USAID Healthy Behaviors Activity
Literature Review

Cover page photo credit: Zeleman Communications, Advertising, and Production, via FHI 360 for the U.S. Agency for International Development Healthy Behaviors Activity, 2022. A smiling family in Oromia region, Ethiopia.

Acronyms and Abbreviations

ADDED	Audience-driven Demand, Design, and Delivery
ANC	Antenatal Care
ARI	Acute Respiratory Illness
EBF	Exclusive Breastfeeding
EIBF	Early Initiation of Breastfeeding
EDHS	Ethiopia Demographic and Health Survey
FHI 360	Family Health International
FP	Family Planning
HCW	Healthcare Worker
HEW	Health Extension Worker
ITN	Insecticide Treated Net
MCM	Modern Contraceptive Method
MIL	Mother-in-Law
MNCH	Maternal, Newborn, and Child Health
MOH	Ministry of Health
ORS	Oral Rehydration Solution
PNC	Postnatal care
PPFP	Postpartum Family Planning
RMNCH	Reproductive, Maternal, Newborn, and Child Health
SBC	Social and Behavior Change
SNNPR	Southern Nations, Nationalities, and Peoples' Region
TBA	Traditional Birth Attendant
USAID	United States Agency for International Development
WHO	World Health Organization

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Introduction

In recent years, the Government of Ethiopia's emphasis on accelerating progress towards universal health coverage, protecting populations in health emergencies, transforming woredas, and improving health system responsiveness has resulted in progress toward increased the use of modern contraceptive methods (MCMs), antenatal care (ANC), facility delivery, and decreased child malnourishment and mortality – among other important indicators [1]. Yet disparities among different populations for these outcomes continue to persist, and recent health program evaluations have shown stagnation or a decline in many of these indicators [1, 2]. This highlights gender, social, and socioeconomic inequities, and the intersectionality of health with sectors like education, livelihoods, and democracy, rights, and governance. Women and girls, people with disabilities, and other marginalized groups also continue to face challenges in accessing care due to low decision-making authority [1, 3].

The FHI 360-managed, United States Agency for International Development (USAID) Healthy Behaviors Activity, with its partners ActionAid Ethiopia; Zeleman Communications, Advertising, and Production; and Fraym, works to increase sustained adoption of appropriate health and nutrition behaviors in Ethiopia using evidence-based, theory-informed social and behavior change (SBC) strategies. USAID Healthy Behaviors achieves this goal by increasing adoption of household level behaviors, increasing demand for health services, and by improving the enabling environment for gender equitable and healthy behaviors. This includes contributing to reductions in unmet need for family planning (FP); malaria, with a new emphasis on the emerging *An. stephensi* vector; maternal and child mortality; and reductions in emerging infectious diseases. The vision of USAID Healthy Behaviors is that individuals and communities can take ownership of their own health and well-being, in a supportive environment for change.

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Methods and Model

Using Google Scholar, a literature review was conducted to inform USAID Health Behaviors' SBC strategy for each of its priority behaviors (Table 1). The literature review included studies that took place in the Activity's anticipated implementation regions: Amhara, Sidama, Oromia, Benishangul-Gumuz, Gambella, and the Southern Nationalities, Nations, and Peoples Region (SNNPR). When evidence for these regions was sparse, data from regions not included in the Activity's geographic scope were also included in the search. All findings are presented are from studies (published and preprint) and gray literature with a publication date of 2017 to the present.

This targeted literature review was conducted using FHI's Audience-driven Demand, Design, and Delivery (ADDED)– Framework as a guide. ADDED provides a theoretical underpinning for the design, implementation, and evaluation of FHI 360's SBC programs (see Figure 1). Based on a Socioecological Model for Change, the ADDED Framework seeks to understand and address priority barriers and facilitators to desired behavioral outcomes across individual, social, and structural levels.

Figure 1. FHI 360's ADDED Framework

By using the ADDED Framework as a basis for this literature review, the USAID Healthy Behaviors Activity aims to align evidence to key factors that inhibit or facilitate the Activity's priority behaviors across levels, in a theory-informed way. This will enable the Activity to identify key determinants of each behavior that it may later seek to address, informing both the Activity's baseline and SBC strategy design.

Priority Behaviors

The USAID Healthy Behaviors Activity seeks to increase sustained uptake of a range of priority behaviors. When appropriate, it plans to use a life stage model as a framework for integrating its SBC activities and messaging, focusing on late adolescence, pregnancy, and new parenthood. These are critical times when individuals and families are most likely to adopt new behaviors. This literature review explores the drivers of these behaviors and identifies enabling behaviors that may catalyze uptake for each. Table 1 lists the priority behaviors explored by health area and life stage (as relevant).

Table 1. USAID Healthy Behaviors Activity Priority Behaviors

Health Area	Life Stage	Behavior Change Objective
FP	Adolescence	Sexually active adolescents use an MCM to delay first birth until after age 19
FP	Pregnancy, Caregiving	After a live birth, women or their partners use an MCM to avoid pregnancy for at least 24 months
Maternal, Newborn, and Child Health (MNCH)	Pregnancy	Pregnant women complete a full course of quality ANC (with an emphasis on early ANC)
MNCH	Pregnancy	Pregnant women deliver in a health facility with an equipped, qualified provider
MNCH	Pregnancy	Mothers initiate breastfeeding within one hour of delivery
MNCH/FP	Caregiving	Mothers breastfeed exclusively for six months after birth
MNCH	Pregnancy, Caregiving	Postpartum women attend postnatal care (PNC) visits for them and their babies within 24 hours and again within the first seven days of birth.
MNCH	Caregiving	Caregivers seek prompt and appropriate care for newborn illness
Malaria/MNCH	Caregiving	Caregivers appropriately manage signs and symptoms for illness for children (including malaria, acute respiratory illness [ARI], and diarrhea)
Malaria	Pregnancy, Caregiving, General	Pregnant women and children under five sleep under an insecticide treated net (ITN) every night All household members, including men sleep under an ITN every night
Malaria	Caregiving, General	Household members appropriately manage the signs and symptoms of malaria, including testing by a qualified provider and treatment adherence

Findings

Family Planning

Priority Behavior: Sexually active adolescents use an MCM to delay first birth until after age 19

Behavior Overview

The Ethiopian Ministry of Health (MOH) has prioritized the delay of first pregnancy until age 19 [4]. Globally, pregnancy before age 18 is associated with unhealthy maternal and newborn outcomes [5], and can curtail girls' educational and economic opportunities [4]. The median age at first birth for women ages 25-49 in Ethiopia was 18.7 years old in 2019 [6], with small variations between regions, spanning 18.3 in Amhara, 18.2 in Oromia, 18.0 in Benishangul-Gumuz, 18.5 in SNNPR, 17.5 in Gambella, and 21.5 in Dire Dawa. Adolescent fatherhood (before the age of 24) is rarer, and is experienced by only 6.8% of young men, according to a study using 2016 Ethiopia Demographic and Health Survey (EDHS) data [7]. The EDHS also found that 19% of married women aged 15-24 had unmet need for MCM, though another study found this may be as high as 44% [2, 8]. For sexually active unmarried women aged 15-24, 41% have an unmet need for MCM [2]

For context, in Ethiopia, the median age of sexual debut was 16.6 for women aged 25-49 and 21.2 for men ages 25-49. The median age at first marriage was 17.1 for women aged 25-49 and 23.8 for men aged 25-49. In addition, 15% of young women aged 15-19 were sexually active, compared to 2% of men [2]. Early sexual debut and early marriage are both tied with pregnancy before the age of 18. Adolescent pregnancies are also linked with disruptions in education. In 2019, Ethiopian women had a median duration of 0.6 years of education, with only 4% completing primary education and 1% completing secondary school. This is compared to men, who in 2016[1] had a median of 3.6 years of education. Only 4% and 1% had completed primary and secondary education, respectively [2, 6].

Individual Factors

Knowledge of MCMs was generally high for adolescent women and was positively associated with its use [9, 10]. Health extension workers (HEWs) and other health care workers, as well as peers, neighbors, and mass media were common sources of MCM knowledge for adolescents [9, 11, 12]. In some studies, knowledge of methods did not always include knowledge about where to access them [13]. However, other studies found that knowledge of where to obtain an MCM was high [8]. There was some evidence that adolescents preferred their peers as a source of MCM-related knowledge [14, 15].

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[1] The 2019 EDHS did not include these education statistics for men.

Knowledge of any contraceptive method was essentially universal, with 97.5% of women ages 15-19 having heard of any MCM [6]. While knowledge of MCMs was high, multiple studies cited misconceptions around MCM use as a barrier to use. Up to 53.5% of respondents reported misconceptions in one study [9]. Misconceptions centered largely around fears that MCMs cause infertility or bad health, particularly if they were used before a first birth [9, 14, 16]. Other social misconceptions were also reported, including those that linked FP use to promiscuity [9].

The education of young women was another key driver of MCM use. Both educational attainment [10, 17, 18] and current enrollment in school [18] were positively associated with MCM use. Educational settings served as a source of information for reproductive health, including contraception. Some studies also recognized indirect impacts of educational attainment on delaying first birth to 18, such as it 'broadening girls' horizons,' increasing skills, and giving girls greater confidence [11, 19]. For young men, lack of education was a driver of early fatherhood in one multi-national study [20].

Attitudes held by adolescents toward MCM use were another key driver and were mostly positive. In one study, 90% of married women and 91% of married men ages 15-19 years old approved of married couples using an MCM to delay or space pregnancies [9]. Interest in FP among married youth to delay or space births was also high [14], yet motivations to use MCM were mixed. Most adolescents (90% in one study [9]) agreed that a benefit of MCM use was preventing unwanted pregnancies [9, 15]. However, in a study of adolescent women who gave birth under the age of 18, less than 20% had sought services to delay pregnancy [15]. desire for independence that marriage and motherhood granted young women was reported in one study as a motivation for marriage and childbearing before age 18 [19]. Some adolescents believed MCM use and spacing were only appropriate for married women [12, 13].

