

## Sexual and Reproductive Health Service Utilization among Young Disabled People in Ethiopia: a cross-sectional study

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### Abstract

**Background:** In Ethiopia, the delivery of sexual and reproductive health services (SRHSs) to young people with disability (YPWD) is poorly understood, as such they are often marginalized and not recognized as being sexual. This study, therefore, aimed to assess the sexual and reproductive health service utilization and associated factors among young people with disability in Ethiopia.

**Methods:** In 2012, a cross-sectional survey was conducted in Addis Ababa, Ethiopia; 426 young people with disability aged 10-24 years were systematically selected and included in the study. Data were collected by trained interviewers using a standardized questionnaire and analyzed using Predictive Analytics Software (PASW), version 20. All analyses used an alpha level of 0.05 (two-tailed) to determine statistical significance.

**Results:** Only one-fourth of the young people with disability (26.1%) had ever utilized sexual and reproductive health services. The most commonly cited reasons for seeking sexual and reproductive health services were to get contraceptives (48.1%), to get condoms (21.2%), and for HIV counseling and testing (21.2%). Sixty-three percent of the sexually active young people with disability had ever used a modern contraceptive method, and 54.3% had ever used a condom. Fifty-six percent of the participants had ever been tested for HIV. Being older, female, and literate were found to be important putative determinants of sexual and reproductive health service use according to logistic regression analysis. The main reasons for not utilizing sexual and reproductive health services were the inconvenience of health institutions (48.8%) followed by poor handling and scolding by the service provider (22.1%).

**Conclusions:** This study revealed that many young people with disability in Ethiopia experience barriers to access sexual and reproductive health services, particularly due to inconvenient health institutions and poor handling by service providers. Not surprisingly, education plays an important role in sexual and reproductive health service use. However, the higher likelihood of using sexual and reproductive health services by older females, as in our study, could be evidence of a societal misconception that SRHSs are only for adults and women. It could also be an indication of the increased risk of females for sexual and reproductive health problems and the increased vulnerability associated with a lack of access to sexual and reproductive health services for younger people with disability. Therefore, an effort has to be made by program and policymakers, and other concerned parties to raise disability-related awareness at the societal level to foster respect for the rights and dignity of persons with disabilities. There is also a need to intervene on the available and upcoming sexual and reproductive health services and programs to make them youth and disability friendly.

## Background

Adolescents are a large and growing segment of the population. More than half of the world's population is under the age of 25 years; four out of five young people in developing countries are younger than 25.(1). More than 1.75 billion individuals in the world today are young people. (2). Young people hold a strategically critical position within the context of population and development. Not only do they represent a vast portion of the population, but the behaviors and attitudes of this group toward sexual and reproductive health (SRH) also determine future demographics, as they are the most sexually active. Adolescents, however, are often less informed, less experienced, and less comfortable accessing family planning (FP) and other reproductive health services than adults. Adolescents may experience resistance or even hostility from adults when they attempt to obtain the reproductive health information and services they need. Therefore, they may be at increased risk of sexually transmitted infections (STIs), HIV, unintended pregnancy, and other health consequences that can affect their communities for years to come. In addition, gender inequities, particularly unequal power in relationships, may limit their ability to use contraceptives or seek reproductive health services.(1,3).

Based on the 2010 global population estimates, approximately 15% of the world's population, or more than a billion people, including 180-220 million young people, are estimated to live with some form of disability (4). Approximately 80% of young people with disabilities (YPWD) live in developing countries, including Ethiopia, most of which lack social systems to support them.(4,5). According to the 2007 National Population and Housing Census in Ethiopia, young people aged 10-24 years constitute approximately one-third (35%) of the population (approximately 25.7 million people), while YPWD aged 10-24 years account for 27% of the total population of disabled people in the country (6).

The burdens faced by people with disabilities (PWDs), especially YPWD, in developing countries such as Ethiopia are tremendous. In addition to physical, mental, intellectual, and sensory impairments, people with disabilities often face stigma, discrimination, violence, and poverty (7). They must cope with inadequate health services and have limited access to

education. They are deprived of opportunities in all aspects of life, including access to essential services. In particular, their sexuality is often ignored, and their reproductive rights are denied. Moreover, they often cannot access SRHSs because of lack of physical access, absence of disability-related technical and human support, and stigma and discrimination (7,8, 9).

People with disabilities in today's societies are often regarded as nonsexual adults. Moreover, societies frequently take the view that intellectually disabled people, in particular, have no right to pursue social and sexual relationships (10,11). Thus, they often have no access to sex education (10). In addition, opportunities for sexual exploration among disabled people, particularly young people, are very limited (10). PWD might also have limited opportunities for sexual relationships for a number of reasons, including being dependent on others for daily living (11). There is often a lack of privacy, and young disabled people are much more likely than other young people to receive negative reactions from an adult if discovered. Limited life choices also have an impact on the self-esteem of disabled people, which, in turn, affects their sexuality (10).

People with disabilities are often among the poorest and cannot, therefore, afford health care services; even those with access to health care often experience discrimination and loss of privacy (12). The condition is worse among women with disability; being female and disabled is often referred to as being doubly disabled (5). Because of rigid societal ideas about sexuality and sexual expression, many people fail to recognize the sexual personhood of women with disabilities (WWDs) (13). Common misconceptions include beliefs that WWDs are asexual, do not have sex, and do not need reproductive health care (12). These beliefs may lead healthcare providers to neglect the sexual and reproductive health of people with disabilities, who have the same concerns and needs as other women (7,14). WWDs are less likely to receive information on contraceptive options and screening for STIs than the general population. According to the Center for Research on WWDs, gynecologists are less likely to inform women with three or more functional limitations or an obvious physical disability about contraceptive options (13,14).

