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Research Article

Socio-Demographic and Socio-Cultural Factors Associated in SBAs Utilization Among Adolescent Mothers Aged 13 - 19 Years in Afgooye District, Somalia

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Abstract

Pregnancy among Adolescents is still a major public health challenges in Somalia, where high fertility rates (118/1,000 adolescents) and maternal mortality (692 / 100,000 live births) are further exacerbated by child marriage and female genital mutilation. This study was aimed to assess the utilization of skilled birth attendants (SBAs) and associated factors among adolescent mothers in Afgooyo District. A mixed-methods cross-sectional study was applied, involving 339 teenage mothers using structured questionnaires and qualitative interviews. Quantitative data were analyzed using SPSS version 27. The findings revealed that only 17.7% of respondents utilized SBAs, a Figure far below the national estimate of 32%. Factors significantly associated with lower SBA utilization included having non formal education (aOR = 0.062, 95% CI: 0.015–0.263), earning less than USD 50 per month (aOR = 0.125, 95% CI: 0.034–0.465), and delivery decisions being made by partners or in-laws (aOR = 0.130, 95% CI: 0.048–0.355). In contrast, belief in the importance of SBAs increased the likelihood of utilization (aOR = 3.651, 95% CI: 1.202–11.094), while preference for home delivery reduced the likelihood of SBA use (aOR = 0.190, 95% CI: 0.067–0.542). SBAs utilization among teenage mothers in Afgooyo District remains low and is significantly influenced by education, household income, decision-making autonomy, perceptions of SBA importance, and preferred place of delivery. Strengthening girls' education, economic empowerment, women's autonomy in healthcare decisions, and positive community perceptions of skilled delivery care could improve SBA utilization.

Keywords

Skilled Birth Attendants, Adolescent Mothers, Aged 13-19 Years, Afgooyo District

1. Introduction

Due to the higher risks of mother and newborn morbidity and death, adolescent pregnancy continues to threaten the health and wellbeing of young mothers and their babies across many parts of the world, particularly in developing countries where healthcare systems are often limited. Every year, twenty-one million of girls between the ages of 15 and 19 experience pregnancy, and nearly twelve million having a child, constituting eleven percent of all global births. [1]. Teenagers are more vulnerable to pregnancy and childbirth since their bodies are still developing and many may not have access to

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high-quality medical care, and socio-economic vulnerabilities [2].

While many countries have achieved improvements in maternal healthcare services over the years, sub-Saharan Africa continues to face a disproportionate burden, accounting for approximately seventy percent of universal maternal deaths [3]. Studies also show that the proportion of deliveries assisted by skilled health personnel has increased globally from 64% to about 84%. However, coverage remains much lower in sub-Saharan Africa, at approximately 63% [4]. These variances are more significant in low-income households, rural communities, and teenagers, where sociocultural factors, financial limitations, and inadequate access to healthcare facilities limit the utilization of skilled delivery services [5].

World Bank reports that Somalia still has one of the worst rates of maternal death in the world, with an estimated 563 maternal fatalities per 100,000 live births. At the same time, the adolescent fertility rate remains high at 117 births per 1,000 girls. These Figures reflect the serious reproductive health challenges facing the country [6].

The situation is further influenced by widespread early marriage practices. According to UNICEF, nearly 45% of girls in Somalia marry before reaching 18 years, while 16% are married before the age of 15 [7]. In addition, female genital mutilation is nearly universal, affecting about 98% of women aged 15–49 years, both of which increase adolescents' vulnerability to adverse reproductive health outcomes [8]. Use of skilled delivery care remains limited across the country. Findings from the Somalia Demographic and Health Survey indicate that only about 32% of births are attended by qualified health personnel. Furthermore, just 21% of deliveries occur in health facilities, while and 79% of births occurring at home [9]. Limited healthcare access, poverty, and reliance on traditional birth attendants further make worse the situation [10].

Adolescent mothers often encounter greater difficulties in accessing maternity services than older women. Factors such as low educational attainment, inadequate access to healthcare services, and reproductive health information, combined with financial hardship and restrictive sociocultural practices increase the likelihood of early pregnancy and reduces their ability to seek and utilize skilled delivery care. [11]. As a result, adolescent pregnancy is linked to a higher risk of poor maternal and newborn outcomes, including maternal death, preterm delivery, low birth weight, and neonatal mortality [12].

