Contraceptive use among reproductive-age females with disabilities in central Sidama National Regional State, Ethiopia: a multilevel analysis

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Background: Contraceptive use is an important and cost-effective intervention to prevent unwanted pregnancies. People with disabilities face discrimination when it comes to using contraception and are doubly burdened by unwanted pregnancies. However, the status of contraceptive use and associated factors among reproductive-aged females with disabilities was not adequately determined in Ethiopia . **Objective:** This study aimed to assess contraceptive use and associated factors among reproductive-age females with disabilities in Dale and Wonsho districts and Yirgalem city administration of central Sidama National Regional State, Ethiopia. **Methods:** A community-based cross-sectional study was conducted among randomly selected 620 reproductive-age females with disabilities living in the selected districts from June 20 to July 15, 2022. The data were collected through face-to-face interviewing techniques using a structured questionnaire. A multilevel logistic regression analysis model was employed to analyze the data. The adjusted odds ratio (AOR) with a 95% confidence interval (CI) was used to report the measures of associations. **Results:** In this study, 27.3 % (95% CI: 23.8 %, 31.0 %) of the reproductive-age females with disabilities were current contraceptive users. Regarding the methods, 82 (48.5%) of the reproductive-age females with disabilities used implants. Having good contraceptive knowledge (AOR = 9.03; 95% CI: 4.39, 18.6), transport accessibility to health facilities (AOR=2.28; 95% CI: 1.32, 3.94), being an adult (25 to 34 years old) (AOR = 3.04; 95% CI: 1.53, 6.04), having a hearing disability (AOR = 0.38; 95% CI: 0.18, 0.79), having paralysis of the extremities (AOR = 0.06; 95% CI: 0.03, 0.12), and wheel-chaired disability (AOR = 0.10; 95% CI: 0.05, 0.22) were factors associated with contraceptive use. **Conclusion:** Contraceptive use among reproductive-age females with disabilities is low. Transport accessibility, contraceptive knowledge, being in the age groups of 25 to 34 years, and the types of disability determine their contraceptive use. Therefore, designing appropriate

strategies to provide contraceptive education and information and provide contraceptive services in their homes is important to enhance contraceptive use.

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2 Regional State, Ethiopia: a multilevel analysis

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Abstract

Background: Contraceptive use is an important and cost-effective intervention to prevent unwanted pregnancies. People with disabilities face discrimination when it comes to using contraception and are doubly burdened by unwanted pregnancies. However, the status of contraceptive use and associated factors among reproductive-aged females with disabilities was not adequately determined in Ethiopia.

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Methods: A community-based cross-sectional study was conducted among randomly selected 620 reproductive-age females with disabilities living in the selected districts from June 20 to July 15, 2022. The data were collected through face-to-face interviewing techniques using a structured questionnaire. A multilevel logistic regression analysis model was employed to analyze the data. The adjusted odds ratio (AOR) with a 95% confidence interval (CI) was used to report the measures of associations.

Results: In this study, 27.3 % (95% CI: 23.8 %, 31.0 %) of the reproductive-age females with disabilities were current contraceptive users. Regarding the methods, 82 (48.5%) of the reproductive-age females with disabilities used implants. Having good contraceptive knowledge (AOR = 9.03; 95% CI: 4.39, 18.6), transport accessibility to health facilities (AOR=2.28; 95% CI: 1.32, 3.94), being an adult (25 to 34 years old) (AOR = 3.04; 95% CI: 1.53, 6.04), having a hearing disability (AOR = 0.38; 95% CI: 0.18, 0.79), having paralysis of the extremities (AOR = 0.06; 95% CI: 0.03, 0.12), and wheel-chaired disability (AOR = 0.10; 95% CI: 0.05, 0.22) were factors associated with contraceptive use.

Conclusion: Contraceptive use among reproductive-age females with disabilities is low. Transport accessibility, contraceptive knowledge, being in the age groups of 25 to 34 years, and the types of disability determine their contraceptive use. Therefore, designing appropriate strategies to provide contraceptive education and information and provide contraceptive services in their homes is important to enhance contraceptive use.