Moreover, PWDs are seldom included in HIV prevention and outreach efforts due to the assumption that they are not sexually active and are at low or no risk for HIV infection. However, a growing body of research indicates that people with disabilities are at increased risk of HIV and AIDS (15). Individuals with disability are likely to be at risk both because they are often,

incorrectly, assumed to be sexually inactive and because they might be easy targets for rape. Indeed, studies have shown that people with disabilities are at increased risk of rape (16).

Individuals with disability have equal or greater exposure to all known risk factors for HIV infection. For example, individuals with disability are as likely as people without disability to use drugs and alcohol (17). Moreover, disabled young people are often denied the right to build families of their own. Social and family constraints make it unlikely that many young people with disabilities will marry (5, 18). However, the lack of social acknowledgment that young men and women with disability are involved in sexual relationships does not preclude the fact that they do engage in sexual activity. Rather, it only perpetuates a culture where they are denied access to appropriate sex education. This places adolescent girls and young women with disabilities, in particular, at increased risk for pregnancy and sexually transmitted diseases/HIV/AIDS (5,18). To the extent that sexuality is an inherent and important aspect of human life, denying disabled people's full realization of their sexuality and limiting their access to SRHSs amount to violating their basic human rights. It also contravenes the UN human rights instrument, the Convention on the Rights of Persons with Disabilities (CRPD), which is intended to protect the rights and dignity of persons with disabilities.

In Ethiopia, the delivery of SRHS to people with disabilities is poorly understood, and extremely limited research has been conducted on this topic. In addition, the focus of these few studies has mainly been related to HIV/AIDS and HIV service use, as well as the risk behavior of people with disabilities of all ages and women with disabilities. Previous studies have included only people with hearing, visual, and physical impairments and neglected other forms of disability. This paper examines the factors associated with SRHS utilization among YPWD in Ethiopia by considering other forms of disability, such as partial mental impairment and leprosy, as well as a wide range of SRHSs. Understanding the factors that influence the utilization of SRHS by people with disabilities in general and YPWD, in particular, is crucial for designing and implementing effective intervention strategies targeting their needs. Thus, effective implementation of the recommendations of the Convention on the Rights of Persons with Disabilities (CRPD) is needed. This study sought to assess the SRHS utilization and associated factors of YPWD in Ethiopia.

## Method

### Study design and area

The data for this paper come from a cross-sectional survey that was conducted from June to September 2012 in Addis Ababa, Ethiopia.

### Study population

The sample included disabled youth aged 10 to 24 years residing in Addis Ababa who were enrolled in relevant organizations (Ethiopian National Association for Physically Handicapped, Ethiopian National Association for the Blind, Ethiopian National Association for the Deaf, Ethiopian National Association for the Deaf-Blind, Ethiopian National Association for Leprosy Patients; Support Organization of the Mentally Handicapped) during the study period.

### Sample size determination and sampling technique

The sample size was determined using the formula for single population proportion.(19) Based on a significance level of 95% ( $\alpha = 0.05$ ), a five percent margin of error, and an assumption of a 50% prevalence of SRH-related problems among study subjects, a total of 426 YPWD were included in the study.

A probability sampling method was used to obtain the required sample size after the census was conducted to establish the sampling frame for each organization. The total sample size was then proportionally allocated to all organizations of people with disability according to the number of YPWD in the respective organization's frame. Random sampling was necessary because not all YPWD were aged 10-24 years, but a selected sample of 426 participants was targeted. Thus, the study subjects were selected by systematic random sampling from the sampling frame. The 1<sup>st</sup> subject was selected by the lottery method, and the next subject was drawn every  $k^{\text{th}}$  for the roll No given on the sampling frame until the required sample was obtained. For unwilling or absent randomly selected study subjects on the date of data collection, the next study subject was replaced from the same organization until we obtained the required sample. Participants received no reimbursement for taking part in the study.

Two-thirds of the study subjects were male, clearly indicating a gender difference in accessing services even within the associations of PWDs. The higher number of males than females

in the sample could reflect gender differences in the number of PWDs in Addis Ababa: out of 32,630 PWDs in the city, 17,931 were male, while 14,699 were female (6). However, these numbers could be underestimated given that data pertaining to the incidence, prevalence, and conditions of persons with disability in Ethiopia are fragmentary, incomplete, and sometimes misleading (20). For example, some societies associate disability with the spiritual curse and may therefore control the appearance of disabled persons in public or may be unwilling to disclose that they have family members who are disabled for fear of stigmatization or other negative consequences (21). These challenges may be exacerbated for females with disability given that societies and cultures in many developing countries favor males.

### **Inclusion and exclusion criteria**

Disabled young people aged 10-24 years who were members of organizations for PWDs, who were randomly selected, and who provided consent were included in the study. Those who were critically ill at the time of the interview and unable to communicate or respond to questions and those who declined to participate were excluded from the study.

### **Data collection**

The data were collected by trained interviewers of the same sex as the interviewees using a pretested structured questionnaire covering socio-demographic information (including sex, age, religion, education, marital status, and income), information on forms and time of disability, living situation and perceived parents' economic status, as well as the use of and preferences regarding SRH services, including modern contraception, condoms, sexual health education and counseling, STI management and prevention, abortion and post-abortion care, antenatal, delivery and postnatal care, and HIV counseling and testing.

Regarding the use of SRHS, participants were asked whether they had visited the SRH unit to obtain sexual health information and counseling; modern family planning methods; condoms; treatment for menstruation disorders; STI management or prevention; abortion or post-abortion care; antenatal, delivery or postnatal care; and HIV counseling and testing. Participants who reported that they had visited an SRH unit to obtain any of the above services were considered users.

