

Contraceptive Utilization And Associated Factors Among Polygamous And Monogamous Women In Worebabo Woreda, South Wollo Zone, Ethiopia: A Comparative Cross Sectional Study, Mixed Model

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1 **Original research**

2 **Title: Contraceptive Utilization And Associated Factors Among Polygamous**
3 **And Monogamous Women In Worebabo Woreda, South Wollo Zone,**
4 **Ethiopia: A Comparative Cross Sectional Study, Mixed Model**

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ABSTRACT

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28 **Background:-** Ethiopia is one of the most populated countries in Africa with a high fertility
29 rate. High population growth and unintended pregnancies are posing pressures where the
30 economy is incapable of holding overpopulation. Despite this problem, utilization of modern
31 contraception is low in rural areas of the country where most of the population resides,
32 especially in the areas where polygamy is common. Understanding modern contraceptive use
33 and the unmet need for family planning is important to changes in fertility and improving
34 reproductive health worldwide. Therefore, this study was conducted to assess contraceptive
35 utilization and associated factors among polygamous and monogamous women in worebabo
36 woreda, South Wollo Zone, Ethiopia.

37 **Method:** - A community-based comparative cross-sectional study design was conducted on
38 the total sample size of 774 selected married women of the reproductive age group by using a
39 multistage sampling method. A pre-tested interview with a structured questionnaire was used
40 to collect data. Determinant factors were analyzed by using bivariable and multivariable
41 binary logistic regression models. The odds ratio, with a 95% confidence level, was used to
42 declare a statistically significant association. A phenomenological study design and a
43 purposive sampling method were used for the qualitative part of the study.

44 **Result:** - A total of 703 married women of the reproductive age group were
45 interviewed, among these married women, 352 and 351 were in monogamous and polygamous
46 relationships. The proportion of women who use modern contraceptives was 161 (45.7%) in
47 monogamous relationship, and 151 (43.0%) in polygamous relationships. Overall, utilization
48 of modern contraceptives was significantly associated with the educational status of the
49 respondent, respondent type of religion, desire time for other children, who decides on the

50 number of children, getting clear information by Health care provider, family pressure to use
51 of modern contraceptive, fear of social stigma, and accept myths about contraceptives.

52 **Conclusion:** - This study identified that utilization of modern contraception is low in the study
53 area. Healthcare programmers at federal, regional, zonal, and woreda levels by collaborating
54 with other partners should initiate new initiatives or interventions that target cultural and social
55 relationships to encourage the utilization of modern contraceptive methods.

56 **Key words:**-Modern contraceptive utilization, Marital type, determinate factors

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Background

59 High fertility remains a public health problem, and the intention to reduce fertility is a global
60 phenomenon [1] . Contraception also known as family planning is defined according to the
61 World Health, as a process whereby individuals couples decide voluntarily, free from
62 coercion, desired or intended number of children, timing and spacing of their birth [2].
63 Nowadays, more attention is being given to family planning because of its multiple benefits in
64 improving both the health of children and women by reducing the risk of unintended
65 pregnancies.

66 Contraception, according to the global community, helps to prevent an estimated 2.7 million
67 infant deaths, the loss of 60 million healthy lives each year, and has the potential to reduce
68 poverty and hunger, particularly in developing countries [3]. Furthermore, if all unmet needs
69 for modern contraception in developing countries were met, the number of unplanned
70 pregnancies would drop from 89 million to 22 million per year, unplanned births from 30
71 million to 7 million per year, and induced abortions from 48 million to 12 million per year.
72 Fully meeting the unmet need for modern contraception would result in an estimated 76,000
73 fewer maternal deaths each year [4].

