoire[mesh] OR Gambia[mesh] OR Ghana[mesh] OR Guinea[mesh] OR Guinea-Bissau[mesh] OR Liberia[mesh] OR Mali[mesh] OR Mauritania[mesh] OR Niger[mesh] OR Nigeria[mesh] OR Senegal[mesh] OR Sierra Leone[mesh] OR Togo[mesh] OR "Africa, Central"[Mesh] OR "Africa, Eastern"[Mesh] OR "Africa, Southern"[Mesh] OR "Africa, Western"[Mesh])

Cervical Cancer

(“cervical cancer” OR uterine cervical neoplasms[mesh] OR “uterine cervical cancers” OR “uterine cervical cancer” OR “cervix neoplasms” OR “cervix neoplasm” OR “cervical neoplasms” OR “cervical neoplasm” OR “uterine cervical neoplasm” OR “uterine cervical neoplasms”) AND (PLWH* OR PLWHA* OR "people living with HIV" OR "people living with HIV/AIDS" OR "people living with" OR "people living with aids" OR "people living with hiv" OR "people living with hiv/aids" OR "people living with hiv/aids plwha" OR "people living with hiv/aids plwhas" OR "people living with hiv aids" OR "people living with hiv aids plwha" OR "people living with hiv aids plwhas" OR "people living with hiv and aids" OR "people living with hiv infection" OR "people living with hivs" OR "people living with human immunodeficiency virus" OR "people living with human immunodeficiency virus/acquired immunodeficiency syndrome" OR "people living with human immunodeficiency virus acquired immunodeficiency syndrome" OR "people livnig with hiv" OR “HIV Infections”[mesh] OR “HIV infection” OR “HIV infections” OR PLWHIV OR “HIV positive” OR “HIV-positive” OR “HIV+” OR “HIV infected” OR “HIV-infected” OR “HIV seropositivity”[mesh] OR “HIV seropositivity”) AND (LMIC OR LMICs OR "low- and middle- income countries" OR "low- and middle-income country" OR "low and middle income" OR "low- and middle- income" OR "lower middle income" OR "lmics" OR "lower middle income" OR "lower middle income countries" OR "lower middle income country" OR "lower middle income economies" OR "lower middle income setting" OR "lower middle income settings" OR Cote d’Ivoire[mesh] OR Ethiopia[mesh] OR Kenya[mesh] OR Malawi[mesh] OR South Africa[mesh] OR Uganda[mesh] OR Zambia[mesh] OR Ivory Coast[tiab] OR Cote d’Ivoire[tiab] OR Ethiopia[tiab] OR Kenya[tiab] OR Malawi[tiab] OR South Africa[tiab] OR Uganda[tiab] OR Zambia[tiab] OR "sub Saharan Africa" OR "sub-saharan Africa" OR Africa[tiab] OR Africa[mesh] OR “sub saharan Africa” OR “developing country” OR “developing countries” OR Cameroon[tiab] OR Central African Republic[tiab] OR Chad[tiab] OR