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Introduction

More than one billion people in the world are estimated to have disabilities. The majority of them are from developing countries (Zziwa Swaibu, Babikako Harriet et al. 2019). People with disabilities are the most discriminated against and marginalized group in many countries, particularly in developing countries, including Ethiopia (MacKay Don 2006, Hosseinpoor, Stewart Williams et al. 2013). In Sidama National Regional State, Ethiopia, we have observed that many females with disabilities are sacrificing themselves with unwanted pregnancies and unwanted children. Due to these problems, women with disabilities have been facing many challenges and have spent their lives begging around the roads and in churches with their unwanted pregnancies and children.

Contraceptive methods are chemicals, drugs, and surgical procedures used to prevent unwanted pregnancy (Jain and Muralidhar 2011). Although people with disabilities have a reproductive right to access and use contraception, coverage of contraceptive use in developing countries, including Ethiopia, is low when compared to developed countries. This is evidenced by the fact that 70.1% (Haynes, Boulet et al. 2018) of disabled women in the United States of America, 67.4% (Aslan, Yılmaz et al. 2021) in Turkey, 34% (Olajide, Omisore et al. 2014) in Nigeria, 26.9% (Trani, Browne et al. 2011) in Sierra Leone, 26.1% (Ayiga and Kigozi 2016) in Uganda, 17% (Kumi-Kyereme 2021) in Ghana, 16% (Odhiambo 2012) in Kenya, and 18% (Beyene, Munea et al. 2019) to 34% (Yesgat, Gebremeskel et al. 2020) in Ethiopia have access to contraceptives.

In Ethiopia, various factors associated with contraceptive use among females with disabilities were identified. Of the reported factors, marital status, age, types of disabilities, knowledge and attitude towards family planning methods, the presence of nearby health facilities providing family

80   planning services, keeping confidentiality and privacy in the health facility, having a good self-

81   perception, and educational and economic status were the most common (Tsegay, Gebremariam

82   et al. 2017, Beyene, Munea et al. 2019, Yimer Awol Seid 2019, Mekonnen Alemayehu Gonie,

83   Bayleyegn Alebachew Demelash et al. 2020, Yesgat, Gebremeskel et al. 2020). Not only do the

84   factors listed above influence contraceptive use, but disability, such as types of disabilities and

85   contraceptive methods, also has an administrative impact on contraceptive use.

86   In Ethiopia, few studies were conducted to determine the prevalence of contraceptive use and

87   associated factors among reproductive-age females with disabilities from 2013 to 2019 (Tsegay,

88   Gebremariam et al. 2017, Beyene, Munea et al. 2019, Yimer Awol Seid 2019, Mekonnen

89   Alemayehu Gonie, Bayleyegn Alebachew Demelash et al. 2020, Yesgat, Gebremeskel et al. 2020).

90   These studies considered only urban female residents, deaf and blind females, and females enrolled

91   in supporting organizations and considered only individual-level factors. Contraceptive coverage

92   in these populations is also inconsistent, ranging from 18% (Beyene, Munea et al. 2019) to 34%

93   (Yesgat, Gebremeskel et al. 2020).

94   Therefore, this study aimed to determine the prevalence of contraceptive use and its associated

95   factors among reproductive-age females with disabilities by considering rural and urban residency,

96   all types of disability (except mental disability), and individual and community-level factors.

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104 **Methods and materials**

105 **Study design and setting**

106 A community-based cross-sectional study was conducted from June 20 to July 15, 2022, to
107 determine the prevalence and factors associated with contraceptive use among reproductive-age
108 females with disabilities in Sidama National Regional State, Ethiopia. The study was conducted in
109 the Dale and Wonsho districts and in the Yirgalem city administration. According to the Sidama
110 National Regional State Report (2021), the total population of Dale and Wonsho districts and
111 Yirgalem city administration was 469,455 (Sidama Region Health Bureau 2021, Sidama Region
112 Health Bureau 2022). The two districts are the health and demographic surveillance sites of
113 Hawassa University. Both districts are known for their coffee production and highly dense
114 populations. In the districts and city administration, there are 56 rural and 10 urban kebeles (the
115 lowest political administrative units in Ethiopia). The districts and city administration have one
116 hospital, 16 health centers, and 54 health posts.

117 **Population**

118 Reproductive-age females with disabilities in Dale and Wonsho districts and Yirgalem city

119 administration in Sidama National Regional State were the source population. Reproductive-age

120 females with disabilities who lived in the selected kebeles for at least six months were the study

121 population, except for those who have dual disabilities (i.e., cannot see and hear) and are seriously

122 ill during the data collection time.

