

BMJ Open Predictors of HIV/AIDS awareness among women of reproductive age in underserved regions of Somaliland: a cross-sectional analysis of the 2020 demographic and health survey

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ABSTRACT

Objective Sanaag and Sool are two remote regions in Somaliland with limited access to health service and high burden of HIV/AIDS. The aim of this study was to identify the predictors of HIV/AIDS awareness among women of reproductive age in underserved regions of Somaliland using data from the 2020 Somaliland Demographic and Health Survey through a cross-sectional analysis.

Design A cross-sectional study using Somaliland Demographic and Health Survey data.

Setting and participants The study was conducted in the Sanaag and Sool regions of Somaliland. These areas are characterised by underserved communities and ongoing internal conflict, which has significantly undermined the delivery of health services. Consequently, there is a high HIV/AIDS burden in these regions. The study focused on women of reproductive age, using data from the 2020 Somaliland Demographic and Health Survey for the analysis.

Variables The outcome variable of the study was awareness about HIV/AIDS and independent variables including education, media exposure, place of residence and wealth index were considered.

Result The proportion of poor HIV/AIDS awareness is high in Sool and Sanaag, with 38.8% and 26.6% of women respectively having no awareness about HIV/AIDS. Findings indicate that women who had primary and above level of education (adjusted OR, AOR=2.25; 95% CI 1.99 to 2.53) and media exposure including radio (AOR=2.31; 95% CI 1.99 to 2.68) and television (AOR=3.94; 95% CI 3.45 to 4.5) are strong predictors of HIV/AIDS awareness. Women in urban areas (AOR=2.83; 95% CI 2.25 to 3.57) were more likely to have HIV/AIDS awareness compared with women in rural and nomadic settings.

Conclusions Inadequate awareness about HIV/AIDS was associated with education, residence and mass media exposure. Targeted health education programmes, promoting women's education status and media campaigns could help improve HIV/AIDS awareness, which in turn enables reproductive age women to take protective measures against exposure.

INTRODUCTION

Global trends in HIV infection demonstrate an overall increase in HIV prevalence, where

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ The study used a large, nationally representative dataset from the 2020 Somaliland Demographic and Health Survey, ensuring high statistical power.
- ⇒ By focusing specifically on the Sool and Sanaag regions, the study captures data from marginalised populations that are frequently underrepresented in national health research.
- ⇒ The use of a standardised, validated global survey instrument (Demographic and Health Survey) allows for the comparison of results with other regional and international settings.
- ⇒ As the study is cross-sectional in design, it cannot establish a temporal sequence or direct causal relationships between the identified predictors and HIV/AIDS awareness.
- ⇒ The findings are subject to potential recall and social desirability biases due to the self-reported nature of the survey data.

sub-Saharan Africa carries a disproportionate burden of HIV, accounting for more than 70% of the global burden of infection. Success in HIV prevention in sub-Saharan Africa has the potential to impact on the global burden of HIV.¹ Despite considerable progress in prevention, treatment and awareness programmes, many populations still lack adequate information about HIV/AIDS, increasing their vulnerability to infection and perpetuating stigma. HIV/AIDS-associated stigma has been identified as a barrier to HIV testing.²

An estimated 26.0 million (23.6–28.8 million) people were living with HIV in 2023, of which 90% (72%–98%) knew their status, 82% (65%–95%) were receiving treatment and 76% (69%–85%) had suppressed viral loads. An estimated 21.3 million people were receiving antiretroviral therapy in 2023.³ The HIV pandemic in sub-Saharan

Africa accounts for more than two thirds of the world's HIV infections. Women continue to bear the brunt of the epidemic, with young women infected almost 10 years earlier compared with their male counterparts. Epidemiological evidence suggests unacceptably high HIV prevalence and incidence rates among women.⁴

HIV/AIDS remains a critical public health concern in the Horn of Africa, including Somaliland, where decades of conflict, political isolation and chronic underinvestment have weakened health systems and constrained access to preventive services.⁵

The healthcare landscape in Somaliland faces significant structural challenges, as service delivery remains largely inadequate to meet the evolving health needs of the population. Currently, many health facilities lack essential drugs, medical equipment and modern technology, while health emergency preparedness systems remain critically weak.⁶ Within this context of systemic fragility, given the central role of awareness, particularly HIV/AIDS, is severely hampered.