Congo[tiab] OR Equatorial Guinea[tiab] OR Gabon[tiab] OR Democratic Republic of the Congo[tiab] OR Burundi[tiab] OR Djibouti[tiab] OR Ethiopia[tiab] OR Kenya[tiab] OR Rwanda[tiab] OR Somalia[tiab] OR Sudan[tiab] OR Tanzania[tiab] OR Uganda[tiab] OR Angola[tiab] OR Botswana[tiab] OR Lesotho[tiab] OR Malawi[tiab] OR Mozambique[tiab] OR Namibia[tiab] OR South Africa[tiab] OR Swaziland[tiab] OR Zambia[tiab] OR Zimbabwe[tiab] OR Benin[tiab] OR Burkina Faso[tiab] OR Cote D'ivoire OR Gambia OR Ghana OR Guinea OR Guinea-Bissau OR Liberia OR Mali OR Mauritania OR Niger[tiab] OR Nigeria[tiab] OR Senegal[tiab] OR Sierra Leone[tiab] OR Togo[tiab] OR Cameroon[mesh] OR Central African Republic[mesh] OR Chad[mesh] OR Congo[mesh] OR Equatorial Guinea[mesh] OR Gabon[mesh] OR Democratic Republic of the Congo[mesh] OR Burundi[mesh] OR Djibouti[mesh] OR Ethiopia[mesh] OR Kenya[mesh] OR Rwanda[mesh] OR Somalia[mesh] OR Sudan[mesh] OR Tanzania[mesh] OR Uganda[mesh] OR Angola[mesh] OR Botswana[mesh] OR Lesotho[mesh] OR Malawi[mesh] OR Mozambique[mesh] OR Namibia[mesh] OR South Africa[mesh] OR Swaziland[mesh] OR Zambia[mesh] OR Zimbabwe[mesh] OR Benin[mesh] OR Burkina Faso[mesh] OR Cote D'ivoire[mesh] OR Gambia[mesh] OR Ghana[mesh] OR Guinea[mesh] OR Guinea-Bissau[mesh] OR Liberia[mesh] OR Mali[mesh] OR Mauritania[mesh] OR Niger[mesh] OR Nigeria[mesh] OR Senegal[mesh] OR Sierra Leone[mesh] OR Togo[mesh] OR "Africa, Central"[Mesh] OR "Africa, Eastern"[Mesh] OR "Africa, Southern"[Mesh] OR "Africa, Western"[Mesh])

Table, Supplemental Digital Content 2. Summary of studies that reported prevalence estimates for non-communicable diseases among HIV-infected persons in low- and middle-income countries

Author, Year	Country	Sample Size	Setting	Measurement	Prevalence	95% Confidence Interval
<i>Cardiovascular Disease</i>						
<i>Hypertension Prevalence</i>						
Amusa 2016 [1]	Nigeria	150	HIV Clinics	SBP > 140 or DBP > 90	46.0%	
Asiki 2015 [2]	Uganda	7741	WHO STEPS	SBP > 140 or DBP > 90	12.3%	
Bloomfield 2011 [3]	Kenya	12,194	HIV Clinics	SBP > 140 or DBP > 90	8.7%	
Dimala 2016 [4]	Cameroon	200	HIV Clinics	SBP > 140 or DBP > 90	28.5%	22.4-35.3%
Diouf 2012 [5]	Senegal	242	HIV Cohort	SBP > 140 or DBP > 90	28.1%	22.5-34.2%
Divala 2016 [6]	Malawi	952	HIV Clinic	SBP > 140 or DBP > 90	23.7%	21.2-26.6%
Edward 2013 [7]	Nigeria	265	HIV Clinics	SBP > 140 or DBP > 90	7.2%	
Gomes 2016 [8]	Dominican Republic	153	HIV Cohort	SBP > 140 or DBP > 90	20.0%	
Julius 2011 [9]	South Africa	304	HIV Clinic	SBP > 140 or DBP > 90	19.1%	14.7-23.5%
Kagaruki 2014 [10]	Tanzania	754	ART Clinic	SBP > 140 or DBP > 90	26.2%	
Kotwani 2013 [11]	Uganda		Community Campaign	SBP > 140 or DBP > 90	15.7%	
Kwarisiima 2016 [12]	Uganda	65000	Population Based Assessment	SBP > 140 or DBP > 90	11.0%	
Magodoro 2016 [13]	Zimbabwe	1033	Public Sector Facility	SBP > 140 or DBP > 90	10.2%	8.4-12.2%
Malaza 2012 [14]	South Africa	10,429	Population-Based Survey	SBP > 140 or DBP > 90	19.5%	