Although a number of studies have examined skilled birth attendant utilization in different settings, there is no known research focusing specifically on adolescent mothers in Somalia, particularly at the community level. Most of data that is currently available comes from women of reproductive age, which may mask the specific challenges faced by adolescents. Therefore, this research aimed to determine the proportion of skilled birth attendant utilization and identify the factors associated with its use among adolescent mothers in Afgooye District, Somalia.

2. Material and Methods

2.1. Study Design

A cross-sectional analytical study that included quantitative and qualitative data collection techniques was conducted using a mixed methods approach. This design is preferred since it may reach a large sample of individuals at an affordable price and in a short length of time.

2.2. Study Setting

The study was carried out in Afgooye District, located in Lower Shabelle Region of Somalia, which is about 30 km west of Mogadishu. The district is officially organized into twelve villages and is made up of both rural and semi-urban communities. According to UNDP (2014), Afgooyo has an estimated population of 67,350, farming is the primary source of income. There is only one district hospital and four mother and child health centers in the area. Poor road networks and seasonal flooding frequently limit access to health services.

2.3. Study Population

The study population consisted of adolescent mothers between the ages 13 and 19 who gave birth within the 12 months preceding the survey and lived in Afgooye District.

2.4. Inclusion and Exclusion Criteria

Adolescent mothers between the ages of 13 and 19 who had resided in the study area for at least two years and had given their agreement to participate were included. Participants under the age of eighteen provided assent together with parental or guardian consent. Adolescents who were severely ill or incapable of responding during the data collecting period were not included.

2.5. Sampling and Sample Size Determination

2.5.1. Sampling Technique

A multistage cluster sampling approach was used. Initially, six villages randomly selected out of the total twelve using simple random sampling Within the selected villages, households were then chosen through systematic random sampling, and eligible participants were identified accordingly. In cases where more than one eligible adolescent mother was found in a single household, one participant was randomly selected to ensure equal representation.

2.5.2. Sample Size Determination

The sample size was calculated using Slovin's formula:

$$n = N / (1+Ne^2)$$

Where: n= Sample size, N= Population, e=desired margin of error (set at 5% or 0.05).

$$n= N/ (1+Ne^2) = \frac{1347}{1 + 1347x(0.05\^2)} =308.18$$

This resulted in a sample size of 308.18, which was rounded to 309.

After adding a 10% non-response rate, the final sample size was adjusted to 339. Out of these, a total of 328 completed questionnaires were considered valid and included in the analysis.

2.5.3 Pre-testing

A pre-test was carried out using 10% of the calculated sample size (31 adolescent mothers) in Marka District, a setting with similar characteristics to the study area. The Feedback obtained during the pre-test was used to enhance the appropriateness, flow, and clarity of the questionnaire before the actual data collection.

2.5.4. Validity Content

Validity was confirmed through expert review by academic supervisors and alignment of the data collection tools with the study objectives. The questionnaire was designed to fully capture all relevant variables.

2.5.5. Reliability

The questionnaire was pre-tested to increase reliability, and research assistants received training on data collection methods. Consistency was maintained by using the same structured questionnaire for all respondents.

2.6. Data Collection

2.6.1. Data Collection Techniques

Interviewer-administered structured questionnaires were used to gather quantitative data. Focus groups (FGDs) and key informant interviews (KIIs) were used to gather qualitative data.

2.6.2. Data Collection Process

Trained research assistants collected data from May to June of 2025. Before taking a part, written informed consent was sought. A total of eight key informant interviews and two focus group discussions were conducted to investigate the determinants influencing the use of skilled birth attendants.

2.7. Data Analysis

SPSS version 27 was used for quantitative data analysis. Descriptive statistics, including percentages and frequencies, were used to summarize the data. To assess associations, the chi-square test was used. After binary logistic regression was performed to identify predictors of SBAs use, multivariable (AORs) and 95% confidence intervals were presented. P < 0.05 was set as the significant level.

For qualitative data, all interviews were transcribed, translated, and analyzed thematically. Results were triangulated with quantitative data.

2.8. Ethical Considerations

Kenyatta University Ethical Review Committee (PKU/3044/12068) and the NIH of Somalia had provided ethical approval. Written informed consent (and assent where applicable) has been obtained from each participants. Privacy, confidentiality, and voluntary participation were kept throughout the research.

3. Results

3.1. Socio-Demographic Characteristics of Respondents

A total of 339 adolescences were enrolled into the study out of which 328 accepted to be interviewed resulting in a 96.8% response rate. Most 322 (98.2%) of the respondents were between the ages of 15 and 19. More than half 177 (54.0%) had no formal education, and the overwhelming majority 296 (93.3%) were married. Nearly half 151 (46.0%) of the respondents earned a household income of less than 50 USD, while the majority 217 (66.2%) were primiparous. Table 1.