### **Ethical approval**

Ethical approval was obtained from the ethics committee of Addis Ababa University on February 27/2012, Ref. No.

ML/298/2012. Written informed consent was obtained from the study subjects and guardians before the data were collected. Separate assent was used for those study subjects less than 16 years old and those with partial mental impairments. The study did not collect personal identifying information, and respondents were assigned unique identification codes.

### **Data analysis**

The data were analyzed using Predictive Analytics Software (PASW), version 20. All analyses used an alpha level of 0.05 (two-tailed) to determine statistical significance. We estimated adjusted logistic regression to assess putative determinants of SRHS utilization, HIV testing, and condom use among YPWD. The models included participants' sex, age, marital status, religion, education, forms of disability, time of disability, work status, living situation, and perceived parental economic status relative to neighbors. For each variable included in the regression models, odds ratios (ORs) and 95% confidence intervals (95% CIs) were calculated.

## **Result**

### **Socio-demographic characteristics of the sample of YPWD**

A total of 426 YPWD aged between 10 and 24 years from different associations of people with disabilities participated in the study. Of the 426 respondents, 64.3% were male, and 35.7% were female. The majority (70.9%) of the respondents were aged between 20 and 24 years, 81.2% were literate (YPWD who had at least attained a primary level of education), and 67.4% were identified as Orthodox Christians. Concerning marital status, 65.5% of the respondents were single. The majority (41.5%) of the respondents had impaired mobility, while those with visual, hearing, partial mental and multiple impairments comprised 23.0%, 19.2%, 13.1% and 3.1% of the sample, respectively.

Most YPWD (47.9%) became disabled in their earlier childhood period. The majority (44.1%) of the respondents indicated disease as the cause of their disability, followed by accidents (28.2%) and disability from birth (congenital; 19.2%). Approximately one-third (36.2%) of the respondents lived with their parents. Only 43.7% of the respondents were engaged in some form of paid work outside the home, with 38.2% of them earning between 10 and 20 Birr per day ( $\approx \leq 1$



USD). Forty-five percent of the respondents perceived their parents' economic status as poor relative to that of their neighbors.

### Sexual history and SRHS utilization

Table 1 presents a summary of the data on the utilization of the SRHS by the YPWD. Approximately one-fourth (26.1%; n=111) of the respondents (23.4% of males and 30.9% of females) had ever sought SRH services, with 12.2% of them seeking such services in the three months preceding the survey. The most commonly cited reasons for seeking SRH services were to obtain contraceptives (48.1%), condoms (21.2%), HIV counseling and testing (21.2%; 13.5% sexually active and 7.7% non-sexually active), delivery services (5.8%), antenatal care (1.9%), and sexual health education (1.9%). With respect to sexual history and family planning service use, 51.9% (n=221) of YPWD had ever had sexual intercourse, 62.9% (n=139) of sexually experienced YPWD had used modern contraceptive methods, and 46.2% (n=102) (46.3% of males and 45.8% of females) had used the method within the 12 months prior to the survey. Among those who used a method in the 12 months preceding the survey, the majority (71%) used it regularly. The type of contraceptive used by the majority of YPWD was a condom (62.7%; n=64), followed by an injectable (32.4%; n=33).

Among those who had never used contraception, the major reasons for nonuse included being sexually inactive (29%), lack of knowledge about contraceptives (29%), infrequent sex (24%), partner refusal (4%), and desire to become pregnant (9%).

More than half (54%) of the sexually active respondents had ever used a condom (61% of males and 40% of females), with 40% of them reporting use in the 12 months preceding the survey.

The main reason for using condoms was to prevent HIV/AIDS (77.3%; n=68), followed by preventing pregnancy (50.0%; n=44). The main reasons given for not using condoms were lack of knowledge (25.2%; n=40), trusting the partner (24.5%; n=39), and use of other contraceptive methods (18.2%; n=29). Another 14.5% (n=23) of respondents stated that they did not think of a condom during sexual intercourse, 11.9% (n=19) believed that condoms would decrease sexual gratification, and 9% stated that they felt ashamed asking their partner to use a condom.

Twenty-four percent (n=52) of the respondents had ever had an STI; among those, only 38.5% (n=20) discussed the issue first with healthcare workers before discussing it with others such as friends, family members, or traditional healers. Sixty-five percent (n=34) of those with a history of STI went to a public health institution, 9.6% (n=5) to private clinics, and 25.0% (n=13) to different local institutions, such as traditional healers, pharmacies, or local injection givers (individuals working locally and illegally as health care workers in the community), to receive treatment. Among respondents who had ever been treated for an STI, 39.2% mentioned low-cost treatment as the reason for seeking care from the health institution that they chose. Other reasons for the choice of health institution included free treatment (25.5%), effectiveness of treatment (21.6%), proximity (15.7%), and confidentiality (9.8%).

Regarding HIV counseling and testing, 56.1% (n=239) of the participants (58.4% of males and 52.0% of females) had visited either static or outreach testing centers and were tested for HIV. Of the 239 participants, 151 (63.2%) had ever had sexual intercourse. The two main reasons for having the test were knowing their HIV status (60.7%) and being a response to a request by healthcare workers after they had an illness (23.4%). The most commonly cited reasons for not having been tested for HIV included fear and lack of information (29.4%), perception of low or no risk of infection and/or not having had sex (27.3%), fear of a positive result and associated stigma (23.5%), lack of access to services (21.4%), non-readiness for the test (15.5%), negative provider attitudes (6.4%), and parental influence (4.8%).