Mashinya 2014 [15]	South Africa	815	Health Center	SBP > 140 or DBP > 90	42.7%	
Mateen 2013 [16]	Uganda	5563	ART Clinic	SBP > 140 or DBP > 90	27.9%	26.7-29.1%
Menanga 2015 [17]	Cameroon	44	Hospital	SBP > 140 or DBP > 90	43.2%	
Mlay 2010 [18]	Tanzania	215	Hospital	SBP > 140 or DBP > 90	53.3%	
Muhammad 2013 [19]	Nigeria	200	Hospital	SBP > 140 or DBP > 90	9.5%	
Negin 2012 [20]	South Africa	4227	SAGE study	SBP > 140 or DBP > 90	63.0%	
Ngatchou 2013 [21]	Cameroon	204	Hospital	SBP > 140 or DBP > 90	41%	
Njelekela 2016 [22]	Tanzania	34111	ART Clinics	SBP > 140 or DBP > 90	12.5%	
Nsagha 2015 [23]	Cameroon	215	Cross-Sectional Study	SBP > 140 or DBP > 90	25.6%	15.3%-35.9%
Ogunmola 2014 [24]	Nigeria	403	Rural Tertiary Health Center	SBP > 140 or DBP > 90	14.0%	
Peck 2014 [25]	Tanzania	454	HIV Clinic	SBP > 140 or DBP > 90	16.9%	
Rabkin 2015 [26]	South Africa	175	ART Clinic	SBP > 140 or DBP > 90	37.8%	
Sander 2015 [27]	Uganda	426	ART Clinic	SBP > 140 or DBP > 90	8.0%	5.4%-10.6%
Zhou 2012 [28]	South Africa	2307	HIV Clinic	SBP > 140 or DBP > 90	20.5%	
<i>Hypertension Incidence</i>						
Okello 2015 [29]	Uganda	3389	Hospital	SBP > 140 or DBP > 90	111.5 per 1000 person-years	101.9-121.7

Dyslipidemia

Hypercholesterolemia

Abebe 2014 [30]	Ethiopia	462	Health Center	TC > 200	18.6%	
Asiki 2015 [2]	Uganda	7741	WHO STEPS	TC > 200	6.0%	
Daniyam 2013 [31]	Nigeria	204	HIV Clinic	TC > 200	10.4%	
Feleke 2012 [32]	Ethiopia	182	ART Clinics	TC > 200	38.2%	
Julius 2011 [9]	South Africa	304	HIV Clinic	TC > 200	32.2%	27.0-37.5%
Kagaruki 2014 [10]	Tanzania	754	ART Clinics	TC > 200	32.7%	
Kuti 2015 [33]	Nigeria	1316	ART Clinics	TC > 200	11.5%	
Muhammed 2013 [19]	Nigeria	200	HIV Clinic	TC > 200	19.0%	
Nsagha 2015 [34]	Cameroon	209	Cross-sectional Study	TC > 200	40.0%	31.8-48.2%
Ngala 2013 [35]	Ghana	305	Cross-sectional Study	TC > 200	31.9%	
Pefura 2011 [36]	Cameroon	276	Cross-sectional Study	TC > 200	30.1%	
<i>Elevated Low Density Lipoprotein (LDL)</i>						
Abebe 2014 [30]	Ethiopia	462	Health Center	LDL \geq 130	17.7%	
Armstrong 2011 [37]	Tanzania	12513	HIV Clinic	LDL \geq 130	12.0%	
Belay 2014 [38]	Ethiopia	141	Hospital	LDL \geq 130	29.6%	
Daniyam, 2013 [31]	Nigeria	204	HIV Clinic	LDL \geq 130	5.7%	
Feleke 2012 [32]	Ethiopia	182	ART Clinics	LDL \geq 130	54.2%	
Julius 2011 [9]	South Africa		HIV Clinic	LDL \geq 130	9.5%	6.2-12.8%
Kagaruki 2014 [10]	Tanzania	754	ART Clinics	LDL \geq 130	42.9%	
Liu 2013 [39]	Tanzania	6382	HIV Clinic	LDL \geq 130	12.9%	
Muhammed 2013 [19]	Nigeria	200	HIV Clinic	LDL \geq 130	31.0%	

