Magnitude of Child Sexual Abuse and Its Associated Factors Among High School Female Students in Dire Dawa, Eastern Ethiopia. A Cross-sectional Study

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Abstract

Background: Child sexual abuse means any kind of sexual contact with a child under the age of 18 years. It is a common and serious public health problem affecting millions of people each year worldwide. It is the most neglected and least documented form of violence in Ethiopia among school girls. So, this study aimed to assess the magnitude and its associated factors among high school female students in Dire Dawa, Eastern Ethiopia.

Methods: An institutional-based, cross-sectional study was conducted, March, 1-23/2021. A stratified multistage sampling technique was used for quantitative data and 794 participants from selected high schools were included. A pre-tested, self-administered questionnaire was used, and data were analyzed using SPSS software version 24. For qualitative data, sixteen in-depth interviews and five focus group discussion were conducted and analyzed thematically.

Result: The magnitude of at least one form of sexual abuse were 384 (48.9%), of these, 150 (19.1%) were rape. Students who live alone 4.3 times (AOR=4.30;95 % CI: 1.81-10.24), those who lives with their friends 5 times (AOR=5.02: 95% CI: 2.24-11.24), and those who lives with their single parent 3 times (AOR=3.31: 95% CI: 1.23-8.89) more likely experience life time sexual abuse than those living with their both parents. The odds of experiencing life time sexual abuse among students of rural residence were 2 times higher than their urban counter part (AOR=2.1; 95% CI: 1.79-3.45). Students who don't drink alcohol were 70% more protective than those who drink alcohol (AOR=0.70: 95% CI: 0.28-0.97).

Conclusion: This study revealed that the magnitude of child sexual abuse among female students in Dire Dawa is high. Lack of discussion about sexual issue with parents, living without both parents, drinking alcohol, being rural residence had significant association with child sexual abuse. Unwanted pregnancy, abortion, and STIs were the most common reproductive consequences of sexual abuse. So, community-based comprehensive awareness creation on sexual and reproductive health issues, are recommended especially, at rural area.

Plain English Summary

Child sexual abuse is any sexual contact with a child under the age of 18 years. It is a common and serious public health problem affecting millions of people each year worldwide. It is the most neglected and least documented form of violence in Ethiopia among school girls. This study aimed to assess the magnitude and its associated factors among high school female students in Dire Dawa.

In this study a total of 794 female students from selected high schools were included. A pre-tested, self-administered questionnaire was used, and data were analyzed using SPSS software version 24. For qualitative data, sixteen in-depth interviews and five focus group discussion were conducted and analyzed thematically.

The finding showed that, the magnitude of at least one form of sexual abuse were 384 (48.9%), of these, 150 (19.1%) were rape. Students who live alone 4.3 times, those who lives with their friends 5 times, and those who lives with their single parent 3 times more likely experience life time sexual abuse than those living with their both parents. The likelihood of experiencing life time sexual abuse among students of rural residence were 2 times higher than their urban counter part. Students who don't drink alcohol were 70% more protective than those who drink alcohol.

In conclusion: this study revealed that the magnitude of child sexual abuse among female students in Dire Dawa is high. Lack of discussion about sexual issue with parents, living without both parents, drinking alcohol, being rural residence had significant association with child sexual abuse. Unwanted pregnancy, abortion, and STIs were the most common reproductive consequences of sexual abuse. So, community-based comprehensive awareness creation on sexual and reproductive health issues, are recommended especially, at rural area.

Background

Child sexual abuse (CSA) means any kind of sexual contact with a child under the age of 18 years. It ranges from forcible rape to physical forms of pressure that compel women to engage in sex against their consent. It is one of the most common human rights violations, and is now recognized as a public health priority, but widely underreported in all settings (1). Sexual abuse is a common and serious public health problem affecting millions of people each year in the world (2). It affects people of all genders, sexual orientations and ages, in every community, but the majority of victims are children, adolescents and women both in industrial and developing countries (3–4).

Globally, one in three adolescent girls' reports having their first sexual experience as a result of coercion (5–6). Sexual violence is a common in Sub-Saharan African educational institutions including Ethiopia. School adolescents can be victimized at school that may be verbal harassment, physical nature, such as unwanted touching and contact. It can also be more overtly violent, as in cases where girls are sexually assaulted (raped) in or near school premises (7).

Studies showed that violence against girls by older male students and teachers is very common, and more than 40% of school girls have experienced some form of sexual abuse at some point in their lives. Sexual violence at schools leads to lower girls' educational attainment and increases absenteeism and dropout rates (8–10).

The problem of obtaining accurate statistics on the magnitude of CSA can be attributed to several factors: inconsistencies in the definitions given to sexual abuse, fear and social stigma against the rape survivors, and other social and cultural norms are some of the factors. It is committed in "complete secrecy" and most victimized children do not report as they are "too ashamed to talk about it", only 1 in 10 incidents is reported, as a result CSA is the least documented form of violence in many developing countries including Ethiopia (2, 11–12).

The systemic review in Ethiopia has shown that, the lifetime prevalence of sexual abuse against women by husband or intimate partner ranged from 19.2 to 59% (13). WHO study found that, 0.3–12% of women respondents reported being forced to have sex that they did not want to, by non-partners since the age of 15 years. The highest levels from 10–12% were reported in Peru, Samoa, and the United Republic of Tanzania city (14).

A study conducted among female University Students in Northern Nigeria showed that the prevalence of gender-based violence was 58.8%. From these, 22.2% sexual violence and 50.8% experienced verbal violence (15).

Other study conducted on sexual abuse in Debarik, among female high school students also showed that, sexual abuse is still a common phenomenon among young girls. The prevalence of performed and attempted rape was 8.8% and 11.5% (16).

All forms of sexual abuse strongly linked to social determinants such as poor governance, weak rule of law, cultural, social, and gender norms, unemployment, low income, and gender inequality, and limited educational opportunities (17). Others factors like the absence of one or both parents or being raised by stepfather, parental conflicts, family adversity, lack of parent control and social isolation have also been linked to a higher risk for child sexual abuse (18–20).