Table 1. *The respondents' demographic characteristics.*

Independent Variables	Frequency (n=328)	Percentage (%)
Age group		
10-14	6	1.8
15-19	322	98.2
Level of Education		
No formal education	177	54.0
Primary	116	35.4
Secondary/above	35	10.7
Marital status		
Married	306	93.3
Divorced/ Widowed	22	6.7
Occupation		
Housewife	296	90.2

Independent Variables	Frequency (n=328)	Percentage (%)
Others	32	9.8
Monthly income		
<50	151	46.0
50_100	135	41.2
Above 101	42	12.8
Age at first birth		
10-14 years	19	5.8
15-19 years	309	94.2
Number of children		
One	217	66.2
Two or more	111	33.8

3.2. Socio-cultural Characteristics of the Respondents

The socio-cultural characteristics of respondents showed that more than half 184 (56.1%) reported that their partner or spouse as the main decision-maker regarding place of delivery, followed by in-laws/others 93 (28.4%), while only 51 (15.5%) reported joint decision-making. Regarding the preferred place of delivery, the majority of respondents 222 (67.7%), preferred home delivery while 106 (32.3%) preferred a medical facility with skilled health personnel. In terms of beliefs regarding the importance of trained birth attendants, a large proportion of respondents 230 (70.1%) did not believe in the importance of SBA, while less than one-third 98 (29.9%) acknowledged its importance. Table 2.

Table 2. *Socio-cultural characteristics of the Respondents.*

Independent Variables	Frequency (n=328)	Percentage (%)
Decision-Maker		
Joined with partner	51	15.5
Partner/Spouse	184	56.1
In-laws/ others	93	28.4
Preferred place of delivery		
Healthcare facility	106	32.3
Home	222	67.7
Believe of SBA importance		
Yes	98	29.9
No	230	70.1

3.3. Reasons for Preference of Home Delivery Among Adolescent Mothers Who Preferred Home Delivery (n=222)

Among adolescents who preferred home delivery (n = 222), the most frequently reported reason was financial constraints 126 (56.8%), followed by previous positive home delivery experience 100 (45%), familiarity with traditional birth attendants 96 (43.2%), and perceived privacy and comfort at home 43 (19.4%).

Table 3. *Reasons for preference of home delivery.*

Reason	Frequency (n=222)	Percentage (%)
Financial barriers	126	56.8
Familiarity with TBAs	100	45
Previous home delivery	96	43.2
Privacy/comfort	43	19.4

3.4. Utilization of Skilled Birth Attendants

Out of the 328 adolescent mothers who participated in this study, a large proportion (265; 80.8%), reported that they delivered at home without skilled birth attendants, while 58 (17.7%) indicated that they delivered at a health facility, and only 5 (1.5%) delivered on the way to the hospital. Deliveries that occurred at a health facility were considered as births attended by a skilled birth attendant (Figure 1).

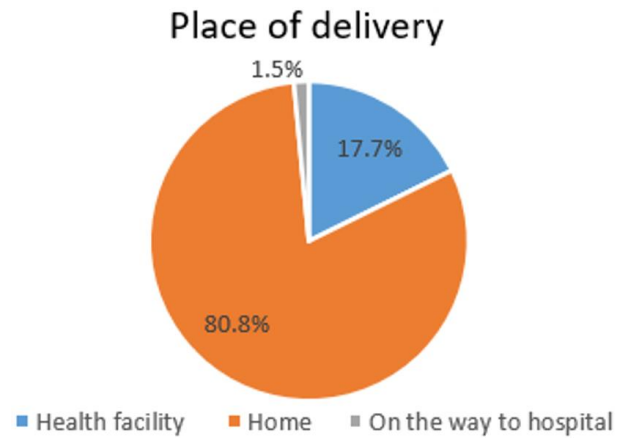

Figure 1. *Proportion of adolescent mothers by place of delivery.*

3.5. Bivariate Analysis of Factors Associated with SBA Utilization

The chi-square test showed that socio-demographic and socio-cultural factors were significantly associated with skilled birth attendant utilization. Education level was significantly associated with SBA utilization (χ^2 = 104.441, df = 2, p < 0.001), with adolescents who had secondary education indicating higher utilization compared to those with no formal education. Similarly, household income showed a significant association (χ^2 = 83.908, df = 2, p<0.001), with higher household-income adolescents more likely to utilize skilled delivery services. Decision-making autonomy (χ^2 = 107.6752, df = 1, p < 0.001) and preferred place of delivery (χ^2 = 66.013, df = 1, p < 0.001) were significantly associated with SBA use. However, belief in the importance of SBA was not significantly associated with SBA use (χ^2 =1.347, df=1, p =0.246).