Lack of decision-making autonomy for MCM use, usually measured by asking about the primary decision-maker for MCM use, was a barrier for delaying first birth for adolescent girls. Among young married couples, husbands were largely the decision-makers for MCM use, including to delay first birth [11, 12, 14, 16]. Mother in-laws (MILs) were reported in one study as a secondary audience mediating this decision-making [12].

Some demographic characteristics were also associated with MCM use by adolescents. A spousal age difference of over five years was negatively associated with delayed first birth [17]. Adolescent women from households with divorced parents, or with sisters with a history of early pregnancy, were themselves more likely to have early pregnancies [18]. Adolescent men living in a female-headed household were at lower risk of early fatherhood [7]. Both male and female adolescents with an early sexual debut were also more likely to have an early first birth [7, 17]. Urban adolescents were better informed about MCMs [11, 15] and had lower chances of having an early first birth than their rural counterparts [15, 21]. In addition, adolescents with access to mass media were less likely to have an early first birth [21].

Social and Community Factors

At the societal and community level, a key reason for early births among adolescents included social expectations (including explicit pressure) to 'prove' fertility by conceiving a child shortly

after marriage [14, 16, 19, 22]. This norm was often related to misconceptions held around MCM use and infertility, as described above. Social status was also attached to parenthood in some communities, where it was seen to bring respect, life meaning, and elevate adolescents into adulthood [16, 19]. Parenthood was also viewed as a way to cement and secure nascent relationships [16]. While community expectations may act as a barrier to delayed first birth, one study identified community support, particularly from religious leaders, as a facilitator for young women in making decisions about MCM use [12]. While social norms for young couples prove fertility right after marriage (including in early marriages) were a key barrier to using MCMs to delay first birth, evidence indicates these norms may be changing along with behaviors. One study found that the probability of early childbearing (before age 20) had declined since 2000 [23]. Another study found that the ideal perceived age for first birth was higher than the actual age of first birth in its focal communities [19].

Social stigma around adolescents' use of contraception was another social norm-related barrier in communities. This finding was particularly salient for unmarried adolescents, who reported greater constraints and stigma in accessing contraception. These included the need to persuade reluctant health care workers (HCWs) to provide it [24], concerns about medical histories remaining private, and fears of HCWs recognizing them [13, 15]. While there may be broader approval for MCM use by married adolescents, community disapproval for this group was still reported as a barrier [14] – one study found that married female adolescents who anticipated stigma in seeking FP services were more likely to have unmet need [8].

Structural Factors

Quality of services, including lack of youth-friendly services or providers, was a key barrier for adolescents. These quality issues included providers who lacked time, training, skills, or resources (such as a separate and private area for adolescent clients) to provide high-quality services for youth [15]. Where youth-friendly services existed, proximity to these services was a barrier. One study found that married adolescents who lived closer to youth-friendly services were more likely to have a met need for FP [8].

Ethiopian policy includes the provision of comprehensive sexual education as part of school health programs. It also recommends adolescent-friendly services. These services are not always reflected in financing or actual programming, however [25]. Evidence showed that policy can have an impact on adolescent MCM use. A study of Ethiopia's 2000 Revised Family Code, which raised the age of marriage and strengthened women's martial rights, was associated with a 9% reduction in the risk of adolescent birth for cohorts of adolescent girls exposed to the law [26].

Priority Behavior: After a live birth, women or their partners use an MCM to avoid pregnancy for at least 24 months

Behavior Overview

Nationally, 41% of married women use any form of MCM [6], and married women's met need for FP for spacing their children was just 36% (47% in Amhara, 29% in Oromia, 29% in Benishangul-Gumuz, 40% in SNNPR, 35% in Gambella, and 30% in Dire Dawa). There was also variation by age. Met need for FP among married women was 32% for those aged 15-19, 39% for women aged 20-24, 41% for women aged 25-29, 37% for women aged 30-35, 35% for women aged 35-39, 33% for women aged 40-44, and 19% for women aged 45-49. Among unmarried, sexually active women, 55% used any method of MCM (for context, 56% of women aged 15-24, 7.5% of women aged 25-35, and 1.3% of women aged 35-49 have never been married). Among sexually active, unmarried women, 47% had a met need for FP for spacing [2].

Individual Factors

Despite relatively low use, knowledge of MCM is high among Ethiopian women of all ages [24]. MCM-related knowledge came from a variety of sources, including when women accessed health services (ANC, facility delivery, PNC, child immunization), and through contact with HCWs (usually HEWs) [24]. Knowledge was positively associated with MCM use [28-48] and shorter birth intervals [49]. One study suggested more nuance, finding that PNC counseling was associated with MCM use, while ANC and facility delivery counseling were not [50]. Another study, however found that PNC and facility delivery counseling were associated with MCM use, but ANC counseling was not [39]. Despite these linkages, another study estimated that half of postpartum women who had been in contact with the health system over the past year had not received any counseling on FP methods [43].

Despite high knowledge of MCMs among women, knowledge around its use for spacing was lacking (e.g., knowledge of when fertility returns postpartum). In the 2016 EDHS, only 24% of women had correct knowledge of fertile periods [2, 35], and in one study, only 56% knew of the benefits of MCM [51]. Misconceptions around MCM were also high, with half of women in one study believing they can cause infertility, which could lead to abandonment by their partners. Women who reported self-efficacy in using MCMs were less likely to hold this belief [52]. Fears of other negative MCM side effects included perceived restrictions on normal activities, loss of privacy (relevant to intrauterine contraceptive devices), changes in breast size, or were unspecified [36, 53-56]. One study found that a very high percentage of mothers (95%) agreed that MCMs were an appropriate form of contraception during the postpartum period [57]. However, in another study, intention to use MCMs among postpartum women was 70% [42]. Postpartum uptake of MCM was even lower than intention – between 30-60% of postpartum women [41, 51, 58]. Of women who did use postpartum family planning (PPFP), injectables and implants were the most popular methods. This was in keeping with women's preferences across all life stages in Ethiopia [30, 58].

Motivation to use or not use PPFP was multifaceted. Preferences for larger families or to have additional children were barriers to PPFP use [59-61]. Women's preferences for longer birth intervals, however, were a facilitator [55, 59, 62-64]. Attitudes also varied, with up to half of women in some studies reporting negative attitudes toward MCM use [50, 51]. Holding positive attitudes, however, were associated with MCM use [65]. There was some evidence that women who had a planned birth were more likely to use PPFP [55, 65] and have longer birth intervals [66]. Another study found that unplanned births were associated with PPFP use, with authors hypothesizing this was due to a desire to prevent another unplanned birth [33]. Previous use of MCMs was shown to be associated with use at time of the study [30, 37, 54, 62, 67]. Low risk perceptions were another barrier for PPFP use, with some postpartum women believing they were not at risk of getting pregnant [24, 30, 36, 54, 68].

Health service utilization alone (i.e., if counseling on PPFP during the provision of services was not measured) was associated with PPFP uptake. Women who used maternity waiting homes [28, 34, 38], attended ANC [37, 42, 45, 51, 54, 56, 58, 60, 67, 68], delivered in facilities [30, 63, 69], received PNC care [29, 31, 32, 45, 47, 48, 51, 58, 70, 71], or accessed immunization services [28, 36, 40, 72] were more likely to use PPFP than those who did not.

Social and Community Factors

Several social and community-level factors were found to be PPFP determinants. For instance, women whose last child was female were more likely to have shorter birth intervals. Study authors suggested this was due to a desire to have a son, as sons were considered both economic and social assets [49, 59, 64].

Men's approval of MCM use for spacing was also an important factor for PPFP uptake. Women whose partners approved of MCM use were more likely to use it [29, 41, 42, 51, 53, 55, 56, 65, 73, 74]. In one study, almost 70% of respondents reported that their partners supported their use of MCMs [51]. Partner influence on MCM use was associated with social norms that elevated men as final decision-makers for household and health-related decisions [53]. In addition, preferences for large families or more children, particularly among men, impacted the acceptability of MCM use for spacing [53]. Couples' communication, which is related to these factors, was also found to be an important factor for PPFP use. Women who communicated with their partners about FP were more likely to use it [32, 35, 36, 40, 51, 70] than those who did not. One study found that almost 60% of women discussed MCM use with their partners [51]. However, another study cautioned that couples' communication about FP may not always reflect joint decision-making, but rather the possibility that male approval was sought for FP decision-making.

Women's decision-making ability was a determinant of PPFP use, with women who decided to use FP either alone or jointly with partners more likely to use it [29, 54, 60]. In one study, over half of women reported deciding to use an MCM together with their partners [51]. In another study, almost 80% of women reported having decision-making power around FP, half of them jointly with their husbands (note: this was a group of women who attended immunization services, so they may not have been typical) [24]. Broader male engagement in FP was important and linked with PPFP use. Other barriers to this, however, were reported, including men seeing themselves

as decision-makers rather than participants in FP-related issues. Men also held similar misconceptions (infertility, side effects) and motivations (desire for large families) as women [53, 75] and were more likely to be positively engaged in FP decision-making if they discussed it with their partner [76].

Across communities, study respondents of both Islam and Christian denominations reported religious objections to FP as a barrier to its use. Religious leaders emerged as a key influential group for FP behaviors, including use of FP for spacing [53, 56, 73].