Regarding the preferred source for obtaining SRHS, most of the respondents (n=292; 68.5%) stated that they would prefer government facilities (see Table 1). The most common reasons for preferring specific SRH service outlets included free treatment (33.8%), effectiveness of the treatment (32.9%), low cost of services (24.6%), and proximity to the place of residence (9.9%).

**Table 1:** Sexual and reproductive health service utilization among young people with disability in Ethiopia (n=426)

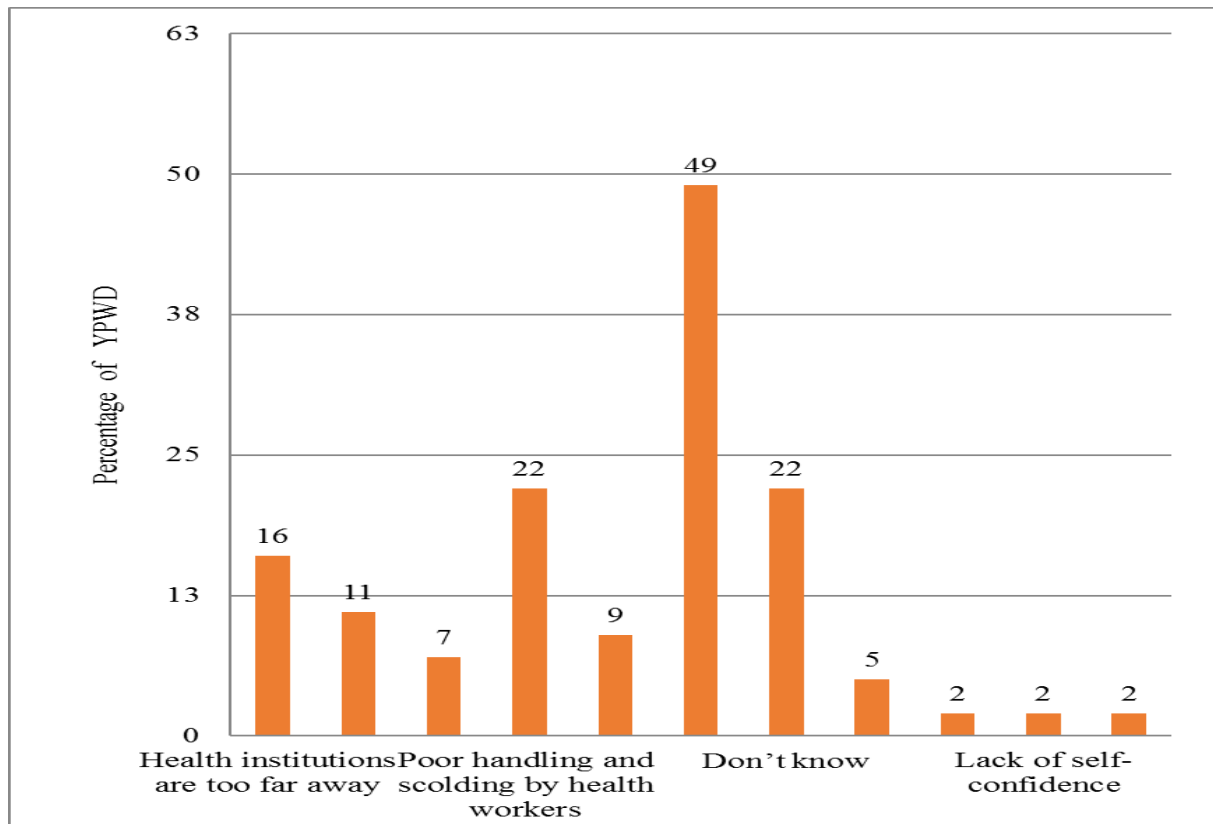
Characteristics	Young people with disability		
	Male № (%)	Female № (%)	Total № (%)
<b>Ever utilized any SRHSs</b>			
Yes	64 (23.4)	47 (30.9)	111 (26.1)
No	210 (76.6)	105 (69.1)	315 (73.9)
<b>Total</b>	274 (100)	152 (100)	426 (100)
<b>Ever used modern contraceptives</b>			
Yes	96 (64.4)	43 (59.7)	139 (62.9)
No	53 (35.6)	29 (40.3)	82 (37.1)
<b>Total</b>	149 (100)	72 (100)	221 (100)
<b>Modern contraceptive used in the past 12 months</b>			
Yes	69 (46.3)	33 (45.8)	102 (46.2)
No	80 (53.7)	39 (54.2)	119 (53.8)
<b>Total</b>	149 (100)	72 (100)	221 (100)
<b>Type of contraceptive used in the past 12 months*</b>			
Contraceptive pills	11 (15.9)	6 (18.2)	17 (16.7)
Condom	52 (75.4)	12 (36.4)	64 (62.7)
Injectables	14 (20.3)	19 (57.6)	33 (32.4)
IUD	2 (2.9)	2 (6.1)	4 (3.9)
Norplant	2 (2.9)	1 (3.0)	3 (2.9)
Others	0 (0.0)	1 (3.0)	1 (1.0)
<b>Frequency of contraceptive use in the past 12 months</b>			
Regular	48 (69.6)	24 (72.7)	72 (70.6)
Irregular	21 (30.4)	9 (27.3)	30 (29.4)
<b>Total</b>	69 (100)	33 (100)	102 (100)
<b>Ever used a condom</b>			
Yes	91 (61.1)	29 (40.3)	120 (54.3)
No	58 (38.9)	43 (59.7)	101 (45.7)
<b>Total</b>	149 (100)	72 (100)	221 (100)
<b>Condom used in the past 12 months</b>			
Yes	65 (43.6)	23 (31.9)	88 (39.8)
No	84 (56.4)	49 (68.1)	133 (60.2)
<b>Total</b>	149 (100)	72 (100)	221 (100)
<b>Frequency of condom use in the past 12 months</b>			
Always	39 (60.0)	11 (47.8)	50 (56.8)
Mostly	8 (12.3)	4 (17.4)	12 (13.6)
Sometimes	18 (27.7)	8 (34.8)	26 (29.5)
<b>Total</b>	65 (100)	23 (100)	88 (100)
<b>Reason for using a condom in the past 12 months*</b>			
To prevent HIV/AIDS	55 (84.6)	13 (56.5)	68 (77.3)
Avoid pregnancy	28 (43.1)	16 (69.6)	44 (50.0)
Mere suggestion by partner	3 (4.6)	1 (4.3)	4 (4.5)
Other	1 (1.5)	0 (0.0)	1 (1.1)
<b>Ever got tested for HIV</b>			
Yes	160 (58.4)	79 (52.0)	239 (56.1)
No	114 (41.6)	73 (48.0)	187 (43.9)
<b>Total</b>	274 (100)	152 (100)	426 (100)
<b>SRHS source preference</b>			
Governmental health facilities	186 (67.9)	106 (69.7)	292 (68.5)
Private health facilities	80 (29.2)	43 (28.3)	123 (28.9)
Drug shops	8 (2.9)	2 (1.3)	10 (2.3)
TBAs	0 (0.0)	0 (0.0)	0 (0.0)
Others	0 (0.0)	1 (0.7)	1 (0.2)
<b>Total</b>	274 (100)	152 (100)	426 (100)