Most of the reproductive health consequences of sexual abuse include, HIV/AIDS, infection, unwanted pregnancy, unsafe abortion, sexually transmitted diseases, vaginal discharge, and etc. (22). Rape alone results in about 32,000 unwanted pregnancies each year globally (14). The consequences of CSA, if neglected are not only affect the victim, but also affect their families, future relationships, and the society as a whole. It is a complex societal problem that requires a comprehensive response (21).

In Ethiopia, scientifically documented information regarding child sexual abuse is scarce especially among adolescents. Moreover, little has been explored about the magnitude different types of CSA in the context of high school students. To the best of our knowledge, there is also no studies related to CSA has been conducted in our study area. Based on this understanding, it is important to investigate and document the magnitude of CSA and its associated factors among high school female students in Dire Dawa, Eastern Ethiopia.

Information obtained from this study can be used for planning of intervention programs by government officials and any other concerned bodies to design appropriate prevention and controlling strategies of child sexual abuse.

Methods

Study Design and setting

An institutional-based cross-sectional study design was conducted March 1–20/2021, among 794 high school female students in Dire Dawa. Dire Dawa (DD) is one of the known and ancient region in Ethiopia found around 515 km from Addis Ababa (capital city) in Eastern part of Ethiopia. Dire Dawa is one of the nine regional state in Ethiopia and has an annual population growth of rate of 2.9% the region has a total population of 653,000, of 327,000 males, 326,000 females and 194,187 childbearing age women. Total fertility rate for the region is 3.4 child/ woman (23).

The potential health service coverage of Dire Dawa was 100% with two governmental hospitals, 15 health centers and 34 health posts. There is also 2 TVET School, 5 private colleges, 1 University, 25 high school (22 urban, 3 rural), 10 governmental and 15 private high schools with a total number of high school students 15,839 (8,503male and 7,336 female) (24).

Study participants

The study population for this study was all high school female students attending their education in the academic year 2020/2021, in DD selected and included in the sample. Critically ill students, night and weekend students were excluded from the study, because not visible to obtain the data.

Sampling method and sample size determination

A stratified, multistage sampling technique were used. First, high schools in Dire Dawa administration were stratified as urban and rural. There were 25 high schools (22 urban, 3 rural). Then, five schools from urban and two schools from rural were selected by lottery method. List of female students in each grade (9th -12th) were taken from all selected schools. Then the total sample size was proportionally allocated to those seven selected schools. Finally, by simple random sampling technique participants from all selected schools were included in the study.

For quantitative study a sample size of 794 study subjects were determined by using single population proportion formula, by considering P = 45.4% (30, 50), 95% CI, 5 % of margin of error, design effect 2, and 10% non-response rate. For quantitative data, 16 in-depth interview (IDI) and 5 focus group discussion (FGD) were conducted on purposively selected participants.

Data collectors, data collection tools, and data collection procedures.

Data collection were facilitated by seven female nurses. The data collectors were clearly briefed about the purpose of the research. Detail training on the data collection tools and methods were given. Data collection were supervised by the authors of this research. A pretested, structured, self-administered questionnaire and checklists were used as data collection instruments, which were partly adopted from the standard “childhood experience of care and abuse Questionnaire (CECA.Q)” (25). The tools were first prepared in English and then translated to local languages and then back translations were made to see consistence of questionnaires.

In order to maintain confidentiality, separate rooms for students were arranged ahead. Data collection facilitators were assigned in each arranged room. All the selected participants were called and made to sit in prior arranged rooms. Each student was taken a single seat with sparse arrangement of chairs and desks, and face mask was distributed for all participants before provided the questionnaire in order to prevent COVID-19. No names or identifiers were included on the questionnaire. Students were instructed not to include their name or other identifiers, and then to fill the questionnaire and leave it in the prepared collecting box. The above procedures were intended to ensure confidentiality and avoid possibilities of immediate handling of filled questionnaires by facilitators. This was followed by an awareness creation class about the nature and consequences of child sexual abuse, preventive measures and coping strategies.

For the qualitative data

To enrich the findings of the quantitative results on child sexual abuse and its associated factors, 16 in-depth interview and five FGD were conducted. Place of in-depth interview and FGD was selected as to the convenience to the participants. Female adolescent students who were working in different clubs, school mini media, and not involved in the quantitative study, high school teachers, health workers, key informant from the community were selected purposively. Before beginning the interview, the participants were briefed about the purpose of the study. Then after obtaining both verbal and written consent, the data collectors were made the interview by using a semi-structured interview guideline. The interview was tape recorded and field notes were taken.

Data analysis

Data was cleaned, edited, coded and entered to Epi-data version 3.1, software, then exported to SPSS software version 24.0 for analysis. Descriptive statistics like, frequencies, proportions and summary statistics were used to describe the study population in relation to relevant variables. Binary Logistic regression was used to assess the presence of association between dependent and independent variables, and variables having p-value < 0.25 were candidate for multivariable logistic regression. Adjusted odds ratio, P- Value < 0.05 with 95% CI were used to determine the significance, and the level of association between dependent and independent variables.

Data analysis for the qualitative data

The Tape-recorded, in-depth interview and field notes were thoroughly listened and fully translated from local language to English. Then major findings were analyzed (transcribed), narrated and summarized based on their thematic area.

Study variables

Dependent variable:

- Child sexual abuse experience (Yes/No)

Independent variables

- **Socio demographic factors** (Grade, Age, Marital status, Educational status, Religion, Residence, Ethnicity, average monthly income)
- **Family level factors** (Family income, parent educational level, Family size, Parent's occupation, living with stepfather, living arrangement)
- **Individual factors** (Living out of home, living alone, absence of parents, age at first sexual practice, having boyfriend, SRH open discussion)
- **Peer and behavioral factors** (Peer pressure, Smoking, Drinking, Chewing).

Operational definition

- **Child sexual abuse experience**: means in this study, those who have had experience (exposure) of any form of sexual abuse (physical, and non-physical form) in their life time.
- **Physical** (fondling, oral-genital contact, rape or attempted rape, and using a child for pornography).
- **Non-physical** (indecent exposure, plain talk about sex designed to shock child or arouse her/his curiosity, allowing the child to watch or hear sexual acts or materials, and having sex in front of child) (26).