123 **Sample size and sampling procedure**

124 The sample size for the first objective (prevalence) was determined by using Epi Info version 7

125 software with the assumptions of a 95% confidence interval with 33.7% contraceptive use among

126 reproductive-age women with disability (Yibeltal Mesfin Yesgat, Feleke Gebremeskel et al. 2020),

127 a level of significance (α) of 0.05, a 5% margin of error (d = 0.05), and a design effect of 1.64. The

128 sample size for factors associated with contraceptive use was also computed using Epi-Info version

129 7 with the assumptions of a two-sided confidence level of 95%, a power of 80, a ratio of one

130 (unexposed: exposed), and a percent outcome in the unexposed group (14.5) versus a percent

131 outcome in the exposed group (24.5). Accordingly, the maximum (530) sample size was

132 determined by marital status (Beyene, Munea et al. 2019). The sample size from the prevalence of

133 563 was larger than the associated factors' maximum sample size of 530. After adjusting for an

134 anticipated 10% nonresponse rate, the final sample size was 620.

135 The sample size was proportionally allocated to the randomly selected 30 kebeles (20 rural and 10

136 urban) based on the number of reproductive-age females with disabilities. Before conducting this

137 study, a house-to-house census was done to determine the number and identify reproductive-age

138 females with disabilities in each kebele. Reproductive-age females with disabilities were registered

139 during the census using the tracing form. The registration form was used to select study participants

140 using a simple random sampling technique.

141 **Variables**

142 The outcome variable was contraceptive use. Whereas the independent variables were marital

143 status, age, types of disability, educational status, knowledge about family planning, income, self-

144 perception, attitude toward family planning, health care providers' attitudes, the presence of family

145 planning provision at a nearby health facility, and the keeping of confidentiality and privacy by

146 the health facility.

147 **Data collection procedures and quality assurance**

148 The questionnaires (data collection tools) were developed by reviewing different existing

149 literature, like EDHS 2016 (Central Statistical Agency (CSA) [Ethiopia] and ICF 2016, Mekonnen

150 Alemayehu Gonie, Bayleyegn Alebachew Demelash et al. 2020, Yesgat, Gebremeskel et al. 2020),

151 which consists of personal and socio-demographic characteristics and contraceptive use-related

152 issues. After developing and pretesting the data collection tool, six data collectors and one

153   supervisor who are fluent speakers of Sidamu Afoo and who have data collection experience were

154   employed. The data were collected through face-to-face interviewing techniques using structured

155   questionnaires. Two of the data collectors were proficient in sign language and collected the data

156   from reproductive-age females with hearing disabilities. The interview was conducted in a place

157   where confidentiality and privacy are assured. To assure the quality of the data collection, a three-

158   day data collector training was given. The data collection tool was first prepared in English and

159   then translated into Afoo-Sidamu, a local language, and then back to English to check the

160   consistency. The trained data collectors did a pre-test on 31 (5%) reproductive-age females with

161   disabilities in *Lokie kebele* Hawassa city to check the tools, and corrections were made based on

162   the feedback. The principal investigator (PI) monitors and controls the overall process of data

163   collection and makes appropriate corrections for any issues raised during data collection. The PI

164   also checked the completeness of the questionnaires daily.

165   **Data management and analysis**

166   The Kobo Collect version 2021.3.4 application was used to collect the data. Following collection,

167   the data were imported into Stata version 16 for analysis using the "SSC install kobo2stata"

168   command. The cleaning and organizing of the data were done in Stata. The types of variables were

169   clarified, and the distribution was checked by running the frequency for categorical data and mean

170    $\pm$ SD (standard deviation) for continuous variables. A multilevel logistic regression analysis model

171   was used to account for the kebele level. Before using the multilevel logistic analysis model, we

172   checked the intraclass correlation coefficient (ICC) level with the chi-square significance level to

173   determine whether using the multilevel logistic analysis model is justifiable. The ICC of0.12 and

174   its chi-square (P= 0.001) significance level showed that using a multilevel analysis model is

175   reasonable. Then, bi-variable multilevel logistic regression was done to identify eligible variables

176   (P-value<0.20) for multivariable multilevel logistic regression analysis. The multivariable

177   multilevel logistic regression was performed to check for the presence of an association between

178   level one or level two variables and contraceptive use. To determine whether a significant

179 association existed and its strength, variables with adjusted odds ratios with a 95% confidence

180 interval and a P-value <0.05 were considered.