Structural Factors

Several structural factors affecting the use of MCMs emerged from the literature. Women who lived closer to health facilities were more likely to use PPFP, suggesting that distance and lack of transportation were barriers to use [51, 70]. Similarly, women who were in contact with HCWs, or who had discussed FP with them, were more likely to use PPFP [35, 36, 73]. For women who were able to access health services, the actual or perceived quality of services was a factor in their use. Women who had received ANC, delivered their baby with a skilled HCW, or who were satisfied with their maternal care were more likely to use PPFP [30, 31, 63, 65, 77]. Policies around MCMs and maternal health care were also important. Male engagement, for example, was inhibited by a lack of policies or programming to guide HCWs in including men in FP discussions or services. This was an issue that emerged across USAID Healthy Behaviors' priority behaviors [53, 75].

Where women lived, in urban or rural settings, also impacted their likelihood of using PPFP. Urban women were more likely than rural women to have good knowledge of PPFP as well as longer birth intervals [44, 59, 60, 78].

Maternal, Newborn, and Child Health

Priority Behavior: Pregnant women complete a full course of quality ANC, with an emphasis on early ANC and achievement of at least four visits

Behavior Overview

Pregnant women attending ANC in the first trimester and attending at least four visits is key for MNCH outcomes and are gateway behaviors for other USAID Healthy Behaviors' priority behaviors, including facility delivery, PNC, and care-seeking for newborn and under-five illnesses (see subsequent sections) [79]. Both World Health Organization (WHO) guidelines and the Ethiopian 2022 National Antenatal Care Guidelines recommend eight or more ANC visits [80]. However, just under 2% of women attended eight or more ANC visits, with 43% of pregnant women attending four or more visits and 26% not attending any [6]. ANC attendance varied regionally among regions included in this literature review, with 83% pregnant women attending four or more ANC visits in Amhara, 71% in Oromia, 83% in Benishangul-Gumuz, 69% in SNNPR, 86% in Gambella, and 84% in Dire Dawa. Seventy-three percent of pregnant women received ANC from a skilled provider [6], and 45% were informed of pregnancy danger signs while at ANC [2]. Of women who attended ANC, 27% initiated their first visit in the first trimester (hereafter called early attendance) [6]. Early attendance was positively associated with subsequent attendance of at least four ANC visits [81].

Individual Factors

ANC attendance was associated with several individual factors. Women's education and literacy were positively associated with ANC attendance [82-85], as well as their husband's educational attainment and literacy [81, 82, 84]. Early attendance at ANC was also linked with both women's [86-88] and men's [86] educational attainment and literacy. Health literacy, including awareness of ANC services was high in one study (over 80% of women [89]), and was positively linked with ANC attendance [86]. A commonly-held misconception, however, was that ANC did not need to start until after the first trimester (WHO and Ethiopian guidelines recommend ANC begin in the first trimester), which was a barrier to early attendance [88].

Income and employment were both linked with ANC, with mothers from higher-income households [81-83, 85, 86, 89] more likely to attend services, and employed mothers less likely to delay ANC initiation [86]. Other maternal characteristics were also associated with ANC attendance, with evidence that older mothers were more hesitant to attend ANC and more likely to delay their first visit [82, 86-88]. Women with greater parity were also more likely to delay their first ANC [83, 87] as compared with women giving birth for the first time, who were more likely to attend [85] and go early [86]. Some single mothers were concerned about facing stigma from their providers [88]. Despite these individual study findings, a 2019 meta-analysis found no association between age, parity, marital status, and ANC attendance [84]. Women who had access

to mass media were more likely to attend ANC, and [82] and this likelihood increased with frequency of exposure [90].

Knowledge and motivational-related factors were also linked with attending ANC. While one study found high awareness (almost 90% of women) of the benefits of ANC [91], other studies showed maternal awareness of benefits to be low [88, 92]. Perceived benefits of ANC included improving health and getting information about one's pregnancy and nutrition [89]. Overall perceptions of pregnancy-related risks were also low, as well as awareness of pregnancy-related danger signs. Many women believed that ANC was not necessary if mothers felt well [92]. Mothers who had no previous pregnancy-related problems were similarly less motivated to attend ANC [88], while mothers who perceived future pregnancy risks [89] or who had previous pregnancy complications were more likely both to attend [82, 92] and to attend early [86]. Women who had planned their pregnancies were also more likely to attend ANC [81, 82, 84, 86, 89, 92, 93]. Those who had had past negative experiences with ANC felt discouraged from attending, and sometimes preferred certain facilities over others [88]. Concerns about ANC included the use of technology while at appointments, like ultrasounds [88].

Social and Community Factors

Social and community factors also influenced the likelihood of ANC utilization. Male engagement was a key issue that emerged, and, overall, was low for ANC services. Male engagement was viewed as more appropriate during labor and birth [94]. Lack of male engagement was associated with a variety of couples' characteristics, including greater age differences between women and their spouses, and lower maternal age at marriage. Women who scored higher on empowerment indexes were more likely to have husbands who were engaged in maternal health care [95].

Lack of partner approval was also a barrier for ANC attendance [88], while women with partners who were engaged in their pregnancy were less likely to delay ANC services [86]. One study participant noted: "Husbands may not be happy when their wives visit health centers for ANC services and some husbands are not willing to accompany their wives for some essential services like ANC." Low male engagement was exacerbated by HCWs who sometimes reflected these same societal norms in their actions (e.g., by not inviting men to attend ANC sessions). Without positive male engagement, ANC was less likely [95]. Couple's decision-making was also linked to ANC. Women with greater decision-making autonomy were more likely to attend ANC [81, 86]. Often, however, husbands served as primary decision-makers for maternal health care [91] and were influenced by MILs [92]; together presenting a barrier for ANC and early attendance.

Other social and gender norms that affected ANC uptake included traditional beliefs, like delivering one's baby at their parent's home (especially for first pregnancies), which may mean women move in late pregnancy and are unable to continue attending ANC [83, 88, 92]. Women were also sometimes hesitant to attend ANC because of norms about disclosing pregnancy early. In one study, a respondent reflected, "In our culture, we don't want to talk to people [about pregnancy]. People should know after the birth of the baby or when our abdomen becomes big. It is shameful and secret because we are not sure about the continuation of the pregnancy." In some instances, cultural and religious acceptance of ANC were also barriers to attending ANC, but

overall, acceptance was believed to be high [91]. Also salient were peers and family who had experienced poor ANC services in the past and discouraged pregnant women from attending [88, 92]. In communities where quality of care was high, mothers were more likely to attend four or more ANC visits [85]. Finally, gendered household roles were a factor in ANC attendance, with mothers reporting household and childcare responsibilities not leaving them enough time to attend ANC [88].

Structural Factors

Several structural factors also impacted access to ANC services. Mothers in urban settings were more likely to attend ANC [81, 84, 85], and have timely attendance [82, 86, 87] than their rural counterparts. One study explained this in part by noting rural women may have lower access to ANC services [83]. Relatedly, transportation was also a barrier. Lack of transportation and its associated costs both discouraged or prevented women from attending ANC. Women also cited a preference for, and a lack of, female ambulance drivers as another barrier [88]. Cost of care overall, or perceptions of the cost of care, were barriers. This included confusion around whether or not ANC services were free [92]. Distance from facilities was also a barrier to uptake [82, 88, 91], with women who lived closer to ANC services more likely to attend four or more visits [81].

Quality and availability health facility structures were also barriers for women attending ANC. Both perceived and actual shortages of medical equipment or drugs [88, 92], long or unpredictable waiting times [88, 91], lack of space at facilities [88], power outages [88], and language barriers [91] were reported. HCW shortage and absenteeism [88, 92] also meant facilities were closed or unstaffed, further discouraging care. Overall, facility quality and readiness to provide skilled care were associated with women attending at least four ANC visits [81].

A wealth of evidence indicated quality of care at health facilities impacted ANC attendance. Women's desire for respectful care was described as services that were equitable, discrimination-free, abuse-free, and friendly [88, 91, 92, 96, 97]. Women also preferred same-sex providers [88], and wanted to see the same provider across multiple visits [88]. These benchmarks of community-defined quality were often not met, and women reported that providers did not allow their decision-making autonomy [91]. For example, in Oromia, experiences of respectful care varied, with up to 65% of women reported receiving disrespectful care [96, 97]. Rural women were more likely to report disrespectful care than urban women, as were women who did not intend to give birth in a facility [96]. Further, issues related to respectful, inclusive care extended to HCWs, who did not invite or make male partners feel welcome at services, leading to reported lower male engagement [95]. Providers cited both a lack of guidance and understanding of men's roles within ANC the reason [94].

Beyond respect and autonomy, the ability to access skilled care for ANC was a factor in attendance. Facility readiness to provide skilled care was associated with women attending at least four ANC visits [81]. In Oromia, almost three-quarters of women described HCW approaches as "good" [91], and in Sidama, women felt coordination of maternal health services was also strong [92]. However, providers who spent insufficient time with patients was cited as an aspect of poor-quality care [91], as well as laboratory reports not being sent back to mothers, which led to client dissatisfaction

[88]. HCWs reported lack of motivation, incentives, and recognition as barriers to providing skilled care [98], as well as lack of supportive supervision [88] and poor quality pre- and in-service training [98]. Related to this, providers' knowledge of and adherence to ANC guidelines was uneven [92, 98]. In one study, just half of women received information on pregnancy danger signs as part of ANC [89]. HCWs reported barriers including high staff turnover, high client load, poor quality facilities, poor quality pre- and in-service training, unavailability of actual ANC guidelines, and a lack of an institutional culture of following guidelines [98]. For providers, adherence to ANC guidance was perceived to contribute to both provision of higher-quality care and decreased workload [98].

Finally, the impacts of COVID-19-related policies highlight the importance of systems and policies for ANC. One study found that 55% of women were late or missed ANC services during the pandemic due to reasons like redeployment of MCH workers to support COVID-19 needs, fear of infection, and other service disruptions [99].