Data quality control

To ensure the quality of data, the questionnaire was translated to local languages, and back translated to English to check its consistence. Pre-testing of the questionnaire was undertaken in 5% of female students in other high school before the actual data collection takes place and corrections on the instrument was made accordingly. One day training was given for all data collectors and facilitators and close supervision was made by all authors. Data was checked for completeness, clarity and consistency by the facilitators and the investigators as soon as collected. Finally, data were entered through double data entry in to Epi-data 3.1 software to minimize error.

Ethical consideration

The study was conducted after getting ethical clearance from the ethical clearance committee of Dire Dawa University. Then, data were collected after getting oral and written consent from all study participants and their family, after provision of information on the purpose, procedures, potential risk, benefits, so encourage provision of accurate and honest responses. The participants and their families were assured that they have full right to participate or withdraw from the study.

Result

5.1. Socio-demographic characteristics of respondents

A total of 785 female students were completed the questionnaire appropriately, and gave a response rate of 98.8%. More than half, 52.1% of the respondents were between the age group of 16 to 17 years with the mean and standard deviation 16.0 ± 1.5 years. Most of the students participated in this study were

from grade nine (27.3%) followed by grade ten (26.0%). Similarly, grade eleven and twelve accounts, 25.0% and 21.7% respectively.

Regarding religion, 314 (40.0%) of the respondents were Muslim followed by Orthodox Christian 275 (35.0%). Majority, 334 (42.5%) of participants were Oromo followed by Somali, 275 (35.0%), and 746 (95%) of the participants were single. More than half, 67% of respondent's residence were urban and 33% of them were rural residence.

Half, 50.0 % of the respondents' father's educational status were secondary education and below, but 50% of the respondents' fathers and 31.8% of their mother's educational status were above secondary school respectively. Most of participant's father (60.0%) and 33.5% of their mothers were employee, and around half (48.9%) of respondent's mothers were house wife. The living arrangement of the students indicated that, less than half, 45.2% of respondents were living with both parents and majority of them didn't (Table 1).

Table 1
Socio-demographic characteristics of respondents on the study of magnitude of CSA and its associated factors among high school female students in DD, Eastern Ethiopia., March, 2021.

Variable	No.	%
Respondents Age category 14–15	93	11.8
16–17	409	52.1
18–19	172	21.9
>=20	111	14.1
Marital status of respondents Single	746	95.0
Married	39	5.0
With whom are you currently living? Both parents	355	45.2
Single parent	192	24.5
Friends	118	15.0
Alone	120	15.3
With whom you slept together in your home? Mother	197	25.1
Sister/s	393	50.1
Brother/s	80	10.2
Alone	115	14.6
What is your father's occupation? Employee	471	60.0
Merchant	114	14.5
Farmer	80	10.2
Daily Laborer	120	15.3
What is your mother's educational status? Grade 1–4	137	17.5
Grade 5–8	198	25.2
Grade 9–12	200	25.5
Above grade 12	250	31.8
Who Support you for learning? Parents	355	45.2
Siblings	192	24.5
Relatives	118	15.0
Husband/Boyfriend	120	15.3

Variable	No.	%
Your family sizes < 5	378	48.1
5 and above	407	51.9

5.2. Substance Use of Respondents

Concerning to substance use, 118 (15.0%) of respondents were chewed Khat, 39 (5.0%) of respondents were smoke cigarette/tobacco, and 90 (11.5%) of respondents were drunk alcohol some times in their life. Moreover, 115 (14.6%) and 78 (10.0%) of respondents reported that they are currently chewing Khat and drinking alcohol respectively, but none of them smoking. Similarly, 198 (25.2%) of the respondents reported that they had either male or female friends who drink alcohol or chewing Khat or both (Table 2).

Table 2
Substance utilization status of respondents on the study of magnitude of CSA and its associated factors among female high school students in DDA, Eastern Ethiopia., March, 2021.

Variable	No.	%
Have you ever chewed Khat? Yes	118	15.0
No	667	85.0
Are you chewing currently? Yes	115	14.6
No	670	85.4
Chat chewing frequency (n = 115). Once in a week	37	32.2
Twice a week	46	40.0
Once in a month	5	4.3
Twice in a month	27	23.5
Have you ever drunk alcohol? Yes	90	11.5
No	695	88.5
Are you drinking currently? (n = 90). Yes	78	86.7
No	12	13.3
Alcohol drinking frequency, (n = 78) Once in a week	16	20.5
Twice a week	38	48.7
Once in a month	12	15.4
Twice in a month	12	15.4
Do your friend drink alcohol/chewing/both? Yes	198	25.2
No	587	74.8

5.3. Sexual and reproductive history of respondents

Regarding the sexual history of the participants, 279 (35.5%) of the participants were ever had boyfriend and 181(23.0 %) of them were reported that they have had history of having sexual intercourse. The mean age at first sexual practices were 15 years with ± 1.5 SD, at minimum and maximum age of 13 and 17 years respectively.

More than three-fourth, 150 (82.9%) of respondents were started sexual intercourse without their willingness and only 31 (17.1%) of them were started sexual intercourse with their willingness. Almost half, (50.2%) of respondents who started sex had multiple (two or more) life time sexual partners.

Moreover, 408 (52.0%) of the study subjects have had open discussions with their parents about sexual and reproductive health issues and the rest don't have (Table 3).

Table 3
History of child sexual abuse experiences among high school female students in Dire Dawa administration, Eastern Ethiopia., March, 2021.

Variables	No.	%
Have you ever had boyfriend? Yes	279	35.5
No	506	64.5
How many boyfriends did you have in your life? Only one	139	49.8
Two or more	140	50.2
Have you ever had sexual intercourse? Yes	181	23.0
No	604	77.0
Was first sexual intercourse based on your will? (n = 181) Yes	31	17.1
No	150	82.9
What was your age at which you started sex? (n = 181) 10–13 years	39	21.5
14–17 years	95	52.5
>=18 years	47	26.0
Have you had any discussion with your parents about SRH? Yes	408	52.0
No	377	48.0

5.4. Magnitude and types of child sexual abuse experiences

Child sexual abuse was assessed through their life time. The life time magnitude of at least one form of sexual abuse in this study were 384(48.9%), out of which 20% of them experienced it in this academic year, 16% of them experienced in the last academic year, and the rest experienced it before three years. With regard to the types of sexual abuse, this study showed that, most, 20.4% (95% CI: 20.5–40.7) of participants were reported that they have experienced verbal form of sexual abuse (verbal harassment), 20.4% (95% CI: 20.5–40.7) of them reported that they have experienced unwelcomed touch/body contact, 19.1 % (95 % CI: 18.3, 23.7) of them were reported that they have experienced forceful sexual intercourse (rape) (Fig. 1).