Nsagha 2015 [23]	Cameroon	215	Cross-sectional Study	LDL \geq 130	29.3%	
Pefura 2011 [36]	Cameroon	276	Cross-sectional Study	LDL \geq 130	33.7%	
Tadewos 2012 [40]	Ethiopia	226	HIV Clinic	LDL \geq 130	33.6%	
<i>Hypertriglyceridemia</i>						
Abebe 2014 [30]	Ethiopia	462	Health Center	TG > 150	28.8%	
Armstrong 2011 [37]	Tanzania	12513	HIV Clinic	TG > 150	28.0%%	
Belay 2014 [38]	Ethiopia	141	Hospital	TG > 150	32.4%%	
Daniyam 2013 [31]	Nigeria	204	HIV Clinic	TG > 150	31.1%	
Feleke 2012 [32]	Ethiopia	182	ART Clinics	TG > 150	15.2%	
Julius 2011 [9]	South Africa	304	HIV Clinic	TG > 150	15.8%	11.7-19.9%
Kagaruki 2014 [10]	Tanzania	754	ART Clinics	TG > 150	16.6%	
Kuti 2015 [33]	Nigeria	1316	ART Clinics	TG > 150	27.6%	
Muhammed 2013 [19]	Nigeria	200	HIV Clinic	TG > 150	16.0%	
Nsagha 2015 [23]	Cameroon	215	Cross-sectional Study	TG > 150	19.5%	8.3-30.7%
Pefura 2011 [36]	Cameroon	276	Cross-sectional Study	TG > 150	40.9%	
Tadewos 2012 [40]	Ethiopia	226	HIV Clinic	TG > 150	55.8%	
Tesfaye 2014 [41]	Ethiopia	374	Hospital	TG > 150	45.2	
<i>Low High Density Lipoprotein (HDL)</i>						
Abebe 2014 [30]	Ethiopia	462	Health Center	HDL-c <40	64.9%	60.0-69.3%
Asiki 2015 [2]	Uganda	7741	WHO STEPS	HDL-c <40	71.3%	
Armstrong 2011 [37]	Tanzania	12513	HIV Clinic	HDL-c <40	67.0%	

Belay 2014 [38]	Ethiopia	141	Hospital	HDL-c <40	16.9%	40.1-51.3%
Daniyam, 2013 [31]	Nigeria	204	HIV Clinic	HDL-c <40	36.8%	
Julius 2011 [9]	South Africa	304	HIV Clinic	HDL-c <40	45.7%	
Kagaruki 2014 [10]	Tanzania	754	ART Clinics	HDL-c <40	71.9%	
Liu 2013 [39]	Tanzania	6382	HIV Clinic	HDL-c <40	55.4%	
Muhammed 2013 [19]	Nigeria	200	HIV Clinic	HDL-c <40	68.5%	
Nsagha 2015 [23]	Cameroon	215	Cross-sectional Study	HDL-c <40	14.4%	
Pefura 2011 [36]	Cameroon	276	Cross-sectional Study	HDL-c <40	38.4%	
Tadewos 2012 [40]	Ethiopia	226	HIV Clinic	HDL-c <40	43.4%	
<i>Dyslipidemia*</i>						
Amusa 2016 [1]	Nigeria	150	HIV Clinic	ATP III	62.7%	
Daniyam 2013 [31]	Nigeria	204	HIV Clinic	ATP III	62.3%	
Dave 2016 [42]	South Africa	957	Health Center	ATP III	90.0%	
Kodogo 2016 [43]	Zimbabwe	103	Health Center	ATP III	67.4%	
Liu 2013 [39]	Tanzania	6382	HIV Clinic	ATP III	69.0%	
Menanga 2015 [17]	Cameroon	44	Hospital	ATP III	38.6%	
Ombeni 2016 [44]	Tanzania		HIV Clinic	ATP III	77.5%	
Omech 2012 [45]	Uganda	442	Infectious Disease Clinic	ATP III	81.5%	
Tadewos 2012 [40]	Ethiopia	226	HIV Clinic	ATP III	82.3%	
Obese and Overweight						
<i>Overweight</i>						
Asiki 2015 [2]	Uganda	7741	WHO STEPS	BMI 25-29	9.8%	
Dimala, 2016 [4]	Cameroon	200	HIV clinic	BMI 25-29	40.5%	
Divala 2016 [6]	Malawi	952	HIV clinic	BMI 25-29	13.9%	

Malaza 2012 [14]	South Africa	10,429	Population-based survey	BMI 25-29	29.3%
Muhammed 2013 [19]	Nigeria	200	Hospital	BMI 25-29	31.0%
Njelekela 2016 [22]	Tanzania	34111	ART clinics	BMI 25-29	12.7%
Nsagha 2015 [23]	Cameroon	215	cross-sectional study	BMI 25-29	32.6%
Okello 2015 [29]	Uganda	3389	HIV clinic	BMI 25-29	15.5%
Sander 2015 [27]	Uganda	426	ART clinic	BMI 25-29	10.8%
Zhou 2016 [46]	Zimbabwe	170	HIV clinic	BMI 25-29	38.8%
Zhou 2015 [47]	Zimbabwe	215	HIV clinic	BMI 25-29	19.5%