In Somaliland, the findings reveal a profound climate of social and economic stigmatisation within the country. Nearly half (49%) of women aged 15–49 harbour negative attitudes toward people living with HIV (PLHIV), while a substantial majority (64%) reported they would refuse to purchase fresh produce from a shopkeeper known to be living with the virus. Increasing awareness is not merely a matter of information dissemination, but a critical public health necessity to dismantle the social stigma and systemic barriers that currently hinder healthcare utilisation in marginalised regions.⁷

Somaliland has adopted the UNAIDS ambitious 90-90-90 treatment targets; however, the region is currently not meeting these three benchmarks. Somaliland's lagging health outcomes are evident in the significant distance remaining before these targets are achieved, necessitating a strategic redirection of efforts to get back on track. There is a persistent challenge within healthcare infrastructure of the country. Specifically, while the percentage of people living with HIV who are aware of their status remains at 32% falling significantly short of the 90% target.⁸ This underscores the urgent need for enhanced public health interventions to bridge the initial awareness gap, particularly in underserved regions.

The World Bank estimated that 0.1% of the Somali population had HIV/AIDS in 2021.⁹ HIV/AIDS remains a significant public health challenge in the region. According to UNAIDS 2021, an estimated 7700 adults and children are living with HIV, with women over 15 years of age representing more than 45% of those affected. While the number of HIV/AIDS-related deaths remains relatively low, at fewer than 500, the persistent burden among vulnerable populations, particularly women, underscores critical gaps in prevention, early diagnosis and access to treatment. Addressing these gaps is critical to reducing new infections and improving health outcomes across the country.¹⁰

The regions of Sanaag and Sool occupy a distinct and contested position in Somaliland's otherwise relatively stable political landscape. While much of Somaliland has enjoyed peace and consolidated governance since 1991, the eastern areas of Sool and Sanaag remain sites of ongoing political contestation and sporadic armed conflict.^{11 12}

Political instability disproportionately impacts the Sanaag and Sool regions, creating distinct challenges for healthcare delivery and population health outcomes. These regions are characterised by geographical isolation and political conflicts causing a lack of peace and political unrest, weak healthcare infrastructure and high levels of illiteracy, all of which hinder the effectiveness of public health interventions.¹³ This might contribute to poor HIV/AIDS awareness among women. Other multiple barriers, including cultural norms that discourage open discussions on sexual and reproductive health, limited access to media and formal education further impede women from accessing information regarding HIV/AIDS prevention and treatment.¹⁴ Individual level factors including education level, residence, age, marital status, occupation and exposure to mass education are also affecting HIV/AIDS awareness.¹⁵ In sub-Saharan Africa, recent studies using large-scale population-based data have highlighted the complex sociodemographic and contextual factors that shape HIV/AIDS awareness. These studies consistently identify education, exposure to media, urban residence and engagement with healthcare services as some of the strongest predictors of HIV/AIDS awareness among women. Together, these findings underscore the importance of improving access to education and health information, particularly through mass media and healthcare systems, in order to strengthen HIV/AIDS awareness and prevention efforts across the region.¹⁶

Given the central role of awareness in preventing the spread of HIV/AIDS, it is imperative to assess the current awareness levels among women of reproductive age in the underserved regions of Sanaag and Sool, Somaliland. Consequently, this study aimed to determine the level of HIV/AIDS awareness and identify its predictors among women of reproductive age in these two regions.

