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Chapter 3.
What is the state of health inequalities of women of reproductive age?

3.1
HOIs by country and multi-country pooled averages

This section presents findings from the analysis of women's health opportunities in 29 sub-Saharan Africa (SSA) countries using the most recently available Demographic Health Survey (DHS) data. The results are disaggregated by three subgroups of women: women of reproductive age (15-49), pregnant women and older adolescent girls (15-19).

3.1.1
Women of reproductive age (15-49 years old)

Opportunities

- Not having anaemia
- BMI between 18.5 and 24.99
- Met need for familiy planning
- Knowledge of where to get an HIV test

Context

Estimates suggest that at present about 26 percent of women of reproductive age – 225 million women – have an unmet need for family planning worldwide[1,2]. In low and middle income countries (LMICs), the number increases to 56 percent of the female population. However, in SSA, the percentage is 40 percent because of the desired big family sizes in the region[3]. Universal access to family planning would improve maternal health and survival by decreasing maternal deaths, including those attributable to unsafe abortions (eight percent) associated with unwanted pregnancies and the reduction of human immunodeficiency virus (HIV) transmission[2].

Behavioural, socio-economic and structural factors – those related to society structure and gender roles – make women in general more vulnerable to HIV infection[4]. In SSA, women account for 58 percent of the total population living with HIV. The disease disproportionally affects young women and adolescents. Every year, there are 380,000 new HIV infections among young women (10-24 years old). Fifteen percent of women aged 15 years and older living with HIV belong to the youth group (15-24 years old), and 80 percent of them live in SSA, where women become HIV infected, on average, five to seven years earlier than men. Regarding HIV knowledge in SSA, only 26 percent of adolescent girls have comprehensive knowledge about the disease, while among boys the percentage is 36 percent[5].

Additionally, two indicators relating to general women's health outcomes were analysed for all women of reproductive age. Nutritional status is among the prin-

cipal causes of morbidity and mortality in SSA[6]. Thus, not having any type or level of anaemia was considered as an opportunity for African women. It is estimated that about 468 million women aged 15-49 years worldwide are anaemic and between 48 percent and 57 percent of them live in Africa. Anaemia is an important health indicator for women because it can be produced by multiple causes, from poor nutrition, hormonal disorders or cancer, to malaria. Anaemia is associated with fatigue, increased susceptibility to infections, anaemia in pregnancy and postpartum haemorrhage, the latter being one of the principal causes of maternal mortality[7,8]. Therefore, not being anaemic constitutes a necessary condition for the well-being of women.

The second indicator related to women's general health and nutrition analysed is body mass index (BMI), which is calculated using the height and weight of the individual (*weight/(height x height)*). The recommended BMI values for an adult are between 18.5 and 24.99, where women with values lower than 18.5 are considered underweight and those above 24.99 are considered overweight[9]. Under nutrition is a persistent problem in LMICs, where nearly two percent of women have been recently assessed to have a BMI lower than 16[10]. Malnutrition can lead to fatigue and susceptibility to infections, and malnourished women are more likely to give birth to a newborn who has low birth weight, is more susceptible to diseases, and thus, has a higher probability of dying prematurely[11].

Box 3. How to interpret the HOI
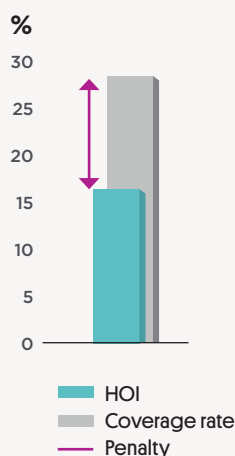
The Human Opportunity Index **(HOI)** is the difference between the coverage rate and a penalty due to inequality:

HOI = Coverage - Penalty

The **penalty** comes from the dissimilarity index (D-index, the measure of inequality, see Chapter 2), but it also depends on the coverage rate of the opportunity:

Penalty = D-index · Coverage

The gap between the grey bar and the blue bar reflects the reduction that the coverage rate suffers due to inequality (D-index), but taking into account that the penalty is also correlated with the coverage rate. Thus, when the coverage rate increases, the penalty due to inequality increases too; therefore in those opportunities where the coverage rate is high, **for the same D-indices** the penalties will be higher than for those opportunities with poor coverage rates.

Findings for reproductive health opportunities

Note: In order to avoid overlap with older adolescent girls' analysis results (15 to 19 year old), the analysis of "met need for family planning" is restricted to women between 20 and 49 years old.

■ Results from the two opportunities for reproductive health analysed vary significantly across countries. This is especially remarkable with regard to the level of "knowledge of where to get tested for HIV", which has an almost 80 percent difference in the HOI between the best (Rwanda) and the worst performing country (Mali).

Figure 3.1 HOI for access to reproductive health

a. Met need for family planning

Coverage [%]
HOI [%]
Pooled average HOI [%]

b. Knowledge of where to get an HIV test
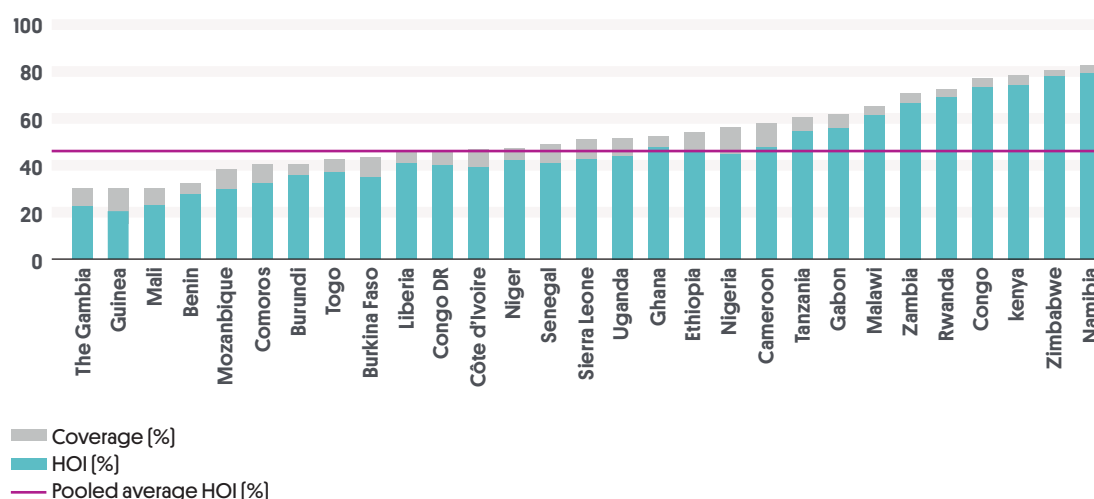
Coverage [%]
HOI [%]
Pooled average HOI [%]
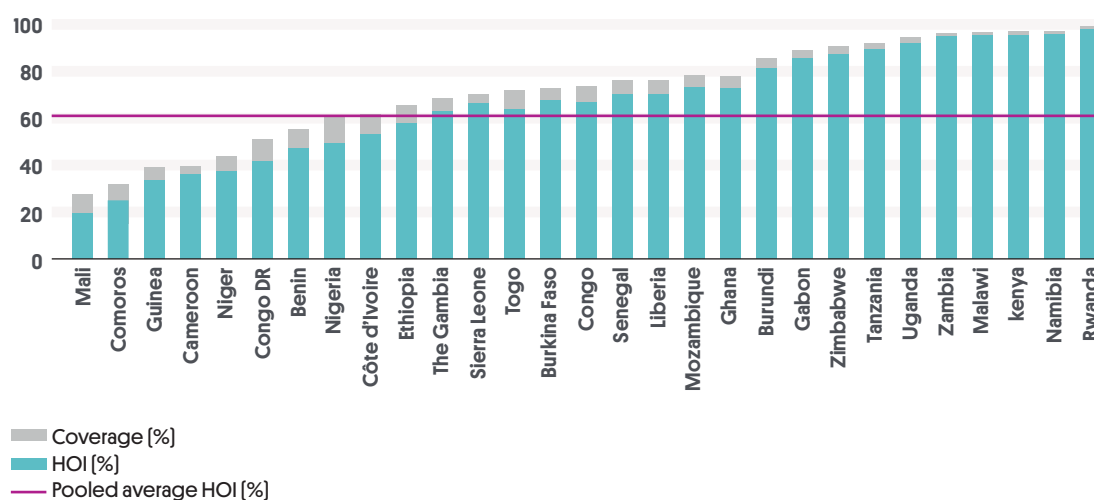
- The HOI for "met need for family planning" ranges between 20 (Guinea) and 78 (Namibia) with a multi-country pooled HOI of 46 (Figure 3.1). Notably, half of the countries rank below the average.

- The HOIs of family planning for adult women between 20 and 49 years old are on average higher than those for older adolescent girls (Figure 3.2). To compute the HOI for older adolescent girls, six circumstances were used, while the model for adult women used eight circumstances[IV]. However, this is not necessarily the source of difference. Since the D-index (and therefore, the HOI) is sensitive to the number of circumstances selected for its calculation, adding a new circumstance always increases the D-index and lowers the HOI. Therefore, should the model for adolescent girls include two additional circumstances, similar to the model for adult women, their HOI would be even lower than it currently is.