\*Multiple answer question; SRHSs: sexual reproductive health services; IUD: intrauterine device; RHS: reproductive health service preference; TBAs: traditional birth attendants

### Barriers to SRH Service Utilization

Most respondents (49%) stated that they did not seek SRH services due to the inconvenience of health institutions in terms of physical inaccessibility, difficulties with communication (e.g., in sign language), and lack of information, education, and communication (IEC) materials in appropriate formats (e.g., braille,

large or plain language prints, or audio tapes). The second major reason for not seeking SRHS was poor handling and scolding by service providers (cited by 22.1% of the respondents). Distance from home and costs were also mentioned as reasons for not seeking services by 16% and 11% of the respondents, respectively (**Figure 1**).



**Figure 1:** Factors that prevent young people with disability from using sexual and reproductive health services in Ethiopia (%)

### Putative determinants of SRHS utilization by YPWD

Of the 221 sexually active YPWD, only 99 (44.8%) utilized SRHS. As shown in Table 2, respondents' sex, age, education, forms of disability, and living arrangements were significantly associated with SRHS utilization among YPWD (adjusted model). The odds of SRHS use were five times greater among female respondents than among male respondents (adjusted odds ratio/AOR=5.4, 95% CI=2.4-12.0). The likelihood of using SRH services increased with age (AOR=1.2 (95% CI=1.0-1.4)) and was greater among literate individuals than among illiterate individuals (AOR=3.1 (95% CI=1.2-7.9)) and among respondents with hearing impairment than among those with partial mental impairment (AOR=7.0 (95% CI= 1.9 -25.3)). Those who lived with their parents had a lower likelihood of using SRH services than did those who were in an orphanage (AOR=4.5, 95% CI=1.2-17.1) or lived with relatives (AOR=9.8, 95% CI=2.1-44.7; **Table 2**).

### Putative determinants of HIV testing among YPWD

The results from logistic regression analysis show significant variations by respondent age, education, disability type, work status, and living arrangement (Table 3). The likelihood of having been tested for HIV increased with age (AOR= 1.2, 95% CI=1.1-1.4) and was greater among literate individuals than among illiterate individuals (AOR=2.7, 95% CI=1.4-5.3). The likelihood of HIV testing was also higher among respondents with visual impairment than among those with partial mental impairment (AOR= 4.0, 95% CI=1.4-11.3). Moreover, the likelihood of having been tested for HIV was higher among respondents who lived in an orphanage than among those who lived with their parents (AOR=2.7, 95% CI=1.1-6.6). Similarly, those who engaged in some form of paid work had higher likelihood of having been tested for HIV than did those without any form of work (AOR=1.8, 95% CI=1.0-3.2; **Table 3**).

**Table 2:** Putative determinants of sexual and reproductive health service use by sexually active YPWD in Ethiopia ( $n=221$ )

Characteristics	Adjusted model			
	Wald	DF	P value	Adjusted OR (95% CI)
<b>Sex</b>				1
Male				1
Female	16.519	1	<0.001	5.4 (2.4-12.0)
<b>Age, every additional year</b>	4.322	1	0.038	1.2 (1.0-1.4)
<b>Marital status</b>				1
Unmarried				1
Married	2.287	1	0.130	1.8 (0.8-3.9)
<b>Religion</b>				1
No religion				1
Orthodox Christian	1.887	1	0.169	0.2 (0.0-2.1)
Muslim	2.665	1	0.103	0.1 (0.0-1.5)
Protestant	2.472	1	0.116	0.1 (0.0-1.7)
Other Christian	2.340	1	0.126	0.1 (0.0-1.9)
<b>Education</b>				1
Illiterate				1
Literate	5.482	1	0.019	3.1 (1.2-7.9)
<b>Form of disability</b>				1
Partial mental impairment				1
Hearing impairment	8.835	1	0.003	7.0 (1.9-25.3)
Visual impairment	2.390	1	0.122	2.4 (0.8-7.6)
Impaired mobility	1.537	1	0.215	2.8 (0.6-14.3)
Multiple impairment	0.009	1	0.926	0.9 (0.1-7.9)
<b>Time of disability</b>				1
From birth				1
Early childhood	0.131	1	0.718	1.3 (0.4-4.3)
Later in life	0.207	1	0.649	1.3 (0.4-4.7)
<b>Work</b>				1
No				1
Yes	1.685	1	0.194	1.7 (0.8-3.9)
<b>Living arrangements</b>				1
With parents				1
With relatives	8.647	1	0.003	9.8 (2.1-44.7)
With friends/peers	0.557	1	0.456	1.6 (0.5-5.7)
With partner	2.641	1	0.104	2.7 (0.8-9.2)
Alone	0.764	1	0.382	1.7 (0.5-5.9)
Orphanage	5.014	1	0.025	4.5 (1.2-17.1)
<b>Perceived parents' economic status</b>				1
Do not know				1
Rich	1.743	1	0.187	4.1 (0.5-32.6)
Medium	1.462	1	0.227	2.6 (0.6-11.9)
Poor	0.467	1	0.494	1.7 (0.4-8.0)