Majority, 93 (62.0 %) of rape survivors were raped at the age of less than 15 years. Almost half, 75 (50.0%) of them were living alone, 23.3% of them with their friends and 20.0% of them were living with their single parent during the occurrence of the event (rape). Among rape cases, 29.3% of them were

raped in their home, 24.7% of them were raped in the perpetrators home, 17.3% of them were raped in the Hotel, 22.7% of them were raped inside the car, and the rest 6.0% of them were in public street (field).

Regarding disclosure status, from the total 150 rape survivors, 114 (76.0%) of the victims didn't report the case to anybody, only 36 (24.0 %) of them disclosed their case to someone else. Out of whom 20 (13.3%) of them were reported to their friends, 10 (6.7%) of them were reported to legal bodies, 6 (4.0%) of them were reported to their parents.

The action taken against the perpetrators; imprisonment was taken as a legal action on nine (9) of the perpetrators reported to legal bodies and one perpetrator was released free. The participants also indicated that the main reasons for not reporting the incidence were, most, 34 (29.8%) of them afraid of perpetrators, 22 (19.3%) of them fear of their families, 30 (30.7%) fearing of stigma, and 23 (20.2%) of them didn't know what to do (Table 4).

Table 4
Magnitude and types of child sexual abuse experiences among high school female students in Dire Dawa administration, Eastern Ethiopia., March, 2021

Variables	No.	%
Have you ever experienced any sexual abuse? Yes	384	48.9
No	401	51.1
When did you encountered sexual abuse? This year	157	20.0
(n = 384) Last year	126	16.0
Three years back	55	7.0
More than 5 years back	46	5.9
Types of sexual abuse did you experienced? Verbal harassment	80	20.9
(n = 384) Breasts caressed	80	20.9
Unwelcomed touch	40	10.4
Unwelcomed kissing	34	8.9
Vaginal intercourse (rape)	150	39.0
Your age at which you have been rape 10–14 years	93	62.0
15–19 years	43	28.7
>=20 years	14	9.3
Where was the rape occurred? (n = 150) In the victim's house	44	29.3
In the perpetrator's house	37	24.7
In Hotel	26	17.3
Inside the car	34	22.7
At public street	9	6.0
Age of the perpetrator compared to yours. More than 10 years	25	16.7
More than 5–10 years	55	36.7
More than 1-5years	70	46.7
To whom did you shared/report? (n = 36). Friends	20	13.3
Family member	10	6.7
Police	6	4.0

Variables	No.	%
Is there any action taken to the perpetrator? Sentenced	4	66.7
Released free	1	16.7
Forced to marry	1	16.7

5.5. Perpetrator's characteristics

Most of the perpetrated/abusers were peers, non-relative familiar people, relatives, and strangers. Out of 150 rape survivors, 125 (83.3%) were raped by extra-familial members and the remaining 25 (16.7%) were raped by family members (relatives). Among extra-familial perpetrators of rape, 21.2% were perpetrated by peers (schoolmates), 20.8% were perpetrated by their school teachers, 19.8% were perpetrated by boyfriend, 16.6% were perpetrated by neighbors, 4.9% by unrecognized persons (strangers) (Fig. 2).

The qualitative finding from in-depth-interview also supportive of this result. Most of the in-depth-interview participants explained that, they knew female students who were raped by their peers/ schoolmates, boyfriends, non-relative familiar people who are very close to the family member, and strangers. Moreover, sexual abuse by family members was not uncommon: step fathers, even sometimes biological fathers and brothers were involved.

A 40 years female health worker in in-depth-interview stated that, "…. I remember in my health facility, a 16 years female student came for safe abortion services and told me her problem during history taking. Following the death of her mother, she was living with her step-father. The drunkard step-father came to home with alcohol and make her to drink a lot. Then, after she became intoxicated and out of control, he takes her to bed in the mid night raped her. The act was frequently happened on her. She shared this secret and as she became conceived from her step-father to her Uncle. Her Uncle convinced her to report to legal bodies, then her step-father had been presented to court, and sentenced……."

5.6. Reproductive Health consequences of Child Sexual Abuse

From the total of 150 female students reported having experienced rape, 64 (37.9%) ended up with an unwanted pregnancy, 26.0% of them aborted, 39 (26.0%) of them developed STI (vaginal discharge), and 10.1% have had vaginal bleeding immediately after the act (Fig. 3).

The qualitative results also supported this finding: most of the focus group discussants remembered and discussed that "……a number of students that they knew, had faced some sort of complications after being raped; unwanted pregnancy, abortion, sexual transmitted infection, and HIV/AIDS were the common ones……"

A 19-year-old female student of grade eleven stated that: "…One of my class-mate student experienced rape 2 years back, she kept the condition secret because of fear of stigma. She didn't have knowledge

about emergency contraceptives and other what to do. Therefore, she remains silent, she became pregnancy. Then after, she tried to terminate it. Due to financial problem, she went to traditional birth attendant to obtain abortion service; because of the poor hygienic procedure she developed infection and also she was traumatized around genitalia, subsequently she became died at her family home."

5.7. Factors associated with child sexual abuse

Factors associated with child sexual abuse were assessed in this study. By bivariate analysis, living arrangement of the student, parent-adolescent communication about sexuality and reproductive health, father's educational level, residence, substance use, having a friend who drink alcohol, and family monthly average income had statistically significant association with child sexual abuse. In the bivariate analysis, variables which had statistically significant association at $p < 0.25$, with child sexual abuse were selected for multivariate logistic regression.

In multivariate logistic regression after controlling for potentially confounding variables, living arrangement, having open discussion/communication with parents about sexual and reproductive health, residence, substance use, had statistically significant association with child sexual abuse.

Students living arrangements had association with the occurrence of child sexual abuse.

Students who live alone 4.3 times (AOR = 4.30;95 % CI: 1.81–10.24), those who lives with their friends 5 times (AOR = 5.02: 95% CI: 2.24–11.24), and those who lives with their single parent 3 times (AOR = 3.31: 95% CI: 1.23–8.89) more likely experience life time sexual abuse than those living with their both parents.