Figure 3.2 Comparison between "met need for family planning" for older adolescent girls (15-19 years) and women of reproductive age (20-49 years)

— 45° line
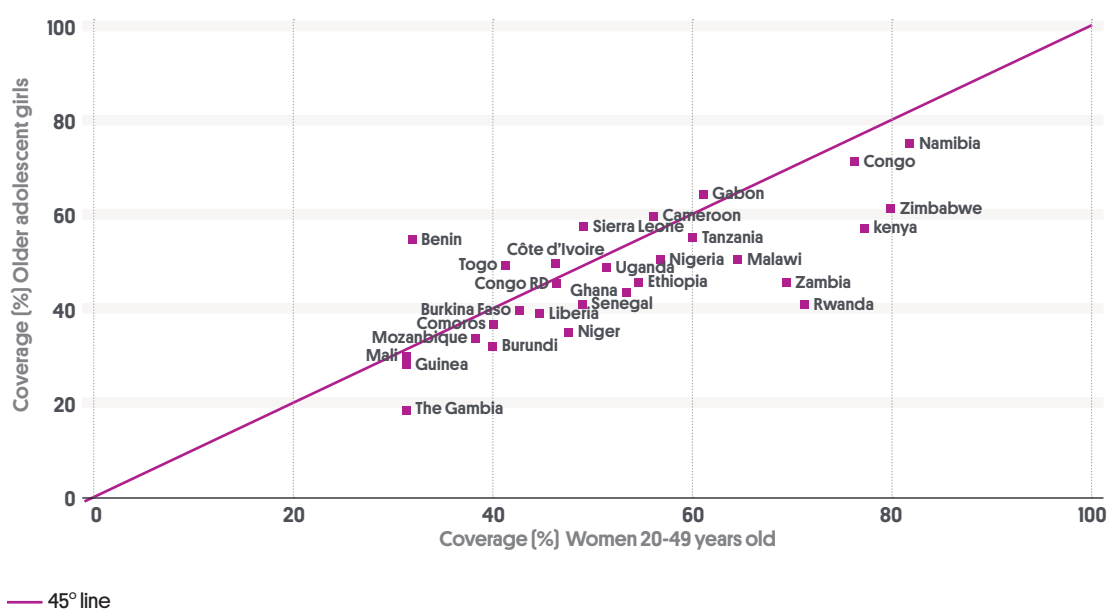
- Both the coverage rates and HOIs for "knowledge of where to get an HIV test" seem to have a gradual gradient. The HOIs for this opportunity seem to be highly correlated with HIV prevalence rates in the countries. Thus, countries with the highest HIV prevalence rates in the SSA region (i.e. Zimbabwe, Tanzania, Uganda, Zambia, Malawi, Kenya and Namibia, with the exception of Mozambique), also have the highest HOIs for the knowledge of where to get tested. Encouragingly, the inequality across women for this opportunity is low, suggesting that the policy to test for HIV status appears to be more equitable.

[IV]Older adolescent girls circumstances: wealth index, region of residence, marital status, occupational status, religion and sex of the household head.
Women between 20 and 49 years old circumstances: wealth index, region of residence, marital status, educational attainment, religion, sex of the household head, number of children and age.

Findings for women's general health

- In terms of coverage rates, overall women's health outcomes examined – measured by the HOI of "not having anaemia" and "having the recommended BMI"[V] – are poor in SSA, for both indicators, although penalties for inequalities seem to be lower than for reproductive health opportunities (Figure 3.3).

- Differences across countries are less marked than for other indicators.

- The multi-country pooled HOI for "not having anaemia" and "having the recommended BMI" is in both cases slightly more than 60. For anaemia, the values range between 37 (Gabon) and almost 81 (Ethiopia), and for BMI, between 41 (Gabon) and 74 (Burundi).

- Many women are anaemic (multi-country pooled prevalence of anaemia: 35 percent) and the rates are similar across most countries for which the data were available. Similarly, in almost every country, two out of three women have BMI within the recommended range, and there is little variation across countries. Notably, six of the 29 SSA countries selected do not have available data about anaemia levels.

- There is no correlation between levels of anaemia and BMI within countries except for Gabon, which has the lowest HOI for both, and Burundi and Rwanda, with some of the highest HOIs for both opportunities. For example, Namibia has an HOI of almost 75 for anaemia, but for the recommended BMI the HOI is less than 50, one of the lowest.

- There does not appear to be any geographical or income pattern in the distribution of anaemia and BMI. However, five out of the six countries with the highest HOI for not having anaemia are also the ones with the lowest incidences of malaria in SSA. Zimbabwe, Namibia, Burundi, Rwanda and Ethiopia have less than 17,000 new cases of malaria reported each year per 100,000 people[12].


[V]For most countries, data on these two opportunities were collected for a randomly selected half or a third of the sample of all women interviewed in the country. However, the results generalise to the whole population of adult women.

Figure 3.3 HOI for general women's health

a. Not having anaemia

Coverage [%]
HOI [%]
Pooled average HOI [%]

b. Having the recommended BMI
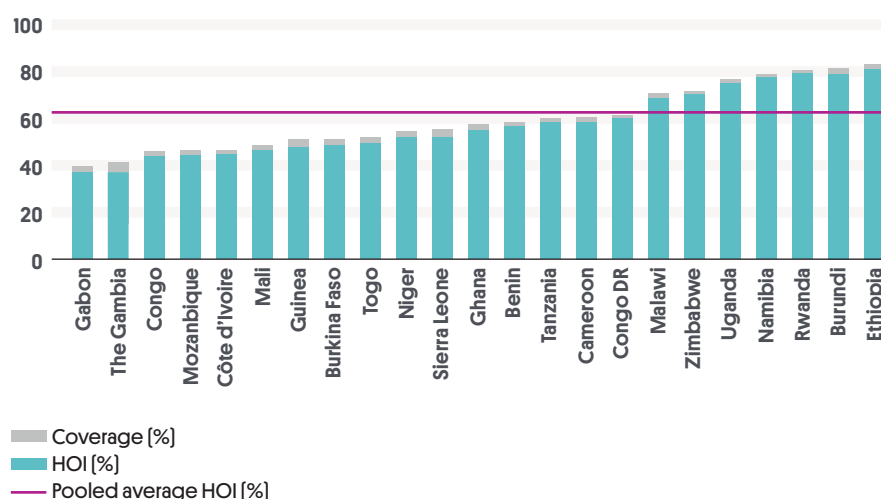
Coverage [%]
HOI [%]
Pooled average HOI [%]
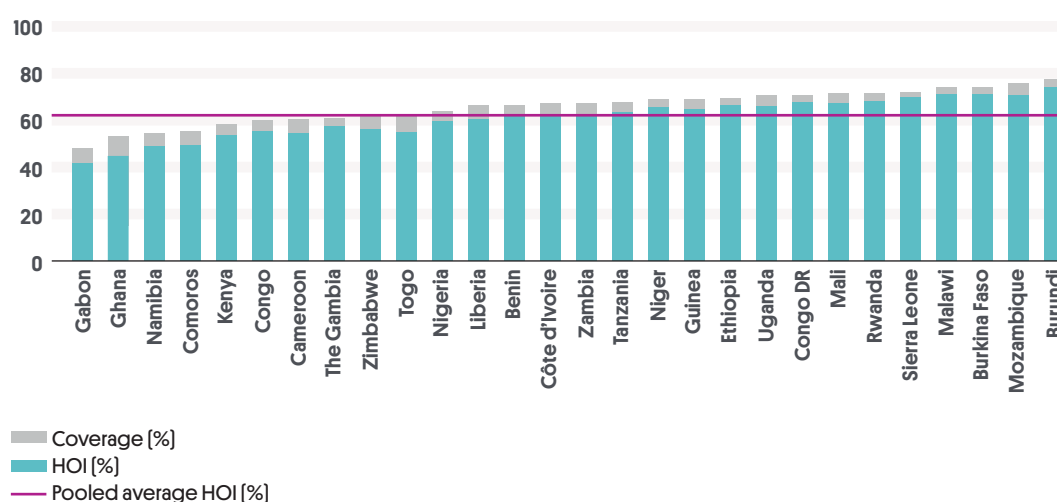
Conclusions

- Differences across countries also exist for reproductive health opportunities and outcomes.

- "Met need for family planning" shows slightly higher HOIs among women aged 20 years or older (multi-country HOI: 46 percent) than among adolescent girls (multi-country HOI: 40 percent).

- "Knowledge of a place where to be tested for HIV" follows a pattern related to HIV prevalence rate. Penalties for inequalities decrease as coverage of the opportunity increases.

- Opportunities for "not having anaemia" and "having the recommended BMI" exhibit significantly lower inequality among SSA women.

- In those countries where malaria is less prevalent, anaemia prevalence is low, which leads to a high HOI of "not having anaemia". The results could be due to the fact that malaria is one of the most important causes of anaemia in endemic areas.

- One in three women in most SSA countries does not have the recommended BMI meaning that they could be either undernourished or obese. Therefore, the countries that under perform in terms of BMI are not only those where a sizeable share of the population may be stunted, they might also have poor nutritional habits that lead to obesity.

3.1.2
Pregnant women

Opportunities

- **Four** antenatal care visits
- Delivery attended by skilled personnel
- Postnatal checkup
- Maternity care package
- Malaria prophylaxis during pregnancy
- HIV test offered during pregnancy
- Infant checkup after delivery
- Six months of exclusive breastfeeding

Context

Good quality maternity care is crucial for the survival and health of both the mother and the newborn child. However, in regions such as SSA the proportion of births attended by skilled health personnel – i.e. doctors, nurses and midwives – is still very low, 52 percent[13]. Of note, in November 2016 the World Health Organization (WHO) launched the new antenatal care guidelines where the recommended minimum number of antenatal care visits increased from four to eight[14]. However, in this report we used the indicator of four antenatal visits given the low antenatal care coverage in SSA. Since 1990, the utilization of the recommended four antenatal care visits has remained low at 47 percent to 49 percent in 2015, in SSA[13]. Thus, highlighting the need to speed the efforts to achieve the full life-saving potential of antenatal care for women and newborns.

In SSA, infectious diseases contribute to the burden of maternal and perinatal deaths[15]. HIV and malaria are known to be two relevant infectious diseases particularly during reproductive age and pregnancy. Globally, 85 percent of pregnant women living with HIV live in SSA[5]. HIV prevention and treatment during pregnancy protects against transmission of the disease to the newborn during gestation or delivery. In the 21 countries with the highest HIV rates, all in the SSA region, the number of women in need of mother-to-child transmission prevention procedures for HIV is 1.3 million. In 2013, half of women in LMICs were not tested for HIV during pregnancy, a health procedure that is essential in these settings, and therefore, they were not able to access HIV treatment and care in case of need[5].