Obesity

Asiki 2015 [2]	Uganda	7741	WHO STEPS	BMI > 30	2.5%
Dave 2016 [42]	South Africa	957	cross-sectional study	BMI > 30	24.0%
Divala 2016 [6]	Malawi	952	HIV clinic	BMI > 30	3.8%
Malaza 2012 [14]	South Africa	10,429	Population-based survey	BMI > 30	23.8%
Muhammad 2013 [19]	Nigeria	200	Hospital	BMI > 30	6.5%
Njelekela 2016 [22]	Tanzania	34,111	ART clinics	BMI > 30	5.1%
Nsagha 2015 [23]	Cameroon	215	cross-sectional study	BMI > 30	22.3%
Ogunmola 2014 [24]	Nigeria	403	rural tertiary health center	BMI > 30	4.4%
Okello, 2015 [29]	Uganda	3389	HIV clinic	BMI > 30	3.6%
Sander 2015 [27]	Uganda	426	ART clinic	BMI > 30	4.5%
Zhou 2015 [47]	Zimbabwe	215	HIV clinic	BMI>30	18.1%

Overweight/Obesity

Bloomfield 2011 [3]	Kenya	12,194	HIV clinics	BMI>25	18.0%
Diouf 2012 [5]	Senegal	242	HIV cohort	BMI>25	28.1%
Kagaruki 2014 [10]	Tanzania	754	ART clinics	BMI>25	26.2%
Njelekela 2016 [22]	Tanzania	34,111	ART clinics	BMI>25	17.6%
van Oosterhout 2012 [48]	Malawi	253	Health clinic	BMI>25	25.0%
Zhou 2012 [28]	South Africa	2298	HIV clinic	BMI>25	57.9%
Zhou 2015 [47]	Zimbabwe	215	HIV clinic	BMI>25	37.7%

Diabetes

Diabetes Mellitus (DM) Definition

Anastos 2010 [49]	Rwanda	824	Clinic	DM	2.0%	
Becker 2010 [50]	South Africa	60	Clinic	DM	3.0%	
Isa 2016 [51]	Nigeria	2632	ART Clinic	T2DM	2.3%	1.8-2.9%
Isa 2016 [51]	Nigeria	2632	ART Clinic	T2DM	5.3%	4.2-6.3%
Levitt 2016 [52]	South Africa	940	Community Health Center	WHO 1998 def	3.1%	1.4-4.8%
Levitt 2016 [52]	South Africa	940	Community Health Center	WHO 1998 def	2.3%	0.9-3.7%
Levitt 2016 [52]	South Africa	940	Community Health Center	WHO 1998 def	5.6%	1.2-9.9%
Maganga 2015 [53]	Tanzania	454	HIV Clinic	DM	18.0%	
Magodoro 2016 [13]	Zimbabwe	1033	Public Sector Facility	DM	2.1%	1.3-3.2%
Mashinya 2014 [15]	South Africa	267	Clinic	DM	13.5%	
Mohammed 2015 [54]	Ethiopia	393	Hospital	DM	6.4%	

Fasting Blood Sugar (FBS)