74 Compared to developed countries, modern family planning utilization is low in developing
75 countries. In developing countries in 2017, it is estimated that there are 1.6 billion women of
76 reproductive age (15–49) group, of these women 885 million want to avoid pregnancy, but
77 only 671 million of them are using modern contraceptives [5]. Regionally, for married women,
78 unmet need in sub-Saharan Africa is approximately 24%, twice the level of 12% in Latin
79 America and the Caribbean [6]. several studies reported that the utilization of modern
80 contraceptive service is determined by demographic and Economic characteristics, [7,8]
81 reproductive characteristics, personal and interpersonal factors, [9,10] the supply-side factors,
82 [11] access barriers, [12] and socio-cultural factors that are represented in the societal norms
83 and practices [13,14].

84 Achievement of Sustainable Development Goals (SDGs), particularly goals one (eliminate all
85 forms of poverty), three (ensure healthy lives and promote well-being for all at all ages), four
86 (ensure inclusive and equitable quality education and promote life-long learning opportunities
87 for all) and five (achieve gender equality and empower all women and girls) might be a mirage
88 without conscious efforts on the part of many developing countries to reduce population
89 growth [15]. So fertility to fall to those low levels, the increased use of modern contraceptive
90 methods plays a significant role especially in the developing countries [16].

91 Ethiopia is the second most populated country in Africa, The expected population of Ethiopia
92 by mid-2030 and 2050 will be 130.5 million and 165.1 million, respectively [17,18]. If the
93 rate of population growth continues, it will be a threat to the nation's economy and social
94 service [19]. In the past years, considerable efforts have been made by the government of
95 Ethiopia and various local and international partners to expand family planning programs and
96 services through building health infrastructure and the adoption of the health extension
97 package (HEP). However, according to the Ethiopian mini demographic health survey, the

98 2019 report indicates that the contraceptive prevalence rate was 41% while the 2015/16
99 Ethiopian health sector transformation plan was planned to achieve a contraceptive prevalence
100 rate to 55% in 2019/20 [20,21]. There was some increment in contraceptive prevalence rate,
101 while the increment was not sufficient enough to achieve the country planned in 2019/20 on
102 the area of health sector transformation plan.

103 Currently, it is more evident that fertility preference is affected by the socio-cultural
104 perspectives of a society. In developing countries, where socio-cultural identities are more
105 deeply rooted, these factors have a great effect on the utilization of modern contraceptive
106 methods [22]. Among these factors, one is the type of marriage especially polygamous union.
107 In most African countries man having more than one wife is acceptable with a lot of
108 attachment to children and wealth, bearing many children would mean security for the mother
109 [23]. The prevalence and effect of polygamous relationships may have serious reproductive
110 and health consequences for women [24].

111 In Ethiopia, the prevalence of polygamy was 11% in 2016 [21]. The key factor driving the
112 difference in women's fertility among polygamous women in rural Ethiopia appears to be
113 marital rank [25]. However, the impact of polygamy on the utilization of modern contraceptive
114 is not well studied. Therefore, this study was conducted to assess contraceptive utilization and
115 associated factors among polygamous and monogamous women in worebabo woreda, where
116 polygamous marriage is common. So that the study findings will contribute to the
117 development of context specific strategies and family planning programs in polygamous
118 communities.

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2. Methods and Material

124 Study design, setting and period

125 A community-based comparative cross-sectional and phenomenological study was carried out
126 in worebabo woreda, which is located in Amhara regional state's South Wollo zone. The
127 administrative center of Werebabu is Bistma, and it has a total of 24 kebeles. The total
128 population of the woreda in 2019 was 123,434. Data were collected from 30-08-2020 to 30 –
129 01- 2021 GC.

130 Population

131 Source population

132 For the quantitative study, the source population was all married reproductive-age women
133 living in Worebabo woreda, and for the qualitative study, key informants who were married
134 reproductive age women in polygamous and monogamous unions.

135 Study population

136 The study population consists of married women of reproductive age in selected kebeles, and
137 for qualitative research, it consists of selected, purposefully married reproductive age women
138 in polygamous and monogamous unions until sufficient information is saturated.