Regarding malaria infection, in high transmissions areas, the risk of low birth weight doubles when there is placental malaria and up to five percent of the neonates can be born with congenital disease. Further, pregnant women infected with malaria more frequently show higher parasitaemia, severe anaemia, hypoglycaemia and acute pulmonary oedema[16]. In SSA, 10,000 pregnant women and 200,000 of their infants die every year due to malaria infection during pregnancy[17]. Intermittent Preventive Treatment of malaria in Pregnancy (IPTp) with sulfadoxine-pyrimethamine (SP) is considered one of the most cost-effective interventions to prevent these deaths[18]. Since 2014, the WHO has recommended the intake of three doses of SP as IPTp for all women living in moderate to high transmission areas, at each scheduled antenatal care visit, starting in the second trimester of gestation[19]. It is estimated that in the African countries that adopted this policy, 52 percent of pregnant women received at least one dose of SP in 2014, 40 percent received two or more doses and only 17 percent received three or more doses[20].

Neonatal care, strictly speaking, is not an opportunity specific to women. However, neonatal health is inextricably linked to maternal health, and therefore it is worth including this component in the analysis. Newborn health was not specifically addressed in the Millennium Development Goal (MDG) framework. Over that period, progress in the rate of child survival among children aged one to 59 months outpaced advances in reducing neonatal mortality; as a result, neonatal deaths now represent a larger share (45 percent) of all under-five deaths globally, resulting in 2.7 million deaths each year[21]. More than 80 percent of all newborn deaths result from three preventable and treatable conditions – complications due to prematurity, intrapartum-related deaths (including birth asphyxia) and neonatal infections. Cost-effective, proven interventions exist to prevent and treat each main cause. Improving effective coverage of care around the time of birth – the most risky period for mothers and their newborns – requires educated and equipped health workers, and availability of essential commodities[22]. The WHO recommends that women who have delivered in a health facility should receive postnatal care for at least 24 hours after birth. If a birth is at home, the first postnatal contact should be as early as possible within 24 hours of birth[23]. Postnatal care offers an opportunity to provide a number of interventions including counselling on exclusive breastfeeding, birth spacing and contraceptive methods, and

educating women on the benefits to their own and their newborn's health of doing so. The WHO recommends three additional postnatal care contacts on day three, between days seven and 14 after birth and six weeks after birth. Newborn health has been given more prominence in the Sustainable Development Goals (SDGs) targets (target 3.2: by 2030, end preventable deaths of newborns and children under five years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-five mortality to at least as low as 25 per 1,000 live births)[24]. In 2015, the global neonatal mortality rate, that is, the likelihood of dying in the first 28 days of life, was 19 deaths per 1,000 live births[13].
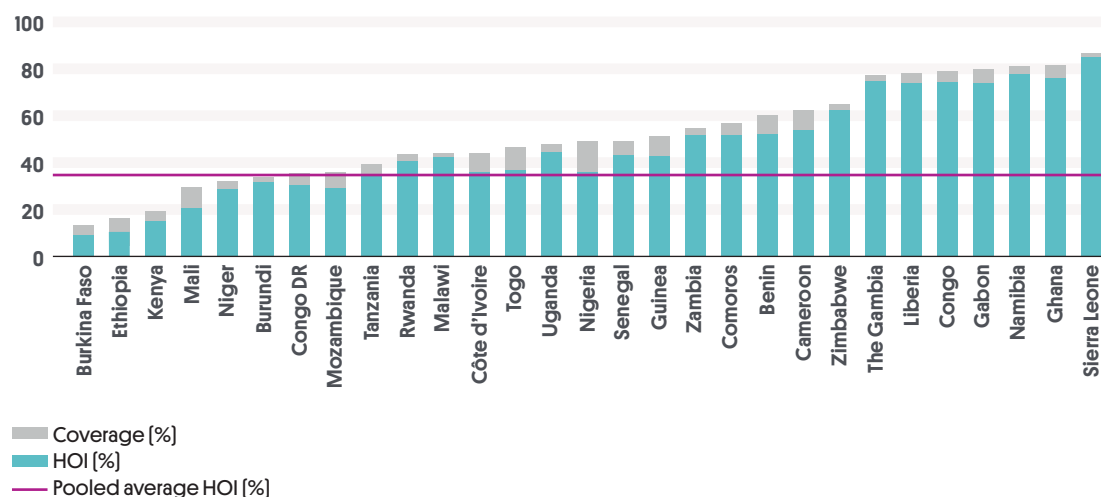
Findings for maternity care

In this section, the availability of each intervention was assessed individually, first "four antenatal care visits", "delivery attended by skilled personnel" and "postnatal women's checkup", after which the joint availability of the minimum maternity care package, which is labelled as the "Composite HOI", is examined. Results show that:

- Maternity care has generally low coverage and is unequally distributed in SSA. On average, for each one of the three individual opportunities, only 35 to 40 percent of women in the SSA region can claim to have access.

- As has been the pattern for most of the opportunities examined thus far, there is substantial country heterogeneity: coverage ranges between 80 to below 20 percent for the three opportunities.

- These opportunities also vary widely within countries, without any clear trend, reflecting that performing better in one of the opportunities does not mean that the performance is also good in the others. For example, "delivery attended by skilled personnel" and "four antenatal care visits" score very low in Burkina Faso (HOIs: 18 percent and nine percent, respectively), but the country performs very well on "postnatal checkups" (HOI: 81 percent).

- The HOI of "delivery attended by skilled personnel" for women that delivered at home is much lower than for those delivering in a health facility, when the sample is split by location of delivery (Figure 3.5). The highest HOI of "delivery attended by skilled personnel" for deliveries at home is 23 (Comoros), and in some countries it is virtually zero, which suggests that few women receive services from trained health personnel when delivery takes place at home. By contrast, for women who gave birth in a health facility, three quarters of the countries have a HOI of "delivery attended by skilled personnel" higher than 90.

Figure 3.4 HOI for maternity care

a. Four antenatal care visits

Coverage [%]
HOI [%]
Pooled average HOI [%]

b. Delivery attended by skilled personnel

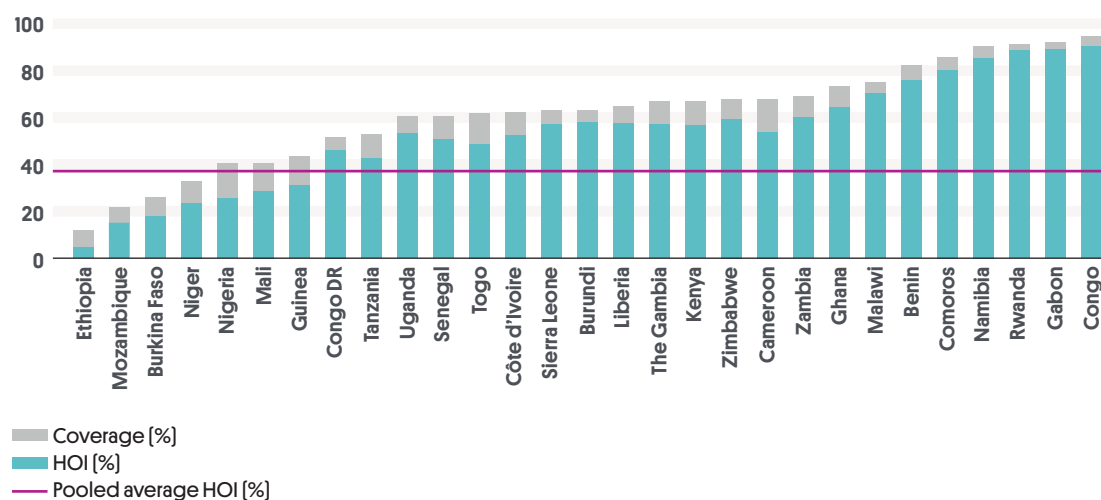Coverage [%]
HOI [%]
Pooled average HOI [%]

figure continues next page

Figure 3.4 HOI for maternity care (continued)

c. Postnatal checkup

Coverage (%)
HOI (%)
Pooled average HOI (%)
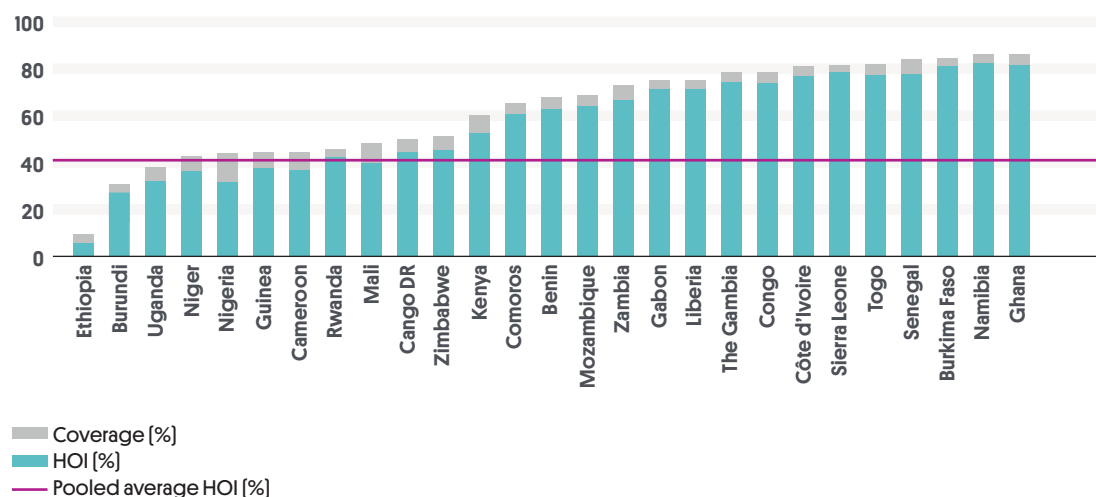
Figure 3.5 HOI for "delivery attended by skilled personnel" by place of delivery