181 **Ethical considerations**

182 The ethical clearance was obtained from the Institutional Review Board at the College of Medicine

183 and Health Sciences of Hawassa University with an approval number of Ref.No: IRB/143/14.

184 After approval, a support letter was written to the Sidama National Regional Public Health

185 Institute. Then, after obtaining the support letter from Sidama National Regional Public Health

186 Institute, the permission and cooperation letter were given to the woreda health offices. Finally,

187 the woreda health offices wrote a permission letter to selected kebeles, asking them to cooperate

188 and give consent to conduct the study. Written consent was obtained from the study participants

189 to collect the data. There is no risk in participating in this survey. People with disabilities having

190 different health problems were linked to nearby health facilities for possible support and follow-

191 up.

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213 **Results**

214 **Socio-demographic characteristics of study participants**

215 A total of 620 reproductive-age females with disabilities were included in this study. The mean

216 (SD) age of the study participants was 28.12 (8.54) years. Of the study participants, 55.32% had no

217 formal education (illiterate) and almost all (98.90%) were not employed. Most (83.71%) of the

218 reproductive-age females with disabilities had no occupation, and 54.20% were married (Table 1).

219 **Contraceptive knowledge and attitude**

220 Among the study participants, 382 (61.6%) had good knowledge about contraceptives. Regarding

221 attitude, 303 (48.9%) of reproductive-age females with disabilities had a positive attitude towards

222 contraceptive use.

223 **Contraceptive use prevalence**

224 In this study, the overall prevalence of current contraceptive use among reproductive-age females

225 with disabilities was 27.3% (95% CI: 23.8, 31.0), of which 19.19% (95% CI: 16.17, 22.52) were

226 from rural residents and 8.06 (95% CI: 6.04, 10.49) were from urban residents. From the overall

227 contraceptive use, 20.3% (95% CI: 17.2, 23.7) were married, and 7% (95% CI: 5.06, 9.22) were

228 unmarried.

229 **Types of contraceptive methods used**

230 Of the contraceptive method users, 82 (48.5%) of the reproductive-age females with disabilities
231 used implants, followed by injectable (36%), oral contraceptive pills (12%), and intrauterine
232 contraceptive devices and condoms (4%).

233 **Reasons for not using contraceptives and their plan to use in the future**

234 This study tried to identify the possible reasons for not using contraceptives among the 451 non-
235 users of contraceptives of reproductive age females with disabilities. Of the respondents, the
236 majority, 161 (36%) did not use it due to a lack of information about contraceptives, and 23 (5%)
237 are due to the plan to have a baby in the near future (Figure 1). Regarding their future plans for
238 contraceptive use, 147 (32.59%) had the plan to use, 209 (46.34%) had no plan to use, and 95
239 (21.06%) were not sure about their future plans.

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242 **Factors associated with contraceptive use**

243 **Random effect model**

244 In the zero model (model I), 12 % of the variability in contraceptive use was at the community
245 level (kebele level). This may be attributable to other unobserved community factors (ICC = 0.12),
246 which were supported by the chi-square test (P<0.001). This finding also showed that using a
247 multilevel analysis model is reasonable.

248 **Fixed effect model**

249 In the bivariable logistic regression, marital status, education, occupation, self-perception, age,
250 transport accessibility, contraceptive knowledge, types of disability, and residence were
251 significantly associated with contraceptive use, but in the multivariable multilevel logistic
252 regression analysis (after adjusting for the possible confounders), contraceptive knowledge,
253 transport accessibility to the health facility, age, and types of disability were significantly
254 associated with contraceptive use.

255 Reproductive-age females with a disability who knew about contraceptives had nine (AOR = 9.03;
256 95% CI: 4.39, 18.6) times higher odds of contraceptive use compared with those who had no

257   contraceptive knowledge. On the other hand, reproductive-age females with disabilities who had

258   transport accessibility to health facilities had a twofold (AOR = 2.28; 95% CI: 1.32, 3.94) higher

259   likelihood of contraceptive use compared with those who had no transport accessibility. Regarding

260   age, reproductive-age females with disabilities who were 25 to 34 years old had three (AOR =

261   3.04; 95% CI: 1.53, 6.04) times higher odds of contraceptive use compared with those who were

262   in the age group of 15 to 24 years old. Participants with hearing disabilities were 62% (AOR =

263   0.38; 95% CI: 0.18, 0.79), those with extremity paralysis were 94% (AOR = 0.06; 95% CI: 0.03,

264   0.12), and those with wheel-chair disabilities were 90% (AOR = 0.10; 95% CI: 0.05, 0.22) less

265   likely to use contraceptives than their counterparts with vision disabilities (Table 2).

