


Navigating antenatal care: The lived experiences of adolescent girls and young women and caregiver perspectives in Zambia

Women's Health
Volume 20: 1–10
© The Author(s) 2024
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/17455057241281482
journals.sagepub.com/home/whe



Alinda M. Young^{1,2} , Natasha Okpara³, Nachela Chelwa³, Mary Mwape³,
Jessy Kayawa³, Nchimunya Nkwengele³, Cecilia Mabai³, Laura Nyblade¹,
Michael Mbizvo³ and Sujha Subramanian¹

Abstract

Introduction: Adolescent pregnancy remains a global concern, especially in low- and middle-income countries. Sub-Saharan African nations, including Zambia, bear a disproportionate burden of adolescent pregnancies, contributing to high rates of maternal and child mortality. Despite efforts to improve antenatal care (ANC) services, utilization rates remain suboptimal, especially among adolescent girls and young women (AGYW).

Objective: To explore the barriers and facilitators to ANC services among AGYW and how these factors might differ by age and HIV status.

Design: This qualitative study employs a combination of in-depth interviews (IDIs) and focus group discussions (FGDs) to gather comprehensive insights into the experiences of AGYW regarding ANC services. The study design follows a socio-ecological framework (SEF) to identify multiple levels of influence on ANC utilization.

Methods: We conducted 40 IDIs with AGYW aged 15–24; and 2 FGDs with caregivers of AGYW ($n=16$). IDIs explored AGYWs barriers and facilitators to accessing and utilizing healthcare services during pregnancy, as well as social support and HIV treatment and prevention. FGD topics included social support, barriers and facilitators to ANC, and HIV services. We developed a codebook based on the SEF and coded transcripts using Dedoose software.

Results: Results showed that early pregnancy knowledge did not always translate to AGYW seeking ANC services right away or within the first trimester. More than half of the AGYW did not initiate ANC until well into the second trimester. Factors including lack of motivation, denial of pregnancy, desires to terminate pregnancies, social norms, policies, clinic environment, and financial constraints contributed to delays in ANC initiation. Social support from family, partners, peers, and the community were crucial motivators for early ANC. Lastly, challenges to ANC continuation included lack of transportation, long clinic waiting times, perceived provider indifference, and stigma at both community and clinic levels.

Conclusion: In conclusion, gaining insights from qualitative data is essential for comprehensively understanding the barriers and challenges to accessing ANC among this specific age group. By identifying and addressing these barriers while enhancing facilitators, effective programs can be developed and implemented to improve the health and well-being of young mothers and their children.

Keywords

pregnancy, adolescent girls and young women, Zambia, antenatal care, prenatal care

Date received: 16 April 2024; revised: 23 July 2024; accepted: 20 August 2024

¹RTI International, Research Triangle Park, NC, USA

²Department of Maternal and Child Health, Gillings School of Global Public Health, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA

³Population Council, Lusaka, Zambia

Corresponding author:

Alinda M. Young, RTI International, 3040 East Cornwallis Road, Research Triangle Park, NC 27709, USA.

Emails: ayoung1@unc.edu; amyoung@rti.org



Introduction

Globally, adolescent pregnancy is a public health concern, with more than 16 million girls aged 15–19 and 2 million adolescents girls below age 15 giving birth each year.^{1–4} Complications related to pregnancy and childbirth are the leading cause of mortality among pregnant adolescents worldwide, disproportionately affecting low- and middle-income countries, which account for over 99% of these deaths.^{1,5–7} Sub-Saharan African (SSA) countries bear a significant burden of adolescent pregnancy, with more than half of young women giving birth before the age of 20.⁸ In Zambia alone, 24% of adolescent girls ages 15–19 have already given birth.⁹

While preventing unwanted adolescent pregnancy is crucial, it is equally important to support adolescent mothers to ensure safe and healthy pregnancies, thereby optimizing maternal health services. Studies consistently show that women who utilize antenatal care (ANC) services experience fewer pregnancy-related complications.^{4,7} ANC attendance is essential for preventing, detecting, and treating potential complications, such as sexually transmitted infections (STIs), HIV, anemia, and undernutrition,^{10–12} as highlighted by research in Zimbabwe where enhancing the quality of ANC services resulted in a 42% reduction in neonatal mortality.¹³ To ensure comprehensive care for expectant mothers, the World Health Organization recommends at least eight ANC visits, including one in the first trimester, two in the second trimester, and five in the third trimester. Early ANC attendance ensures expecting mothers and their families receive accurate information and encourages delivery by a skilled birth attendant.^{13,14} However, despite these recommendations, the Zambia Demographic and Health Survey, indicates that while 97% of women of reproductive age received some form of ANC from a skilled provider, only 64% of them had at least four ANC visits, and merely 37% initiated their ANC during the first trimester.⁹ Moreover, a study on maternal health service utilization among women of reproductive age in Zambia found that women aged 25–54 were four times more likely than adolescent girls and young women (AGYW) (ages 15–24) to attend at least four ANC visits.¹⁵ This suboptimal utilization of ANC among all women, especially in the first trimester, can result in missed opportunities for early detection and intervention, potentially affecting both maternal and fetal health.

Understanding the experiences of AGYW through qualitative studies is essential for gaining insight into their interactions with ANC services, addressing challenges, and amplifying enablers. Although understanding these challenges is crucial, there is a scarcity of qualitative studies examining ANC experiences in this population. Notably, existing research, such as a study in Zambia,¹⁶ has limitations: it excluded women aged 20–24 and did not consider the impact of HIV status on ANC experiences.