Participants who did not have open discussion with their parents on sexual and reproductive health about 3 times more likely to experience sexual abuse as compared to those students who have had an open discussion with their parents (AOR = 2.93; 95 % CI: 1.33–6.45).

Respondents of rural residence were 2 times more likely experiencing sexual abuse than those respondents living in urban residence (AOR = 2.1; 95% CI: 1.79–3.45). Students who don't drink alcohol were 70% more protective than those who drink alcohol (AOR = 0.70: 95% CI: 0.28–0.97) (Table 5).

Table 5

Factors associated with child sexual abuse among high school female students in Dire Dawa administration, Eastern Ethiopia, March, 2021 (384).

Variables	Life time CSA		COR (95%CI)	COR (95%CI)
	Yes	No		
Respondents Age category				
14-15 years	84	9	1.00	1.00
16-17 years	159	250	0.40 (0.92, 2.95)	1.86 (0.52, 2.05)
18-19 years	90	82	1.80(1.19, 7.52)	1.20(0.19, 5.54)
>=20 years	51	60	0.53 (0.43, 0.99)	0.33 (0.12, 1.93)
Marital status of respondents				
Married	7	32	1.00	1.00
Single	377	369	2.0 (1.135, 3.726)	2.156(0.674, 6.89)
Father's educational status				
Above secondary	142	251	1.00	1.00
Below secondary	242	150	5.59(2.28,13.9)	4.69(1.84,11.95)
Living arrangement with				
Both parents	76	90	1.00	1.00
Single parent	90	93	3.00(1.19, 7.54)	3.31(1.23, 8.89)
Friends	192	198	5.02(2.24,11.24)	5.02(2.24,11.24)
Alone	26	20	4.30(1.81, 10.24)	4.30(1.81, 10.24)
Have you open discussion on SRH?				
Yes	154	254	1.00	1.00
No	230	147	3.17(1.53,6.58)	2.93(1.33,6.45)
Family Monthly income				
<5000 ETB	200	156	1.00	1.00
5000-9999 ETB	105	95	5.08(2.44, 10.55)	3.82(1.76, 8.31)
10000-15000 ETB	67	90	2.5(1.22, 7.08)	0.42(0.92, 6.98)
>15000 ETB	12	60	0.53(0.22, 0.99)	0.50(0.08, 0.87)
Residence of respondents				
Urban	225	301	1.00	1.00

Rural	159	100	1.5(0.92, 3.55)	3.2(3.02, 4.51)
Substance use (drink alcohol).				
Yes	333	180	1.00	1.00
No	51	221	0.53(0.22-0.99)	0.70(0.28-0.97)
Having friend who drink alcohol				
Yes	148	50	1.00	1.00
No	236	351	0.32(0.12-0.79)	0.50(0.08-0.87)

Qualitative results support this finding: participants of a FGD, point out that, drinking alcohol by girls or perpetrators, chewing khat, using hashish, and dressing styles are the major factors for sexual abuse. One female discussant strongly agreed for the idea that says alcohol and khat as contributing factors for sexual abuse, "….it is very common in this area that boys take girls to khat and hashish houses and make her drunk, and then they will do what they wanted on her"

One 33 years old female school director in FGD from other group said "…. Even though it is her right for a girl to dress as she likes, females dressing style short dressing expose her to be abused…..". "..All discussant agreed that, dressing style is a major factor for a female student's exposure to sexual abuse especially by family members……."

One of a 10th grade 16 years female discussant stated that, "…. I know one female student who was rapped due to her own female friend pressure. Her female friend takes her to her boyfriend's home, and make her to chew Khat with them, and then followed by hashish. Finally, because her girly friend prepared her to be raped by the friend of her boyfriend and she was raped ……"

Another 18 years grade 12th female student in a focus discussion said that," …… Physical force used by some of the perpetrators, use of Hashish or other drugs by girls or perpetrators, some females raped by use of authority by the perpetrators and some during sleep.

The focus group discussants were asked if there is any condition for a boy to have sexual intercourse without females will, and the participants said that, "……it is acceptable if she is wearing short dresses, if she is his wife, if she is willing to spend the night with him, if she is willing to go to home hotel with him, if both were sexually exited, if she is his girlfriend…."

Discussion

The magnitude of sexual abuse among children varies substantially in different studies. This study revealed that, the life time magnitude of at least one form of sexual abuse were, 384 (48.9%). This finding is consistent with studies conducted among female students in Wolayta Soddo, Ethiopia, 45.4% (27),

Mekelle town, Ethiopia, 45.4% (33), Bahir Dar city, Ethiopia, 49.1% (30), India, 47.0% (28), South West Nigeria, 42.1 % (29), and Japan, 52.5% (34). But our study result was much higher than the study conducted among high school adolescents in Addis Ababa, Ethiopia, 12.7 % (35), Harari Regional State, Ethiopia 25% (31), and Butajira, southern Ethiopia, 32.8% (36). But the result was lower than studies conducted in South west Ethiopia, 68.7% (32), and southern brazil 56% (37).

These discrepancies may be due to social and cultural differences between the study subjects in reporting sexual abuse like fear of stigma (because it results decrease the probability of engaging in marriage once disclosed), could be due to lack of knowledge about sexual abuse, could be also due to deference in the time of the study, and could be also the socio-demographic difference of the study populations.

The finding of this study indicated that, the life time magnitude of rape was found to be 19.1 % (95 % CI: 18.3–23.7). This finding is similar with the studies conducted among school adolescents in Bahir Dar city, Ethiopia, 16.7% (30), and in Addis Ababa, 23% (35). But our study result was higher than the studies conducted in Butajira, 6.3% (36), in Arbaminch town, 11.0% (38), and in Debark, Ethiopia, 8.8% (17). These discrepancies may be due to social and cultural differences between the study subjects in reporting sexual abuse like fear of stigma (because it results decrease the probability of engaging in marriage once disclosed), could be due to lack of knowledge about sexual abuse, could be also due to deference in the time of the study, and could be also the socio-demographic difference of the study populations.

Parent-adolescent communication on sexual and reproductive health related issue is crucial for adolescents to learn and share life experiences on SRH from families which help them to prevent risky sexual behavior. This study revealed that, female students who haven't had open discussions with their parents about SRH, were about 3 times more likely experiencing sexual abuse as compared to those students who have had open discussions with their parents (AOR = 2.93: 95%CI: 1.33–6.45).

