

**Table 1: Articles included in the review**

Author	Location	Study Design	Sample Size/Population	Summary of findings
Dahiru et al 2013	Nigeria	SA of 2013 NDHS	38,945 women aged 15-49 years	Older age (+), rural residence (-), mother's and husband' level of education (+), working status of the woman (+), rich household (+), health insurance (+), Christian and Muslim religion (+)
Muchie 2017	Ethiopia	SA 2014 DHS	3694 women aged 15-49 years	Lower educational level (-), lower economic conditions (-), higher birth order (-), rural residence (-), available high quality ANC services (+)
Gebre 2018	Ethiopia	SA 2000-2016 Ethiopia DHS	5867 (year 2000), 2279 (year 2016)	Low-economic status (-), illiteracy (-), rural residence (-), no occupation (-), poor access to mass media (-)
Yaya 2018	Benin	Benin DHS	17,794 and 16,599 women in 2006 and 2012 respectively.	Education (+), higher wealth index (+), rural residence (-), employed (+)
Yaya 2017	Ethiopia	SA 2011 Ethiopia DHS	10,896 women	Frequency- older age interval (-), rural residence (+), primigravidity (+), unemployed (+) Timing- Rural residence (-), multiparity (-) Age >31 years (-), single women (-), poor social support (-)
Rurangirwa 2017	Rwanda	Cross-sectional study	921 women	
Akinyemi 2017	Nigeria	SA 2013 NDHS	20,467 women	Low formal education (-), poverty (-) healthcare access problems (-)
Saad-Haddad 2016	Multi-country- Bangladesh, Cambodia, Peru, Cameroon, Nepal, Senegal, Uganda.	SA NDHS	7576, 8008, 4818 women, in Cameroon; Senegal and Uganda respectively	Education (+) household wealth(+), gestational age at first visit (-), birth rank (-), preceding birth interval (-)
Worku 2016	South Africa	Cross-sectional	272 mothers	Mother's age >20 years (+), increased distance to health facility(+), service satisfaction (+)
Manthalu 2016	Malawi	SA	142 health facilities	Use fee exemption (+)
Fagbamigbe 2017	Nigeria	SA	6,299 females	Low education (-), poverty (-)
Tsegay 2013	Ethiopia	cross-sectional study	1113 women	Married (+), educated (+), proximity of health facility to the village(+), and husband's not a farmer (+)
Babalola 2009	Nigeria	SA	2148 women	Education (+), older age at the birth of last child (+), and approval of family planning (+), urban residence(+), wealthy household (+), large number of clients in PHC (-)
Abor 2011	Ghana	Ghana DHS	5588 women	Older age (-), multiple pregnancies (-), education (+), religious affiliation (+), high economic status (+)
Wilunda 2015	Ethiopia	Cross-sectional study	500 women	High wealth status (+), knowledge of the recommended number of ANC visits (+), attitude towards maternal health care (+), older age (-)
Abosse 2010	Ethiopia	Cross-sectional study	691 women	Older age (+), husband's positive attitude to ANC (+), small family size (+), no education (-)
Zegeye 2013	Ethiopia	Cross-sectional	446 women	Timing: Mothers with no parity before (+), good knowledge on early ANC (+), planned pregnancy (+)

Akowuah 2018	Ghana	Cross-sectional study	200 pregnant women	Older age (+), large household size (+), employed (+)
Adewuyi 2018	Nigeria	SA of DHS 2013	19652 mothers aged 15 to 49 years old	Rural: maternal non-working status (-), birth interval < 24 months (-), single birth type (-), not listening to radio at all (-), lack of companionship to health facility (-), not getting money for health services (-) Urban: mothers professing Islam (-), those who did not read newspaper at all (-), and those who lacked health insurance (-)
Brown et al 2008	Kenya	Cross-sectional	1,562 perinatal outcomes	Education: secondary education or above (+), Distance: living further than 5 km from a dispensary (-), Secondary or higher education (+), greater wealth (+), urban residence (+), parity of 3–4 (+)
Mbuagbaw 2011	Camaeron	DHS	7,557 women	Parity (+), literacy status of women (+), average monthly family income (+), media exposure (+), decision where to give birth (+), perception of distance to health institutions (+)
Birmeta 2013	Ethiopia	Cross-sectional	422 women	Women with higher education (+), Women from urban areas (+), autonomous women (+)
Tarekegn 2014	Ethiopia	DHS	16,515 women	Young age (+), least educated (+), poorest women (+) women whose partners were uneducated (+), those with health insurance (+), low socioeconomic status (-)
Sakeah 2017	Ghana	Cross-sectional	1497 women	Timing: rural (-), secondary education (+), higher parity (-), married (+)
Ochako 2011	Kenya	SA 2003 KDHS	1675 young women	Living in communities with a high proportion of women who delivered in a health facility (+), Residence in high-poverty communities (-)
Ononokpono 2013	Nigeria	DHS	16,005 women	Older mothers (+), urban residents (+), higher education (+), farmer mothers (+)
Melaku 2014	Ethiopia	Cross-sectional	2361 mothers	Young age (+)
Straneo 2016	Tanzania	Cross sectional	464 women	Timing: young age (+)
Ononokpono 2015	Nigeria	SA NDHS 2008	17560 women	Younger women (+), secondary/higher education (+), Employed (+), Christian women (+), rich households (+), involvement in decision making (+), joint decision (+), Igbo, Yoruba and other minority ethnic groups (+), urban areas (+), educated women (+), exposed to mass media (+)
Arthur 2013	Ghana	SA of GDHS 2008	NR	Wealth (+), urban areas (+), mothers with health insurance (+), educational level (+)
Tewodros 2009	Ethiopia	Cross-sectional	627 women	Educated (+), less than 60 minute walk to facility (+), husband approval (+), illness in future pregnancies (+), planned pregnancy and illness experienced in past pregnancy (+), age at first pregnancy (+)
Gupta 2014	Tanzania	SA of DHS	8,035 women	urban areas (+)