METHODS AND MATERIALS

Study setting

Geographically, the Republic of Somaliland is located in the Horn of Africa.¹⁷ It is bordered by Djibouti to the west, Ethiopia to the south and Somalia to the east. Somaliland has an area of 176 119.2 km² and 850 km² of coastline with the majority lying along the Gulf of Aden. Sanaag and Sool are semi-arid with average daily temperatures ranging between 25°C and 35°C. Although the Republic of Somaliland comprises six regions (Awdal, Marodijeh, Sahil, Togdheer, Sool and Sanaag), this study intentionally focused on Sool and Sanaag. These two regions are widely recognised as marginalised within Somaliland,

with higher levels of poverty, predominantly rural and nomadic populations, long distances to health facilities and lower utilisation of reproductive and maternal health services compared with other regions.^{18–20}

For this study, data were extracted specifically for the Sanaag and Sool regions, two of the most marginalised and conflict-prone regions in Somaliland.²¹ The political and social marginalisation also often fuels resentment and provides fertile ground for conflict,²² which in turn destabilises healthcare infrastructure and hinders the delivery of public health interventions. Concentrating on Sool and Sanaag, therefore, directly aligns with the study objective: identifying predictors of HIV/AIDS awareness in the most underserved settings where targeted interventions are most urgently required to bridge the health equity gap.

Study design and study period

This study uses secondary data from the Somaliland Demographic and Health Survey (SLDHS) 2020. The SLDHS is a nationally representative survey that provides essential information on demographic and health indicators, including reproductive health, maternal and child health, and disease awareness, such as HIV/AIDS. The survey was a cross-sectional study that began in August 2018 and was completed in December 2019. It was reported in 2020 as the first nationally representative demographic health survey of Somaliland.⁷

Sample size and sampling

The study population consists of women aged 15–49 years residing in the Sanaag and Sool regions. These women were selected based on their participation in the SLDHS survey and their responses to the HIV/AIDS awareness questions. The survey employs a two-stage stratified sampling technique to ensure comprehensive coverage of different population groups, including urban, rural and nomadic communities. The total sample size for this study was 2610 women (1366 women from Sanaag region and 1244 from Sool region).

Data source and inclusion criteria

We used the 2020 SLDHS, which sampled women in all six regions. For this article, we retained only respondents from Sool and Sanaag. Two reasons motivated this decision. First, the study aim was to explore HIV/AIDS awareness in the least-served regions, where health and reproductive health indicators lag behind the national average.^{18–19} Second, preliminary descriptive analysis showed marked regional differences in HIV awareness and other health outcomes, with Sool and Sanaag consistently among the lowest-performing regions.^{18–20} To maintain a coherent analytical focus and avoid confounding by strong regional heterogeneity, we restricted the final analytic sample to these two regions.

Patient and public involvement

Patients and the public were not involved in the design, conduct, reporting or dissemination plans of this research.

Variables of the study

Outcome variable

HIV/AIDS awareness (yes or no). Women who heard about the disease, its transmission mode and means of prevention were categorised as having awareness.

Predictor variables

Sociodemographic factors including age, educational level, residence, media exposure (listening to radio, watching TV).

Data collection

For the 2020 SLDHS,⁷ data were collected from 30 selected families in each of the 10 sampled enumeration areas (EAs) within each region stratum. Trained interviewers and supervisors worked in both urban and rural areas. Households were chosen from a list of all households in the EA. The survey was conducted by 19 teams, each consisting of one supervisor, three enumerators and one driver. Data were collected using an Android platform in CPro, with a skilled listing team assisting in identifying EA boundaries and selected households.

In nomadic areas,⁷ four teams, each with four members, collected SLDHS data. To ensure an up-to-date and complete household list, nomadic households were listed a day before enumeration in each Temporary Nomadic Settlements (TNS). 30 households were selected from each EA.