Our study further explores how AGYWs ANC experiences may differ by age group or by HIV status and can inform comprehensive approaches to enhance ANC services and support AGYW in overcoming these complex health issues. In this paper, we focus on a portion of the Maternal and Child Health (MCH) continuum, specifically on the utilization of ANC services during pregnancy (1 week up to around 40 weeks or the onset of labor).¹⁷ The research presented in this paper was part of a sub-study nested within the Support for HIV Integrated Education, Linkages to Care, and Destigmatization/Integrated Wellness Care (SHIELD/IWC) clinical trial in Zambia.¹⁸ The nested sub-study aimed to explore, from the perspective of AGYWs and their family caregivers, the barriers and facilitators which influence AGYWs access to and utilization of MCH services across the MCH (pregnancy to 12-month postpartum) continuum.

Methods

Parent study clinical trial design and study population

The SHIELD/IWC program, was a three-arm randomized control trial conducted in Zambia under the Prevention and Treatment through a Comprehensive Care Continuum for HIV-affected Adolescents in Resource-Constrained Settings (PATC³H) consortium (NICHD Grant # 1UH3HD096908).¹⁸ The Zambia study was designed to assess the effectiveness of interventions to prevent HIV and improve healthcare access for AGYW aged 10–24. AGYWs were recruited from six clinics providing HIV services located in noncontiguous catchment areas of communities in the greater Lusaka area. Eligibility criteria for AGYW to participate included self-reporting of a negative or unknown (no HIV testing within the past 6 months) HIV status or living with HIV and diagnosis in the past 3 years. Details for the parent study methods have been published elsewhere.¹⁸

Nested sub-study

Recruitment and data collection. Our qualitative research, part of a diversity supplement grant, explored the ANC experiences of AGYW who became pregnant during a clinical trial. Although the original RCT excluded pregnant AGYW, some participants became pregnant during the study. We aimed to understand and improve sexual and reproductive health for these participants. Guided by an interpretivist epistemology, we captured the subjective experiences and perspectives of these AGYW regarding ANC. This qualitative study was independent of the RCTs quantitative data, focusing on personal narratives and social contexts to gain a comprehensive understanding of their needs and challenges.

We conducted in-depth interviews (IDIs) and focus group discussions (FGDs) with: (1) AGYW aged 15–24 who had completed the 12-month assessment survey of the parent study, were at least 3-month postpartum, or had given birth within the last 24 months and (2) caregivers of AGYW in the sub-study who identified either as a caregiver or guardian of the AGYW. We purposively screened 40 AGYWs for eligibility through phone calls, and those who agreed were scheduled for interviews at their convenience. All eligible AGYW who were still in the study catchment area were offered participation and interviews continued until the accrual target was met due to time constraints. Our target of 40 interviews was informed by existing literature and previous research, which suggest that this number is generally sufficient to reach data saturation in qualitative studies.^{19–21} IDIs explored AGYWs barriers and facilitators to accessing and utilizing healthcare services during pregnancy and postpartum. IDIs topics discussed included but were not limited to; barriers as well as facilitators to accessing antenatal and experiences with ART treatment or other HIV prevention methods in general and during the pregnancy period. We utilized demographic and pregnancy data from the parent study's survey to characterize the AGYW participants (Table 1). Female caregivers ($n=16$) of AGYW who had participated in the parent study, became pregnant, and were also taking part in the sub-study were randomly selected and invited to participate in one of two FGDs. Caregivers were selected due to their significant influence on the health-seeking behaviors of AGYW. Previous research has demonstrated that caregivers play a crucial role in shaping AGYWs attitudes toward health services, providing emotional and practical support, and influencing decision-making processes regarding healthcare utilization. These caregivers were also former participants in the parent study. FGD topics included; AGYWs antenatal care experiences, social support, AGYWs sexual and reproductive health, and recommendations to improve AGYWs ANC experiences.

Face-to-face IDIs and FGDs were conducted between March 27, 2023, and May 18, 2023, by trained female interviewers using a semi-structured interview guide in a private location within the AGYWs' community or at a health facility (for FGDs with caregivers), in either English, Bemba, or Nyanja and lasted an average of 50 min for IDIs and 122 min for FGDs. All interviews were audio recorded, transcribed, and translated into English (where applicable) by study site staff fluent in the local languages.

Data analysis/statistical analysis

Transcripts were uploaded into Dedoose software (version 9.0.107) and coded by the lead author. The coding followed an iteratively developed codebook that designated

Table 1. Demographic characteristics ($N=40$).

Variables	<i>n</i> (%)
AGYW HIV status	
HIV+	22 (55)
HIV–/or status unknown	18 (45)
Age	
15–17	6 (15)
18–19	16 (40)
20–22	11 (27.5)
23–24	7 (17.5)
Highest level of education completed	
Less than primary school	6 (15)
Primary school completed	3 (7.5)
Some secondary school,	22 (55)
Secondary school completed	9 (22.5)
Living arrangement ^a	
Parents	25 (62.5)
Parents and extended family	8 (20)
Husband/romantic partner	7 (17.5)
Marital status	
Single/never married	29 (72.5)
Married (legal or traditional)	10 (25)
Decline to answer	1 (2.5)
Source of income ^a	
None	3 (7.5)
Salary	1 (2.5)
Informal or cash	4 (10)
Partner	7 (17.5)
Family	15 (37.5)
Partner and family	7 (17.5)
Partner, family, and salary	1 (2.5)
Informal and partner	2 (5)
No. of sexual partners in lifetime	
1	22 (55)
2	9 (22.5)
3 or more	9 (22.5)
Ever used contraceptive	
Yes	30 (75)
No	10 (25)
No. of pregnancies	
1	32 (80)
2	7 (17.5)
3	1 (2.5)

AGYW: adolescent girls and young women.