Priority Behavior: Pregnant women deliver in a health facility

Behavior Overview

In 2019, 51% of Ethiopian women delivered in health facilities as compared with 48% at home. This figure represents a huge increase over the past two decades as facility deliveries occurred in just 5% of births in 2000 and 11% in 2011. Place of delivery varied across regions. In 2019 in Amhara, 59.5% of women delivered in facilities, compared to 44% in Oromia, 67% in Benishangul-Gumuz, 50% in SNNPR, 73% in Gambella, and 73% in Dire Dawa [2].

Individual factors

At an individual level, mothers' educational attainment and literacy was associated with facility delivery [100-110]. This was also true of husbands in some studies [109, 111, 112]. Other factors associated with knowledge and information were access to mobile phones [100, 109] and exposure to mass media [104, 105]; both characteristics positively associated with facility delivery.

In addition, knowledge was associated with facility delivery in many studies. As a benchmark, in SNNPR, 58% of mothers demonstrated adequate knowledge of institutional delivery [113]. Lack of adequate knowledge, including about maternal danger signs, and that delivery should be free at facilities all negatively impacted facility births [92, 106, 112, 114-116]. These facts highlight the importance of health literacy. Facility delivery-related knowledge often came from ANC or from other contacts with HCWs. For example, women who received more content as part of ANC counseling were more likely to have a birth and pregnancy complication readiness plan than women who received less [103].

ANC itself was strongly linked to facility delivery, with women who received any ANC, and more ANC visits, more likely to deliver in facilities [100-102, 104-106, 108, 109, 111-114, 117-122]. There was not a clear, linear relationship between ANC and health facility delivery, however. Women who attended ANC, received delivery information while at ANC, had knowledge of pregnancy danger signs, and who had attended ANC at health posts or centers (rather than a public hospital), were more likely to have facility deliveries. This was similarly true for women with sociodemographic characteristics independently associated with ANC (e.g., higher incomes, living in urban settings, higher educational attainment) [104, 116, 122, 123].

Mothers' motivations also impacted facility delivery. Lower knowledge contributed to lower risk perceptions, including beliefs that childbirth was routine and "normal births" do not require a facility delivery. Another commonly held perception was that home births did not carry high risk. These beliefs were held by both women [115, 116] and their partners [94]. In contrast, low perceived benefits of facilty delivery discouraged women [92, 101, 116, 124]; as did higher perceived benefits of home births. These included comfort, familiarity, privacy, keeping with tradition, belief that they would receive superior care from traditional birth attendants (TBAs), and proximity to family [92, 94, 104, 114, 116]. Similarly, women with negative attitudes about facility delivery tended to prefer a home delivery. Those with positive attitudes (76% of mothers had positive attitudes about institutional delivery in one study [113]), however, preferred facility

delivery and were more likely to use maternity waiting homes. Maternity waiting homes were used by women who lived far away from facilities or had complicated pregnancies before as a place to stay before facility delivery [106, 107, 115].

Women's previous birth experiences, intertwined with risk and benefit perceptions, also played a role. Women who had experienced complications in previous births, delivered in facilities in the past, or had a prior bad home delivery experience were more likely to seek facility delivery [121, 125], while women who had delivered successfully at home, had previous normal pregnancies, or had a bad facility delivery experiences were more likely to deliver at home or delay care [92, 111, 113, 126]. Women's expectations about their experience at facilities was also an important determinant. Women's fears about facility births included examinations, unfamiliar environments, unfamiliar birthing positions, exposure to illness, male providers, and family or partners would not allowed in or would be treated badly [92, 94, 116]. Motivational factors were influenced by preparation. Mothers who were not prepared to have a facility birth were more likely to delay seeking care [110], whereas women with birth and delivery plans were more likely to have facility deliveries [101]. Mothers with planned pregnancies were also more likely to deliver in a facility than mothers with unplanned pregnancies. One study suggested that women with planned pregnancies were more likely to be logistically and financially prepared for accessing care across the maternal continuum of care, including delivery, and more likely to have partner support [104, 114].

Several sociodemographic characteristics were also associated with facility delivery. Age at pregnancy was linked: younger mothers (~18-25) more likely to deliver in facilities than older mothers [105, 112, 113]. In one study, however, very young mothers (~15-19) were more likely to deliver at home than older mothers [117]. Age was also connected with parity. Evidence broadly showed that women with more children or women who were not delivering their first child were more likely to deliver at home [100, 114, 117, 120]. One national study found the opposite [109]). Another study posited that household responsibilities, including care for other children, might deter women with other children from seeking a facility delivery [114]. Wealth emerged as a positive determinant for women to deliver in facilities [106, 109, 112, 113, 120, 121].

Social and Community Factors

Several social factors emerged as determinants of facility delivery. Male engagement (already noted) was a through-line for multiple behaviors. It was reported across the board as low, but higher for labor and delivery than for ANC and PNC services. This reflected social norms that pregnancy is "women's business," but men can support delivery physically, financially, logistically, and emotionally [94]. Couples' discussion of pregnancy was linked with facility delivery [117], reflecting findings reported under individual determinants that joint decision-making was a key factor in having a facility delivery. In one study, 86% of women reported they discussed the place of delivery with their husbands, and 92% of women and 91% of husbands preferred a facility delivery [104] – a preference that was generally higher than actual rates of facility delivery but may reflect changing attitudes.

Family and social support were also important to having a facility delivery, as women who felt child and house care would be handled while they were in maternity waiting homes were more likely to use them [125]. Mothers citing lack of child care at home noted it as a reason to delay seeking health facility care during labor. This suggests that instrumental support may encourage facility delivery [111]. Similarly, social capital in the form of engagement in women's groups, such as women's health conferences or 1-5 meetings was linked to increased facility delivery [114, 117].

In communities, there may be a normative preference for home births, which were seen as socially accepted and expected, considered good luck for mothers and families, seen as safer, and allowed women to follow traditional birthing practices and use TBAs [92, 104, 115, 124, 127]. This may be especially true for first births, where mothers may be expected to deliver at parents' homes [16, 128]. Preferences for TBAs due to cultural familiarity was explained by one HEW: "TBAs receive only a little information [training] from the government but they are famous in the kebeles so the people say 'the known devil is better than unknown God' and the people believe in them" [92]. In this milieu, women who deliver in facilities were seen as outside the norm in some settings [92]. Older family members — particularly parents' [94] and partners [110] — preferences for home births may be a barrier or cause of delay for facility births. In communities more broadly, women who perceived low community support for facility delivery were more likely to prefer home delivery, while women who perceived high community support were more likely to prefer a facility delivery [117]. Norms approving of facility deliveries may be shifting: one study found community support for TBAs in facilitating referrals rather than performing deliveries [92]. This may indicate community preferences for traditional home births are changing.

Community members' experiences influenced other mothers in the community as well, with influential members who delivered successfully at home [115] or who had bad experiences in facilities [116] influencing mothers' in their decisions to deliver – or not – in facilities. The influence of community norms was also indicated in two studies that found mothers living in settings with high community ANC utilization [109, 120] and high community educational attainment for women [109] were more likely to have facility deliveries.

Women's decision-making autonomy also emerged as a determinant of facility delivery, as many women did not have full control over their place of delivery, and needed their partner's approval, which could forestall or delay facility delivery [110]. MILs may be a key reference group in this decision [92]. However, joint decision-making between husbands and wives meant women were more likely to deliver in facilities [101, 115, 116, 118, 122]. One study found that almost 90% of women reported they discussed place of delivery with their husbands, and 92% of women and 91% of husbands preferred facility delivery [104]. Stigma and discrimination impacted facility delivery as well, with some unmarried mothers preferring to deliver at home due to feelings of shame.

Structural Factors

Structural factors were interwoven with individual and community factors in influencing facility delivery. A strong factor that emerged was high-quality, service delivery and respectful care. Women who perceived or had previous experience with low-quality, unskilled care were less likely

to have or prefer facility deliveries [112-115, 126, 127], while those experiencing good quality care were more likely to have or prefer facility deliveries [92, 122]. In fact, one study reported that women saw high-quality care as 'worth it' even when it was felt to be disrespectful [126]. However, offering high-quality care was a reported as a challenge by HCW [92], as well as lack of necessary supplies and equipment at health posts [92, 115]. Similarly, women with perceptions of, or previous experiences with, disrespectful care, including neglect and abuse, were less likely to prefer facility deliveries [92, 114, 126, 127]. This included negative treatment of men – a cross-cutting barrier for male engagement throughout the maternal continuum of care [94, 127]. Women with perceptions or previous experience of respectful, friendly care were more like to prefer facility delivery. From the studies reviewed, respectful, friendly care was defined as including a preference for female providers, polite interactions, explaining at each step, privacy, allowing companions to accompany women throughout labor, and discussing and allowing women to choose their birth position [104, 113, 114, 126, 129]. Disrespectful care included providers neglecting or abandoning women, violating their privacy, and both physical and verbal abuse [129].

Apart from quality of care, access to facilities was reported as a challenge. Women reported they perceived or had previously experienced closed facilities, HCW absenteeism, and long waits for services [92, 108, 110, 112, 124]. Getting to facilities was also a barrier, with bad roads, challenging terrain, and lack of access to various modes of transportation reported as obstacles to seeking care [92, 112, 114-116]. Cost of transportation was also a barrier, though mitigated by free ambulance services, where available [92, 115, 116, 122]. This was also true for use of maternity waiting homes [125]. Similarly, distance and proximity emerged as factors associated with facility delivery [100, 101, 104, 108, 109, 113, 116, 121]. Affordability was a factor beyond the cost of transportation, with cost of delivery and associated care a barrier to facility delivery [112, 115, 122, 124], particularly when referrals to hospitals were involved [92]. Policies also played a role – the introduction of a policy mandating free delivery services significantly increased facility deliveries [130]. Finally, while urban and rural differences are linked to many individual, social, and structural factors, mothers in urban settings were more likely to deliver at facilities than those in rural areas [102, 105, 109, 122, 123].