Data quality assurance during

During the DHS data collection, 92 employees, including interviewers and supervisors, were trained. The training included a pretest with manual questionnaires and computer-assisted personal interviewing to ensure trainees met required knowledge and skill levels. GPS tracking supported geo-referencing for accurate data collection. In October 2017, a technical team from the UNFPA national office trained four master trainers in Kigali, Rwanda. These master trainers, specialists from Somaliland, later conducted ToTs in Borama, Hargeisa and Burao. Supervisors were selected based on their performance in both classroom and field pretests.⁷

Statistical analysis

Data extracted and exported to Stata software V.14 for analysis. The percentage, frequency and mean were calculated using descriptive statistics. To assess the relationship between HIV/AIDS awareness and the predictor variables, the study employs both χ^2 tests and multivariate logistic regression analysis. The χ^2 test was used to determine the association between categorical predictor variables and HIV/AIDS awareness, helping to identify whether significant differences exist in awareness levels based on factors such as education, residence and media exposure. To further analyse the significant association of predictors, a multivariate logistic regression model was applied.

Table 1 Sociodemographic characteristics of women in Sanaag and Sool

Variable	Sanaag (n=1366)		Sool (n=1244)		Total (n=2610)	
	Frequency	%	Frequency	%	Frequency	%
Age group (years)						
15–19	368	26.94	336	27.01	704	26.97
20–24	247	18.08	225	18.09	472	18.08
25–29	248	18.16	226	18.17	474	18.16
30–34	185	13.54	169	13.59	354	13.56
35–39	164	12.01	150	12.06	314	12.03
40–44	98	7.17	90	7.23	188	7.20
45–49	55	4.03	50	4.02	105	4.02
Education level						
No education	996	72.9	942	75.7	1938	74.3
Primary and above	370	27.1	302	24.3	672	25.7
Place of residence						
Urban	645	47.2	529	42.5	1174	44.8
Rural	421	30.8	417	33.5	838	32.1
Nomadic	300	22.0	298	24.0	598	23.1
Media exposure						
Listens to radio						
At least once a week	284	20.8	228	18.3	512	19.5
Not at all	1082	79.2	1016	81.7	2098	80.5
Watches TV						
At least once a week	239	17.5	188	15.1	427	16.3
Not at all	1127	82.5	1056	84.9	2183	83.7

A $p < 0.05$ was considered statistically significant, indicating a significant association between the predictor variable and HIV/AIDS awareness.

RESULTS

Sociodemographic characteristics of the participants

All the participants were women of reproductive age group, with the 15–19 age group constituting the largest percentage of study population. Nearly three-quarters of the population (74.3%) had no history of formal education. More than 80% of the participants had no history of exposure to social media (table 1).

Table 2 HIV/AIDS awareness by region

Region	Aware of HIV/AIDS (%)	Not aware of HIV/AIDS (%)
Sanaag	73.4% (1002)	26.6% (364)
Sool	61.2% (761)	38.8% (483)
Overall	67.6% (1763)	32.4% (847)

Participants' awareness level of HIV/AIDS

In Sanaag, over a quarter (26.6%) of participants lacked awareness of HIV/AIDS, whereas this figure rose to 38.8% among women in Sool (table 2).

Predictors of HIV/AIDS awareness

Women who attended a minimum of primary education had 2.25 times higher odds to have HIV/AIDS awareness compared with those with no education (adjusted OR, AOR=2.25, 95% CI 1.99 to 2.53, $p < 0.001$). Media exposure is also a significant associated factor, with those who listen to the radio at least once a week having 2.31 times higher odds to be aware of HIV/AIDS (AOR=2.31, 95% CI 1.99 to 2.68, $p < 0.001$), while watching TV at least once a week also increases odds of HIV/AIDS awareness (AOR=3.94, 95% CI 3.45 to 4.50, $p < 0.001$). Additionally, urban residents have 2.83 times higher odds of having HIV/AIDS awareness compared with nomadic populations (AOR=2.83, 95% CI 2.25 to 3.57, $p < 0.001$) (table 3).