Delivery in a health facility
Delivery at home
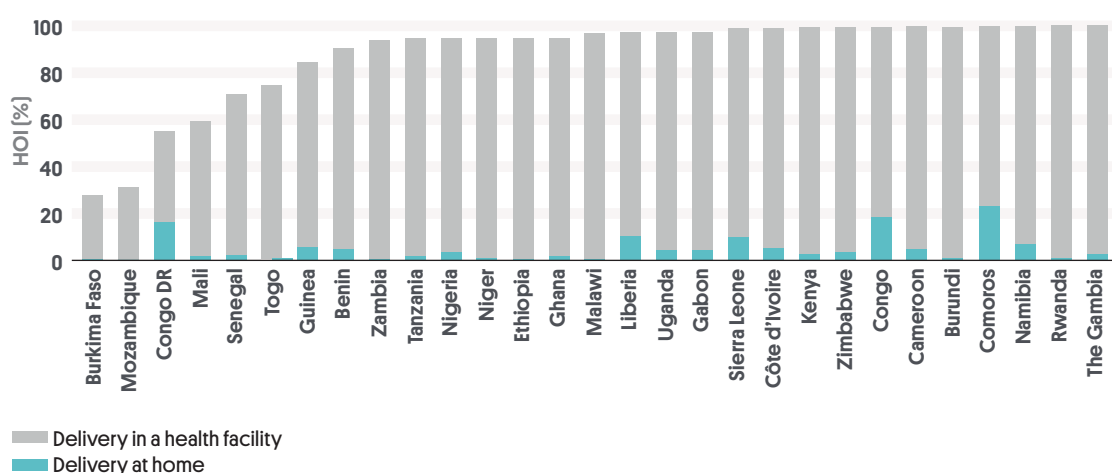
Findings for the minimum maternity care package (Composite HOI)

This section revisits the opportunities for perinatal care, but unlike the previous section, which looked at individual opportunities, it assesses how SSA countries perform when the opportunity of interest is a minimum package of essential maternity care ("four antenatal care visits", "delivery attended by skilled personnel" and "postnatal checkup" regardless of time since delivery). Although the package does not include all services that women need, for example, checkup for women within hours after delivery is not included given data unavailability, it largely covers extent of the basic interventions necessary to avoid high risk situations for mothers.

- In general coverage is very low, as the multi-country pooled composite HOI (16) reveals. Despite this low average, ten countries have values below this value, meaning that the availability of the package of services is almost inexistent in one out of three countries. In all countries, there is substantial inequality of access to the package of services (Figure 3.6).

Figure 3.6 Composite HOI for maternal care

Coverage [%]
HOI [%]
Pooled average HOI [%]
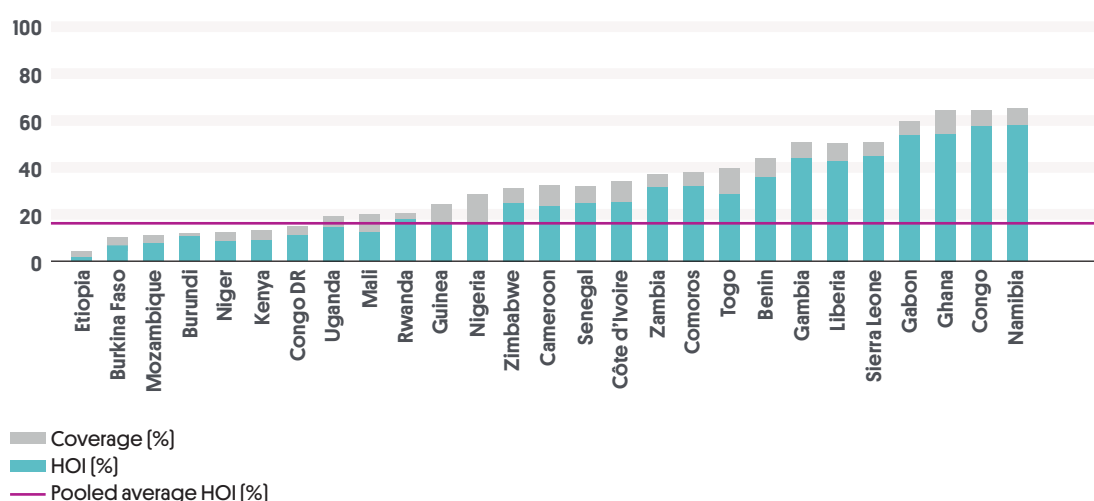
- Differences across countries are large, ranging from moderate to no provision of the package (Ethiopia has a HOI near 0) to a HOI around 60 (Namibia).

- To further assess whether this essential maternal care package could have an impact on maternal and infant health, infant mortality rate (IMR)[VI] and maternal mortality ratio (MMR)[VII] have been correlated using the D-index of the composite HOI for each country and survey year (Figure 3.7). The correlations show how different infant or maternal mortality are between countries, depending on differences in inequality of opportunity. The higher the infant (or maternal) mortality is, the higher the inequality of access to the essential maternity care package (D-index) is in the country.

- The correlations appear to be significantly strong, especially in the case of IMR, suggesting that countries with higher inequality of the maternity care package also tend to have higher IMR and MMR. Ethiopia and Sierra Leone are outlier countries that make the correlation weaker. In both cases, the special situation of the countries regarding their health systems could explain these results (Box 4).

[VI]Infant mortality rate is the number of infants dying before reaching one year of age, per 1,000 live births in a given year.

[VII]Maternal mortality ratio is the number of women who die from pregnancy-related causes while pregnant or within 42 days of pregnancy termination per 100,000 live births.
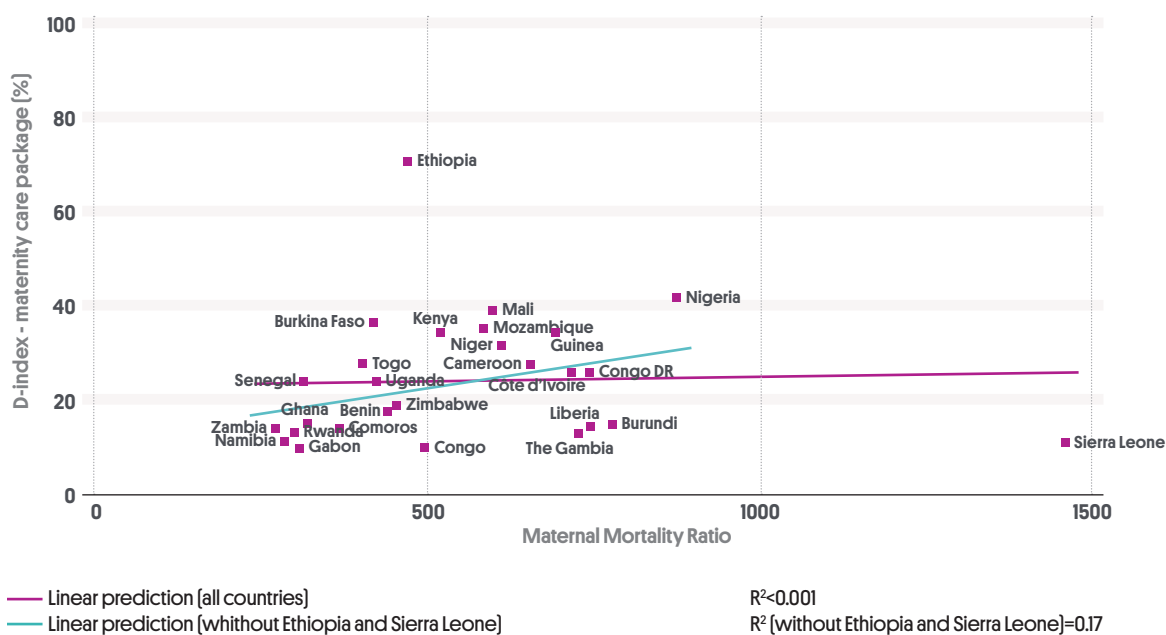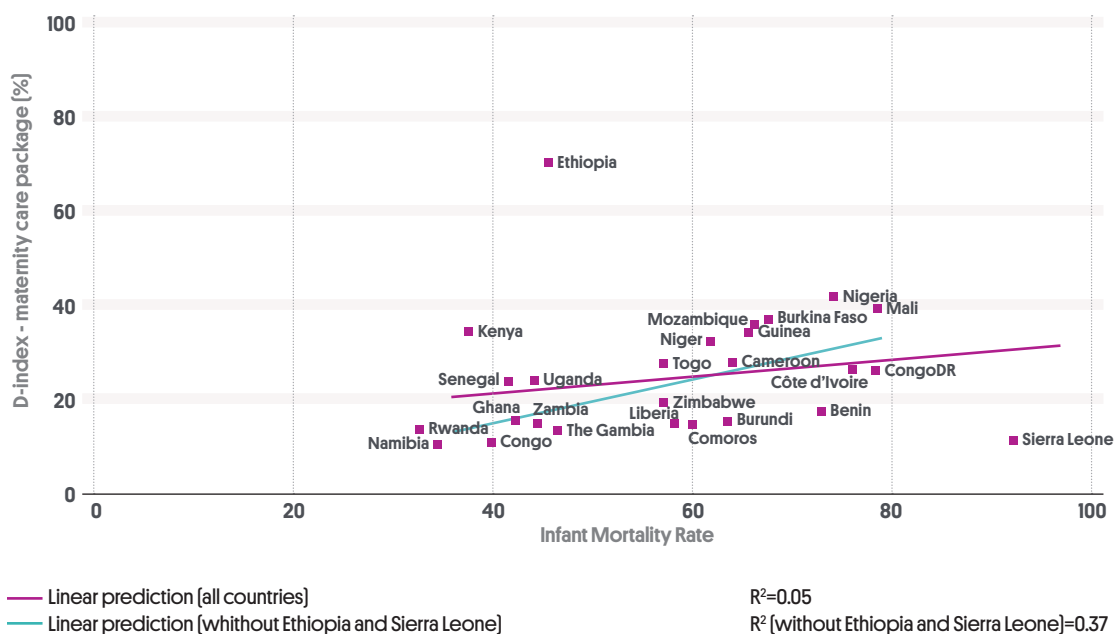
Box 4. Country cases: Ethiopia and Sierra Leone

Ethiopia: The Ethiopian government launched the Health Extension Plan (HEP) in order to provide basic health prevention services and treatment to rural communities. The HEP was operative between 2004 and 2005 when the first Health Extension Workers (HEWs) graduated[25,26]. HEWs are trained during a year and then, they spread the adequate health messages to their communities to engage people in good health and hygiene practices. The indicators analysed regarding pregnancy are always constructed for antenatal care visits and deliveries attended by skilled personnel, thus all individuals attended by HEWs are counted as a "not skilled attended" case. Consequently, Ethiopia stands always at the bottom of the graphs with the lowest HOI for maternity care indicators. For this same reason, it can be observed that the inequalities in the indicators for Ethiopia are the highest in the group of countries analysed. Rural communities are the ones with the most important presence of HEWs, while in cities and among the wealthier groups of women, the conventional medical system is easier to access.