Table 4. Bivariate analysis of factors associated with SBA utilization.

Variable		SBA utilization		Chi-square statistic χ2	Degree of freedom (df)	P-value
		Yes (%)	No (%)			
Level of Education	No-formal education	9 (5.1)	168 (94.9)	χ^2=104.441,	2	p<0.001
	Primary	22 (19.0)	94 (81.0)			
	Secondary / Higher	27 (77.1)	8 (22.9)			
Monthly Income (USD)	< 50	9 (6.0)	142 (94.0)	χ^2=83.908,	2	p<0.001
	50–100	21 (15.6)	114 (84.4)			
	> 100	28 (76.7)	14 (33.3)			
Decision Maker	Joined	35 (68.6)	16 (31.4)	χ^2=107.6752	1	p<0.001
	Partner/In-laws	23 (12)	254 (88)			
Preferred place of delivery	Home	13 (5.9)	209 (94.1)	χ^2 = 66.013	1	p<0.001
	Health facility	45 (42.5)	61 (57.5)			
Believe of SBA importance	Yes	21 (17.3)	77 (82.7)	χ^2 =1.347	1	p=0.246
	No	37 (16.1)	193 (83.9)			

3.6. Binary Logistic Regression Analysis

Analysis of Multivariable binary logistic regression showed that education level, household income, decision-making autonomy, belief in the importance of SBA, and preferred place of delivery were associated with utilization of SBAs. Mothers with lower levels of education were significantly not as likely to use SBAs than those with higher education (AOR = 0.062, p < 0.001; AOR = 0.261, p = 0.039). similarly, Similarly, mothers with lower household income had reduced odds of SBA utilization (AOR = 0.125, p = 0.002; AOR = 0.093, p < 0.001). Decision-making autonomy was also a significant predictor, with women who had limited decision-making power being less likely to utilize SBA (AOR = 0.130, p < 0.001; AOR = 0.026, p = 0.001). However, mothers who believed that skilled birth attendance is important were more likely to utilize SBAs (AOR = 3.651, p = 0.022). Additionally, mothers who preferred to deliver at home had significantly lower odds of utilizing SBAs (AOR = 0.190, p = 0.002).

Table 5. Binary logistic regression analysis of factors associated with SBA utilization.

Variable	Category	AOR (95%CI)	P-value
Education	No formal education	0.062 (0.015 – 0.263)	<0.001
	Primary education	0.261 (0.073 – 0.936)	0.039
	Secondary/higher education	1 (Reference)	—

Variable	Category	AOR (95%CI)	P-value
Household Income (USD)	<50	0.125 (0.034 – 0.465)	0.002
	50–100	0.093 (0.029 – 0.297)	<0.001
	>101	1 (Reference)	—
Decision Maker	Partner	0.130 (0.048 – 0.355)	<0.001
	In-laws/others	0.026 (0.003 – 0.239)	0.001
	Self	1 (Reference)	—
Belief in Importance of SBA	Yes	3.651 (1.202 – 11.094)	0.022
	No	1 (Reference)	—
Preferred Place of Delivery	At home	0.190 (0.067 – 0.542)	0.002
	Health facility	(Reference)	—

4. Discussion

This study assessed the proportion and factors of utilization of skilled birth attendants among teenage mothers in Afgooye District. The finding showed less than 20% of adolescent mothers delivered with a skilled birth attendant, indicating low utilization of skilled delivery services in this area. This proportion is lower than sub-national estimates reported in the SHDS, including Benadir (45–50%), South West State (30%), Jubaland (27%), Galmudug (≈30%), and Hirshabelle (18%) [9]. However, these regional estimates were based on women of reproductive age, where the present study specifically focused on adolescent mothers, who are often use maternal health services less frequently.

The proportion observed in this study was also lower than studies from East African countries such as Kenya (89%), Uganda (57.3%), and Tanzania (85.3%) [13-15]. similarly, this result was lower than those of research done in Ethiopia and Nigeria, where skilled birth attendance among young women between the ages of 15 and 24 ranged from approximately 33% to 43.7% [16, 17]. The lower utilization observed in this study may be explained by contextual factors such as limited availability of skilled providers, poor health infrastructure, restricted physical access to facilities, and socio-cultural norms that favor home delivery [18, 19].