^aMultiple responses allowed; totals may add to more than 100%.

codes corresponding to the research objectives, the study population, structured IDI and FGD guides, literature regarding perinatal care utilization in this setting, as well as the socio-ecological framework (SEF).²² The SEF recognizes that human behavior is shaped by a combination of individual attributes and the influence of various social and environmental factors, including family, peers, community, and systems. By considering the interconnectedness of these multiple levels, this framework provides a

holistic understanding of human behavior and its implications for AGYW wellbeing. The codebook for analysis included descriptive codes that directly corresponded to topical areas relevant to the study (e.g., barriers, facilitators, pregnancy, HIV, and SEF levels). Following the coding process, we used a content analysis approach to summarize data in a matrix comprising four categories: barriers, facilitators, HIV, and overall pregnancy journey. The first author then reviewed the passages of the transcripts pertaining to the pregnancy period to ensure all essential information was included. The interpretation of quotes and results was reviewed and approved by all coauthors. The COREQ guidelines were followed in the preparation of the manuscript.²³

Positionality and reflexivity. Interviewers (all females) were from the local area and fluent in the languages used for the interviews. The coder and lead author (also female), who is from the SSA region, has experience working with AGYW and is pursuing a PhD in MCH, focusing on the perinatal period among AGYW. This background provided a deep understanding of the cultural context and helped mitigate power imbalances. Participants were informed that they could skip any questions they felt uncomfortable answering without affecting their access to healthcare services, ensuring their comfort and autonomy during the interviews. Lastly, the interviewers were trained in reflexivity to maintain awareness of their own biases and the potential influence on data collection and analysis. The interviewers were part of the clinical trial team and are included in the authorship of the paper. To ensure quality and consistency, the leading author and study staff reviewed all the interview data. Having the interviewers as part of the authorship team also facilitated a deeper understanding of the study's context and objectives and ensured data accuracy.

Ethical considerations

Study procedures were approved by the Zambia's ERES Converge IRB, Population Council IRB, and University of North Carolina at Chapel Hill IRB. The final approval was sought from the Ministry of Health, through the National Health Research Authority. All AGYW and caregivers provided written informed consent in the parent study and were re-consented to take part in the sub-study. In Zambia, the legal age for consent for health research is 18 years. For minors under age 18 who participated in the study, written consent was obtained from a parent or legal guardian and minors provided assent for study participation.

Results

Characteristics of AGYW

The 40 sub-study AGYW were aged between 15 and 24, with 40% aged 18–19 and 55% currently living with HIV.

More than half (55%) of AGYW had some secondary school education and among these, 22.5% were currently in school. Furthermore, 22.5% had completed secondary school, 72.5% reported being single, and more than half (62.5%) lived with their parents. The majority of AGYW reported main sources of income to be from partners (42.5%), family (57.5%), and informal/cash (15%). While the number of lifetime sexual partners ranged from 1 to 11, most AGYW reported only 1 (55%) or 2 (22.5%) lifetime sexual partners. Furthermore, 75% of the AGYW reported having used contraceptives previously, and 80% reported this being their first pregnancy.

Barriers to ANC initiation and continuation

Intrapersonal factors for delay in ANC initiation. Early pregnancy knowledge did not always translate to AGYW seeking ANC services right away or within the first trimester. Despite the recommendation to start ANC within the first trimester (1–3 months), more than half of the AGYW did not initiate ANC until well into the second trimester (4–6 months), with two starting in the third trimester (7–9 months). A few AGYW cited intrapersonal reasons for delaying the start of ANC with the overarching factors being a self-described sense of laziness and feeling unmotivated to initiate ANC, often attributing it to feelings of fatigue or procrastination. In the quote below, the AGYW discusses her family knowing about her pregnancy but feeling unmotivated to start ANC within the first trimester because she was preparing for her exams. This reflects a potentially limited understanding of the importance of ANC attendance and illustrates how some AGYW might prioritize competing interests in their lives: "I was feeling lazy because at home they knew like today [meaning her family knew early] and I am starting my exams next week, then the pregnancy was four (4) months old, so I was feeling lazy and busy preparing for exams." [AGYW, HIV–]

Caregivers noted AGYW's reluctance to disclose their pregnancies as the main barrier for late ANC initiation and delayed family support.

"Sometimes when a child becomes pregnant, she starts hiding the pregnancy. . . So that child who is afraid of telling her mother that she is pregnant and the mother identifying pregnancy late contributes to the delaying of starting antenatal. By the time parents find out that there is a pregnant child at home the pregnancy is 4 or 5 months old, if the pregnancy is 5 months and the time you spend encouraging her [to attend ANC] adds on." [Caregiver]

Denial of pregnancy and desires to terminate pregnancies also contributed to the delay. Some AGYW spoke of initially being in denial of their pregnancies, either out of fear or reluctance to accept the reality. Additionally, a subset of AGYW expressed wanting to abort their pregnancies, driven by various concerns. For one AGYW who

was HIV positive, the decision to delay ANC initiation and the desire to abort was rooted in the fear of transmitting HIV to her unborn child. In one serious case, an AGYW talked about drinking a bottle of pesticides to abort the pregnancy and was rushed to the hospital by her family for treatment.