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271   **Discussion**

272   The prevalence of contraceptive method use among reproductive-age females with disabilities was

273   27.3%. In the multivariable multilevel logistic regression analysis, contraceptive knowledge,

274   transport accessibility to the health facility, being an adult (25 to 34 years old), and types of

275   disability were significantly associated with contraceptive use.

276   This study revealed that the contraceptive method use prevalence of 27.3% was almost similar to

277   the studies conducted in Uganda, 26.1% (Ayiga and Kigozi 2016), in Sierra Leone, 26.9% (Trani,

278   Browne et al. 2011) and in Ethiopia, 24.5% (Mekonnen Alemayehu Gonie, Bayleyegn Alebachew

279   Demelash et al. 2020) and 27.2% (Tsegay, Gebremariam et al. 2017). On the other hand, the

280   prevalence of contraceptive use in the current study is higher than in the previous studies conducted

281   in Kenya, 16% (Odhiambo 2012), Ghana, 17% (Kumi-Kyereme 2021), and in Ethiopia 18%

282   (Beyene, Munea et al. 2019). The possible reasons might be the long time interval between

283   previous studies (2008) (Odhiambo 2012) and our study (2022). And, due to age group differences

284   in the study population, school young people in the previous study (Kumi-Kyereme 2021) and

285   reproductive-age females with disabilities in the current study. And alsodue to information bias

286   from the source of data, since the information was collected from caregivers (Odhiambo 2012).

287   The other possible elucidation might be due to sample size differences. However, the prevalence

288   of contraceptive use is lower than the studies conducted in Namibia, 32.7% (Loeb and Grut 2005),

289   Nigeria, 34% (Olajide, Omisore et al. 2014) and in Ethiopia 34% (Yesgat, Gebremeskel et al.

290   2020). The possible justification might be that the Namibia study (Loeb and Grut 2005) was

291   conducted among married women with disabilities ,the chance of having unprotected sex increased

292   among married people, and people with disabilities have a higher desire to prevent pregnancy

293   (Casebolt M Tara, Singh Kavita et al. 2022).

294   In this study, contraceptive knowledge is found to be significantly associated with contraceptive

295   use. Those participants who had contraceptive knowledge had a higher chance of using

296   contraceptives compared with those who had no contraceptive knowledge. The finding is

297   consistent with the studies conducted in Uganda (Ayiga and Kigozi 2016) and Nigeria (Olajide,

298   Omisore et al. 2014). The possible justification might be due to the power of knowledge to create

299   awareness and overcome some cultural and social constraints that may act as a barrier to the use

300   of contraceptives (Beyene, Munea et al. 2019).

301   Those who had transport availability to the health facility had a greater chance of contraceptive

302   use when compared with those who had no transport accessibility to the health facility. As it is

303   known, most people with disabilities face a physical challenge (Olajide, Omisore et al. 2014) in

304   accessing health facilities. Due to this, transportation is very important for accessing health

305   facilities and getting contraceptive methods. Being an adult (25 to 34 years old) increased the

306   chance of contraceptive use when compared with the age group of 15 to 24 years old. The possible

307   justification is that the chance of marriage and unprotected sexual intercourse will increase among

308   25 to 34-year-old females with disabilities, and the chance of using contraception will also increase

309   due to the greater desire of people with disabilities to avoid pregnancy (Casebolt M Tara, Singh

310   Kavita et al. 2022). Compared with vision impairment, the probability of using contraceptives by

311   hearing-disability reproductive age females with disabilities had 62% lower odds of contraceptive

312   use, 94% lower odds of contraceptive use by extremity paralysis disabilities, and 90% lower odds

313   by wheel-chaired disabilities. This finding is inconsistent with studies conducted in Gondar, the

314   Amhara region, Ethiopia, and Addis Ababa. The studies revealed that the probability of

315 contraceptive use increased among vision-impaired females with disabilities when compared with
316 other types of disabilities (Beyene, Munea et al. 2019). The possible reason for the difference
317 might be that visually impaired females with disabilities had an increased chance of accessing
318 information access through different social media, most commonly radio. Radio is one of the most
319 accessible and effective channels of information transmission for people with disabilities in
320 developing countries, including Ethiopia (Beyene, Munea et al. 2019).