139 Inclusion and exclusion criteria

140 Inclusion criteria

141 All women who are married reproductive age group (15-49).

142 Exclusion criteria

143 Women who have a history of hestroctomy and who were critically ill during the data
144 collection period.

145 **Sample size determination**

146 "The sample size for the quantitative study is calculated using the double population
147 proportion formula, yielding 774 married reproductive-age women (each of polygamy and
148 monogamy family sample sizes is 387), based on the assumptions of a 24.4% and 14.0%
149 modern contraceptive utilization rate by monogamous and polygamous married
150 women respectively, [3] 5% margin of error, a 95% confidence level, and a 10% non-response
151 rate.

152 For the qualitative part of the study, uses 15 participants who are married women in
153 monogamous and polygamous relationships in the study area.

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155 **Sampling procedure**

156 For the quantitative part, a multi-stage sampling method was used to select study participants.
157 From the total of twenty four kebeles, fifteen kebeles are selected using the lottery method.
158 Pre-survey was conducted in selected kebeles to identify the number of married women in
159 monogamous and polygamous relationships and was used as a sampling frame. The total
160 sample size was allocated proportionally to each selected kebele by using the sampling frame
161 from the survey result, and participants were selected by using a simple random sampling
162 method. The data collector encountered more than one married woman in polygamous
163 relationships at one house and chose one participant using a simple random sampling method.

164 For qualitative data, a purposive sampling method was used to select candidates in both
165 polygamous and monogamous unions.

166 **Study variable**

167 The dependent variable was the utilization of modern contraceptive methods, and the
168 independent variables of the study were socio-demographic characteristics (women's age, age
169 of marriage, educational status, residence of living, duration after marriage, and wealth status),
170 reproductive history of the women (number of previous pregnancies, number of previous
171 deliveries, number of abortions, number of neonatal loss, number of still births, and fertility
172 desire), knowledge about modern contraceptives, and socio-cultural perspectives (perceived
173 acceptance by religious leaders, fear of social stigma, myths about contraceptives, family
174 pressure and perceived misconceptions' and fears of side effects of contraceptives).

175 **Operational definitions**

176 **Modern contraceptive utilization** is the main outcome variable (dependent variable), which
177 is dichotomized into modern contraceptive users and non-users [26].

178 **Modern contraceptive Users** are those women or whose husbands are using one of the
179 modern contraceptive methods (oral contraceptive pill, injectable, implants, IUDs, condom,
180 sterilization, or locational amenorrhea method) during the data collection time [26].

181 **Modern contraception non-users** are those women who or whose husband is not using a
182 modern contraceptive method during the data collection time [26].

183 **Misconceptions' and fears of side effects of contraceptives:** this variables were measured
184 using the "yes" and "no" answers. The variables were collected by the use of a questionnaire
185 and interviews [27].

186 **Monogamy:** refers to unions in which there is one man and one wife. It was measured by
187 "Yes" or "No" answers. The variables were collected by using the questionnaire and interview
188 [28].

189 **Polygamy:** refers to unions in which there is one man and more than one wife. It was
190 measured by “yes” or “no” answers. The variable was collected by the use of questionnaire
191 and an interview [28].

192 **Knowledge of FP:** refers to respondents’ previous knowledge regarding modern contraceptive
193 methods. This was measured by using “yes” or “No” questions and 1pt for yes and 0 pt for no
194 answers then based on cut off point(>4) respondent classified as having good knowledge or
195 poor Knowledge [29].

196 **Data collection tools and Quality control**

197 For the quantitative study, the data was collected using structured interview administered
198 questionnaires which adopted from different literatures [3,26,30,31]. The questionnaires were
199 translated into Amharic and back to English to ensure consistency. The data was collected by
200 eight health extension workers, which were selected from other unselected kebeles and
201 supervised by two BSC degree health professionals. Its quality was controlled by designing
202 proper data collection tools, pre-testing, and continuous supervision and before actual data
203 collection, training was provided to health extension worker data collectors for two days on
204 the data collection techniques to familiarize data collectors with the tool.

205 For the qualitative part using a semi-structured interview guide as a tool in-depth interview
206 was conducted on key informants to explore the experience of married women on the effect of
207 socio cultural factors toward utilization of modern contraception. The guide was constructed
208 from different literature [26,32] Increase the trust worthiness credibility was insured by
209 approaching each study participant’s friendly, ensuring privacy and confidentiality before
210 interview.