“When they found out I just got surprised when I woke up in the morning mom started saying ‘I am not seeing you well,’ my uncle’s wife was also pregnant, and she was nearby so she called me and said, ‘tell me my child don’t be scared of me.’ I denied it! I denied it! They checked my breasts and touched my stomach; I just told them ‘this is how I am when I am filled up with food.’ They said, ‘no you are pregnant,’ that’s how I noticed that in the evenings it became worse, I went and bought Doom (pesticide). . . I even drunk it, my younger sibling is the one who found me.” [AGYW, HIV+]

AGYW also highlighted instances where disruption in their menstrual cycles was misinterpreted as a side effect of contraceptive use rather than an indicator of pregnancy. This misinterpretation led to delays in seeking ANC, as the pregnancy went unnoticed until much later.

External factors influencing delay in ANC initiation. Delay in initiation was sometimes influenced by external factors beyond the control of AGYW. These factors included being sent away from the home once parents discovered the pregnancy, and being told that traditional medicine could serve the same purpose as prenatal vitamins. For several AGYW, policies in some clinics mandating male partners presence during the initial ANC visit created challenge, particularly when adolescent male partners hesitated or denied the pregnancy. One AGYW spoke of being sent back home during her ANC initiation and told to return with her partner—she reinitiated with her partner. Others, fearing reprimands from ANC staff, especially when partners prioritized work, delayed beginning ANC until well into the third trimester.

“I started late, I started at 7 months because my husband was refusing to escort me saying that he was going for work. . . I was scared because they reprimand that side.” [AGYW, HIV+]

“Okay this is what they used to do, when you go to start antenatal, they [healthcare providers] will ask you this ‘where is the person who impregnated you?’ then I told them ‘He isn’t around, he is out because he is a truck driver.’ and they responded by saying ‘oh so he impregnated you from the truck? You didn’t think about coming to the clinic? You didn’t tell him that he is supposed to come to the clinic?’” [AGYW, HIV-]

“The challenge I encountered like the other respondent mentioned is the partner, because even my daughter the man refused to take responsibility, so I am the one who went to

represent her as the father of the baby when starting antenatal.” [Caregiver]

AGYW were also concerned about healthcare providers attitudes, some due to community rumors regarding neglect at health facilities. Furthermore, caregivers and AGYW highlighted age-related stigma from community members, clinic staff, and peers as a significant deterrent to initiating ANC services. AGYW frequently grappled with feelings of shame and fear of ridicule, leading to isolation and reluctance to attend recommended ANC visits—with one caregiver giving an account of her daughter contemplating suicide due to pervasive community stigma and rumors. This fear of judgment and reprimands at clinics, specifically due to the young age of AGYW, also extended to caregivers, who shared similar apprehensions about potential criticism for allowing their daughters to become pregnant at an early age, and thus did not encourage their daughters to initiate ANC despite having knowledge of the pregnancies earlier than when the AGYW initiated ANC.

“People in the community would make me feel uncomfortable because they would stare at me. . . They would stare at me and I would hear them talk about me. . . They would say things like at her tender age she’s pregnant and so on. . . They would say I was promiscuous that’s why I got pregnant.” [AGYW, HIV-]

“At the clinic because they will ask, ‘a small child, 13 years of age is pregnant? You [Caregiver] were not taking care of her.’ A lot of things will be said and you get to fear taking her. . . The nurses like shouting at people saying you don’t pay attention to the children but when that child goes to school you don’t know what she does, you pay attention and you care for her then she is found pregnant, you go there they [nurses] start treating you like you don’t think properly. That is the challenge I observed.” [Caregiver]

Lastly, caregivers and AGYW spoke of other barriers to ANC attendance including lack of transportation means, distance to the clinic, lengthy waiting times, and financial constraints as impacting ANC attendance.

Barriers to ANC continuation. Once AGYWs initiated ANC, continuation for most was easy. Minimal barriers were reported to ANC continuation from the various levels. As they had initially feared, some girls were chastised by the healthcare providers; however, they felt the benefits they were receiving from attending ANC outweighed the negative interactions with clinic staff. Additionally, indifference from healthcare providers, often preoccupied with phones, frustrated AGYW and occasionally led to conflicts, echoing initial concerns about delaying ANC to avoid such interactions. Other barriers that were mentioned included long waiting hours (up to 8h) and

continued transportation issues. Transportation challenges often led to AGYW walking to the clinic due to bus unavailability, and having difficulty returning home after lengthy visits, especially for those with underlying health issues. Lastly, engagement with older women also attending ANC discussing labor topics distressed some AGYW, while continued stigma and community negativity caused fear and depression for others.

“. . . I used to spend time there, going early in the morning, and coming back in the afternoon sometimes I would think to myself ‘maybe I can stop [going to ANC].’” [AGYW, HIV+]

“In the community you start thinking on how you would face the community because there are times where people will start laughing at you when you are passing to say ‘see that one is pregnant’ so you don’t know how to face the community because you tend to have fear, get depressed, feeling shy and fail to move freely. So those were the challenges.” [AGYW, HIV-]

Facilitators to ANC initiation and continuation

Intrapersonal factors influencing ANC initiation. Most AGYW identified their pregnancies between 2 and 4 months. A few initiated ANC immediately, particularly those living with HIV, driven by their awareness of potential implications for both them and their unborn child. An AGYW living with HIV who initiated ANC at 1-month gestation illustrated this point below:

“Because of my status I really wanted guidance that’s why I really wanted to go to the clinic so that at least they should be guiding me, giving me medication, and checking my viral load from time to time. That really made me start fast.” [AGYW, HIV+]

Other AGYW that started ANC right after they discovered their pregnancies spoke of being motivated by the fact that it would ensure the fetus was healthy and enable them to deliver at a health facility without challenges.