Amusa 2016 [1]	Nigeria	150	HIV Clinic	FBS	28.0%
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Diouf 2012 [5]	Senegal	242	HIV Cohort	FBS > 7.0 mmol/l	14.5%	3.0-5.6%
Divala 2016 [6]	Malawi	952	HIV Clinic	FBS > 126	4.1%	
Gomes 2016 [8]	Dominican Republic	153	HIV Cohort	FBS > 126	6.0%	
Kagaruki 2014 [10]	Tanzania	754	ART Clinics	FBS > 126	4.2%	
Muhammad 2013 [19]	Nigeria	200	Hospital	FBS> or NFBS >200	3.0%	
Ngatchou 2013 [21]	Cameroon	204	Hospital	FBS > 125	2.3%	
Nsagha 2015 [34]	Cameroon	215	Cross-Sectional Study	FBS > 126	2.3%	
Tesfaye 2014 [41]	Ethiopia	374	Hospital	IDF (>100mg/dl)	33.5%	
<i>Hemoglobin A1C (HgbA1C)</i>						
Asiki 2015 [2]	Uganda	7741	WHO STEPS	HgbA1C > 6	5.6%	
Julius 2011 [9]	South Africa	304	HIV Clinic	HgbA1C > 7 or FBS > 11 mmol	1.7%	
Rhee 2016 [55]	Cameroon	500	Cross-Sectional Study	HgbA1C	3.8%	
<i>Oral Glucose Tolerance Test (OGTT)</i>						
Dave 2016 [42]	South Africa	957	Cross-Sectional Study	OGTT	3.1%	

Cervical Cancer

Invasive Cervical Cancer (ICC)

Coghill 2013 [56]	Uganda	802	Cancer Registry	ICC	48.9%
Kafuruki 2013 [57]	Tanzania	355	Clinic-based Cross-Sectional	ICC	7.3%
Memiah 2012 [58]	Kenya	715	ART Clinics	ICC	3.7%

Mungo 2013 [59]	Kenya	4308	Clinic	ICC	1.3%	
Tanon 2012 [60]	Cote D'Ivoire	1017	Hospital	ICC	26.2%	
Simonds 2012 [61]	South Africa	461	Hospital	IIIB Cervical Cancer	83.1%	
<i>Cervical Intraepithelial Neoplasia (CIN)</i>						
Huchko 2014 [62]	Kenya	2338	HIV Clinic	CIN 2+	26.4%	
Jaquet 2014 [63]	Cote D'Ivoire	2998	Clinic	CIN any grade	4.4%	
Kafuruki 2013 [56]	Tanzania	355	Clinic-based Cross-Sectional	CIN	61.1%	
Kohler 2016 [64]	Malawi	824	Hospital	CIN 2+	17.3%	
Maranga 2013 [52]	Kenya	448	Hospital	CIN I	16.8%	
Memiah 2012 [57]	Kenya	715	ART Clinics	CINI, CINII, CIN III, ICC	26.7%	
Musa 2014 [65]	Nigeria	78	Hospital	CIN	11.5%	
Musa 2014 [65]	Nigeria	78	Hospital	CIN 2+	6.4%	
Njagi 2013 [66]	Kenya	350	Clinic	CIN	30.0%	
Parham 2010 [67]	Zambia	6572	Cervical Cancer	CIN2/3	33.0%	
Ramogola-Masire 2012 [68]	Botswana	2175	Community Clinic	CIN2/3	12.1%	
Wu 2016 [69]	Kenya	1054	Clinic	CIN2+	12.0%	
<i>Abnormal Cytology</i>						
Dim 2011 [70]	Nigeria	150	Hospital	SIL	12.6%	
Ezechi 2014 [71]	Nigeria	1140	Community and Clinic	SIL	79.2%	
Liu 2016 [39]	Tanzania	1365	Cross-Sectional Survey	SIL	79.2%	
Menon 2017 [72]	Kenya	599	Community	abnormal cytology	27.1%	20.9-34.0%