321 These findings may be important for different stakeholders who are concerned about reproductive-
322 age females with disabilities and their reproductive health services, specifically contraceptive use.
323 This study was conducted among all types of reproductive-age females with disabilities who reside
324 in urban and rural areas. In the previous studies, rural residents with disabilities were excluded
325 from the contraceptive use assessment studies. The other strength of this study was the use of
326 multilevel analysis to check the effect of kebele-level variables on contraceptive use. However,
327 due to the sensitivity and principles of contraceptive use, this study did not consider reproductive-
328 age females with mental disabilities. Therefore, this study could be generalized to all reproductive-
329 age females with disabilities except for mental disabilities.

330

Conclusion

332 Contraceptive use among reproductive-age females with disabilities, specifically among the unmarried, is
333 noticeably low in Dale and Wonsho districts and Yirgalem city administration, Sidama National Regional
334 State, Ethiopia. Contraceptive knowledge, accessible transportation to the health facility, being an adult (25
335 to 34 years old), and having specific types of disability were factors associated with contraceptive use
336 among reproductive-age females with disabilities. Therefore, designing appropriate strategies to provide
337 contraceptive education and information and provide contraceptive services in their homes is
338 important to enhance contraceptive use.

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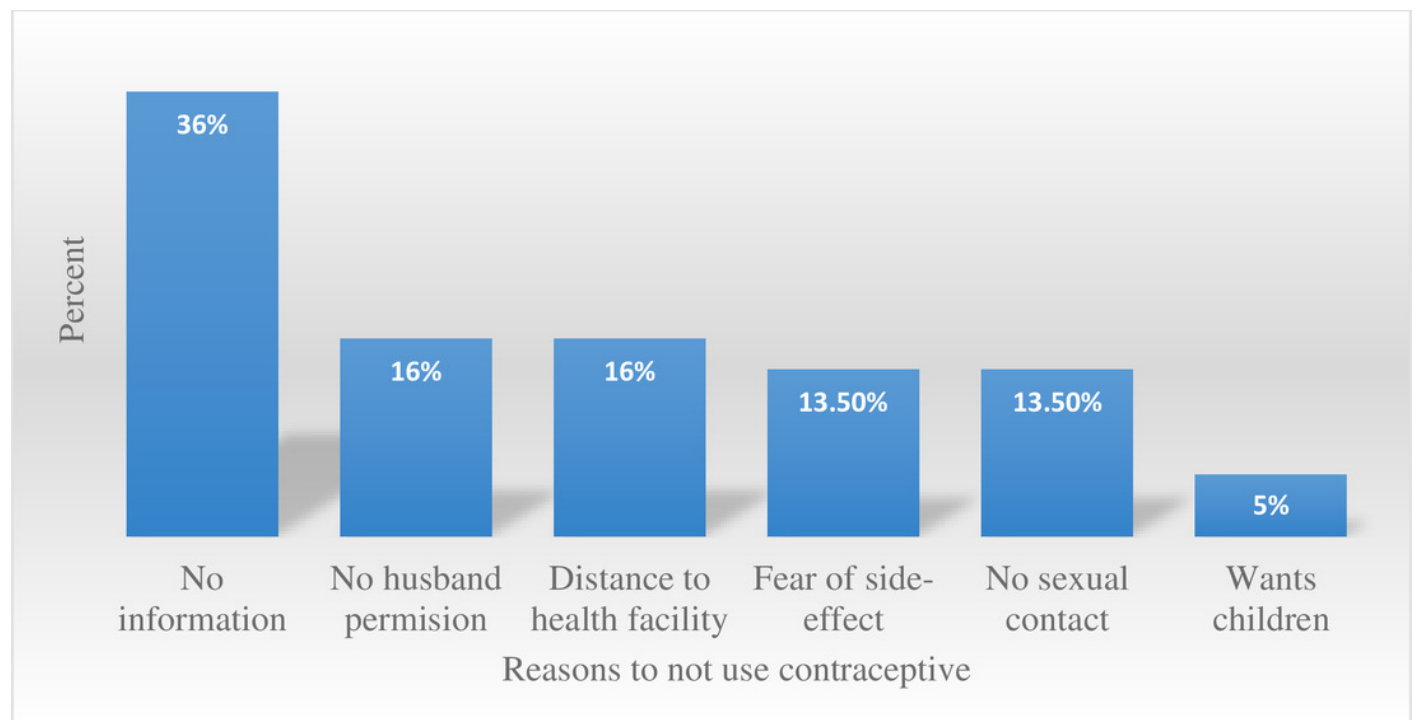
Figure 1