External factors influencing ANC initiation. Various individuals within AGYW social circles significantly influenced ANC initiation and continuation. Some AGYW as well as caregivers highlighted the importance of male partners involvement. A few male partners, even though adolescent themselves, were found to encourage AGYW and often accompanied them to the clinic for their first ANC visit or provided transportation funds to the clinic.

“What made it easy is the father of this baby, he said these words ‘Are you going to start with going for antenatal or going for scanning.’ I said these words ‘I will start with going for antenatal then when I go for antenatal they will tell me to go for scanning.’. . . like I said. . . it was easy because my partner knew how I was with my pregnancy. . . he [would]

observe how I was with my pregnancy knowing that I want this and that but okay he had a lot of care. So it was easy, he bought things needed for the baby within 3 months.” [AGYW, HIV-]

“The guy who impregnated her used to remind her and escort her for antenatal. He used to come get her so they can go together.” [Caregiver]

Mothers also played a crucial role, by escorting daughters to clinics, encouraging prompt ANC, and providing financial support. Other family members, including sisters, grandmothers, and in-laws, helped alleviate concerns, preventing AGYW from considering abortion or delaying ANC. Caregivers, echoing AGYW experiences, emphasized the significance of ANC in providing guidance on a healthy pregnancy and delivery preparation. Some caregivers even accompanied AGYW to their first ANC visit as highlighted in the quotes below illustrating the supportive role of family members in initiating ANC.

“So when I discovered that I was pregnant at three (3) months, I started antenatal at four (4) months and my mother was even upset that I delayed to start. So mum escorted me to the clinic for my first antenatal visit.” [AGYW, HIV-]

“She [mother-in-law] told me not to go ahead with Abortion, if you fall pregnant that doesn’t mean the child will also be HIV positive. She sat me down and counseled me, saying the child will not be sick don’t be worried just keep the pregnancy.” [AGYW, HIV+]

“When my child was pregnant, I made sure I followed up on every step of the way until the pregnancy was 3 months old I told her to start antenatal, after they conducted the necessary test they gave her iron tablets but she used to feel lazy to drink them but I used to force her to drink them. I used to encourage her a lot.” [Caregiver]

Supportive peers and peer groups (e.g., supportive groups for those living with HIV) provided motivation and companionship. In alignment with AGYW narratives, some caregivers agreed that peer influence was another driving force, with friends who had experienced motherhood themselves often encouraging AGYW to initiate ANC. Caregivers found these friends beneficial, as AGYW sometimes showed indifference to their caregivers regarding ANC attendance until they received encouragement from these friends.

“It was easy for her because of her friends, she had two friends who had children before her. So at least her friends liked asking her that ‘did you go for antenatal?’ she said ‘No, I haven’t yet started.’ They would tell her what their parents used to tell them because sometimes you tell a child something and they think you are the only one that knows those things others don’t know them, so at least when others tell her that is

when she sees that ‘so those things that I am told at home are everywhere’, that helped her.” [Caregiver]

Moreover, a few AGYW reported community members providing encouragement, even providing funds for ANC attendance.

Facilitators to continuation. Once participants started ANC, they recognized the importance of ANC to their wellbeing that that of their unborn child, especially if they were diagnosed with a health issue (e.g., low or high blood pressure). They and their caregivers emphasized the valuable guidance from clinic staff, covering self-care, nutrition, breastfeeding, and medication instructions.

“We used to follow what the doctor used to say like ‘you need to be coming here so that we can be seeing how the baby is progressing and what is happening in the womb,’ that’s what made me continue going.” [AGYW, HIV–]

AGYW living with HIV highlighted their commitment to ANC for preventing mother-to-child transmission and found support in interactions with other women living with HIV during ANC visits.

“I knew that if I go I will get the drugs for blood and the ART and that will make my baby negative and for sure the baby came out negative.” [AGYW, HIV+]

“Interacting with people with the same condition helped and gave me confidence to say my problems are not as bad as my friends’ problems.” [AGYW, HIV+]

Furthermore, for many AGYW, male partners, family, peer, and the community provided ongoing support throughout their ANC journey. Male partners, family members, and sometimes friends continued accompanying AGYW to their ANC visits or provided reminders for upcoming appointments. For a few AGYW participants, they went together to ANC with other pregnant family or community members. Though rare, AGYWs mentioned receiving support from community members, including neighbors, indicating the varied sources of encouragement.

“He [partner] used to remind me, every time like when the date is due, he would tell me to say, ‘remember tomorrow is antenatal day’ and he would even escort me.” [AGYW, HIV+]

“My family was happy, they used to escort me to the clinic and in the road my friends were also escorting me. They used to bring me food and prepare hot water for me to bath as well as massage me just like that.” [AGYW, HIV+]

“I had a friend who I told about what was happening [referencing the community stigma] she advised me to just

continue going for antenatal because people will just pull me back so that’s how I continued going for antenatal.” [AGYW, HIV–]

“I had one [neighbour] that was pregnant as well that used to motivate me, we could go together [to ANC].” [AGYW, HIV–]

Although we observed no disparities in ANC experiences between multiparous and primiparous women, we noted a higher prevalence of community stigma among unwed AGYW compared to their wed counterparts, who generally tended to be older. Furthermore, there were minimal differences in initiation and continuation of ANC among AGYW living with HIV and those not living with HIV.