Data analysis

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212 Data were entered in Epi data 3.1 and it was checked, cleaned, and edited before analysis, and
213 it was exported to SPSS version 25 for analysis. Frequency distributions and cross tabulations
214 were used to check for missed values and outliers during the analysis. Descriptive statistics
215 were computed as frequency, percentage, and results were displayed using tables and graphs.
216 The relationship between the independent variable and the outcome variable was determined
217 using a multivariable binary logistic regression model. Model fitness was checked by Hosmer
218 and lemons test. The first bivariable analysis was made for each independent variable to
219 the outcome variable, and those variables resulting p-value less than 0.2 were entered into the
220 multivariable binary logistic regression model. In the final model, those variables with a p-
221 value less than 0.05 were considered as statistically significant, and they were presented by
222 odds ratio (OR), with a 95% confidence level (CI) to show the strength and direction of the
223 association.

224 The qualitative data, which was obtained from participants conversations, was audio-taped,
225 transcribed, translated and coded. The qualitative data was analyzed using thematic analysis.
226 The investigator was read the collected data repeatedly, and codes it. The coded data
227 categorized and then grouped in theme as per the objective of the study then it was displayed
228 and reduced. Finally, the reduced data was interpreted.

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RESULT

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237 A total of 703 married women of reproductive age were interviewed, yielding a 90.89%
238 response rate; 352 of these women are in monogamous relationships, while the remaining 351
239 are in polygamous relationships.

240 **Socio-demographic character**

241 For monogamy and polygamy, the mean age of respondents with standard deviation is 32.77
242 (7.68) and 37.65 (6.59), respectively. Concerning the educational status of the respondents,
243 44.3% and 51.6% of monogamous and polygamous women didn't have any formal
244 education, respectively, and the result shows a statistically significant difference at ($X^2 =$
245 13.88, P-value = 0.002) between the two groups. With regard to respondent occupation, 47.4%
246 and 53.0% Monogamous and polygamous women are farmers, respectively. Religion type
247 64.2% of monogamous women and 70.9% of Polygamous woman's are Muslim. In terms of
248 residence, 56% of monogamous women and 71.5% of polygamous women live in rural areas,
249 respectively. (Table 1)

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257 Table 2:- Socio-demographic character of Monogamous and Polygamous women in worebabo woreda, south
 258 wollo, Ethiopia, 2021.

Variable	Category	Monogamous women	Polygamous women
		No	No
Respondents Age	15-24	40 (11.4%)	21 (6.05%)
	25-34	166 (47.2%)	106 (30.2%)
	35-49	146 (41.5%)	224 (63.8%)
	Total	352	351
Educational status	No formal education	156 (44.3%)	181 (51.6%)
	Primary education	130 (36.9%)	138 (39.3%)
	Secondary and above	66 (18.8%)	32 (9.1%)
	Total	352	351
occupation	Farmer	167 (47.4%)	186 (53%)
	House Wife	109 (31%)	92 (26.2%)
	Business Woman	60 (17%)	60 (17.1%)
	Government employee	16 (4.5%)	13 (3.7%)
	Total	352	351
Religion	Muslim	226 (64.2%)	249 (70.9%)
	Orthodox	126 (35.8%)	102 (29%)
	Total	352	351
place of residence	Rural	197 (56%)	251 (71.5%)
	Urban	155 (44%)	100 (28.5%)
	Total	352	351
Years at first marriage	< 18 years old	175(49.7%)	207(59%)
	>= 18 years old	177(50.3%)	144(41%)
	Total	352	351
Husband age	15-24	14(4%)	0
	25-34	67(19%)	33(9.4%)
	35-49	271(77%)	318(90.6%)
	Total	352	351
Husband educational status	no formal education	116(33.0%)	148(42.2%)
	primary education	151(42.9%)	146(41.6%)
	secondary and above	85(24.1%)	57(16.2%)
	Total	352	351
Husband occupation	Farmer	218(61.9%)	190(54.1%)
	Business man	113(32.1%)	140(39.9%)
	Government employee	21(6.0%)	21(6%)
	Total	352	351