Ntambue 2012	Democratic Republic of Congo	Cross-sectional	1762 women	primiparous and grand multiparous (-), unplanned pregnancies (-)
Mwase 2018	Burkina Faso	Cross-sectional	6601 women	least poor households (+), married (+), living further away (-), multiparous (-), Muslim religion (-),
Bobo 2017	Ethiopia	SA of DHS 2014	8070 women	urban area (+), secondary level (+),
Anchang-Kimbi 2014	Burkina Faso	Cross-sectional	287 parturient women	Only one dose of IPTp (-)
Melese et al 2016	Ethiopia	Cross-sectional	Women (15-49 years) who gave birth in one year preceding the study (n=748)	Preference of skilled personnel (+), awareness about places where to get skilled providers (+), listening to radio (+), distance of WHDT within 2km radius from the nearest health facility (+)

DHS: Demographic health survey, SA: Secondary Analysis FGD: Focal Group Discussion SA: Secondary Analysis, IDI: In-depth interview, ANC: Antenatal care, TBAs: Traditional birth attendants NR: Not Reported IPTp: intermittent preventive treatment during pregnancy \*Only results for Cameroon, Senegal, Uganda included in review NR: Not reported (+): increases ANC use (-) reduces ANC use

**Table 2: Articles included in the review**

Author	Location	Study Design	Sample Size/Population	Summary of findings
Kyei 2012	Zambia	SA 2007 DHS	2405 rural births	Distance(+), level of provision category (+)
Doctor 2011	Nigeria	SA 2008 Nigeria DHS	18,028) women	youngest age cohort(-), rural residence (-), lack of schooling (-), higher parity (-), residence in northern region(-) and poor economic status(-)
Woldemicael 2010	Eritrea, Ethiopia	SA DHS 2007	Currently married women	Women's autonomy (+)
Kibusi 2018	Tanzania	SA 2011/2012 Tanzania HIV/AIDS and malaria indicator survey	4513 women	Having health insurance (+)
Makate 2017	Zimbabwe	SA ZDHS 2005/06 and 2010/11	8907 women ( 2005/06), 9171 women (2010/11)	Contraceptive prevalence (+), religious composition (+), density of nurses (+), health expenditures per capita (+), availability of government hospitals in communities (+)
Haruna-Ogun	Nigeria	NDHS 2013	20,192 cases	Place of residence (+)
Aliyu 2017	Nigeria	SA NDHS 2013	20,467 women	maternal education (+), media exposure (+), place of residence (+), having health insurance(+)