Priority Behavior: Mothers initiate breastfeeding within one hour of delivery

Behavior Overview

The literature specifically focused on early initiation of breastfeeding (EIBF) is limited, but largely in line with related behaviors, such as exclusive breastfeeding (EBF). Nationally, in 2019, 72% of children started breastfeeding within one hour of birth, and 91% started within one day. Both indicators dropped very slightly from 2016 EDHS rates after steadily increasing since 2000 – in 2016, 73% of children started breastfeeding within one hour of birth, and 92% started breastfeeding within one day [2, 6]. Early breastfeeding rates varied regionally, with 61% of women in Amhara, 82% in Oromia, 76% in Benishangul-Gumuz, 69% in SNNPR, 79% in Gambella, and 72% in Dire Dawa initiating breastfeeding within an hour of birth.

Individual Factors

Several individual factors contributed to EIBF. As with other USAID Healthy Behaviors' priority behaviors, knowledge was a key determinant, with women counseled on breastfeeding during ANC more likely to initiate breastfeeding early [131, 132]. ANC alone (i.e., without considering or measuring content on breastfeeding) was also associated with EIBF, with this association increasing with more ANC visits [131, 133]. Formal education was also associated with EIBF [131]. Finally, mothers who delivered in facilities were more likely to practice EIBF [133], with authors proposing they were more likely to receive guidance from HCWs encouraging early initiation.

Multiple motivations drove this behavior. Women who had another child under five years old were less likely to initiate breastfeeding early than mothers who had two other children under five [131]. The authors proposed that women with more children under five had more experience with breastfeeding. Some child-related characteristics were also associated with EIBF, with mothers of male or low-birth-weight infants less likely to practice EIBF [133]. Women's birth experience was another driver, with women who had cesarean sections less likely to initiate breastfeeding early than women who had spontaneous vaginal deliveries [132, 133]. The authors suggested that women who had undergone cesarean sections may have had to delay breastfeeding as the procedure was completed, and may have experienced pain or tiredness afterwards that further delayed EIBF.

Social and Community Factors

Family size was associated with EIBF, with women with small families less likely to initiate early breastfeeding [131, 133]. In addition, a mixed-methods study in SNNPR of abound 500 women found that cultural beliefs, including that colostrum was not good for infants (held by 23% of women in the study), were barriers to EIBF [134]. In other studies, women cited both cultural and health reasons to avoid colostrum, reported by 8-11% of mothers. One study found avoiding colostrum was less likely when women had received counseling on EIBF [135, 136].

Structural Factors

Mothers in urban settings were more likely to initiate early breastfeeding than mothers in rural settings [133], a finding consistent with other MNCH findings across the literature review.

Priority Behavior: Mothers breastfeed exclusively for six months after birth

Behavior Overview

Nationally, 59% of children under 6 months were EBF. Rates of EBF decline as infants age, with 74% of infants 0-1 months breastfed, dropping to 36% for 4-5 months. Regional breastfeeding prevalence rates were not available for percentage of children EBF under 6 months, but the median duration of EBF was 4.1 months in Amhara, 2.8 months in Oromia, 4.6 months in Benishangul-Gumuz, 3.0 months in SNNPR, 2.9 months in Gambella, and 3.2 months in Dire Dawa. For each of these regions, the duration of predominant breastfeeding (receiving water or non-milk liquid in addition to breastfeeding) and any breastfeeding is much longer than EBF [2].

Individual Factors

Knowledge was a determinant of EBF, with women who had information about EBF or who had received counseling more likely to practice EBF [131, 134, 137-143]. One source of EBF-related knowledge was ANC counseling, with women who had received EBF counseling at ANC more likely to practice EBF [139, 144-146], although only 35% of women received counseling on breastfeeding within two days of birth [147]. Misconceptions around breastfeeding were barriers to practice, and included women's beliefs they could not produce milk or that sick/sleepy babies should not be breastfed [134, 148]. Some women also held beliefs that they could not breastfed if they were sick themselves [149] and that when babies cry, it meant they were starving. This led mothers to cease EBF and to introduce additional fluids or solids to infants before 6 months [149]. Even when provision of information on breastfeeding was not measured, ANC attendance alone was associated with EBF, and more visits had stronger associations [134, 137, 140, 142, 144, 147, 150-155]. Mothers who used PNC after their most recent birth were also more likely practice EBF [133, 137, 140, 146, 149, 152, 155-157].

Education was a facilitator of EBF. Mothers with greater educational attainment or who were literate were more likely to practice EBF [131, 133, 137, 144, 147, 153] and the same was true of their husbands [149]. One study, however, found that women with formal education were less likely to practice EBF. The authors proposed that the women may be employed and have less opportunity for EBF [152]. The relationship between employment/occupation and EBF is complex and was inconsistent with trends seen for other MNCH behaviors, where mothers' employment was associated with healthier behaviors. In general, mothers who were housewives/unemployed were more likely to practice EBF than employed mothers [142-144, 149, 157-159]. Mothers who were informally employed were more likely to practice EBF than unemployed mothers[150]. Mothers who were employed in farming were less likely to practice EBF than those who were not, with the authors proposing that farming meant more time spent away from the home, leading to decreased opportunities for EBF [144]. In addition, mothers who were employed were more likely to practice EBF if employed by the government versus private sector, with authors theorizing that government jobs may have rules and regulations creating enabling environments for breastfeeding [160]. Workplace flexibility as a facilitator for EBF was pointed to in another finding, that

employed mothers who did not pump breast milk were more likely to cease EBF [160]. Overall, mothers cited return to work as a reason why they stopped EBF [149].

As with other behaviors, an interconnected set of motivations was associated with EBF. Women who perceived benefits to EBF were more likely to practice it [137, 149, 158], as were women with positive attitudes about EBF [137, 142]. Some infant characteristics were also associated with EBF. Female infants were more likely to receive EBF than male. Authors proposed that this may be due to perceptions that male infants have greater nutritional requirements and need additional food [154]. The same reasoning was put forward for an association between cessation of EBF for infants with comorbidities or low birth weight – i.e., they had greater nutritional needs [133, 154].

Parity was another factor. Women giving birth to their first child were less likely to practice EBF than women who had higher parity [131, 142, 149] and some evidence showed women with more than four children were less likely to practice EBF [152]. This may be because first-time mothers lack the skills or confidence to breastfeed, while mothers with more children may lack the time to practice EBF with younger children at home. Mothers who had greater birth spacing were more likely to practice EBF [155], as were mothers who wanted more children [159] and whose pregnancy was intentional [140]. Finally, birth and post-birth experiences were drivers of EBF, with mothers who delivered by cesarian section [142, 147, 158] and women who reported breast problems, less likely to practice EBF [149, 156].

Two other behaviors of interest for this review – EIBF and facility delivery – were also associated with EBF. Mothers who initiated early breastfeeding were more likely to practice EBF [134, 137, 138, 146, 153]. Mothers who delivered in facilities [133, 143-145, 147, 151, 158] or who had a HCW attend their birth [156] were also more likely to practice EBF. This may because they were able to receive counseling on breastfeeding from an HCW.

Several sociodemographic characteristics were associated with EBF. Women from higher-wealth households or with higher incomes were more likely to practice EBF [142, 146, 148, 150, 153, 154, 159], though one study found that women from richer households were less likely to practice EBF. The authors hypothesized that wealthier households were better able to afford formula [152]. Married women were more likely to practice EBF than single mothers [137, 140, 141, 144, 145, 158], suggesting the possibility of social support and male engagement (facilitators for EBF discussed in greater detail in the next section). Finally, women exposed to mass media were more likely to practice EBF [137].

Social and Community Factors

Many of the individual factors discussed are connected with the social and community factors that may drive EBF. Key among these are male engagement and social support, with women who were supported by their husbands more likely to practice EBF [141]. One SNNPR study found that 72% of fathers were involved in breastfeeding practices [161]. Women's perceptions were key to male engagement, as described in one study, with wives who were supportive of fathers' involvement more likely to have husbands engaged in breastfeeding. Another key driver related to husband-wife relationships and EBF were domestic responsibilities. Women reported that lack of time

because of such responsibilities was a barrier to EBF [141, 144, 162, 163]. Other forms of social support were also associated with EBF [142, 155, 162].

Community-level beliefs and practices were also drivers of EBF. These included barriers posed by cultural beliefs and traditions, including infants should taste all foods mothers eat [134, 144], and colostrum is not good for infants [134, 136]. Women living in communities with high levels of PNC utilization and high levels of employment were more likely to practice EBF [148] – this suggests communities with more acceptance or ability to seek MNCH care may likely be enabling environments for EBF.

Structural Factors

A few structural factors emerged that were associated with EBF. As with many other behaviors of interest, women in urban settings were more likely to practice EBF than women in rural settings [147, 153]; while women who lived in pastoralist settings were less likely to practice EBF than women in agrarian regions [148]. For employed women, a longer distance to the workplace from home was associated with cessation of EBF [160]. In addition, employment policies impacted EBF. Employed mothers with shorter maternity leaves, without flexible work schedules, and without lactation breaks were less likely to practice EBF [160].