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261 **Reproductive Character**

262 Among all married women, 91.5% of monogamous and 78.3% of polygamous women have a
 263 history of pregnancy. Among these women, 22.2% and 21.4% of monogamous and
 264 polygamous women had 3-4 pregnancies, respectively. The result also shows that there is a
 265 statistically significant difference ($X^2=43.16$, P-value= 0.001) between the two groups and the
 266 number of pregnancies they had. In terms of abortion history, 7.7% and 14.5% of
 267 monogamous and polygamous women, respectively, had a history of abortion. With regard to
 268 the number of children a respondent has, 18.2% and 34.8% of monogamous and polygamous
 269 women have more than or equal to five children, respectively. (Table 2)

270 Table 2:- Reproductive Character of monogamous and polygamous women in worebabo worda in
 271 2021.

Variable	Category	Monogamous women	Polygamous women	X^2	P-value
		No	No		
History of pregnancy	No	30 (8.5%)	76 (21.7%)	23.6	0.000
	Yes	322 (91.5%)	275 (78.3%)		
	Total	352	351		
Number of pregnancy	1-2	197 (61.2%)	106 (38.5%)	43.16	0.000
	3-4	46 (14.3%)	26 (9.5%)		
	>=5	79 (24.5%)	143 (52%)		
	Total	322	275		
Number of delivery	0	38 (10.8%)	80 (22.8%)	78.07	0.034
	1-2	217 (61.6%)	103 (29.3%)		
	3-4	31 (8.8%)	74 (21.1%)		
	>=5	66 (18.8%)	94 (26.8%)		
	Total	352	351		
History of still birth	No	305 (86.6%)	300 (85.5%)	0.20	0.65
	Yes	47 (13.4%)	51 (14.5%)		
	Total	352	351		
History of abortion	0	235 (66.8%)	292 (83.2%)	31.58	0.000
	1	104 (29.5%)	59 (16.8%)		
	2	13 (3.7%)	0		
	Total	352	351		

Number of live children	0	101 (28.7%)	90 (25.6%)	16.81	0.001
	1-2	151 (42.9%)	115 (32.8%)		
	3-4	36 (10.2%)	38 (10.8%)		
	>=5	64 (18.2%)	108 (30.8%)		
	Total	352	351		
women's desire to next child	Less than two years	114 (32.4%)	99 (28.2%)	1.51	0.367
	After two years	124 (35.2%)	134 (38.2%)		
	no desire	114 (32.4%)	118 (33.6%)		
	Total	352	351		
Respondents husband number of desired children	same number	112 (31.8%)	44 (12.5%)	106.1	0.554
	more children	112 (31.8%)	241 (68.7%)		
	Fewer children	128 (36.4%)	46 (13.1%)		
	Don't know	0	20 (5.7%)		
	Total	352	351		

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273 **Knowledge on modern contraception**

274 From the total respondents, 94.8% and 91.5% of monogamous and polygamous women have
275 heard about modern contraceptive, respectively, and for most of the respondents, the source of
276 information was HEWs, which is 29.0% and 31.1%, respectively. With regard to the types of
277 modern contraceptive methods, injectables were the most commonly mentioned by 70.7% and
278 60.7% of monogamous and polygamous women, respectively. Finally, when we compute the
279 knowledge of the respondents based on knowledge related questions, 55.1% and 48.1% of
280 monogamous and polygamous women have good knowledge of modern contraceptive
281 methods. (Table 3)

282 The qualitative part of the study also found that due to discussions with HEWs and health
283 education sessions in health posts and health centers, most key informant mothers had
284 awareness about modern contraceptives and the benefits they yield for women and children's
285 health.

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287 Table 3:- Knowledge on contraceptive methods of monogamous and polygamous women in worebabo
 288 woreda in 2021.