Mwakigonja 2012 [73]	Tanzania	170	Hospital	HSIL	41.3%	12.1-14.9%
Omar 2011 [74]	South Africa	2325	HIV Clinic	HSIL	13.5%	
Soh 2014 [75]	Kenya	441	Clinic	LSIL, HSIL	26.0%	
Depression						
Beck's Depression Inventory (BDI)						
Amiya 2014 [76]	Nepal	322	Cross-Sectional Study	BDI-Ia	25.5%	
Lawler 2011 [77]	Botswana	120	Surveillance	BDI-FS>4	38.0%	
Magidson 2016 [78]	South Africa	101	HIV Clinic	BDI-II≥14	52.1%	
Nel 2013 [79]	South Africa	101	Convenience Sample	BDI II	40.5%	
Center for Epidemiologic Studies –Depression Scale (CES-D)						
Kitshoff 2012 [80]	South Africa		HIV Clinic	CES-D	62.0%	
Olisah 2015 [81]	Nigeria	310	HIV Clinic	CES-D	14.2%	
Olisah 2010 [82]	Nigeria	310	HIV Clinic	CES-D	21.3%	
Peltzer 2011 [83]	South Africa	342	Primary Health Clinic	CES-D>9	56.6%	
Peterson 2012 [84]	Gambia	252	Clinic	CES-D≥11	7.0%	
Composite International Diagnostic Interview (CIDI)						
Gaynes 2012 [85]	Cameroon	400	HIV Clinic	CIDI	21.0%	
Ibrahim 2014 [86]	Nigeria	350	Hospital	CIDI	19.8%	
Nyirenda 2013 [87]	South Africa	422	Community	CIDI	42.4%	
Diagnostic and Statistical Manuel of Mental Disorders IV (DSM-IV)						
Nakimuli-Mpungu 2011 [88]	Uganda	244	Cross-Sectional Study	DSM IV	40.0%	
Olangunju 2013 [89]	Nigeria	295	HIV Clinic	DSM IV	14.9%	
Hopkins Symptom Checklist (HSCL-D)						
Chan 2015 [90]	Uganda	154	HIV Clinic	HSCL-D	28.8%	

Krumme 2015 [91]	Rwanda	610	Health Clinics	HSCL 15	47.1%
Wroe 2015 [92]	Rwanda	292	Clinic	HSCL-15 \geq 1.75	11.0%
<i>Hospital Anxiety and Depression Scale (HADS)</i>					
Pappin 2012 [93]	South Africa	716	HIV Clinic	HADS \geq 8	25.4%
Tesfaw 2016 [94]	Ethiopia	417	Hospital	HADS \geq 8	41.2%
Yunusa 2011 [95]	Nigeria	167	Cross-Sectional Study	HADS	7.6%
<i>MINI International Neuropsychiatric Interview (MINI)</i>					
Akena 2013 [96]	Uganda	735	HIV Clinic	MINI	17.4%
Breuer 2014 [97]	South Africa	366	HIV Clinic	MINI	16.6%
Kinyanda 2016 [98]	Uganda	1099	HIV Clinic	MINI	14.1%
Mugisha 2016 [99]	Uganda	471	Population Survey	MINI	10.7%
Nakimuli-Mpungu 2013 [100]	Uganda	400	HIV Clinic	MINI	12.3%
Nakimuli-Mpungu 2011 [101]	Uganda	500	HIV Clinic	MINI	25.0%
Onyebueke 2015 [102]	Nigeria	360	HIV Clinic	MINI	27.8%
<i>Patient Health Questionnaire (PHQ9)</i>					
Ahaneku, 2016 [103]	Tanzania	205	Community	PHQ-9 \geq 4	68.2%
Cerutti 2016 [104]	Lesotho	1388	Clinic	PHQ9 \geq 10	28.8%
Cholera 2014 [105]	South Africa	397	Clinic	PHQ9 \geq 10	36.2%
Cholera 2016 [106]	South Africa	1683	Clinic	PHQ9 \geq 10	30.0%
Chibanda 2016 [107]	Zimbabwe	264	Primary health care facility	PHQ9 \geq 11	68.5%
Endenshaw 2014 [108]	Ethiopia		Mixed methods Cross-Sectional Study	PHQ-9	60.0%
Kingori 2015 [109]	Kenya	312	HIV Clinic	PHQ9 \geq 10	31.7%
L'Akoa R 2013 [110]	Cameroon	100	Hospital	PHQ9 \geq 9	63.0%