*D.F.* – degree of freedom, *OR* – odds ratio, *CI* – confidence interval, *SD* – standard deviation



**Table 3:** Putative determinants of HIV test utilization by young people with disabilities in Ethiopia (n=426)

Characteristics	Adjusted model			
	Wald	d.f.	P value	Adjusted OR (95% CI)
<b>Sex</b>				
Female				1
Male	0.807	1	0.369	0.8 (0.5-1.3)
<b>Age, every additional year</b>				
	12.408	1	<0.001	<b>1.2 (1.1-1.4)</b>
<b>Marital status</b>				
Unmarried				1
Married	3.502	1	0.061	1.8 (1.0-3.2)
<b>Religion</b>				
Other Christian				1
Orthodox Christian	1.343	1	0.246	1.9 (0.6-5.6)
Muslim	1.892	1	0.169	2.4 (0.7-7.9)
Protestant	0.989	1	0.320	1.9 (0.5-7.0)
No religion	0.159	1	0.690	1.4 (0.3-8.3)
<b>Education</b>				
Illiterate				1
Literate	8.047	1	<b>0.005</b>	<b>2.7 (1.4-5.3)</b>
<b>Form of disability</b>				
Partial mental impairment				1
Hearing impairment	0.125	1	0.724	0.9 (0.4-2.1)
Visual impairment	6.494	1	<b>0.011</b>	<b>4.0 (1.4-11.3)</b>
Impaired mobility	0.004	1	0.950	1.0 (0.4-2.5)
Multiple impairment	0.001	1	0.974	1.0 (0.2-4.9)
<b>Time of disability</b>				
From birth				1
Early childhood	0.038	1	0.845	1.1 (0.5-2.2)
Later in life	0.888	1	0.346	1.4 (0.7-3.1)
<b>Living arrangements</b>				
With parents				1
With relatives	0.045	1	0.832	1.1 (0.5-2.6)
With friends/peers	1.378	1	0.240	1.6 (0.7-3.5)
With partner	3.141	1	0.076	2.7 (0.9-8.3)
Alone	1.683	1	0.195	1.7 (0.8-4.0)
Orphanage	4.893	1	0.027	<b>2.7 (1.1-6.6)</b>
<b>Work</b>				
No				1
Yes	4.357	1	<b>0.037</b>	<b>1.8 (1.0-3.2)</b>
<b>Perceived parents' economic status</b>				
Do not know				1
Rich	1.026	1	0.311	2.1 (0.5-8.8)
Medium	0.788	1	0.375	1.6 (0.6-4.5)
Poor	0.102	1	0.750	1.2 (0.4-3.4)

*DF.* – degree of freedom, *OR* – odds ratio, *CI* – confidence interval, *SD* – standard deviation

**Putative determinants of condom use by YPWD**

The logistic regression analysis revealed significant differences in condom use by respondent sex, disability form, living arrangement, and perceived parental economic status (Table 4). In particular, the likelihood of using condoms was two times greater among male respondents than among female respondents (AOR=2.3, 95% CI=1.1-4.8). In addition, respondents who had hearing or visual impairment were more likely to use condoms than were those who had partial mental impairment (AOR=14.5, 95% CI=3.1-68.0 and AOR=6.9, 95% CI=1.3-37.2, respectively).

Moreover, those who lived in an orphanage or together with their friends/peers were also more likely to use condoms than those who lived with their parents (AOR= 9.6, 95% CI=2.5-36.5 and AOR=4.3, 95% CI= 1.4-13.3, respectively). The odds of condom use were also greater among those who perceived their parents' economic status as rich than among those who did not know their parents' economic status (AOR=8.8, 95% CI=1.0-75.5; **Table 4**).