Variable	Category	Monogamous women	Polygamous women	X ²	P-value
		N ₀	N ₀		
Respondent ever heard about modern contraceptive methods	No	18 (5.1%)	30 (8.5%)	3.25	0.075
	Yes	334 (94.9%)	321 (91.5%)		
	Total	352	351		
Respondent knows where modern contraceptive is provided	No	18 (5.1%)	30 (8.5%)	3.25	0.071
	Yes	334 (94.9%)	321 (91.5%)		
	Total	352	351		
Knows pills(coc, pop)	No	105 (29.8%)	221 (63%)	77.5	0.000
	Yes	247 (70.2%)	130 (37%)		
	Total	352	351		
Knows injectable	No	103 (29.3%)	138 (39.3%)	7.8	0.005
	Yes	249 (70.7%)	213 (60.7%)		
	Total	352	351		
Knows Implants	No	208 (59.1%)	196 (55.8%)	0.76	0.383
	Yes	144 (40.9%)	155 (44.2%)		
	Total	352	351		
Knows IUCD	No	244 (69.3%)	243 (69.2%)	0.001	0.98
	Yes	108 (30.7%)	108 (30.8%)		
	Total	352	351		
Knows Condom	No	226 (64.2%)	197 (56.1%)	4.78	0.029
	Yes	126 (35.8%)	154 (43.9%)		
	Total	352	351		
Knows surgical method	No	270 (76.7%)	267 (76.1%)	0.039	0.843
	Yes	82 (23.35%)	84 (23.9%)		
	Total	352	351		
Respondent knowledge on modern contraceptive methods	Poor knowledge	158 (44.9%)	182 (51.9%)	3.41	0.065
	Good knowledge	194 (55.1%)	169 (48.1%)		
	Total	352	351		

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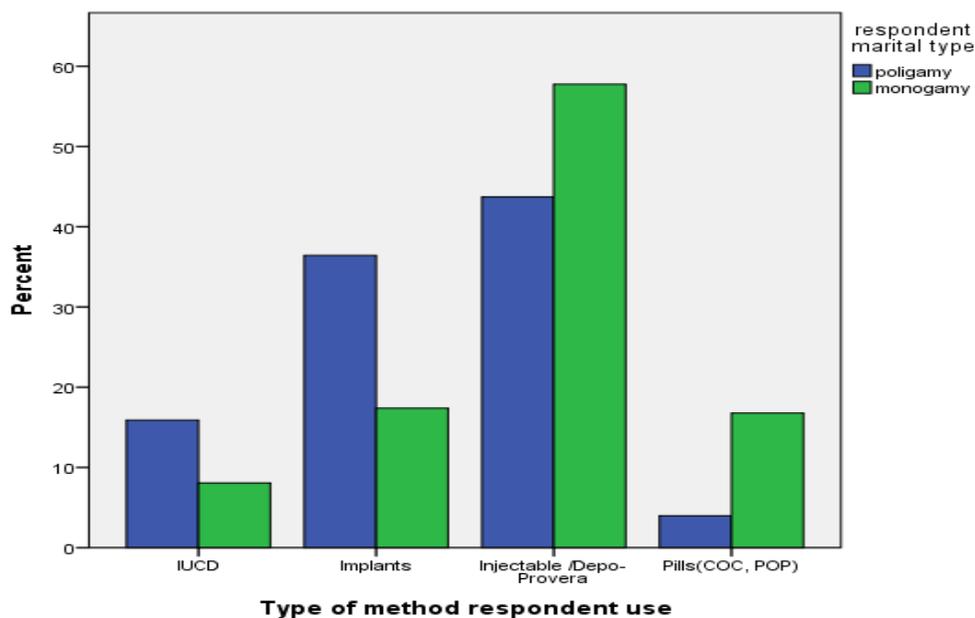
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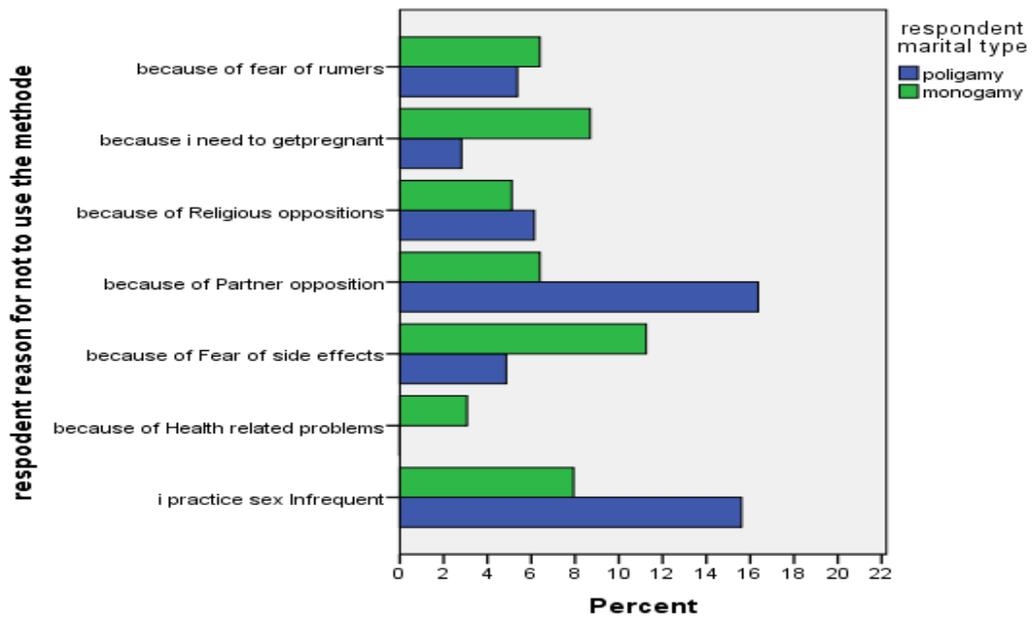
294 **Utilization of modern contraceptive**