Priority Behavior: Postpartum women attend PNC visits for themselves and their babies within 24 hours of birth and again within the first 7 days of birth

Behavior Overview

The Ethiopian MOH recommendation for PNC is four visits: within 24 hours, on the third day after birth, the seventh day after birth, and six weeks after birth [164, 165]. Nationally, in 2019, 34% of women had their first postnatal checkup within the first two days after birth. This varied by region, with 40% of women in Amhara, 45% in Benishangul-Gumuz, 55% in Gambella, 26% in Oromia, and 32% in SNNPR having their first checkup within two days of birth [6]. While the EDHS does not measure the number of PNC visits, one study found that 39% of women received one visit, 45% two, 14% three, and just 2% four visits [166]. Another study found that 28% completed three or more visits [167]. To facilitate the visit schedule, the MOH has recommended women stay at the facility for 24 hours after delivery. Of women who deliver in facilities, 25% for between 1-2 days, as compared with 64% who stay 23 hours or less [2].

Individual Factors

Knowledge was a determinant of PNC utilization, with women with greater awareness of PNC more likely to attend PNC [168-185]. Educational attainment was also associated with PNC; mothers with more educational attainment or literacy more likely to utilize PNC [93, 167, 168, 172, 174, 176, 179, 182, 184-192] and attend more PNC visits [167]. This was also true of their partners' educational attainment [179, 193].

Individuals' past experiences with MNCH care emerged as strong determinants of PNC care. Women who attended ANC, and women who attended more ANC visits were more likely to attend PNC [90, 170, 172, 174, 176-180, 183, 185-187, 190, 191, 193-199], more likely to receive PNC-related information [182], and more likely to attend all four recommended PNC visits [200]. In addition, women who delivered in facilities were more likely to use PNC than women who delivered at home [90, 171, 172, 177, 179, 180, 183, 188, 190-195, 201, 202] and to attend more PNC visits [200]. Of women who delivered at home, those who were employed and had higher incomes were more likely to return for additional PNC visits after discharge within two months than those who were unemployed and had lower incomes [197, 198]. One HEW explained "Since we usually visit delivered women at their home, they assume that they shouldn't come to the health facility [and instead are] waiting for our visit to their home." [202].

Many motivational factors impact women's use of PNC. Perceived benefits were one factor, with views held by some that PNC was not necessary for healthy mothers and babies [167, 176, 192, 202, 203]. Risk perceptions were another factor, with women who were aware of postnatal danger signs more likely to use PNC [93, 180, 185, 186, 193] – this included having birth and complication readiness plans [186]. Women's prior experiences were also a driver, with those who used PNC for prior births more likely to access it for their most recent birth [175, 181, 191], and women with pregnancy complications [173, 175, 178, 187, 191] and/or a cesarean sections [167, 174-176, 182, 195, 196] more likely to access PNC and attend more visits [167, 200]. Women with more positive attitudes towards PNC were more likely to use it [169, 177].

Women's fertility experiences were also a driver, with women with planned pregnancies more likely to complete PNC [189, 204]. Women with planned pregnancies who delivered at home were also more likely to complete PNC [197], with authors suggesting these women were better prepared emotionally and logistically. Women who used an MCM prior to pregnancy [204] were also more likely to attend PNC, with authors suggesting these women were already informed about health care needs and motivated to plan for further care. Women with only one child [167] or fewer children were more likely to attend PNC [93, 201] and attend more visits [167]. This may be explained by experienced mothers feeling less need for PNC or being too busy to seek it out. However, other evidence showed women with more children were more likely to use PNC [175, 185, 195].

As with other behaviors, decision-making autonomy was a determinant of PNC attendance. Women who had autonomy (measured in some studies as deciding alone or jointly with her partner) over maternal and health-related decisions were more likely to attend PNC than women who did not [171, 187, 189, 193, 201, 204]. One study that measured decision-making as women who decided alone, women who decided jointly with their partner, or women whose partner decided alone found that women who decided jointly with their partners were the most likely to attend PNC [171]. This finding points to the importance of joint decision-making for PNC and other priority behaviors.

Sociodemographic factors were also associated with PNC use. While the evidence related age was not clear cut, in general, very young mothers (15-19) were less likely to use PNC, young mothers (20-24) were more likely, and older mothers (35+) were less likely [168-170, 177, 178]. Household income was also associated with PNC, with women from households with higher incomes more likely to access it [90, 93, 188, 193]. Higher income was a positively associated with PNC; this was true even for women with characteristics such as lack of education that made PNC attendance less likely [205]. Relatedly, women within six weeks postpartum whose partners were employees were significantly more likely to attend PNC than those whose husbands were self-employed [173]. Also tied to income, women with exposure to media [184, 189, 195, 204], including radio [93, 197] and access to mobile phones [93] were more like to attend PNC and complete the maternal continuum of care.

Social and Community Factors

As with many of the MNCH behaviors covered in this review, family and social approval and support were determinants of PNC utilization. Women whose partners were supportive of maternal health care [202], who had planned and supported pregnancies [169, 188], and who had discussed pregnancy with their families [196], were more likely to complete the maternal continuum of care, including using PNC. Male engagement was low for PNC and served as a barrier. The role of men was seen as more appropriate for labor and birth than ANC and PNC [94]. Cultural norms around postpartum seclusion of mothers and newborns — beliefs that movement is bad luck or bad for health — were reasons to delay or not seek PNC [167, 174, 176, 181, 202]. One such belief was that women were not strong enough or not allowed to move outside the home in the days immediately after delivery. The period of confinement varied by setting and religion, from between ~10-45 days [181, 202, 206], while other women described (but did not specify) cultural

prohibitions around PNC [168, 180]. In one study, 76% of women reported post-delivery seclusion, and 49% felt seclusion was more important than PNC visits, while 24% felt the visit was more important. Social engagement beyond the family was also associated with PNC, with women who were part of Model Households [174, 176, 182, 196], a Women's Development Army, [171, 183] or engaged in health extension programming delivered by HEW [183] more likely to attend PNC.

Structural Factors

Quality of care and respectful care across the maternal care continuum emerged as a factor. Women who received high-quality ANC [207], skilled birth attendance [207], and overall, had high use of maternal care were more likely to use PNC [193]. These factors also impacted satisfaction with PNC care, with women who attended more ANC sessions, and who were satisfied with their care during delivery more likely to be satisfied with PNC [208]. This was also true of women who received friendly care or could bring a companion with them [208]. Authors suggested that women who had positive experiences with ANC and delivery care were more motivated to move forward through the maternal continuum of care. However, perceptions or experiences with low-quality care, including issues with HCWs, were a barrier to PNC utilization [174, 176, 181, 192, 203]. As with other behaviors, HCWs reported lack of understanding and guidance for men's roles as part of PNC [94]. Linking women with PNC at other service delivery points may support women's likeliness to attend PNC, for example, those women given an appointment after delivery [178, 181] or whose HEWs were notified of their birth [196, 209] were more likely to utilize PNC.

In addition to quality, the accessibility of facilities was a factor in PNC attendance, with facilities being inaccessible [195, 203, 209, 210] or not open [192, 202] reported as barriers. Distance from health facilities and access to transportation also emerged as determinants for seeking PNC. Women who lived near facilities or did not perceive distance to be a barrier were more likely to attend PNC [168, 173, 175, 176, 179, 181, 184, 185, 187, 190, 192, 194, 202, 205, 209] and to attend more visits [200]. Women who had access to transportation (including ambulance service) were more likely to complete the continuum of care [184]. While care is free, the opportunity cost of attending PNC was reported as a barrier to PNC attendance [203], with women enrolled in community-based health insurance schemes more likely to attend [182]. Finally, women in urban settings were more likely to attend PNC than those in rural settings [93, 170, 184, 187, 192, 193, 198].

Priority Behavior: Caregivers seek prompt and appropriate care for newborn illness

Behavior Overview

This literature review covers care-seeking for newborn illnesses as well as care-seeking and home management for children under the age of 5. While there are commonalities, distinct elements to newborn care merit this behavior being broken out.

Individual Factors

Broadly, women with better knowledge of newborn illness and its symptoms were more likely to seek care. This knowledge came from HCWs, neighbors, and others in the community [211-214]. Women counseled about newborn care were more likely to have good knowledge [215]. However, knowledge was not a direct line to care-seeking, and a 'wait-and-see' approach was identified (discussed below) [212]. Maternal education was associated both with knowledge of newborn danger signs and newborn care [215-220], as well as the likelihood of seeking care [221, 222]. The same was true of paternal education [217, 223]. Mass media too was associated both with care-seeking [219] and knowledge of neonatal danger signs [216, 219].

Women's experience across the maternal continuum of care was associated with care-seeking and knowledge of newborn danger signs. Women who attended ANC were more likely to have good knowledge of newborn danger signs and newborn care [216, 217, 224] and to seek care [215]. Women who attended PNC were also more likely to have good knowledge of newborn danger signs [218] and to seek care [225, 226]. Women who delivered in facilities were more likely to have good knowledge of neonatal danger signs [216, 224], good knowledge and practice of newborn care [215, 220], and were more likely to seek care for newborn illness [222-224]. Among women who did not deliver in facilities, those who were literate were more likely to seek newborn care – reinforcing the complexity of determinants affecting this behavior [214].

Decision-making autonomy and roles were important to achievement of newborn care-seeking behaviors. Broadly, mothers were the primary caretakers while fathers were the primarily decision-makers. One respondent in a study explained: "Since the man is the head of the household, the decision is expected from him. The woman should discuss the child's illness so that the man could see that the child is really ill. The mother is the one who is close to the child—more so than the father. She should immediately explain about the illness and the father will decide to take the child to the health facility" [227]. In addition to the husband, extended families and sometimes neighbors were involved in decision-making, which sometimes led to delays in the decision to seek care. Once a decision was reached, women were expected to defer to decisions made by their husband and/or extended families [212, 227-229]. Given this dynamic, women with higher autonomy were more likely to seek care for newborns [219].