Sierra Leone: Since the end of the Civil War in 2002, and despite political instability, Sierra Leone moved to process of peace and regeneration of the country. The war caused important damages in infrastructures, high death rates, migration of health personnel and the collapse of services, all of these issues that the government has worked to rebuild since then[27,28]. Despite being the country with the highest mortality rates in SSA, Sierra Leone is not among the regions with the biggest inequalities in maternal health. In fact, other studies found that, for example, concentration of nurses and midwives is similar between rural and urban areas, in contrast with other countries where the health workforce is concentrated in urban settings[29]. This fact could be caused by the general poverty situation in which the country was found after the end of the war, and the rebuilding process would have been quite similar in different regions, either rural or urban.

Finally, although it is not observed in these results, the obstacles that pregnant women face in Sierra Leone under normal circumstances – owing to access barriers and the limitations of the weakest health systems in SSA – have significantly increased since the start of the Ebola outbreak (2014-2016). The breakdown of weak public health systems triggered by the epidemic has contributed to making medical resources scarcer and services (e.g. emergency maternity care, family planning, immunisation programmes or prevention of malaria) less available or halted, which could eliminate the gains achieved by the country, resulting in much higher maternal, newborn and child mortality rates[30].

Figure 3.7 Correlations between the D-index of the maternity care package and IMR or MMR

—— Linear prediction (all countries)   R²=0.05
—— Linear prediction (whithout Ethiopia and Sierra Leone)   R² (without Ethiopia and Sierra Leone)=0.37

—— Linear prediction (all countries)   R²<0.001
—— Linear prediction (whithout Ethiopia and Sierra Leone)   R² (without Ethiopia and Sierra Leone)=0.17
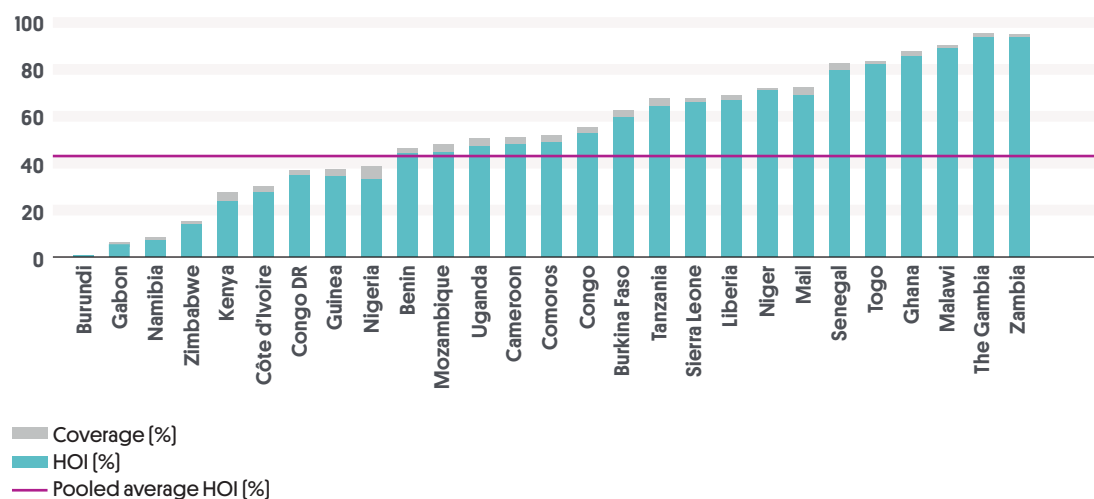
**Note:** R²= Correlation Coefficient

Findings for malaria and HIV

- Offering HIV testing during antenatal care has a multi-country pooled HOI of nearly 60, and follows a similar pattern to the previous opportunity examined, regarding women's level of knowledge on a place to get tested for HIV. HIV testing coverage during pregnancy is substantially higher and relatively equal for women in countries with high HIV incidence.

- HOI scores for "malaria prophylaxis" vary greatly between countries, ranging from virtually zero in Burundi, to more than 90 in The Gambia and Zambia, with a multi-country pooled HOI of 43. The low scores for Burundi could be explained by the implementation of the WHO recommendations on malaria prophylaxis previously mentioned[19]. Burundi and Ethiopia are the only SSA countries included in this report that decided not to implement the recommendation, and Rwanda decided to stop recommending SP in 2008; in all cases the reason was the low incidence of malaria rates in the countries. Ethiopia and Rwanda do not have available information on IPTp in the DHS survey questionnaires and therefore were not included.

Figure 3.8 **HOI for malaria and HIV indicators**

a. Malaria prophylaxis

Coverage [%]
HOI [%]
Pooled average HOI [%]

b. HIV test offered during pregnancy

Coverage [%]
HOI [%]
Pooled average HOI [%]
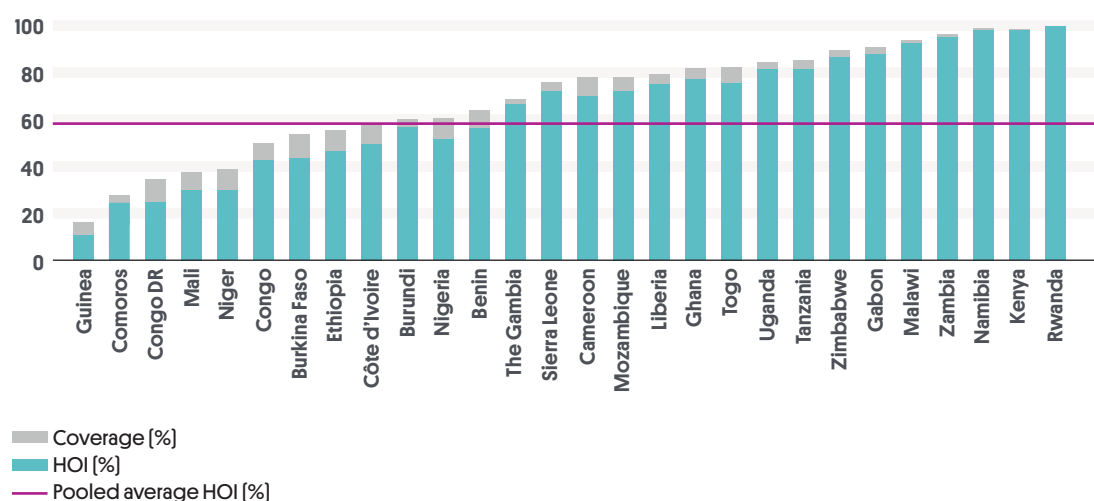
Findings for infant care

The WHO recommends using the "newborn checkup within two days after birth" as a relevant indicator[31]. However, available data in SSA countries on this intervention is scarce due to a number of reasons including: weak information systems or poorly kept records, survey respondents' inability to recall information, very low number of women attending the newborn checkup within two days after delivery or large number of women that deliver at home. As a result, this indicator had many missing values and could not be included. This is a limitation of the analysis, since this information would be relevant, especially in the current context of neonatal mortality accounting for 45 percent of the under-five child deaths globally[21].
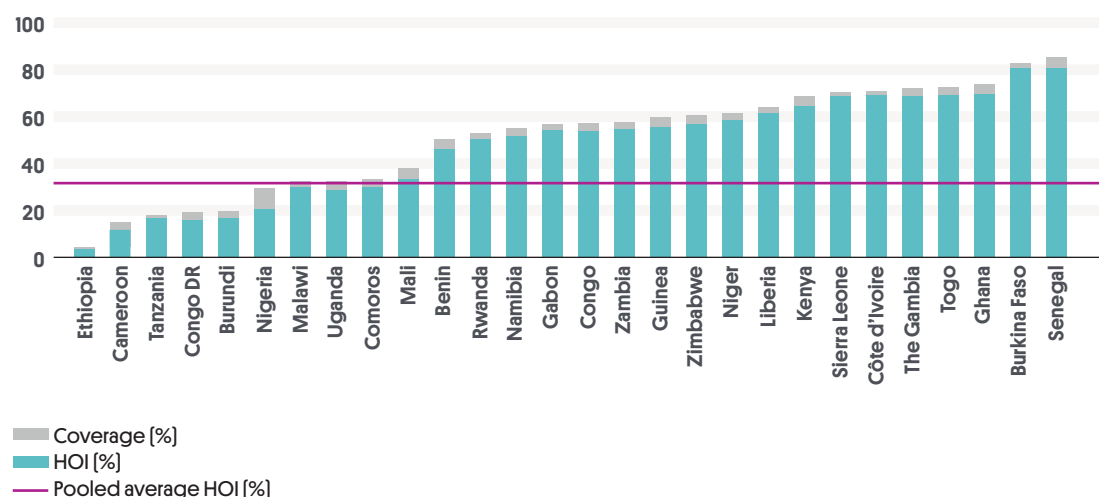
Notably, after two months, an infant – or a child of less than one year of age – is no longer a newborn. This is relevant because newborn checkups immediately after delivery are intended to prevent or address the causes of neonatal mortality – that currently account for nearly half of child mortality[32] – and to educate and counsel women on practices beneficial to both the mother and the newborn, such as breastfeeding, birth spacing or immunisation. Thus, the indicator "infant checkup within two months after delivery" has been used as an alternative indicator to the "newborn checkup within two days after birth" in the absence of information regarding neonates. Although "infant checkup after two months" is not a standard indicator, it conveys a measure of action taken to improve infant care by the mother.

- "Infant checkup after delivery" reveals high inequalities among countries ranging from Ethiopia (three) to Burkina Faso (81) in HOI. The multi-country pooled HOI is only 32.

- In general, West African countries appear to outperform the rest (East, Central and Southern African countries), because they are above the multi-country pooled HOI (green line) with only a few exceptions.

- Looking at individual countries, Ethiopia is among the worst performing in both cases, while Ghana, Burkina Faso and Senegal have among the highest HOI scores for these two opportunities.