Discussion

The results showed various social-ecological factors shape the initiation and continuation of ANC experiences for AGYW. Intrapersonal factors, such as the timing of pregnancy awareness, feeling unmotivated, denial of pregnancy, hiding pregnancy, and desires to terminate pregnancies, significantly influenced ANC utilization. These findings align with those reported in Tanzania and Ghana.^{24,25} External factors, including age-related pregnancy stigma in the community, peer pressure, financial constraints, and negative perceptions of healthcare providers, presented significant obstacles to timely ANC commencement and continuation. However, social support from partners, family, peers, and sometimes community members played a pivotal role in assisting AGYW in starting and continuing ANC services. Despite encountering challenges such as extended waiting times, perceived indifference from healthcare providers, and negative community comments, the resilience of AGYW and the backing of their support networks enabled them to persevere.

The variation in pregnancy awareness across trimesters among AGYW underlines the need for targeted education and awareness campaigns to facilitate early detection. Early detection, especially among those living with HIV, often translated into immediate ANC initiation. Some AGYW initiated ANC only when confronted with maternal health issues rather than upon realizing their pregnancy. Additionally some delayed initiation due to the inability to recognize pregnancy signs until the second trimester, consistent with findings from other studies in these regions.^{24–27} This underscores the importance of comprehensive sexual and reproductive health education that includes pregnancy signs and accurate information about pregnancy and ANC. Furthermore, we observed no differences between multiparous and primiparous AGYW, highlighting the need to enhance maternal healthcare experiences for all AGYWs.

External factors such as societal norms, clinical environment, peer pressure, and financial constraints, strongly influenced ANC initiation decisions. Similar to studies in Eastern and Southern Africa, financial limitations, leading to transportation challenges and inability to afford clinic materials, compelled some AGYW to rely on others for support.^{17,28–31} Community perceptions, stigma, and peer opinions significantly impacted AGYW's decisions regarding ANC initiation and continuation. Studies have reported the negative effect of community stigma and its hindrance on ANC, with stigma and judgment often intensifying among unwed AGYW.^{17,29–34} This necessitates community-based interventions that challenge stereotypes and foster a supportive environment for AGYW navigating pregnancy and ANC.

At the clinic level, negative perceptions of healthcare providers and clinic policies mandating male partner attendance were identified as hinderances to timely ANC initiation. Similar issues, such as illegal fees and healthcare providers prioritizing phone calls over patient care, leading to prolonged waiting lines, have been reported previously.³⁵ Negative healthcare provider interactions have been reported elsewhere to also deter AGYW from seeking early ANC or even led to discontinuation of attendance due to inadequate care.^{32–37} Discrimination based on marital status or age, favoring older women and those attending with partners, was also noted.^{17,29,35,37} These barriers emphasize the importance of nonjudgmental healthcare environments, policy changes, healthcare provider training to ensure respectful interactions, and improved patient-provider communication. Support from clinic leadership in implementing these changes is vital for improving the experiences of AGYW utilizing ANC services in Zambia. While male partner attendance is important, particularly for HIV/STI testing, treatment, and prevention, flexibility should be exercised in its implementation to avoid hindering early ANC initiation.^{29,32,36}

Finally, the indispensable role of social support networks emerged as critical influence in facilitating both timely ANC initiation and continuation and in overcoming barriers. Despite facing challenges such as prolonged waiting times, perceived provider indifference, and negative community feedback, the unwavering support of AGYW's families, partners, and peers, combined with their own resilience, proved instrumental in their perseverance. Positive reinforcement from these networks not only motivated AGYW to actively seek ANC services but also ensured their consistent attendance, emphasizing the paramount importance of strong support systems during this vulnerable period. Support groups and community organizations hold the potential to empower AGYW by offering emotional, informational, and financial assistance. Previous studies conducted within this African region have also underscored the critical significance of social support, particularly from family members and male partners, in

influencing the timely initiation and sustained engagement with ANC and other MCH services.^{28–30,33,38} However, not all male partners were supportive during this period, which is consistent with prior studies.^{31,34} More research is needed to further explore these social support networks, particularly male partners, and their potential for improving the health outcomes of AGYW. Additionally, the positive rapport established with healthcare providers significantly contributed to AGYW's feelings of support and motivation to continue utilizing ANC services, aligning with findings from other contexts.^{17,37,39}

The study's strengths lie in its qualitative approach, providing rich insights into the lived experiences of AGYW in relation to ANC utilization. However, results should be interpreted with some limitations in mind. There is a potential for recall bias, as AGYW were interviewed 3 months postpartum, which may have affected the accuracy and completeness of their recollections regarding ANC experiences. Additionally, participants are representative of peri-urban and urban dwellers and thus perspectives might differ from AGYW and caregivers in rural settings. Nonetheless, the perspectives from AGYW and caregivers contribute to a nuanced understanding of the complexities surrounding ANC utilization among AGYW in Zambia.