Motivation to seek care was complex. Perceived risk to newborns was a factor, with caregivers who perceived illness as serious more likely to seek care [211]. However, the line from perceived severity to care-seeking was not straight. Some mothers of newborns were able to describe

symptoms of severe illness, though not all prompted care-seeking or led them to seek care promptly [212]. Women with planned pregnancies [225], as well as those women who had birth preparedness and complication readiness plans were more likely to know danger signs [219] and seek care [214, 225]. Women who practiced optimal thermal care were also more likely to seek care [222].

Some sociodemographic characteristics were associated with newborn care-seeking. Higher income [223], maternal occupation [224], and paternal occupation [223] were associated with greater knowledge of neonatal danger signs. Mothers under age 18 were less likely to know about neonatal danger signs than mothers 18-35 years old [217].

Social and Community Factors

Social and community factors interact with the individual factors discussed above. Many norms may impact care-seeking, including those that place restrictions on women and newborns' movement postpartum (particularly before baptism) as concerns around bad luck or danger to health were barriers [212, 213, 227, 230]. One participant in a study explained "It is not good for the mother to leave the house before you complete 15 days, it is better to stay for one month. Since there is such kind of belief, people often use traditional medicines rather than taking [the baby] to hospital. . . Here, it's not considered good to take out neonates before christening. It is very scary before 40 days" [227].

In addition, a 'wait-and-see' approach, even for illness perceived as severe, suggested norms of fatalism – that newborn illnesses were hopeless or not treatable [212, 228-231]. Part of this dynamic reflects norms that newborns may not be considered full family members, with others in the family prioritized for care over them [228]. Norms and preferences for traditional treatments connect to this, including beliefs that traditional medicine is more effective for certain types of newborn illness. This belief caused delay or prevented care seeking [213, 230]. Some individuals, however, saw traditional medicine as complementary to biomedical treatments [229-231]. Women who thought traditional care was ineffective were more likely to seek health care services [213]. Some evidence indicated that norms around traditional medicine use are changing, with participants in one study reflecting that while older women preferred traditional medicine and "criticize us for running to the hospital… the current generation prefers to take their children to the health center or hospital rather than listening to their [older women's] advice" [227].

Household and community gender roles also are linked with the decision to seek care and women's domestic responsibilities prevented newborn care-seeking [227, 228, 232, 233]. Partner and family support was a facilitator for care-seeking [231], with women with engaged partners having better knowledge of newborn danger signs and care-seeking practices [219]. Family support was also a determinant of care-seeking [233] and optimal newborn care [220].

Structural Factors

Structural factors also impacted care-seeking. The anticipated or actual cost of treatment was a barrier to care-seeking and caused delays [212, 224, 228, 233], while free care encouraged care-

seeking. Distance and transportation were also factors, with lack of transportation and distance from facilities [212, 232] both emerging as barriers to care-seeking. Proximity to HEW also encouraged care-seeking [213, 230]. Other barriers were availability of services, including clinic hours not amenable to care-seeking, and facilities not being open. Quality of care and respectful care were also factors for this behavior whether they were perceived or experienced. This included lack of resources, lack of training, and poor facility quality [230, 233] and perceived or experienced poor treatment and lack of respectful care [212, 232]. Finally, mothers in urban settings were more likely to seek newborn care [226-228] as well as more likely to be knowledgeable about newborn danger signs [217, 234] than those in rural settings.

Priority Behavior: Caregivers appropriately manage signs and symptoms and seek care for illness in children under the age of five

Behavior Overview

Care-seeking and home management of illness for children under 5 was driven by some of the same factors as care-seeking for newborns, but with slightly different nuances. This literature review looked at both care-seeking and appropriate home management for fever, ARI, and diarrhea. In the 2016 EDHS, 37% of children under 5 with fever had sought advice or treatment from an HCP, with regional variations of 32% in Amhara, 38% in Oromia, 48% in Benishangul-Gumuz, 35% in SNNPR, 54% in Gambella, and 51% in Dire Dawa. For children with an ARI, 34% sought advice or treatment, with regional variations of 28% in Amhara, 30% in Oromia, and 45% in Benishangul-Gumuz. Finally, for diarrhea, 47% of children nationally had treatment sought, with regional variations of 41% in Amhara, 46% in Oromia, 65% in Benishangul-Gumuz, 51% in SNNPR, 65% in Gambella, and 66% in Dire Dawa [2].

Individual Factors

Knowledge was associated with increased likelihood of prompt care seeking for childhood illnesses [235-239], as well as well as for treating children at home using appropriate medical treatment [237, 239-244] and it was relatively high for both symptoms and treatment [245]. Despite this, home management practices may not be within standards. In one study, about 60% of mothers practiced poor home-based management of diarrhea, including the preparation and administration of oral rehydration solution (ORS) [246]. While over 90% of caregivers in another study treated children for malaria at home with modern drugs (obtained largely from HEW, though some caregivers purchased drugs from pharmacies or got them from neighbors), just 16% started treatment within 24 hours [241].

Caregivers with good knowledge of childhood illness were also more likely to have positive attitudes about home management , using appropriate medical treatment [245]. Supportive attitudes were relatively high, with just under 90% of mothers reporting positive attitudes around ORS and home management of diarrhea in one study [247] (although these were as low as 50% in another) [245]. Mothers, in particular, who had received formal education or were literate were more likely to seek care promptly [237, 248-251] and appropriately treat childhood illnesses [243, 252-254].

Mothers' experiences across the maternal continuum of care were relevant to care-seeking and treatment of under-five illnesses. Mothers who had attended ANC [255] were more likely to practice appropriate home management and mothers who had attended ANC, PNC, or delivered in a facility were more likely to seek care for childhood illnesses [236, 237, 249, 256].

Motivation, as well as knowledge, was a factor in seeking care or appropriately managing symptoms at home. Caregivers' risk perception emerged as a factor: those who had perceived their children to be at risk [238], or that their child's illness was severe or worsening [69, 211, 249, 257], were more likely to seek care. This was also true for caregivers who previously experienced

a child death [257, 258] or frequent illness [236, 256]. Perception of benefits was also important – with caregivers believing that mild or routine childhood illness did not require treatment [259, 260], or that childhood illness cannot be cured using health care/or that it self-resolves, which may lead to delays or eschewing medical treatment altogether [260-262]. While evidence was limited, the type of caregiver may make a difference, with mothers more likely to practice appropriate home-based management than grandmothers [254].

As well as caregiver characteristics, child characteristics may motivate care-seeking, with some evidence showing that caregivers were more likely to promptly seek care for male children [237, 242, 250, 251]. However, not all evidence supported this association [240]. Other evidence pointed to birth order and associated child age with care-seeking, with firstborn children [237] and older children [211, 249-251] more likely to have care sought for them (although other evidence pointed to greater care-seeking for younger children) [69]. Mothers who did not want additional children were more likely to seek care for childhood illness [237]. Finally, attitudes and experiences were motivators: caregivers with a preference for treatment at facilities versus at home or using traditional medicine were more likely to seek facility care [246, 262]. There was some evidence that caregivers who self-medicated their children may delay care or not seek care [235, 251]. Caregivers who had previously used home management techniques [239, 253] or previously sought care for current illness [239, 253] were more likely to use them for current illness.

Finally, there is evidence that sociodemographic characteristics are associated with treatment and care-seeking. Caregivers with higher incomes were more likely to both seek care [235, 237, 248-251, 256] and to use appropriate home management techniques [254]. Marital status was also associated. Single, separated, and divorced mothers were less likely to both have appropriate home management practices [243, 245] and to seek care [249] than married ones. Caregivers with exposure to mass media were also more likely to seek care for childhood illnesses [237, 261]. Age emerged as a factor in treatment and care-seeking, though evidence was mixed. Generally, younger mothers (under ~30) were more likely to seek care, while very young mothers (under ~18) and older mothers (over ~30) were less likely to do so [237, 238], though not all evidence supported this trend [69]. Older mothers (25-35) were more likely to practice home management [240, 242, 243, 245] – perhaps due to past experiences managing illnesses at home.

Social and Community Factors

As with newborn illness, norms around childhood illness were associated with beliefs about nonmedical reasons for childhood illnesses, including exposure to direct sunlight, cold weather, or the evil eye [260, 263, 264]. This was often linked with a preference for traditional medicine or healers – as these perceptions led to delays or lack of care-seeking altogether [235, 236, 238, 261, 263]. Injunctive norms around care-seeking were also described, with community advice influencing care-seeking behaviors [257], and influential community members' preference for traditional healers as a barrier to seeking health care [260]. Finally, couples' shared decision-making was associated with care-seeking delays. Delays were more like likely when one parent decided whether to seek care alone, and less likely when both parents decided jointly [211, 235]. In one study, 90% of mothers made the decision to seek care on their own, while 8% of husbands did so [69]. Generally, household norms held that men were the ultimate decision-makers for care-

seeking, though women were expected to manage illnesses [265]. However, fathers felt they were more involved in children's health than in the past, suggesting changes in the female caregiver/male decider dynamic [265].

⚙ Structural Factors

As with newborn care-seeking, expectations of high-quality, respectful care were factors for care seeking for under-five children. Quality of care included HCW skills and facility resources [260, 266], and included expectations that examinations were given and medication available [250]. Respectful care was another factor associated with care seeking [250]. One study suggested that trust in HCWs was high in some settings, with over 90% of caregivers believing that community or institutional health workers were the most successful person for treating childhood illness [248]. One HEW summarized this dynamic: "The majority of the people in the kebele have an interest in bringing their sick children to the health post, but the problem is the frequent service interruption due to inconsistent drug supply. When we get the supplies, we announce that we have the drugs, and the service is resumed. But after some time, we face drug stockouts and the service is interrupted again. As a result, the community is forced to look for other options." [260]

Perceived or experienced health facility closures [236, 250, 260] or long waits [69, 250] inhibited care-seeking. Caregivers who perceived high barriers to treatment seeking [238], including the need for referrals [265], were less likely to seek care. Other logistical factors included cost of care in delaying or leading to not seeking care [69, 260, 265, 267]. Caregivers enrolled in community-based health insurance were less likely to delay or not seek care [211, 251]. Distance from health facilities was a factor [236, 237, 241, 250, 257, 260, 261]; as well as appropriate home management [252]. Finally, urban caregivers were more likely have good knowledge and practice of home-based management [240] than rural caregivers. This may be an issue of access, in addition to other components – for example, rural parents were more likely to have difficulty in getting zinc to manage diarrhea at home [240]. This also held true for care-seeking [235, 237, 238, 261]. Policies may make a difference for some aspects of home management – e.g., health policy dictates that zinc is an essential drug to be available at health facilities and prescribed free of charge [240].