DISCUSSION

The study found that a substantial proportion of women of reproductive age in Sool and Sanaag had no awareness of HIV/AIDS, confirming that HIV awareness is particularly poor in these regions of Somaliland. Similar

Table 3 Determinants of HIV/AIDS awareness—logistic regression analysis

Variable	Unadjusted OR	95% CI	Adjusted OR	95% CI	P value
Education					
Primary and above	2.68	2.35 to 3.05	2.25	1.99 to 2.53	<0.001
No education	Ref	—	Ref	—	—
Media exposure					
Listens to radio					
At least once a week	2.79	2.43 to 3.20	2.31	1.99 to 2.68	<0.001
Not at all	Ref	—	Ref	—	—
Watches TV					
At least once a week	4.21	3.76 to 4.86	3.94	3.45 to 4.50	<0.001
Not at all	Ref	—	Ref	—	—
Place of residence					
Urban	3.05	2.47 to 3.77	2.83	2.25 to 3.57	<0.001
Nomadic/rural	Ref	—	Ref	—	—
Regional differences					
Sool	0.71	0.59 to 0.86	0.65	0.52 to 0.80	<0.001
Sanaag	Ref	—	Ref	—	—

nationwide analyses conducted across the country report low levels of comprehensive HIV awareness, widespread misconceptions and significant awareness gaps among women, particularly within rural and nomadic populations.^{5 18 23} This finding is in line with the report from a study conducted in Somalia that the awareness about HIV/AIDs and its transmission has been reported to be significantly insufficient in the Somali population.¹⁵ The low level of awareness of HIV/AIDS could be due to inadequate health education services, sociocultural barriers, limited media exposure and the absence of targeted awareness campaigns for women in marginalised regions.

In Ethiopia and Liberia, comprehensive HIV awareness among women is also low (about 25%–35%), emphasising that this problem is common across low-resource settings in sub-Saharan Africa.^{24–26}

The findings of this study reveal significant regional disparities in HIV/AIDS awareness, specifically within the Sanaag and Sool regions. Interestingly, while both regions are characterised by nomadic populations and political instability, women in Sanaag demonstrated higher awareness levels than their counterparts in Sool. This disparity in awareness mirrors broader maternal health service gaps identified in Somaliland. For instance, previous evidence indicates that women in Sool and Sanaag have a significantly reduced probability of opting for facility-based deliveries (both public and private) compared with those in Maroodi Jeex. This highlights a deep-seated reliance on home births in these underserved areas.¹⁷ This suggests that the barriers are not disease-specific but are instead rooted in a ‘triple burden’ of geographic isolation, economic hardship and a lack of health-system presence. Consequently, the lack of interaction with formal healthcare during pregnancy (antenatal care (ANC) visits

and facility delivery) directly limits the opportunities for women to receive health education regarding HIV/AIDS, thereby sustaining the awareness gap.

This finding aligns with the broader patterns observed in other regions. The higher awareness in Sanaag can be attributed to better access to education, media and health service coverage. This is consistent with a study done in sub-Saharan Africa. It was found that in East Africa, areas with more developed infrastructure and higher literacy rates were associated with better HIV/AIDS awareness among women.²⁵

Consistent with our finding of regional disparities between Sanaag and Sool, spatial analyses in Ethiopia and Somalia show clear geographic ‘hotspots’ of poor HIV knowledge in marginalised, border or pastoral regions, often characterised by weak health systems and poor infrastructure.^{5 24} This supports the interpretation that structural marginalisation, rather than individual factors alone, underlies the particularly low awareness in Sool.

The role of media access in shaping HIV/AIDS awareness, as highlighted in this study, also aligns with findings from a study done in sub-Saharan Africa which found that media exposure, particularly through radio and television, had a significant positive impact on women’s health condition and behaviours.²⁷ This aligns with the current study’s finding that women who typically have more access to education and media demonstrated higher levels of HIV/AIDS awareness compared with their counterparts.