Banke-Thomas	Ethiopia	SA Kenya DHS	898 adolescents	Having education (+), religion (+), ethnicity (+), urban residence (+), wealth quintile (+), mass media exposure (+), and geographical region (+)
Kuuiire 2017	Nigeria Malawi	SA NDHS 2003, 2008 and 2013 MDHS 2000, 2004 and 2010	Nigeria (39,923 women) and Malawi (28,951 women).	Nigeria: Wealth (+) Malawi: Wealth (-)
Chorongo 2018	Kenya	Cross-sectional comparative study	385 women	Being Muslim (+), Higher education (-),
Owili 2016	Kenya	SA KDHS	4005 women	Monogamous setting (+), marriage (+), Older age (+), religion (+), health insurance (+), Exposure to media (+), higher education (+)
Bayou 2016	Ethiopia	Cross sectional	870 women	Higher education (+), ANC in private facility (+)
Browne 2016	Ghana	SA GDHS 2008	3022 Women	Being insured (+)
Ochako 2016	Kenya	2008-09 Kenya DHS.	4014 women	Wanted pregnancy (+), Urban residence (+), Higher education (+), Older age (+), birth interval less than 25 months (-)
Muhwava 2016	South Africa	Cross sectional	363 women from rural sample and 466 women from urban	Urban :Being employed (+), wanted pregnancy Rural site: Being married (+), Religiosity (-)
Gudayu 2015	Ethiopia	Cross sectional	390 women	Not aware of right timing of booking (-), not autonomous to use ANC (-), Recognised pregnancy by missing period (-).
Oyewale 2015	Nigeria	Cross sectional	384 pregnant women	Older age (-), Higher education (-), Birth order (-), urban residence (+), health insurance coverage (+) and household income (+).
Dutamo 2015	Ethiopia	Cross sectional	634 currently married women	Low parity (+), pregnancy intended (+), awareness of danger signs of pregnancy (+), higher education of woman and spouse (+)
Omer 2014	Nigeria (Bauchi and Cross river)	Cross sectional	7870 women in Bauchi and of 7759 in Cross River	Residence in community with a government health facility (+), absence of physical intimate partner violence (+)
Manzi 2014	Rwanda	SA 2010 RDHS	6,325 women	Having many children (-), feeling that distance to health facility is a problem (-), unwanted pregnancy (-),ANC at a private hospital (+),being married (+), health insurance (+)
Belayneh 2014	Ethiopia	Cross sectional	398 pregnant women	Early timing of ANC: Mothers with younger age (+), formal education (+), previous early ANC visit (+), perceived ANC visit per pregnancy of four and greater (+)
Rossier 2014	Kenya, Burkina Faso	SA Nairobi DHS, Ouagadougou DHS	3,346 and 4,239 births in Kenya and Burkina Faso respectively	Kenya (at least one visit): Less-educated (-), poorer (-), non-Kikuyu women (-), women living in the neighbourhood farther from public health services (-)

Ononokpono 2014	Nigeria	2008 Nigeria DHS	17,476 women	Burkina Faso (at least four visits); poorer households (-), non-educated women (-), women from Polesgo and Nioko tribe (-)
Chama-Chiliba 2015	Zambia	SA Zambia DHS	2925 women	Intimate partner violence (+)
Afewerk 2014	Ethiopia	Cross-sectional	4949 women	Employment (+), low quality ANC (-), multiparity (-), higher education of husband (+),
Oladokun 2010	Nigeria	Cross-sectional	796 women	Visit by community health worker (+)
Stephenson 2012	Bangladesh, Egypt, and Rwanda	SA DHS for Bangladesh (2007), Egypt (2008), and Rwanda (2005).	4926, 8036, 5387 women respectively	Low parity (+), previous stillbirth (+)
Regassa 2011	Ethiopia	Cross sectional	1094 women	Rwandan communities with higher employment rate among men (+)
Rai 2012	Nigeria	SA NDHS 2008	2434 Women	Literacy (+), have exposure to media(+), low parity(+)
Exavery 2013	Tanzana	Cross-sectional household survey	3,127 women	Women's education, (+), husband's Education (+), wealth (+), urban residence (+), Mass media exposure (+)
Worku 2013	Ethiopia	Cross sectional	1668 women who had births in the year preceding the survey	Mistimed pregnancy (-),
Yeneneh 2018	Ethiopia	Ethiopian DHS	23,179 women who had a live birth in the five years preceding the survey	Higher educational of women and their husbands (+), higher wealth Quintiles (+), awareness of risk of pregnancy (+), preference for skilled provider(+), birth order (-), unwanted pregnancy (-)
Dansou 2017	Benin Republic	DHS	9110 mothers who had completed at least a pregnancy within the 5 years preceding the survey	Richest wealth quintiles(+), lowest number of birth order(+), urban residence(+), younger age(+) and educated(+)
Assefa 2016	Ethiopia	DHS	7,773 women aged 15-49 years who gave birth during the five-year period preceding the survey	Economically well-off households (+)for richest women (+), educated women(+),and those with desired pregnancies(+)
Ayalew 2017	Ethiopia	Cross sectional	317 women who gave birth 6 months before the study	Urban residence (+), older mothers (+), education (+), employment (+), mass media exposure(+), religion (+), access to health services(+)
Begum 2018	Niger	Cross sectional	923 pregnant women	Older age (+), Education(+), history of stillbirth(+), planned pregnancy(+), service utilization
				Women with gestational age $\geq 27$ weeks (+), Women who reportedly received husbands' advice about attending ANC (+)

Verney 2017	Senegal, Ethiopia, Kenya	Cross sectional	4,575 women	Higher education(+), Higher income (+), formal employment(+), advice from health worker(+), nulliparity(+)
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