Malaria

Priority Behavior: Household members (especially pregnant women and children under 5) sleep under an insecticide treated net (ITN) each night

Behavior Overview

At a national level, 64% of households in malarious areas own at least one ITN. This varies regionally, with 73% of households in Amhara, 59% in Oromia, 55% in Benishangul-Gumuz, 69% in SNNPR, 59% in Gambella, and 34% in Dire Dawa owning at least one ITN.

In households with at least one ITN, 61% of the de facto household population had slept under an ITN the night before the survey, 59% of the male and 64% of the female members. For pregnant women in malarious areas living in a household with at least one ITN, 74% reported using an ITN the night before the survey; this varied regionally, with 67% of pregnant women in Amhara, 81% in Oromia, 83% in Benishangul-Gumuz, 65% in SNNPR, 95% in Gambella, and 69% in Dire Dawa. For children under 5 in malarious areas living in a household with at least one ITN, 70% had used an ITN the night before the survey, with regional variation: 67% in Amhara, 75% in Oromia, 82% in Benishangul-Gumuz, 61% in SNNPR, 86% in Gambella, and 56% in Dire Dawa [268].

Individual Factors

Knowledge of many facets of malaria was associated with ITN use, including comprehensive knowledge of malaria and ITNs [269, 270]. Caregivers who had knowledge of ITNs and malaria transmission were more likely to use ITNs for children [271-274]. Sources of knowledge for ITN use included HEWs and health facilities [272], as well as ANC. However, in practice, one study found that only 42% of women who attended ANC received information on malaria prevention [89]. In one study, the level of awareness of malaria and ITNs was just under 70% [274], and included misconceptions about malaria transmission and ITNs [275-277], including that mosquitoes do not bite in the early evening [275], mosquitos are only a risk during the summer, ITNs are poisonous to newborns, [276], and nets attract bedbugs [276]. Use of nets was limited by lack of knowledge around purposes, upkeep, and effectiveness of ITNs [277]. In one study, men had better knowledge of malaria transmission than women [278].

Education was associated with ITN use for children and at a household level, with both mothers [269, 270, 273, 279-281] and fathers [273, 279-281] with higher educational attainment or literacy more likely to use ITNs.

Motivations to use ITNs in households are multi-faceted. Low risk perceptions related to malaria infection were reasons households reported for not using nets [274]. On the other hand, high risk perception, such as seeing malaria as an economic risk encouraged net use [282]. Risk perception varied between family members and by life stage. Some evidence indicated that families gave pregnant mothers priority for ITN use, believing them to be at more at risk [269], though other

evidence points to low knowledge of the greater risk for pregnant women and children under age 5 [271]. Experiences of perceived negative side effects of ITNs from ITNs shaped motivations. These included perceptions that nets had become dirty, they were too hot to use while sleeping, and they caused skin itching [239, 274, 283-285]. Households that properly hung ITNs were more likely to use them [280], though misuse of ITNs for other purposes, often with economic motivations (such as bagging straw, protecting seedlings, and drying cereals), was a barrier to regular use by households [282-287]. Attitudes were also a determinant of net use, with parental attitudes towards malaria associated with net use for children [274]. The color of ITNs was associated with motivations to misuse nets, with certain colors preferred for use to stitch cloth, sell, or give as gifts [284]. Experience with ANC attendance for women was associated with a higher likelihood of net use [274, 288].

Sociodemographic characteristics were also associated with ITN use. Households with higher incomes were more likely to use ITNs [270, 279, 280, 286, 288]. The occupation of household members also proved important – households where the head was a farmer were less likely to own or use ITNs [273, 289] while households with employed women were more likely to use ITNs [288]. Exposure to mass media was another factor, with households that had heard media campaigns more likely to use ITNs [272, 282, 290].

Social and Community Factors

Evidence pointed to gender and life stage preferences given for ITNs within households, with pregnant women and babies most likely to use ITNs for their intended purposes [239, 272, 273, 282, 288]. While this may be positive, as these groups are particularly vulnerable to malaria, it may also lead other groups to underestimate their own risk and eschew nets, even if available. Couple dynamics were also associated with net use: couples who reported more equitable household roles were more likely to use ITNs [282]. This includes decision-making, which one study found to be a consideration for net use. While women are largely responsible for nets, including hanging and repair, men are decision-makers around (mis)use, particularly for repurposing nets for income-generating functions [282].

Structural Factors

The characteristics of distributed nets were associated with use, with preferences for certain types: conical [272, 283] and rectangular [283, 285]. Net shape preference varied by region and setting [268, 281]. In one study, respondents expressed a preference for nets containing insecticides that also killed household pests [283]. Similarly, household construction was associated with net use, with households with at least one separate sleeping room [273, 281, 285] (households have on average just under two sleeping spaces [268]), enough space to hang a net [282, 286]; and iron rather than thatched rooves [280, 282, 284] all more likely to use ITNs. Having enough nets was associated with greater use [239, 271, 286, 290], and smaller families were more likely to have and regularly use ITNs [271, 272, 284, 285]. Quality or perceived quality of ITNs were also important, and old age or loss of insecticidal properties of nets were reported barriers to use [283, 286]. Policy (formal or informal) also plays a role in ITN use – respondents from one study noted

that households were denied ITNs for not having latrines [283]. In another study, respondents noted free distribution of nets created a low sense of ownership over use/care [284]. Finally, setting may be associated with use with pregnant women in rural settings more likely to use ITNs than those in urban settings [270, 284, 288].

Priority Behavior: Household members appropriately manage the signs and symptoms of malaria, including testing by a qualified provider and treatment adherence

Behavior Overview

There was less evidence focused on care-seeking and treatment for malaria than for its prevention. According to the 2015 Malaria Indicator Survey, for children under 5, 38% of those with fevers had their parents seek advice or treatment (34% in Amhara, 37% in Oromia, 45% in Benishangul-Gumuz, 42% in SNNPR, 47% in Gambella, and 48% in Dire Dawa), and just 17% had blood drawn for testing (17% in Amhara, 9% in Oromia, 25% in Benishangul-Gumuz, 22% in SNNPR, 36% in Gambella, and 14% in Dire Dawa). Advice was most commonly sought at a health center, followed by a health post, or from an HEW [268]. One study found that once treatment had been sought, adherence was just over 50% [292].

Individual Factors

In malarious areas, 68% of women aged 15-49 had ever heard of malaria, and of these, 75% knew mosquito bites caused malaria and that fever was a symptom [268]. Knowledge also played a role in care-seeking and treatment adherence, with patients who had good knowledge of malaria more likely to seek timely treatment [293-295] and adhere to it [292, 296]. Likewise, patients without formal education or who were illiterate were more likely to delay care-seeking [295] or not adhere to treatment [292, 296].

Motivations to seek care and adhere to treatment also played a role in the achievement of these behaviors. Perceived benefits of treatment and adherence were low for some respondents – with some believing that malaria was mild. This created a barrier for timely care-seeking [294]. Perceived risk was also a factor. Patients who were not aware of the consequences of non-adherence to malaria treatment were more likely to not adhere [292]. Reasons for non-adherence included sharing drugs with family members and neighbors, saving drugs for a later use, and stopping treatment once symptoms had abated [296]. Patients who had previous experience with malaria were more likely to seek timely treatment [293, 294] and adhere to it [296].

Patients for whom the care-seeking decision was made by the head of household were significantly less likely to seek care early than those who decided for themselves [294, 295]. Where fathers were the main decision-maker, as opposed to mothers, delays in treatment-seeking were associated. Authors suggested that women generally work closer to the home and may be better able to observe symptoms earlier on and seek treatment more promptly [295].

Sociodemographic factors were also associated with timely care-seeking. Patients under 5 were more likely to adhere to malaria treatment guidelines [292]. Authors suggested parental monitoring of dosage made it more likely that children would adhere to treatment than adults. As well, patients with higher household incomes were more likely to seek timely care [294].

Social and Community Factors

Cultural influence (unspecified) was cited as a reason to use traditional medicine; in this same study, the use of traditional medicine was higher than participants' preference for traditional medicine, suggesting an opening exists to transform this norm [297].

Structural Factors

Quality of care emerged as a factor associated with treatment adherence. In one study, 75% of patients did not have the opportunity to repeat treatment instructions back to the provider, and very few took their first dose under the direct observation of providers [292]. Patients treated at health posts were more likely to adhere to treatment than those treated at health centers. Authors suggested that HEW have more time to spend with each patient than higher cadre providers [292]. Accessing care was another challenge, with patients who lived closer to health facilties more likely to seek timely care [293]. Inconvenient service times (details not specified) at health facilities were reported as a barrier for timely care-seeking [294]. Anticipated costs were also a barrier for timely care-seeking [294], and cited as a reason to use traditional rather than modern medicine [297]. Patients who were members of community-based insurance schemes were more likely to seek timely care [294]. Finally, patients in urban settings were more likely to adhere to treatment than those in rural settings [296].

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