**Table 4:** Putative determinants of condom use by young people with disabilities in Ethiopia (n=221)

Characteristics	Adjusted model			
	Wald	d.f.	P value	Adjusted OR (95% CI)
<b>Sex</b>				1
Female				
Male	5.207	1	<b>0.022</b>	<b>2.3 (1.1-4.8)</b>
<b>Age, every additional year</b>	3.164	1	0.075	1.2 (0.9-1.408)
<b>Marital status</b>				1
Married				
Unmarried	0.001	1	0.975	0.9 (0.5-2.1)
<b>Religion</b>				1
No religion				
Orthodox Christian	0.025	1	0.874	0.8 (0.1-11.7)
Muslim	0.011	1	0.918	1.2 (0.1-18.6)
Protestant	0.617	1	0.432	0.3 (0.0-5.7)
Other Christian	0.149	1	0.699	1.8 (0.1-36.9)
<b>Education</b>				1
Illiterate				
Literate	0.559	1	0.455	1.4 (0.6-3.6)
<b>Form of disability</b>				1
Partial mental impairment				
Hearing impairment	11.440	1	<b>0.001</b>	<b>14.5 (3.1-68.0)</b>
Visual impairment	5.016	1	<b>0.025</b>	<b>6.9 (1.3-37.2)</b>
Impaired mobility	2.089	1	0.148	3.1 (0.7-14.6)
Multiple impairment	1.986	1	0.159	5.3 (0.5-53.9)
<b>Time of disability</b>				1
From birth				
Early childhood	0.016	1	0.899	0.9 (0.3-2.9)
Later in life	0.060	1	0.806	0.9 (0.3-2.8)
<b>Living arrangements</b>				1
With partner				
With parents	3.700	1	0.054	3.2 (1.0-10.1)
With relatives	1.686	1	0.194	2.8 (0.6-13.7)
With friends/peers	6.191	1	<b>0.013</b>	<b>4.3 (1.4-13.3)</b>
Alone	3.080	1	0.079	2.6 (0.9-7.7)
Orphanage	10.888	1	<b>0.001</b>	<b>9.6 (2.5-36.5)</b>
<b>Work</b>				1
No				
Yes	0.065	1	0.798	0.9 (0.4-2.0)
<b>Perceived parents' economic status</b>				1
Don't know				
Rich	3.900	1	<b>0.048</b>	<b>8.8 (1.0-75.5)</b>
Medium	2.405	1	0.121	3.4 (0.7-16.4)
Poor	1.809	1	0.179	2.9 (0.6-13.9)

d.f. – degree of freedom, OR – odds ratio, CI – confidence interval, SD – standard deviation

## Discussion

In this study, we sought to assess the sexual and reproductive health service utilization of YPWDs in Ethiopia. Our study revealed that about three-quarters of young disabled people had never used SRHSs. The main reasons for not utilizing SRHS were the inconvenience of the health institution, followed by poor handling and/or scolding on the part of the service provider. Our findings regarding barriers to SRHS use are in line with findings from studies of PWDs in the U.S. and in numerous African countries, including Ethiopia (22-28).

Our study revealed a high level of nonuse of SRHSs, especially compared to findings from studies on service use among adolescents without disability in different parts of Ethiopia. For example, a study conducted in northwest Ethiopia indicated that only 20.5% of the adolescents were not utilizing FP and VCT (27.8%), while 73.9% were utilizing these services in our study.(29). A study conducted in Addis Ababa, Ethiopia, also showed that 52.9% of the “street children” aged 10-18 years did not use any kind of SRHSs, and 54% of these respondents mentioned unaffordable costs, while 20.4% stated that long waiting times were the main reason for not using SRHSs.(30). Another study conducted in southern Ethiopia also indicated that 70.6% of youths had not utilized SRHSs in the last year (31). These studies showed a lower rate of SRH service nonuse than did our study (73.9%).

One study conducted in East Gojjam, Ethiopia, reported that 78.5% of the included rural adolescents had never used SRHS (32) and the main reasons that deterred the adolescents from using services were parental disapproval, lack of basic information, and pressure from partners. These findings are, thus, in line with findings from other studies on adolescents without disabilities that reported similar reasons for not using SRHSs, reasons that differ from those of YPWD. In a study that was conducted in Addis Ababa, for example, a considerable proportion of the adolescents stated that feelings of embarrassment (72.0%) and fear of being seen by parents or people who know them (67.8%) were the main barriers preventing them from utilizing SRHSs (33).

The higher proportion of disabled youth who had never utilized SRHSs in our study could be indicative of poor access to SRHSs for this segment of the population. In addition, it is also clear that the factors that prevent YPWD from using

SRHS differ from the factors stated by adolescents without disability; thus, different strategies and interventions are needed. For YPWD, the primary focus of programs, policymakers, and other concerned parties needs to be on the infrastructures, communication, and attitudes of healthcare providers to improve access to services for this segment of the population.

In our study, being older, female, and literate, as well as having a hearing impairment, living in an institutional setting (in an orphanage), or with relatives, were found to be important putative determinants of SRHS use. These findings of a greater likelihood of SRHS use among older females and those who are literate are also consistent with the findings of others. (e.g., with findings from a study conducted in Uganda among WWDs)(34). However, the greater likelihood of using SRHS by older females, as in our study, could be evidence of a societal misconception that SRHSs are only for adults and women. This could also be an indication of the increased risk of SRH problems in females and the increased vulnerability associated with a lack of access to SRHS for younger PWD. The lower likelihood of using SRHSs among young people with partial mental impairment and those who live with their parents might also indicate parental influences and may result from the societal misconception that links disability with a spiritual evil attack or curse. This would, in turn, make some parents unwilling to disclose that they have disabled family members and would preclude disabled members from going out into public to obtain services out of fear of stigmatization or other negative consequences. Not surprisingly, education plays an important role in the use of SRHS. Therefore, efforts must be made by programs, policymakers, and other concerned parties to raise disability-related awareness at the societal level to foster respect for the rights and dignity of people with disabilities.

In this study, we found that only 63% of the sexually experienced respondents had ever used modern contraceptives. Contraceptive use in the 12 months prior to the survey was 46.2%. These findings of modern contraceptive use are higher than those of a study conducted in Uganda and Malawi among PWDs (34, 35). In contrast, our findings are much lower than those of a study conducted in Ethiopia among adolescents without disability, which showed that 68.1% of adolescents used contraceptive methods at their first sexual intercourse and 97% used contraception at their last intercourse (29). This difference might be explained by the fact that the other study

considered nondisabled adolescents, while our study considered YPWDs—a group of subjects for whom access to family planning services is likely to be poorer.