Figure 3.9 HOI for infant care

a. Infant checkup within two months after delivery

Coverage [%]
HOI [%]
Pooled average HOI [%]

b. Six months of exclusive breastfeeding

Coverage [%]
HOI [%]
Pooled average HOI [%]
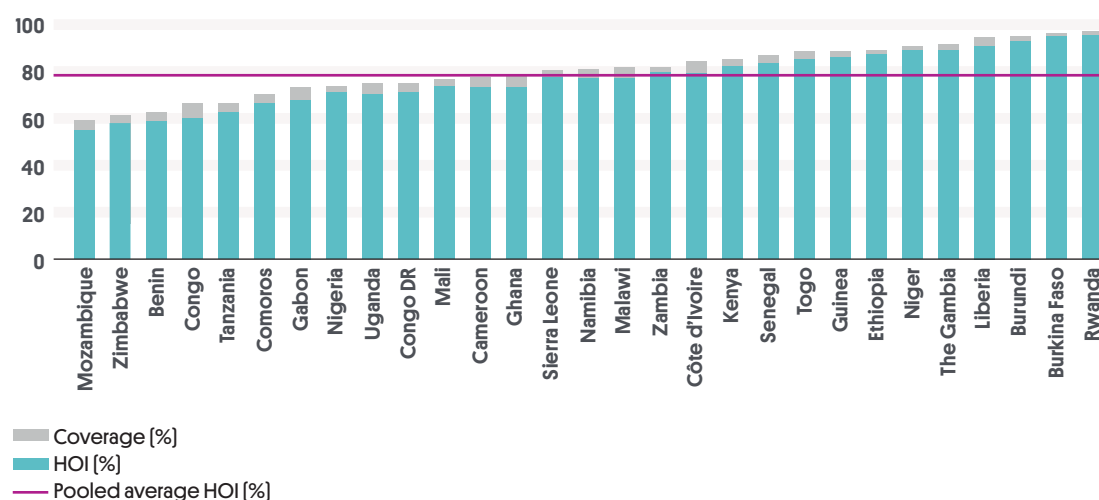
- In stark contrast, SSA countries overall do very well with the opportunity "six months of exclusive breastfeeding". The weighted HOI is around 80, which is the highest obtained among all opportunities examined in this study. Mozambique, the country that ranks lowest has an HOI above 50 percent, and the highest, Rwanda, has an HOI over 95.

■ There is very little inequality in breastfeeding within countries. The most important inequality that can be observed is between regions. East African countries appear to be in general below the multi-country pooled HOI (80 percent).

■ The negative correlation between HIV prevalence and the HOI for "exclusive breastfeeding" may be explained by the initial recommendation that HIV-infected mothers should not breastfeed to avoid the risk of transmitting the virus to their newborns. Currently, all lactating women should receive antiretroviral treatment, and thus breastfeeding is recommended at least up to six months of age, even if the mother is HIV positive[33]. However, in some settings exclusive breastfeeding might not be fully implemented, and the population remains cautious. This hypothesis would need to be tested with disaggregated data by HIV status of the women.

Figure 3.10 Correlation between HIV prevalence and the HOI for "six months of exclusive breastfeeding"
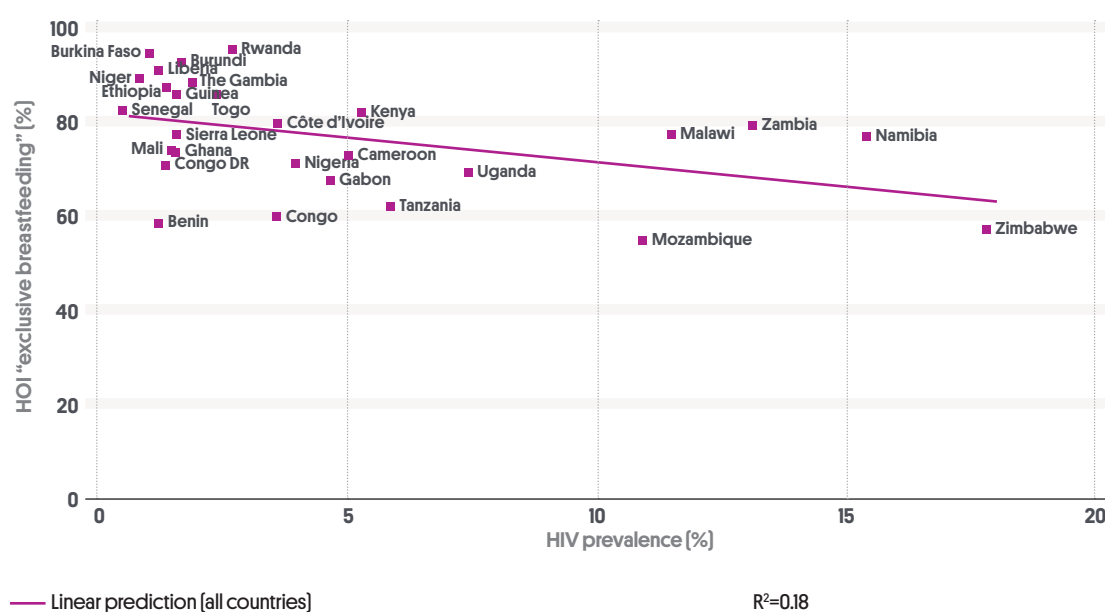
Conclusions

■ Maternity care is inadequate and is characterised by large inequalities within and across countries. These results also indicate that the high rate of home deliveries may be the reason why most births are not attended by skilled personnel.

■ Although the package analysed is the minimum essential to avoid high risks during pregnancy, it is still unavailable for many women and is very unevenly distributed among the population of women in SSA countries.

■ These results suggest the possibility that improving access to this essential set of services for maternity care could lead to reductions in IMR and MMR.

- The HOIs of "malaria prophylaxis during pregnancy" vary greatly between the countries. This could be caused by differences in antenatal care clinic attendance (because attending once might not be enough, especially when the visit occurs in the first trimester), uncertainty among health workers about SP administration and/or stock outs of SP at the health facility level, among other reasons[34].

- Regarding HIV testing, high burden countries outperform the rest in terms of coverage and HOI. In countries where HIV prevalence is lower than five, results are significantly worse than in high prevalence countries. Therefore, actions leading to expanding this essential health service to offer HIV testing before and during pregnancy should be encouraged.

- Infant care indicators vary widely between countries and reveal disparate results. On the one hand, the "infant checkup after delivery" shows inequalities among and within countries, with low HOIs. Importantly, the high neonatal mortality rates could be reduced with newborn checkups within hours after delivery. However, there is no data available for this crucial indicator, highlighting the need for improving health information systems as a prerequisite to addressing the causes of newborn mortality and morbidity. On the other hand, "six months of exclusive breastfeeding" is a good example of an extended practice with low inequalities throughout SSA countries.

3.1.3
Older adolescent girls (15-19 years old)

Older adolescent girls

- Met need for family planning
- Having never been pregnant
- Currently attending school

Context

In SSA, there are more than one billion people, and 23 percent of them are adolescents between ten and 19 years old[21]. Older adolescents – those between 15 and 19 years old – represent 11 percent of the SSA population. Half of these are girls, and 11 million are sexually active and want to delay childbirth for at least two years on average[21,35]. A third of these adolescent girls (3.6 million) are using a modern contraceptive method to avoid pregnancy, but the rest currently face an unmet need for contraception[35]. This unmet need is always higher among adolescents than among other women of reproductive age (60 percent and 26 percent, respectively)[1]. As a result, in SSA, almost half of pregnancies among older adolescents are unwanted, and half of them end in abortion in countries where abortion is illegal and usually performed under unsafe conditions. It is estimated that if

all the adolescent girls in SSA who needed contraceptives used them, unintended pregnancies would drop by 2.7 million per year[35].

The fertility rate among older adolescent girls has not undergone important variations during the MDGs period. SSA is the region that has made the least progress – a four percent reduction between 2000 and 2015 –, and is currently at 102 births per 1,000 adolescent girls[13,36]. Pregnancies during adolescence are life-threatening events, due to a greater probability of high-risk pregnancy at this age[37]. Gestation and labour complications are among the leading causes of maternal death among older adolescent girls in LMICs. Further, newborns of adolescent mothers face major health risks compared to those born to older women[1]. Therefore improving adolescents' access to sexual and reproductive health information and services is key. However, in 2015, less than half of women (15 to 49 years of age) in SSA who were married or in union satisfied their need for family planning by using modern contraceptive methods. Notably, child marriage is an important driver of adolescent pregnancy in SSA, where 90 percent of adolescents who give birth are married[38]. Adolescent pregnancy has strong negative effects on future educational and professional opportunities for girls, helping to perpetuate the cycle of poverty and ill health[1].

Education is tightly linked to adolescents' current and future reproductive health outcomes, and this is the reason why education has been considered an opportunity[39]. Although the gender gap in educational attainment has narrowed since 1990, currently 68 percent of older adolescent girls from LMICs have completed seven or more years of education. This proportion is remarkably lower for Africa (51 percent) compared to other world regions (Latin America 82 percent, Asia 72 percent)[1].