Reasons for not using contraceptives among reproductive-age females with disabilities in Sidama National Regional State, Ethiopia, 2022

Socio-demographic characteristics of reproductive-age females with disabilities in Sidama Regional Stata, Ethiopia, 2022 (N=620)

1 **Table 1:** Socio-demographic characteristics of reproductive-age females with disabilities in
2 Sidama Regional Stata, Ethiopia, 2022 (N=620)

Variable		Number	Percent
Age in years mean(SD)	28.12 (8.54)		
Marital status of the participants	Married	336	54.2
	Never married	239	38.6
	Widowed	20	3.20
	Divorced	25	4.00
Residency	Rural	381	61.45
	Urban	239	38.55
Participants educational status	Illiterate	343	55.32
	Primary school	192	30.96
	Secondary school	78	12.60
	Vocational and technique	7	1.12
Employment status	Employed	6	1.10
	Unemployed	538	98.90
wealth index of household	Low	216	34.84
	Medium	196	31.61
	High	208	33.55

Multilevel logistic regression analysis for factors associated with contraceptive use among reproductive-aged females with disabilities in Sidama National Regional State, 2022

1   **Table 2:** Multilevel logistic regression analysis for factors associated with contraceptive use

2   among reproductive-aged females with disabilities in Sidama National Regional State, 2022

Variables		Contraceptive		COR with 95% CI	AOR with 95% CI
		Use	Not use		
Marital status	Not married	48	238	1.00	1.00
	Married	121	215	2.79 (1.92,4.35)*	1.53 (0.87, 2.69)
Education	Illiterate	85	258	1.00	1.00
	Literate	84	198	1.30 (0.89,1.91)*	1.13 (0.68, 1.88)
Occupation	No occupation	130	389	1.00	1.00
	Have occupation	39	62	1.88 (1.02,2.68)*	1.17 (0.63, 2.16)
Self-perception	Bad	66	127	1.00	1.00
	Good	103	324	0.61 (0.41,0.92)*	0.99 (0.57, 1.70)
Age (Years)	15 to 24	28	193	1.00	1.00
	25 to 34	88	153	3.96 (2.61,7.22)*	3.04 (1.53, 6.04)**
	35 to 44	48	85	3.89 (1.89,6.02)*	2.20 (0.99, 4.85)
	45 to 49	5	20	1.70 (0.52,4.85)	2.09 (0.56, 7.83)
Transport accessibility	Yes	129	257	2.34 (1.52,3.59)*	2.28 (1.32, 3.94)**
	No	40	194	1.00	1.00
Distance to a health facility	$\geq$30 minutes on foot	56	90	1.39 (0.84, 2.30)*	1.17 (0.64, 2.11)
	<30 minutes on foot	113	361	1.00	1.00
knowledge	Knowledgeable	143	239	4.85 (2.97,7.90)*	9.03 (4.39, 18.6)**
	Not knowledgeable	26	212	1.00	1.00
Wealth index	Rich	67	141	1.21(0.76,1.92)	1.41 (0.77, 2.57)
	Medium	46	150	0.99(0.61,1.63)	1.22 (0.66, 2.24)
	Poor	56	160	1.00	1.00
Disability type	Hearing	30	100	0.26 (0.14,0.48)*	0.38 (0.18, 0.79)**
	Extremity	36	185	0.18 (0.10,0.31)*	0.06 (0.03, 0.12)**
	Wheel-chaired	40	84	0.39 (0.22,0.71)*	0.10 (0.05, 0.22)**
	Vision	63	82	1.00	1.00
Residence	Urban	50	189	0.65 (0.34,1.21)*	0.84 (0.42, 1.71)

Rural	119	262	1.00		1.00

3 *: P-value < 0.2; **: P-value < 0.05; AOR: Adjusted odds ratio; CI: Confidence interval