The strong association between media exposure and HIV awareness in this study aligns with multilevel analyses from Ethiopia, SSA and Liberia, where exposure to radio, television or newspapers significantly increases comprehensive HIV awareness and reduces misconceptions.^{24–26 28 29}

Media exposure has also been identified as a key factor influencing HIV/AIDS awareness. In areas where access to television and radio is limited, alternative communication methods, such as community health talks, mobile health campaigns and the use of local dialects in health messages, can be effective. A study in Malawi found that integrating health education with community gatherings approach significantly improved awareness about HIV/AIDS, particularly among women in rural areas. Community approaches offer an important strategy to increase HIV prevention in rural communities without burdening healthcare systems.³⁰ Similarly, successful interventions in Kenya involved the use of mobile technology, such as SMS-based health campaigns, to provide critical information on HIV/AIDS prevention. Adding mobile HIV counselling and testing (HCT) to existing stand-alone HCT appears to be a cost-effective approach for expanding HCT coverage, for reaching different target populations, including women and young people, and for identifying persons with newly diagnosed HIV infection for referral to treatment and care.³¹ These approaches could be adapted for Sool, Sanaag and other underserved regions to enhance HIV/AIDS awareness.

Likewise, our urban–rural and education gradients mirror large multicountry DHS analyses in SSA and East Africa, which consistently show that education, wealth, urban residence and proximity to health facilities predict better HIV awareness and Prevention of Mother-to-Child Transmission (PMTCT).^{26 28 32–34}

Evidence from Malawi and Kenya indicates that community-based education, integration of HIV counselling into routine maternal care, and mobile or SMS-based interventions can improve HIV awareness and service uptake in rural populations.^{28 33} Given the very low media penetration and high illiteracy in Sool and parts of Sanaag,^{18 23} these context-adapted, community and mobile-based strategies appear more feasible than relying solely on mass media and could help close the large awareness gap documented in our study.

This urban–rural disparity in health awareness is also evident in other global studies. Compared with urban residents, rural residents had lower access to health information from sources including primary care providers, specialist doctors, blogs and magazines, and less use of search engines. After accounting for sociodemographics, rural residents only had lower access to it. Rural residents with limited health literacy had lower access to mass media and scientific literature.³⁵ In rural residence was negatively associated with comprehensive HIV awareness compared with their urban counterparts due to limited access to healthcare facilities and health education programmes. These findings suggest that the development and implementation of HIV education and awareness programmes should target rural areas, especially where there is limited access to HIV testing.³⁶

Limited healthcare access, including HIV testing and counselling, contributes to low awareness among women. Evidence from South Africa shows that integrating

PMTCT into primary care improves outcomes, but challenges such as inadequate infrastructure, staff shortages and insufficient training limit effectiveness.³⁷ Adapting similar strategies in Somaliland by including HIV counselling in ANC could enhance women's awareness and reduce their vulnerability.

However, variations exist in terms of policy interventions and programme implementation. For instance, while Bangladesh has made progress in adolescent reproductive health awareness through school-based programmes,³⁸ the challenges in rural and nomadic areas of Sanaag and Sool remain significant due to cultural barriers and infrastructural limitations. Given these findings, HIV/AIDS awareness programmes must be context-specific, targeting the unique barriers young women face in rural and nomadic communities. A Nationwide Cross-Sectional Study in Somalia found that it is important to stress the need for public campaigns in rural, nomadic and urban areas with limited HIV awareness. Interventions should prioritise improving education access and enhancing media outreach to boost awareness and prevention efforts among Somali women.⁵

Educational status could also limit the ability to access and comprehend written health information. Research in Ethiopia has similarly reported that education status was significantly associated with HIV/AIDS and is among the strongest predictors of HIV/AIDS awareness.²⁴

Studies have shown that literacy enhances women's ability to seek, interpret and apply health-related information, leading to better health outcomes. There is a direct relationship between health literacy and its dimensions with empowerment during pregnancy.³⁹ Governments and non-governmental organisations (NGOs) should prioritise educational programmes that incorporate HIV/AIDS awareness into school curricula and adult literacy initiatives. Additionally, investing in community-based education programmes that use trusted local figures, such as religious leaders and community elders, can help overcome cultural resistance to discussing HIV/AIDS.