Finally, preventing unintended pregnancy and reducing adolescent childbearing through universal access to sexual and reproductive health-care services are critical to advance the health of women, children and adolescents, a precondition to achieve the SDGs. Three of the goals— SDG3, SDG4 and SDG5, related to health, education and gender equality, respectively — depend largely on improvements in adolescents' living conditions. However, adolescents have only been recently included in the global agenda as a separate group of individuals with specific needs[40].
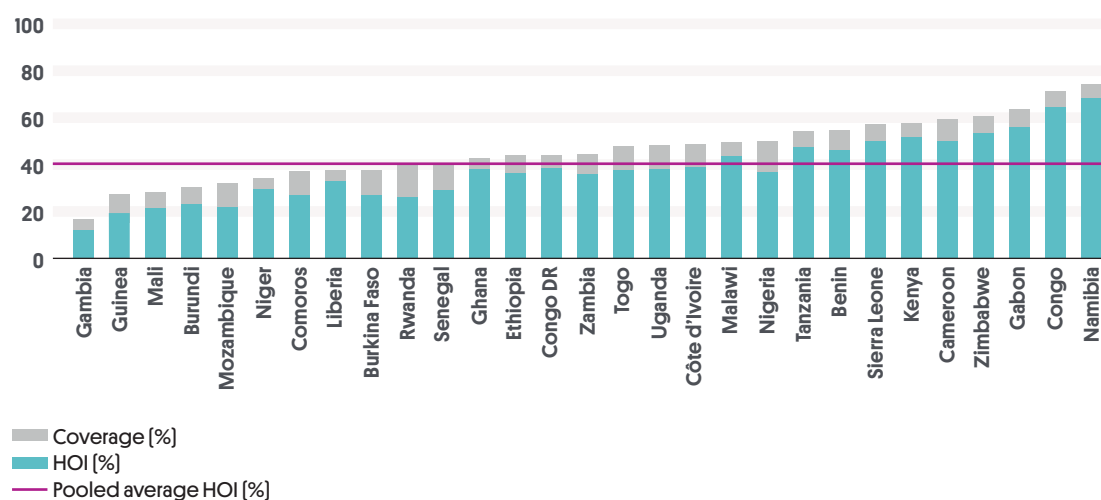
Findings

- Across SSA, data show that from the entire older adolescent girls' sample, only half of them attend school. Thirty-eight percent work and attend school at the same time. Twenty-three percent of older adolescent girls included in the study have been pregnant at some stage; of these, roughly 79 percent have been married or in a union, half are working and only eight percent are attending school.

- In general, the coverage of the three opportunities analysed for older adolescent girls is low, below 40 percent in two of the opportunities, while the penalties for inequalities are very high, meaning that there are important differences in cov-

erage rates between groups of adolescents with different characteristics, such as differences between urban-rural residents and between married and unmarried girls, among others.

Figure 3.11 HOI for access to reproductive health and education for older adolescent girls

a. Met need for family planning

Coverage [%]
HOI [%]
Pooled average HOI [%]

b. Currently attending school

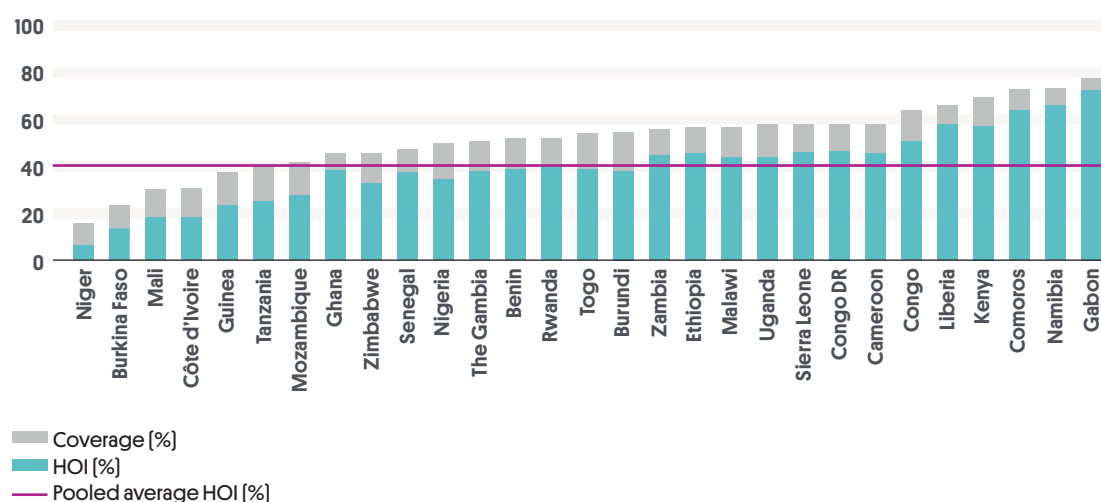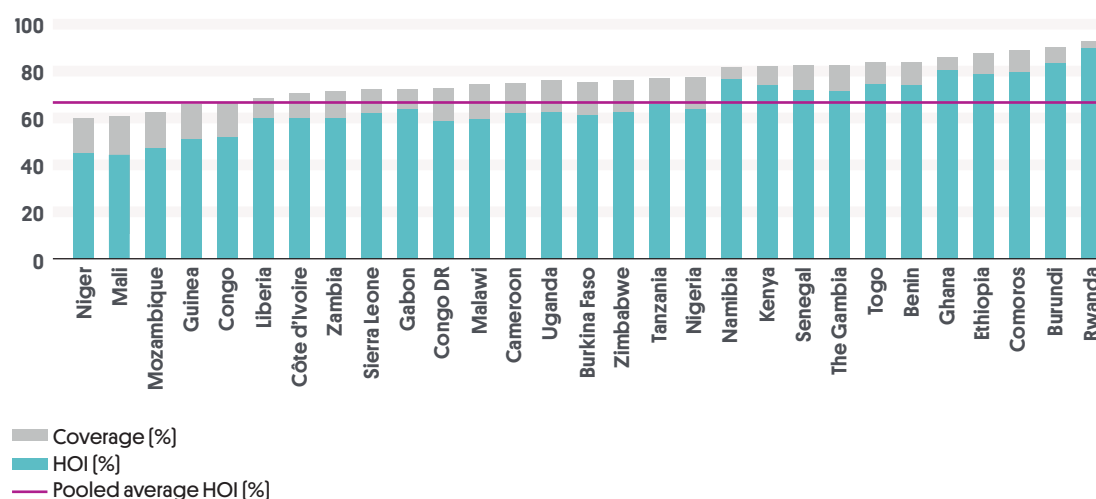Coverage [%]
HOI [%]
Pooled average HOI [%]

figure continues next page

Figure 3.11 HOI for access to reproductive health and education for older adolescent girls (continued)

c. Having never been pregnant

- Coverage [%]
- HOI [%]
- Pooled average HOI [%]

- The HOI for the three indicators varies greatly across countries. The HOI for "met need for family planning" ranges from 12 (The Gambia) to 68 (Namibia), with a multi-country pooled HOI of 40. The multi-country HOI for "currently attending school" is 40, but the differences across countries are wider, ranging from six (Niger) to 72 (Gabon). The HOI for "having never been pregnant" is generally higher than the HOI of other indicators for all countries, with a multi-country pooled HOI of almost 70 and ranging from 44 (Mali) to 90 (Rwanda).

- Cameroon, Kenya, Gabon, Rwanda, Congo and Namibia are among the top performing countries in terms of HOI for "met need for family planning" and "school attendance". They also have some of the best scores with regard to adolescent girls avoiding pregnancies. In contrast, the HOIs for Guinea, Mozambique, Niger and Mali are among the lowest ranked for the three opportunities examined.

- Regionally, results also show that Sahel adolescents suffer larger disadvantages than adolescents from other regions. The countries included in this study belonging to the Sahel region are Senegal, Mali, Burkina Faso, and Niger. With the exception of Senegal in adolescent pregnancy, Sahel countries are always below the multi-country pooled HOI for the three opportunities analysed.

Conclusions

- Important inequalities exist between adolescents with different life circumstances, since the coverage rates show important decreases due to inequalities when computing the HOIs.

- In some SSA countries, high proportions of adolescents avoid pregnancy, but regionally (in the multi-country pooled analysis of the 29 SSA analysed) about three in ten of older adolescent girls become pregnant at a very early age.

3.2
Comparing HOIs among groups of countries

The previous section of this chapter has focused on analysing access to opportunities for SSA women at a country level and at a regional level – with the multi-country pooled HOIs –, while in this section we describe the comparisons studied between different sets of countries grouped by the United Nations (UN) region and HIV prevalence. For completeness of results, the comparisons will be made between both weighted and unweighted average country groups' HOIs. The weighted averages (multi-country pooled HOIs) show the results of the African regions populations taking into account the women's population of each country. For example, in West Africa, individuals from Nigeria have higher weight than the ones from other countries because Nigeria is the most populated country of the region. On the other hand, unweighted average HOIs are useful to see the simple mean HOI of a group of countries without losing the "effect" of small countries, which do not have an impact on weighted averages. As presented in the chapter, both types of comparison display quite similar trends, showing that the HOIs of the countries inside a group are very similar and the average does not change much when weighting.

3.2.1
Comparing African regions

In the analysis of the HOIs by country, some geographical patterns have been detected and thus, have already been explained in the previous sections. In order to verify whether these differences between country regions are real, the average HOIs (weighted and unweighted) have been computed for Central, Eastern and Western Africa. The comparison with Southern Africa would have been meaningless because there is only one Southern African country included in the study (Namibia). The countries were classified as Western, Eastern or Central, following the UN classification (Table 2.1, Chapter 2). A non-parametric test – Wilcoxon rank sum test[VIII] – is needed to check for these differences but it can only be applied to the unweighted sample because it does not work with weights. In Figure 3.12, small violet squares mark the indicators where at least two of the regions show significant differences with a confidence level of 90 percent.

Women of reproductive age
- East Africa is the region with the highest HOI for the "knowledge of a place where to get an HIV test", which is consistent with the fact that the majority of the countries with high HIV prevalence in Africa are in the Southern and Eastern regions.

- For "met need for family planning", West Africa has a lower HOI than the other regions. In the weighted analysis, HIV differences are still clear, while family planning seems to reduce the differences between West Africa and Eastern and Central regions.