Musisi 2014 [111]	Uganda	386	4 HIV Clinics	PHQ9 = 5-9	19.2%
Musisi 2014 [111]	Uganda	386	4 HIV Clinics	PHQ9>9	10.9%
Okeke 2013 [112]	Uganda	482	HIV Clinic	PHQ9≥9	8.3%
Onyebuchi-Iwudibia 2014 [113]	Nigeria	105	HIV Clinic	PHQ9≥10	33.3%
Pence 2014 [114]	Cameroon	55	Clinic	PHQ9	13.0%
Pence 2012 [115]	Cameroon	400	HIV Clinic	PHQ9≥10	3.0%
Shittu 2013 [116]	Nigeria	300	HIV Clinic	PHQ9≥5	56.7%
Wagner 2012 [117]	Uganda	602	HIV Clinic	PHQ9>9	13.1%
<i>Structured Clinical Interview for DSM-IV (SCID)</i>					
Chibanda 2016 [107]	Zimbabwe	264	Primary health care facility	SCID	67.0%
Obadeji 2014 [118]	Nigeria	130	Clinic	SCID	23.1%
<i>Other</i>					
Bongongo 2013 [119]	South Africa	117	HIV Clinic	Zung self-rating scale	71.8%
Chikezie 2013 [120]	Nigeria		Cross-sectional study	SCAN	29.3%
Lawler 2010 [121]	Botswana	120	Clinic	IHDS	24.0%
Marwick 2010 [122]	Tanzania	220	HIV Clinic	CIS-R	2.7%
Mwesiga 2015 [123]	Uganda	345	HIV Clinic	IASP	5.0%
Ramirez-Avila 2012 [124]	South Africa	1545	HIV Clinic	MHI-5	55.0%
Shumba 2013 [125]	Uganda	732	Clinic	Survey	59.0%
Yakob 2016 [126]	Ethiopia	485	HIV Clinics - rural and urban	Questionnaire	15.5%
Yeji 2014 [127]	South Africa	272	HIV Clinic	GHQ12	33.0%
<i>Women including pregnant women</i>					

Bailey 2016 [128]	Ukraine	180	Cross-sectional survey	Short questionnaire	27.0%
Bailey 2016 [128]	Ukraine	228	Cross-sectional survey	Short questionnaire	25.0%
Bernstein 2016 [129]	South Africa	623	Antenatal Clinic	EPDS	11.0%
Chibanda 2010 [130]	Zimbabwe	210	Clinic	DSM-IV	54.0%
Chibanda 2010 [130]	Zimbabwe	210	Clinic	EPDS \geq 11	61.0%
Dow 2014 [131]	Malawi	529	Clinic	EPDS	11.5%
Hatcher 2014 [132]	Uganda	270	Prospective HIV cohort study	HSCL > 1.75	23.7%
Kaida 2014 [133]	Uganda	447	HIV Clinic	HSCL > 1.75	38.9%
Lewis 2012 [134]	Botswana	62	ID Clinic	BDI-FS	48.0%
Onono 2014 [135]	Kenya	281	9 ANC's		10.1%
Peltzer 2016 [136]	South Africa	663	Community health centers	EPDS \geq 13	48.7%
Peltzer 2011 [83]	South Africa	607	PHC and community clinics	EPDS	45.1%
Sudfeld 2017 [137]	Tanzania	1487	Cohort	HSCL	57.8%
Turan 2014 [138]	Kenya	135	ANC	EPDS \geq 13	25.2%
Tuthill 2016 [139]	South Africa	68	Cohort	PHQ-9>10	Antenatal 48.5%; postnatal 32.4%
Wong 2016 [140]	South Africa	625	Clinic	EPDS	11.0%
Yator 2016 [141]	Kenya	123	PMTCT Clinic	EPDS	48.0%

*_Dyslipidemia based on the US National Cholesterol Education Program, Adult Treatment Panel III (ATP III) using conservative cutoffs: total cholesterol (TC): TC \geq 200 mg/dl or 5.2 mmol/l; elevated LDL: LDL-c \geq 130 mg/dl or 3.4 mmol/l; hypertriglyceridemia (TG): TG \geq 150 mg/dl or 1.7 mmol/l; low HDL: HDL-c < 40 mg/dl or 1 mmol/l

SBP = Systolic Blood Pressure; DBP = Diastolic Blood Pressure; BMI = Body Mass Index; T2DM = Type 2 Diabetes Mellitus; NFBS = Non-Fasting Blood Sugar; IDF = International Diabetes Federation; IHDS = International HIV Dementia Scale, CIS-R = Clinical Interview Schedule Revised, IASP = International

Association of the Study of Pain, MHI-5 = Mental Health Inventory-5, EPDS = Edinburgh Postnatal Depression Scale, GHQ12 = General Health Questionnaire-12

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