This finding is consistent with a study conducted in Bahir Dar town, Ethiopia, and Arbaminch town, Ethiopia where the odds of experiencing lifetime rape was much higher among students who never had open discussions with parents on SRH than those who have had it (30, 38). This might be because most students and families consider open discussions about sexual issues as a shame and taboo in Ethiopian cultures, resulting in reluctance and fear to discuss and address sexual health issues. Consequently, this leads to missing opportunities of getting experiences and life skills from parents on the prevention of sexual abuse.

Our study again showed that, Students who live alone 4.3 times (AOR = 4.30;95 % CI: 1.81–10.24), those who lives with their friends 5 times (AOR = 5.02: 95% CI: 2.24–11.24), and those who lives with their single parent 3 times (AOR = 3.31: 95% CI: 1.23–8.89) more likely experience life time sexual abuse than those living with their both parents. These findings are in line with the studies done among high school students in Arbaminch town, Ethiopia, in Harar, and in South East Nigeria (38, 39, 40). The possible explanation could be, children who live with their parents are under direct monitoring and follow up, and

the parents care their daughter more than their friends and relatives, and this minimize their chance of exposure to sexual abuse.

Some studies done in Ethiopia underlined the use of alcohol as contributing factors for sexual abuse (13). Similarly, the finding of this study revealed that, respondents having history of alcohol consumption, and those having drunken peers/friends were higher risk of experiencing sexual abuse than their counter part. Students who don't drink alcohol were 70% less likely experienced sexual abuse than students who drink alcohol (AOR = 0.70; 95%CI: 0.28–0.97). Moreover, the odds of experiencing sexual abuse were 2 times higher for those respondents who had a close friend drinking alcohol (AOR = 2.0, 95%CI: 1.09–5.43) than their counter part. This finding also supported by the study conducted in Bahirdar town, Ethiopia (30). This could be explained by the fact that, alcohol leads to reduce the decision-making ability of an individual on her own sexual and reproductive health matters.

Some study findings show that socio economic characteristics has nothing to do with child sexual abuse. They found no significant link between child sexual abuse and socioeconomic background such as father's occupation, residence (urban or rural), and average family monthly income (41).

Contrary to this, our study showed that, rural residence was strongly associated with child sexual abuse. But fathers occupation and education has no association with child sexual abuse.

Students from rural residence were 3.2 times more likely experiencing sexual abuse than those students from urban residence (AOR = 3.2: 95% CI: 3.02–4.51). Similarly, studies conducted in Bahir Dar city, and other part of Ethiopia, among female students showed, female students whose childhood background from rural areas were four times more likely to have had sexual abuse (AOR = 4.51, 95%CI: 1.67–12.16) (27, 30).

The possible explanation could be, students from urban, relatively have better access to information through youth associations, youth centers, the media and the environment itself. However, their counterparts from rural areas might lack such chances because of low awareness of the society which inhibits free and open discussion about reproductive and sexual issues. This can support the existence of sexual abuse.

The most frequently reported reproductive health consequences as a result of sexual abuse (rape) in this study were: 64 (37.9%) ended up with an unwanted pregnancy, 26.0% of them aborted, 39 (26.0%) of them developed STI (vaginal discharge), and 10.1% have had vaginal bleeding immediately after the act. This finding is similar with the study conducted in Harar high school students, which showed that unwanted pregnancy (44.2%), abortion (32.2%), vaginal discharge (28.6%), and genital trauma (25%), were the most common consequences of rape (31). Again, our study result was similar with the studies conducted in Addis Ababa and Debark town of north Gondar zone, which showed consequences of forced sex as reported by the respondents were: injury around the genitalia (33.3%), unusual vaginal bleeding (20%), pregnancy (16.7%), and swelling around the genitalia (13.3%) (35, 17).

This result is also supported by the qualitative findings. A 40 years male key-informant health worker said that "…. a number of students come to health facility for examination had faced some sort of complications after being raped; genital tear and bleeding if examined immediately, unwanted pregnancy, abortion, and STIs lately were the most common ones.

Limitations of the study

Since our study topic assesses personal and sensitive issues related to sexuality, this might have caused underreporting of experiences of sexual abuse. Thus, the findings of this study should be interpreted within these limitations.

Conclusion

This study found that child sexual abuse is still a common problem among high school female students in Dire Dawa administration. The study revealed that, almost half of female students were experienced life time at least one form of sexual abuse, and around one-fifth of the participants were raped. Lack of discussion about sexual issue with parents, living without both parents, drinking alcohol, being rural residence, had significant association with child sexual abuse. Unwanted pregnancy, abortion, and STIs were the most common reproductive consequences of sexual abuse. Therefore, School based awareness creation on the nature, legal aspects and consequences of sexual abuse and provision of comprehensive school based SRH education including victimization prevention programs, life skill training, besides formal education.is recommended in order to reduce the problem.

Abbreviations

ASRH-Adolescent sexual and reproductive health; **AIDS**-Acquired immune-deficiency syndrome; **CRC**-Convention on the rights of the child; **CSA**-Child Sexual Abuse; **CDC**-Center for disease control; **DDU**-Dire Dawa University; **FGD**-Focus group discussion; **HIV** –Human Immune Deficiency Virus; **IDI**- in-depth interview; **SRH**- Sexual and reproductive health; **STDs**- Sexual Transmitted Diseases; **STI** – Sexually Transmitted Infections; **TVET** –Technical Vocational Education Teaching; **UNICEF**- United Nations International Children 's Fund; **WHO**-World health organization.

Declarations

The study was conducted after getting ethical clearance from the ethical clearance committee of Dire Dawa University. Then, data was collected after getting oral and written consent from all study participants after the provision of information on the purpose and procedures, potential risk and benefits so encourage the provision of accurate and honest responses. The participants were assured that they have full right to participate or withdraw from the study. For students less than 18 years, one day before the actual study, we sent the information sheet (contains a detail description of the aim of the study, the

benefit of the study, that the study has no risk, and the confidentiality issues) for parents and we obtained assent.

Consent for publication

not applicable.

Availability of data and materials

All the necessary data for this study were included in this manuscript.