[VIII]Wilcoxon rank sum test is only applicable to pairs of samples, therefore in this analysis the test has been applied to each pair of regions to compare (West-East, East-Central and Central-West).
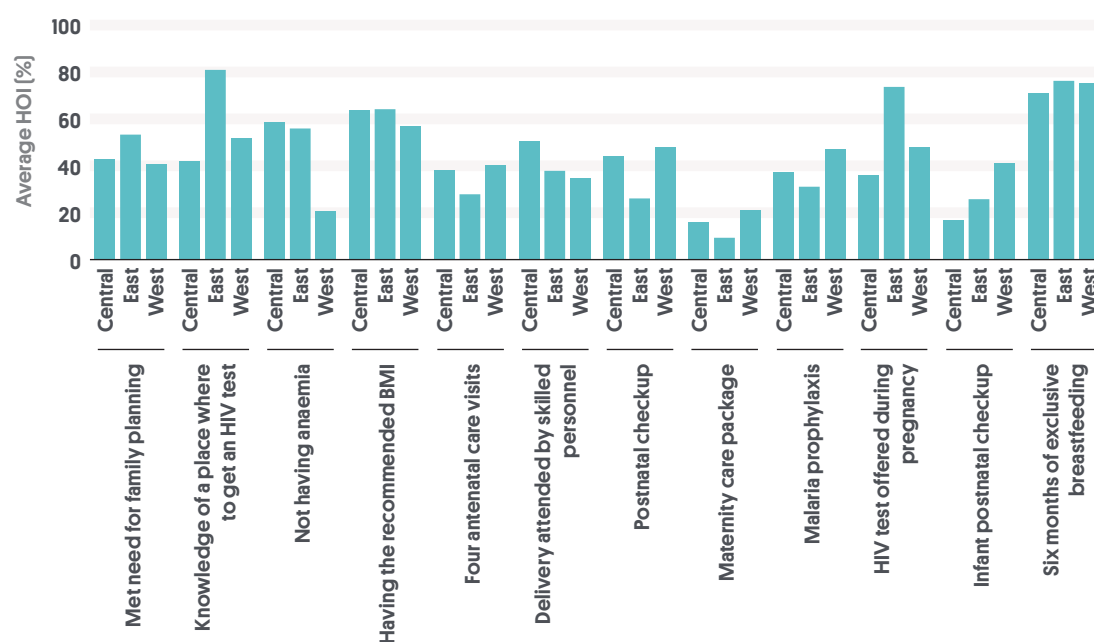
Figure 3.12 Average HOIs for women of reproductive age and pregnant women's opportunities by African region
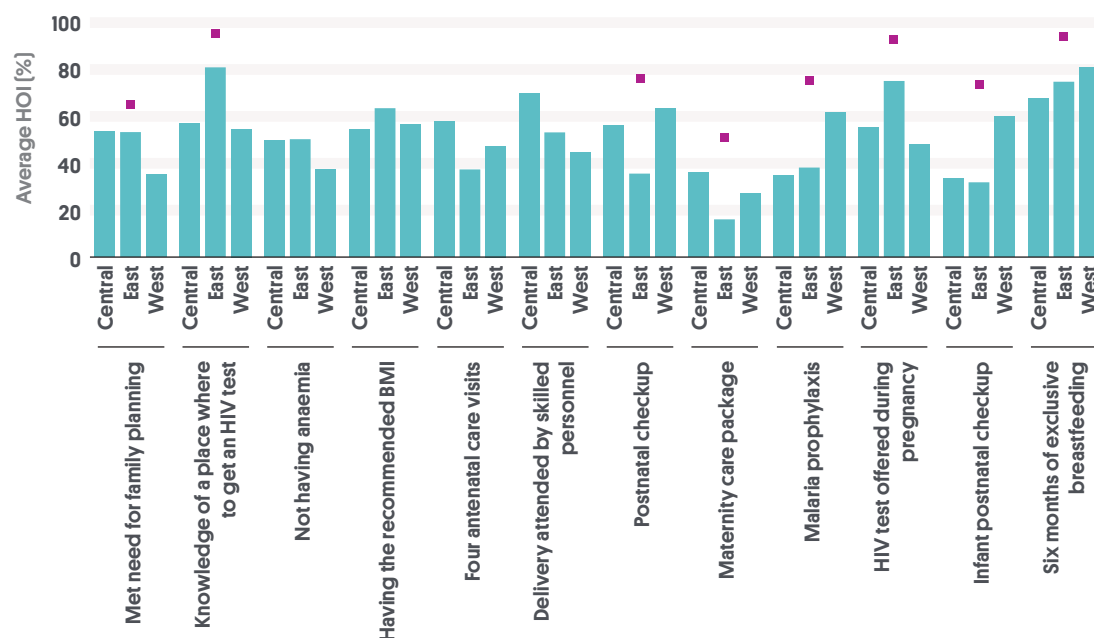
a. Unweighted

Note: ■ = significant differences with a confidence level of 90 percent.

b. Weighted

Note: ■ = significant differences with a confidence level of 90 percent.

- "Not having anaemia" and "having the recommended BMI" do not appear to bear significant differences between regions in the unweighted analysis. However, it is remarkable that the opportunity "not having anaemia" shows large differences in terms of HOIs between West Africa in comparison with East and Central Africa in the weighted analysis.

Pregnant women

- In the unweighted analysis, "postnatal checkup", "malaria prophylaxis during pregnancy", "HIV test offered during pregnancy", "infant checkup", "exclusive breastfeeding" and the "maternity care package", all show significant differences between African regions.

- West Africa outperforms the other regions in "postnatal checkup", "malaria prophylaxis" and infant opportunities, while East Africa fares better in "HIV test offered during pregnancy". Central Africa has high HOIs for the rest of the indicators, but the power of the comparisons is low because there are only four Central African countries included in the analysis in comparison with the 11 and 13 countries of the two other regions.

- Although the results do not vary significantly in the weighted analysis, in general, it can be seen that average HOIs are lower than the ones obtained in the unweighted analysis.

Older adolescent girls

- The differences in the unweighted analysis are not large, although they are significant for the "met need for family planning" and the "school attendance".

- In general, Central Africa outperforms the other African regions.

- The results from the weighted analysis are very similar to the previous ones. The only exception is the "met need for family planning" that seems to have fewer differences between regions, meaning that accounting for country populations, people from all over SSA regions show the same HOI for this indicator.

Figure 3.13 Average HOIs for older adolescent girls' indicators by African region

a. Unweighted   b. Weighted
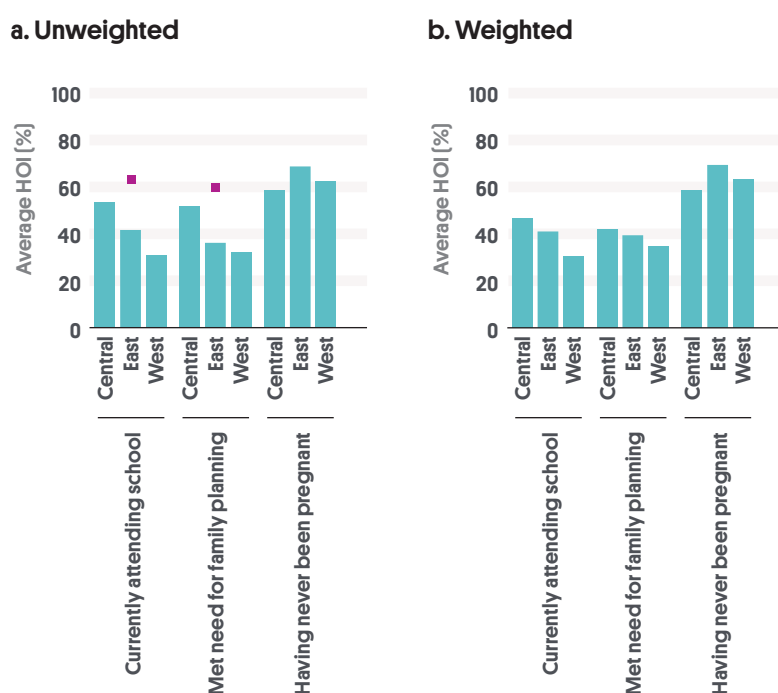
Note: ■ = significant differences with a confidence level of 90 percent.

3.2.2
Comparing SSA countries with different HIV prevalence

Both indicators related to HIV analysed in this report – "knowledge of a place where to be tested" and "having been offered an HIV test during pregnancy" – showed a clear trend where high HIV prevalence countries outperform in general the rest of the SSA countries in access to these HIV services. To highlight the differences between HOIs, the weighted and unweighted analyses between the countries that have an HIV prevalence of more than five and the ones with prevalence equal or lower than five have been computed. Higher HIV prevalence countries included are Kenya, Malawi, Mozambique, Namibia, Tanzania, Uganda, Zambia and Zimbabwe. The HIV prevalence rates of all countries for the corresponding survey year are listed in Appendix A.

- Both indicators related to HIV show higher HOIs – both in weighted and unweighted analyses – for the group of countries with HIV prevalence higher than five.

- The HOIs tend to be lower in the weighted analyses than in the unweighted ones.

- Undoubtedly, it can be stated that in countries where HIV is a major public health problem with more than five percent of the population infected, knowledge and access to HIV services is considerably better than in other SSA countries. Despite the HIV prevalence being lower in the rest of the countries included in the

analyses, it is not insignificant. If these countries do not spread HIV awareness and prevention among the population, there is the possibility of an increase of HIV prevalence in the future.

Figure 3.14 Average HOIs by HIV prevalence regions

Knowledge of where to get an HIV test

a. Unweighted   **b. Weighted**

HIV test offered during pregnancy

a. Unweighted   **b. Weighted**

Note: ■ = significant differences with a confidence level of 90 percent.

Key messages

- On average, there are fewer inequalities both at country level and across countries for the opportunities "not having anaemia" and "having the recommended BMI" than for reproductive and maternal opportunities analysed (e.g. "met need for family planning", HIV-related opportunities and maternity care opportunities).

  - Reproductive health needs are related more to service provision, which bear higher inequalities than health outcomes.

  - Anaemia and BMI are indicators of general health and are more evenly distributed within the country populations.

- The maternity care package ("four antenatal care visits", "delivery attended by skilled personnel" and "postnatal checkup") has very low coverage with large inequalities.

  - Individually, each of these indicators also has high inequalities, although the most unequal is "delivery attended by skilled personnel".

  - The low HOIs obtained for "delivery attended by skilled personnel" are mainly due to home births.

- "Exclusive breastfeeding" has a good coverage in SSA with low inequalities within and across countries.

- Older adolescent girls have poorer reproductive health opportunities than older subgroups of women of reproductive age.

  - On average, "met need for family planning" has lower coverage and higher inequalities among adolescents than women older than 20 years.

- No general geographical pattern has been detected for maternal and reproductive health opportunities distribution in SSA.

  - Specific opportunities display particular patterns, but there is no general trend across indicators.

- High HIV prevalence countries show lower inequalities and higher coverage rates of HIV-related opportunities than low HIV prevalence countries, suggesting that progress is possible when interventions are prioritised and sufficiently funded.

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