Conclusion

This study's findings underscore the importance of addressing the multifaceted barriers that hinder timely ANC initiation and continuation among AGYW. Addressing these challenges requires multilevel strategies that tackle the various barriers AGYW face at different socio-ecological levels while at the same time amplifying the facilitators. By enhancing community awareness, fostering supportive environments, and improving healthcare access and provider attitudes, it is possible to empower AGYW to prioritize their health and the health of their unborn children. Comprehensive interventions that consider the unique challenges faced by this population are essential for promoting positive MCH outcomes and breaking the cycle of suboptimal ANC utilization.

Declarations

Ethical approval and consent to participate

Study procedures were approved by the Zambia's ERES Converge IRB, Population Council IRB, and University of North Carolina at Chapel Hill IRB (not applicable for the sub-study). The final approval was sought from the Ministry of Health, through the National Health Research Authority. All AGYW and caregivers provided written informed consent in the parent study and were re-consented to take part in the sub-study. In Zambia, the legal age for consent for health research is 18 years. For minors under age 18 who participated in the study, written

consent was obtained from a parent or legal guardian and minors provided assent for study participation.

Consent for publication

Not Applicable.

Author contributions

Alinda M. Young: Conceptualization; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Resources; Supervision; Writing – original draft; Writing – review & editing.

Natasha Okpara: Investigation; Methodology; Project administration; Resources; Supervision; Writing – review & editing.

Nachela Chelwa: Investigation; Methodology; Project administration; Resources; Supervision; Writing – review & editing.

Mary Mwape: Investigation; Methodology; Resources; Writing – review & editing.

Jessy Kayawa: Investigation; Methodology; Resources; Writing – review & editing.

Nchimunya Nkwengele: Investigation; Methodology; Resources; Writing – review & editing.

Cecilia Mabai: Investigation; Methodology; Resources; Writing – review & editing.

Laura Nyblade: Conceptualization; Funding acquisition; Investigation; Methodology; Supervision; Writing – review & editing.

Michael Mbizvo: Conceptualization; Funding acquisition; Investigation; Methodology; Resources; Supervision; Writing – review & editing.

Sujha Subramanian: Conceptualization; Funding acquisition; Investigation; Methodology; Resources; Supervision; Writing – review & editing.

Acknowledgements

We are grateful to the participants for their contributions to this study, and to the study team members at the Population Council Zambia.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: Research reported in this publication was supported by the Eunice Kennedy Shriver National Institute of Child Health and Human Development of the National Institutes of Health under grant number 1UH3HD096908. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

Competing interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Availability of data and materials

Codes and themes are available upon request.

ORCID iD

Alinda M. Young  <https://orcid.org/0000-0001-9277-967X>

Supplemental material

Supplemental material for this article is available online.

References

1. Mekonnen T, Dune T and Perz J. Maternal health service utilisation of adolescent women in sub-Saharan Africa: a systematic scoping review. *BMC Pregnancy Childbirth* 2019; 19(1): 366.
2. Gronvik T and Fossgard Sandoy I. Complications associated with adolescent childbearing in Sub-Saharan Africa: a systematic literature review and meta-analysis. *PLoS One* 2018; 13(9): e0204327.
3. Asare BY-A, Baafi D, Dwumfour-Asare B, et al. Factors associated with adolescent pregnancy in the Sunyani Municipality of Ghana. *Int J Africa Nurs Sci* 2019; 10: 87–91.
4. Gennari PJ. Adolescent pregnancy in developing countries. *Int J Childbirth Education* 2013; 28(1): 57–62.
5. Svanemyr J. Adolescent pregnancy and social norms in Zambia. *Cult Health Sex* 2020; 22(6): 615–629.
6. Kiani MA, Ghazanfarpour M and Saecidi M. Adolescent pregnancy: a health challenge. *Int J Pediatr* 2019; 7(7): 9749–9752.
7. Rurangirwa AA, Mogren I, Nyirazinyoye L, et al. Determinants of poor utilization of antenatal care services among recently delivered women in Rwanda; a population based study. *BMC Pregnancy Childbirth* 2017; 17: 142.
8. Sama CB, Ngasa SN, Dzekem BS, et al. Prevalence, predictors and adverse outcomes of adolescent pregnancy in sub-Saharan Africa: a protocol of a systematic review. *Syst Rev* 2017; 6(1): 247.
9. Zambia Statistics Agency (ZSA), Ministry of Health (MOH), University Teaching Hospital Virology Laboratory (UTH-VL), ICF. *Zambia Demographic and Health Survey 2018*. Lusaka, Zambia: ZSA, MOH, UTH-VL and ICF; 2020.
10. Owolabi OO, Wong KL, Dennis ML, et al. Comparing the use and content of antenatal care in adolescent and older first-time mothers in 13 countries of west Africa: a cross-sectional analysis of Demographic and Health Surveys. *Lancet Child Adolesc Health* 2017; 1(3): 203–212.
11. Geta MB and Yallew WW. Early initiation of antenatal care and factors associated with early antenatal care initiation at health facilities in southern Ethiopia. *Adv Public Health* 2017; 10: 6.
12. Ewunetie AA, Muneza AM, Meselu BT, et al. DELAY on first antenatal care visit and its associated factors among pregnant women in public health facilities of Debre Markos town, North West Ethiopia. *BMC Pregnancy Childbirth* 2018; 18(1): 173.
13. Nisingizwe MP, Tuyisenge G, Hategeka C, et al. Are perceived barriers to accessing health care associated with inadequate antenatal care visits among women of reproductive age in Rwanda? *BMC Pregnancy Childbirth* 2020; 20(1): 88.