Competing of interest

The authors declare that they have no competing interests.

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Authors' contributions

LA: was made substantial contributions from the start of the research idea to proposal development, data collection, analysis and interpretation of data and preparation of the manuscript.

KD, and AA: were participated in proposal development, data analysis and preparation of the manuscript for publication. All authors read and approved the final version of the manuscript.

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Figures

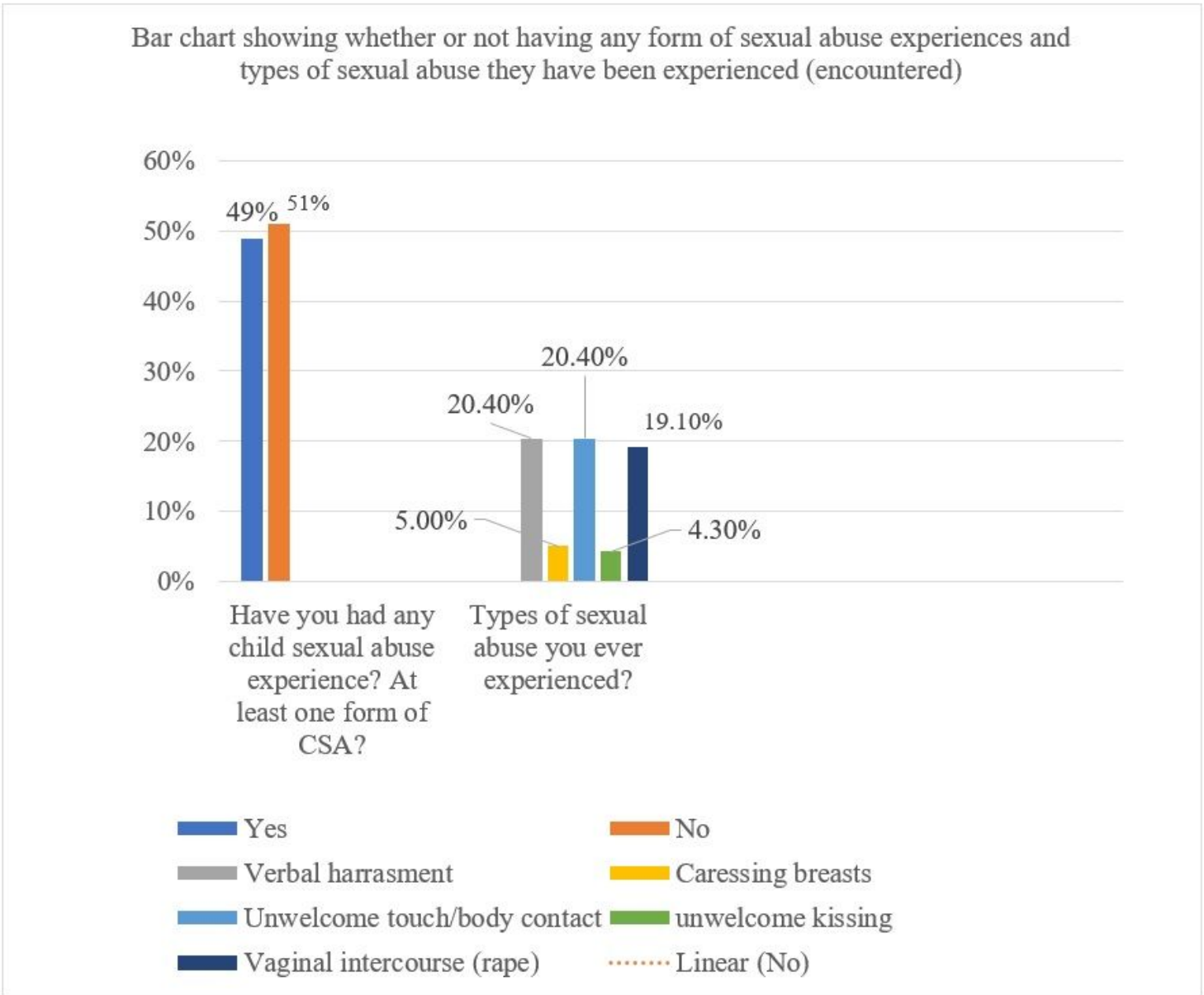

Figure 1

Magnitude and types of sexual abuse that the respondents ever experienced (encountered) in their life time in Dire Dawa administration, Eastern Ethiopia., March, 2021.