Our findings on modern contraceptive use are also lower than those of a similar study conducted in Ethiopia among YPWD in 2008 (27). Differences in the composition of the study subjects might account for the difference in findings between these two studies; the other study considered only those with visual, hearing, and mobility impairments, while our study additionally included those with leprosy, partial mental, and multiple impairments—subgroups for whom the use of modern contraceptives is likely to be lower. Therefore, we recommend that programs and policymakers pay special attention to those groups of people with a full range of impairments, particularly those with partial mental and multiple impairments.

Regarding HIV counseling and testing, we found that 56% of YPWD were tested for HIV. The two main reasons for having an HIV test were to know the HIV status and as a response to a request by healthcare workers following an illness. Our findings are comparable with the results of studies conducted among PWD in various African countries, including Ethiopia (28, 36). Our findings on respondents' reasons for having an HIV test are also consistent with previous findings from a study conducted in Malawi (35) In contrast, another study from Ethiopia reported substantially higher rates of HIV test service utilization than our study, as most (72.2%) nondisabled adolescents stated that they had utilized HIV testing services (29) This provides further evidence of poor access to services for YPWD, requiring intervention by responsible parties.

In this study, we also found that those who were younger, not educated, had partial mental impairment, and lived with their parents were at increased risk for SRH-related problems, as they were less likely to use HIV testing services or condoms. Therefore, there should be strategies to address the needs of these high-risk groups for YPWD. Efforts must be made to reach these hard-to-reach groups of YPWD to increase awareness in families who have a disabled child, in particular, and in the community, in general, through different outreach activities and services.

#### **Limitations of the study**

Our study considered only YPWD who were members of associations for PWD in the capital city of Ethiopia and may

therefore not be representative of the entire population of YPWD in Ethiopia, particularly those who were not members of any association or living in rural areas of the country. In addition, as noted earlier, the study subjects were selected by systematic random sampling, and for unwilling or absent randomly selected study subjects on the date of data collection, the next study subject was replaced from the same organization until we reached the required sample. However, we were not able to collect information on the number of non-respondents and thus to quantify the nonresponse rate. No special procedures were conducted in the sampling process to address gender disparities or to better represent females in the sample.

Given the cross-sectional nature of the data used in this paper, we cannot make causal inferences regarding the significant associations between certain socio-demographic characteristics and the use of SRH services. The associations identified thus have to be further studied. As we used face-to-face interviews to collect data, the sensitivity of the issues and the presence of an interviewer might have influenced participants' ease in reporting sexual activity and related issues.

## **Conclusion and Recommendation**

The Convention on the Rights of Persons with Disabilities (CRPD), adopted in 2006, is a landmark human rights treaty with 82 initial signatories. According to charity-based views, individuals with disabilities are recognized as rights-holders, emphasizing a social development dimension. Since 2008, it has broadened disability categorization, ensuring fundamental rights for all and highlighting areas requiring enhanced protection. (Reference: A/RES/61/106)

The Convention on the right of People with Disabilities clearly states that people with disabilities have the right to have access – on an equal basis with others – to the physical environment, to transportation, to information and communications, including information and communications technologies and systems, as well as the right to have the enjoyment of the highest attainable standard of health without discrimination on the basis of disability. However, this study revealed that many young people with disabilities in Ethiopia experience barriers to accessing SRHS. A few of the many barriers were the inconvenience of health institutions (physical barriers that ren-

der them inaccessible to individuals with disabilities), a lack of personnel with special communication skills and materials (Braille, language prints, or audiovisual aids) and misconceptions by the societies and families of PWD themselves, which prevented YPWD from receiving pertinent services despite the limited availability of service providers. These results underscore the urgent necessity for educational focus groups aimed at dispelling misconceptions and implementing practical measures to ensure the provision of quality sexual and reproductive health (SRH) services and information to people with disabilities (PwDs). The barriers preventing YPWD from accessing Sexual and Reproductive Health Services (SRHS) — negative attitudes from healthcare professionals — present a complex challenge. Solutions involve comprehensive training for healthcare providers on disability awareness, basic sign language, and tactile language for individuals with multiple impairments. Additionally, there is a need to promote non-stigmatized assistance and service provision. Simultaneously, efforts should focus on enhancing disability awareness in both healthcare providers and society as a whole to foster respect for the rights and dignity of people with disabilities.

In conclusion, further research is crucial for obtaining accurate national data and policy support. Additionally, it is imperative to create and implement cost-efficient intervention strategies for the Sexual and Reproductive Health Services (SRHS) needs of Young People with Disabilities (YPWD). This underscores the need for policymakers and stakeholders to prioritize and act on these vital initiatives.

#### List of abbreviations

AIDS: acquired immunodeficiency syndrome

HIV: Human immunodeficiency virus

IEC: Information, Education, and Communication

PWD: People with Disability

SRH: Sexual Reproductive Health

SRHS: sexual reproductive health service

STI: Sexually Transmitted Infection

YPWD: Young People with Disability

#### Competing interests

We, the authors of the manuscript, declare that we have neither financial nor non-financial competing interests.

#### Authors' contributions

TAK conceived the study, participated in its design and coordination, in the acquisition and management of the data, performed the statistical analysis, and drafted the manuscript. TL helped to interpret the data and perform the statistical analysis and was involved in drafting and critically revising the manuscript for important content. MM and SKB helped to interpret the data and were involved in drafting and critically revising the manuscript for important content. SGRH participated in the design of the study, supervised the study, helped to interpret the data, and was involved in drafting and revising the manuscript for important content. All the authors have read and approved the final version of the manuscript.

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