14. Wilunda C, Scanagatta C, Putoto G, et al. Barriers to utilisation of antenatal care services in South Sudan: a qualitative study in Rumbek North County. *Reprod Health* 2017; 14(1): 65.
15. Jacobs C, Moshabela M, Maswenyeho S, et al. Predictors of antenatal care, skilled birth attendance, and postnatal care utilization among the remote and poorest rural communities of Zambia: a multilevel analysis. *Front Public Health* 2017; 5: 11.
16. Global A. Update. *Confronting inequalities-lessons for pandemic responses from 40 years of AIDS* [homepage on the Internet]. Geneva: UNAIDS Joint United Nations Programme on HIV. AIDS; 2021.
17. Bwalya BC, Sitali D, Baboo KS, et al. Experiences of antenatal care among pregnant adolescents at Kanyama and Matero clinics in Lusaka district, Zambia. *Reprod Health* 2018; 15: 1–8.
18. Subramanian S, Edwards P, Roberts ST, et al. Integrated care delivery for HIV prevention and treatment in adolescent girls and young women in Zambia: protocol for a cluster-randomized controlled trial. *JMIR Res Protoc* 2019; 8(10): e15314.
19. Guest G, Bunce A and Johnson L. How many interviews are enough? An experiment with data saturation and variability. *Field Methods* 2006; 18(1): 59–82.
20. Mason M (ed) Sample size and saturation in PhD studies using qualitative interviews. *Forum Qual Soc res* 2010; 11(3): 1428.
21. Hennink MM, Kaiser BN and Marconi VC. Code saturation versus meaning saturation: how many interviews are enough? *Qual Health Res* 2017; 27(4): 591–608.
22. Kilanowski JF. Breadth of the socio-ecological model. *J Agromed* 2017; 22(4): 295–297.
23. Tong A, Sainsbury P and Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care* 2007; 19(6): 349–357.
24. Kotoh AM and Boah M. “No visible signs of pregnancy, no sickness, no antenatal care”: initiation of antenatal care in a rural district in Northern Ghana. *BMC Public Health* 2019; 19: 1094.
25. Exavery A, Kanté AM, Hingora A, et al. How mistimed and unwanted pregnancies affect timing of antenatal care initiation in three districts in Tanzania. *BMC Pregnancy Childbirth* 2013; 13: 35.
26. Redi T, Seid O, Bazie GW, et al. Timely initiation of antenatal care and associated factors among pregnant women attending antenatal care in Southwest Ethiopia. *PLoS One* 2022; 17(8): e0273152.
27. Nasira Boi A, Izudi J and Atim F. Timely attendance of the first antenatal care among pregnant women aged 15–49 living with HIV in Juba, South Sudan. *Adv Public Health* 2022; 2022: 3252906
28. Mgata S and Maluka SO. Factors for late initiation of antenatal care in Dar es Salaam, Tanzania: a qualitative study. *BMC Pregnancy Childbirth* 2019; 19: 419.
29. Hackett K, Lenters L, Vandermorris A, et al. How can engagement of adolescents in antenatal care be enhanced? Learning from the perspectives of young mothers in Ghana and Tanzania. *BMC Pregnancy Childbirth* 2019; 19: 184.
30. Atuyambe L, Mirembe F, Annika J, et al. Seeking safety and empathy: adolescent health seeking behavior during pregnancy and early motherhood in central Uganda. *J Adolesc* 2009; 32(4): 781–796.
31. Kisiangani I, Elmi M, Bakibinga P, et al. Persistent barriers to the use of maternal, newborn and child health services in Garissa sub-county, Kenya: a qualitative study. *BMC Pregnancy Childbirth* 2020; 20: 277.
32. Mweteni W, Kabirigi J, Matovelo D, et al. Implications of power imbalance in antenatal care seeking among pregnant adolescents in rural Tanzania: a qualitative study. *PLoS One* 2021; 16(6): e0250646.
33. Erasmus MO, Knight L and Dutton J. Barriers to accessing maternal health care amongst pregnant adolescents in South Africa: a qualitative study. *Int J Public Health* 2020; 65: 469–476.
34. Kumar M, Huang K-Y, Othieno C, et al. Adolescent pregnancy and challenges in Kenyan context: perspectives from multiple community stakeholders. *Glob Soc Welf* 2018; 5: 11–27.
35. James S, Rall N and Strumpher J. Perceptions of pregnant teenagers with regard to the antenatal care clinic environment. *Curationis* 2012; 35(1): 1–8.
36. Chimatiro CS, Hajison P, Chipeta E, et al. Understanding barriers preventing pregnant women from starting antenatal clinic in the first trimester of pregnancy in Ntcheu District-Malawi. *Reprod Health* 2018; 15: 1–7.
37. Sewpaul R, Crutzen R, Dukhi N, et al. A mixed reception: perceptions of pregnant adolescents' experiences with health care workers in Cape Town, South Africa. *Reprod Health* 2021; 18: 1–12.
38. Young AM, Saidi F, Phanga T, et al. Male partners' support and influence on pregnant women's oral PrEP use and adherence in Malawi. *Front Reprod Health* 2023; 5: 1206075.
39. Chikalipo MC, Mipando LN, Ngalande RC, et al. Perceptions of pregnant adolescents on the antenatal care received at Ndirande Health Centre in Blantyre, Malawi. *Malawi Med J* 2018; 30(1): 25–30.