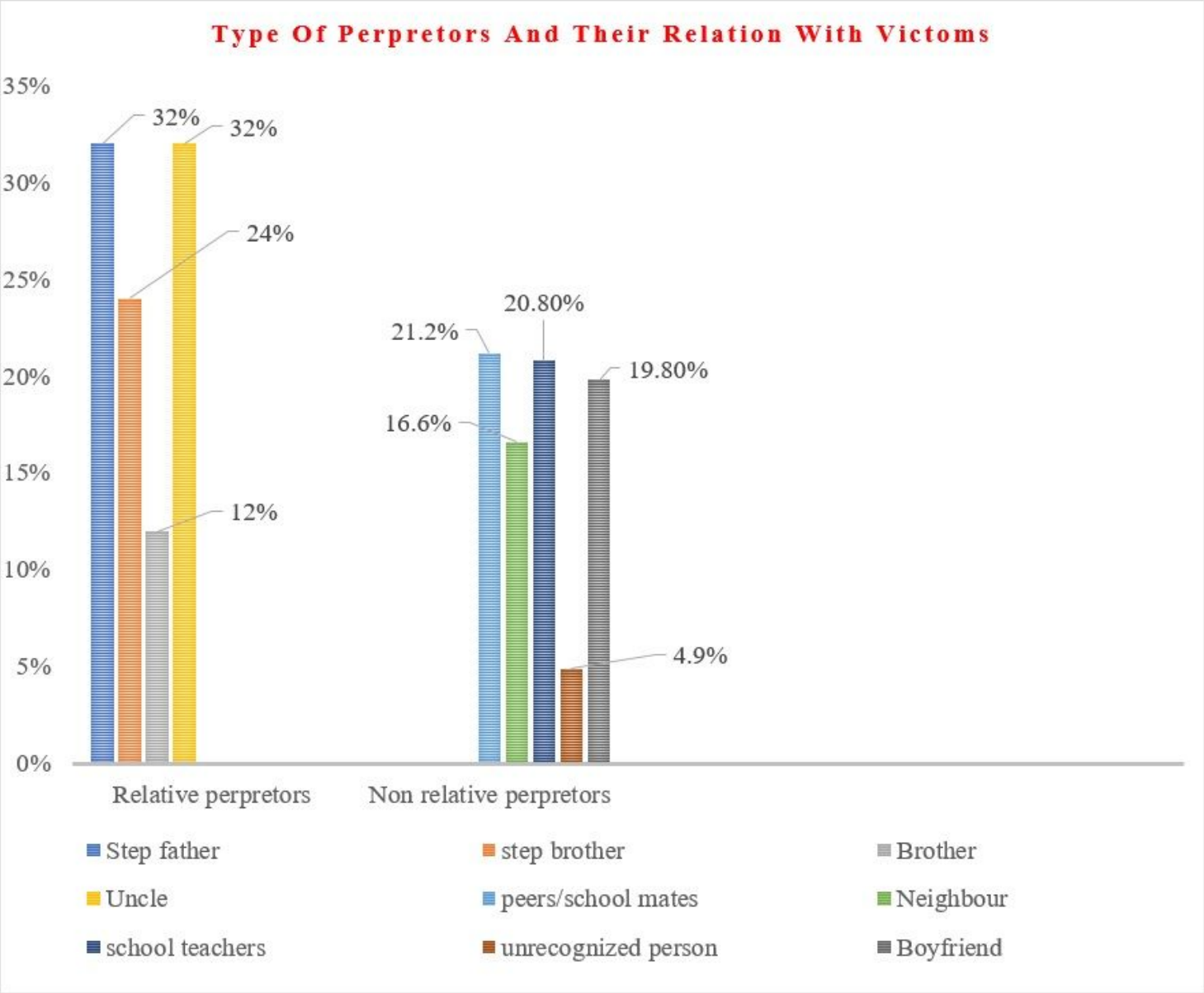

Figure 2

Perpetrators and their relation with victims for the study of childhood sexual abuse experiences and its associated factors among high school female students in Dire Dawa administration, Eastern Ethiopia., March, 2021.

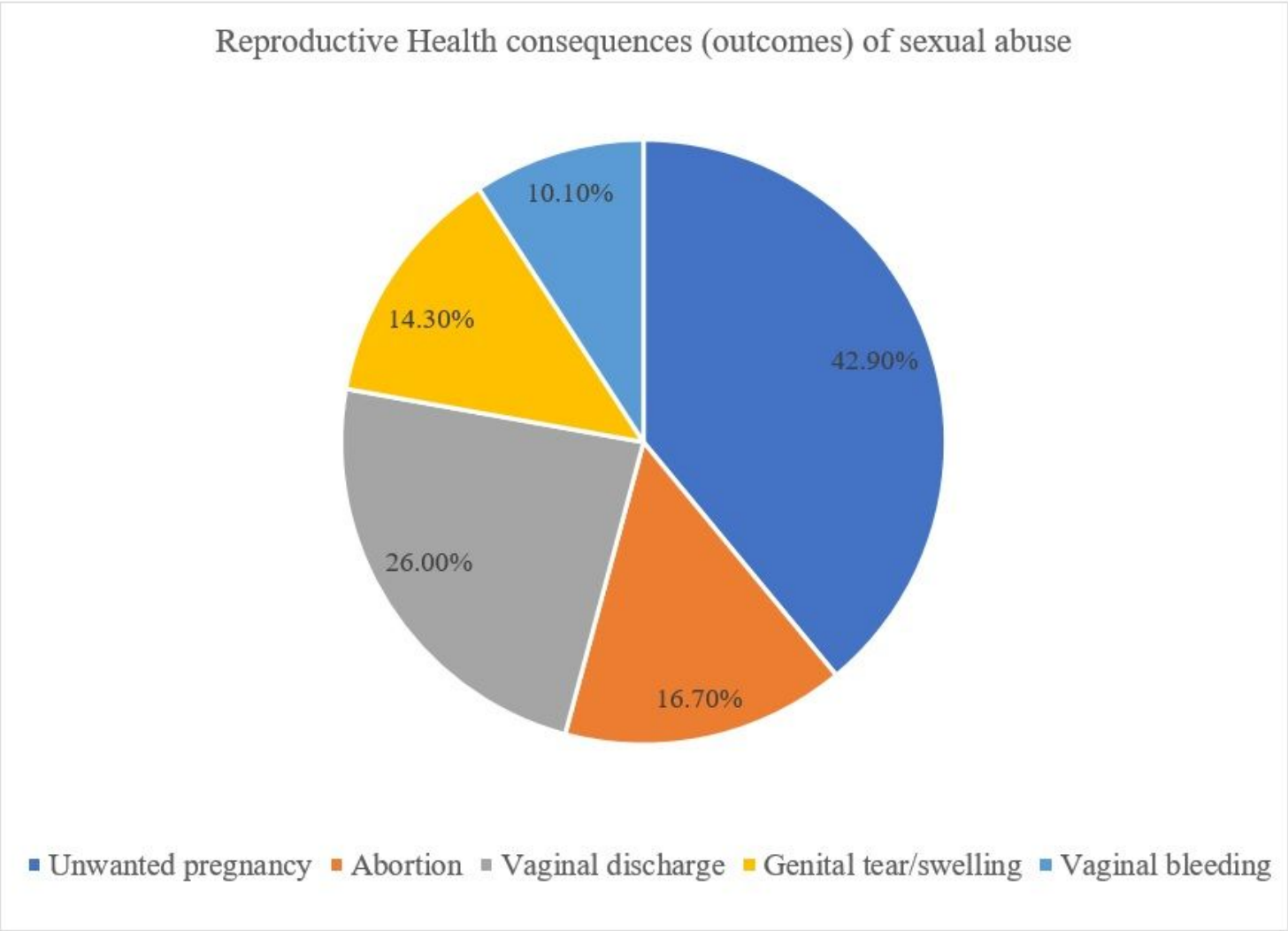

Figure 3

Reproductive health consequences of sexual abuse for the study of child sexual abuse and its associated factors among high school female students in Dire Dawa administration, Eastern Ethiopia, March, 2021.