Strengths and limitations of the study

This study possesses significant strengths, most notably the use of high-quality, nationally representative data from the 2020 SLDHS. To our knowledge, this is the first study to specifically isolate and analyse the predictors of HIV/AIDS awareness in the Sool and Sanaag regions, providing a critical baseline for populations often overlooked in national health reporting. The restriction to Sool and Sanaag is both a strength and a limitation. It allows a focused assessment of predictors of HIV/AIDS awareness in two of the most marginalised regions, but findings cannot be generalised to all women in Somaliland, where socioeconomic conditions and service access differ across regions.^{18–20}

However, several methodological limitations must be acknowledged. First, the cross-sectional nature of the DHS design means that the identified predictors and

HIV/AIDS awareness were measured simultaneously; therefore, we cannot establish a temporal sequence or direct causal relationships. Second, the data rely on self-reported responses, which are inherently susceptible to social desirability bias, particularly given the sensitive and stigmatised nature of HIV/AIDS in Somaliland. Respondents may have claimed awareness to avoid perceived judgement, potentially overestimating the actual levels of understanding. Finally, while focusing on the marginalised regions of Sool and Sanaag provides specialised insights, these findings may not be fully generalisable to the other regions in the Republic of Somaliland.

CONCLUSIONS

In conclusion, the findings from Sool and Sanaag mirror global trends where education, media access and urban residency are strong determinants of HIV/AIDS awareness. However, the persistent awareness gap in Sool underscores the need for context-specific interventions. Strengthening education, expanding media outreach, improving healthcare accessibility and addressing stigma through culturally appropriate approaches can collectively enhance HIV/AIDS awareness and contribute to better public health outcomes in Somaliland.

Recommendations

To address the low levels of HIV/AIDS awareness, particularly in Sool, health authorities and NGOs should prioritise targeted awareness campaigns that focus on educating young women about sexual and reproductive health. Increasing investment in educational initiatives, especially for women and girls, is crucial in empowering them with the information and resources needed to make informed health decisions. Additionally, given the limited access to formal education and healthcare facilities in rural and nomadic communities, radio and television programmes should be promoted as primary sources of HIV/AIDS awareness, ensuring that crucial health information reaches a broader audience. Furthermore, mobile health services should be encouraged to extend HIV/AIDS awareness and related healthcare services to nomadic populations, bridging the gap in access and ensuring that vulnerable groups receive the necessary support. These combined efforts will contribute to reducing the risks associated with HIV/AIDS while promoting better health outcomes for women in these regions.

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Contributors SAA conceptualised and designed the study, supervised data collection, performed data analysis and drafted the manuscript. TGG contributed to data collection, literature review and critical revision of the manuscript. Guarantor: SAA.

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Patient consent for publication Not applicable.

Ethics approval Since this study relies on secondary data obtained from the Somaliland Demographic and Health Survey (SLDHS) 2020, ethical approval was sought and granted by the Institutional Review Board (IRB) of the Ministry of Health and Development, Somaliland. The approval reference number for this process is Ref: MOHD/DG: 2/1038/2023. This approval confirms that the study adheres to the ethical guidelines and standards set by both national and international ethical frameworks. The use of secondary data ensures that no direct interaction with participants was involved, thus minimising any potential ethical concerns related to participant confidentiality and consent. Furthermore, the Institutional Review Board's oversight guarantees that the data collection and analysis comply with the necessary ethical practices, ensuring the protection of the rights and welfare of individuals and the integrity of the research. By following these procedures, the study aligns with the highest ethical standards, ensuring that the findings are valid, credible and ethically sound.

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