In this study, the utilization of SBAs was statistically significant associated with mother's education household income, decision making, belief in the importance of SBA, and preferred place of delivery. Teenage mothers who had completed secondary education had higher likelihood of using SBAs services than those who did not. This finding may be explained by the fact that mothers with higher levels of education are more likely to understand pregnancy related risks, recognize the importance of professional delivery care, and make informed decisions regarding maternal health services. similar findings were reported in different part of the country, where mothers without formal education had significantly higher odds of home delivery and lower utilization of health care delivery services [20]. A study done in Somaliland also found that women with higher education were more likely to deliver at health facilities than uneducated women [21].

This finding is also aligns with research done in Sierra Leone, Niger, Mali and across 37 low- and middle-income countries, which reported that maternal education was a strong predictor of SBA utilization, as educated women were more likely to seek skilled maternity care [22, 23].

Mothers from households with higher income had a higher likelihood to use SBAs than those from low-income households. This could be because financially stable families are better able to afford transportation, medical expenses, and other indirect costs related to facility delivery. This finding is consistent with evidence from Uganda and other SSA countries showing that poverty limits women's ability to afford transport and service-related costs, thereby reducing SBA use [24, 25].

Decision-making autonomy was also statistically associated with SBAs, adolescents involved in joint decision-making were more likely to utilize SBA services. A possible explanation is that adolescents who participate in healthcare decisions may have greater autonomy, confidence, and support to seek professional delivery care. In contrast, limited decision-making power may delay or prevent access to maternity services, especially in patriarchal societies where husbands or older family members largely influence healthcare choices. [26].

A qualitative study done in the country reported that men are commonly regarded as the primary household decision-makers and control family resources, including decisions related to healthcare utilization. The study further noted that women's limited autonomy and dependence on husbands often affect decisions regarding health facility delivery and

skilled birth attendance [18]. Similar results have been documented in Kenya, Uganda, and other Sub-Saharan African countries, where higher use of maternal health services was linked to women's involvement in healthcare decision-making [27-29]. This is also consistent with studies from Pakistan and Nigeria, where women's participation in healthcare decisions improves maternal service utilization [30, 31].

Belief in the importance of SBAs had a positively association with utilization of skilled delivery. The likelihood of using SBAs was 3.65 times higher among mothers who believed skilled delivery attendance was important, highlighting the role of knowledge and perception in influencing maternal health-seeking behavior. This finding is supported by research done in Ethiopia, which reported that positive perceptions, awareness, women's empowerment, and favorable attitudes toward maternal health services significantly increased the likelihood of utilizing skilled birth attendance [32]. The possible explanation is that mothers who perceive skilled birth attendance as beneficial may have better awareness of obstetric complications and greater trust in health facilities, which encourages them to seek professional assistance during delivery.

Additionally, preference for home delivery was negatively associated with SBA utilization in this study, as mothers who preferred home delivery were less likely to utilize skilled birth attendance services. Similar results were documented in the country, where women were more likely to deliver at home if they had less understanding of the significance of giving birth in a medical facility [33]. Study from Ethiopia also found that preference for home delivery, poor perception of facility delivery, cultural norms, and limited partner support reduced utilization of skilled birth attendance services [34]. These findings suggest that continued preference for home birth remains an important barrier to maternal healthcare utilization in many African settings.

5. Conclusion

Utilization of skilled birth attendants among teenage mothers in Afgooyo District is low. It is influenced by education, household income, decision-making autonomy, belief in the importance of SBA, and preferred place of delivery. Addressing these determinants is essential to improve skilled birth attendants.

6. Recommendations

1) The Ministry of Health should strength maternal health education programs targeting adolescent mothers, with a focus on the risks of giving birth at home and the significance of skilled delivery service.
2) Health authorities should improve access to affordable and adolescent friendly maternal health services, especially for low-income households and rural communities.
3) Health workers should involve husbands and family members in maternal health counseling session to support informed and collaborative decision making regarding the place of delivery.

Abbreviations

FGM	Female Genital Mutilation
MMR	Maternal Mortality Ratio
SBA	Skilled Birth Attendance
SHDS	Somali Health and Demographic Survey
TBAs	Traditional Birth Attendants
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
WHO	World Health Organization

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Author Contributions

Astahil Nor: Conceptualization, Formal Analysis, Investigation, Methodology, Visualization, Writing – original draft

Isaac Mwanzo: Methodology, Supervision, Writing – review & editing

Anthony Wanjohi: Methodology, Supervision, Writing – review & editing

Data Availability Statement

Data available upon writing to the corresponding author.

Conflicts of Interest

The authors declare no conflicts of interest.

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