295 With regard to the current utilization of modern contraceptive methods, 45.7% and 43.0% of
296 Monogamous and polygamous women use modern contraceptive methods. Among the
297 monogamous women who use modern contraceptive methods, 57.7% rely on injectables,
298 17.4% on implants, 16.8% on pills, and 8.1% on IUCD, while among polygamous women,
299 43.7% rely on Injectable, 36.4% on Implants, 4.0% on pills, and 15.9% on IUCD.(Fig 1)
300 Concerning reasons for not using the method 23.5% since they practice sex infrequently, 3.1%
301 because of health-related problems, 16.1% because of fear of side effects, 22.8% because of
302 partner opposition, 11.5% because they need to get pregnant, 11.5 % because of fear of rumors
303 5.7% and 11.3 because of religious opposition are mentioned by monogamous and
304 polygamous women.(Fig 2) Most of the participants of the key informant interview mention
305 that they prefer to use injectable due to its simplicity to use the method , can be used for a
306 short period of time, no procedure is needed to discontinue and also easy to hide. (Table 4)



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308 Figure 1:- Utilization of modern contraceptive methods by Monogamous and Polygamous married reproductive
309 aged women in worebabo woreda in 2021.



Married reproductive aged women in worebabo woreda reason for not using modern contraceptive methods in 2020 E.C.

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311 **Figure 2:- Married reproductive aged women in worebabo woreda reasons for not using modern**
 312 **contraceptive methods in 2021.**

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328 Table 4:- Utilization of modern contraceptive methods by monogamous and polygamous women in
 329 worebabo woreda in 2021.

Variable	Category	Monogamous women	Polygamous women	X ²	P-value
		No	No		
current use any modern contraceptive	No	191 (54.3%)	200 (57%)	0.526	0.468
	Yes	161 (45.7%)	151 (43%)		
	Total	352	351		
Type of contraceptive method used	Pills(COC, POP)	27 (16.8%)	6 (4%)	29.71	0.000
	Injectable	93 (57.8%)	66 (43.7%)		
	IUCD	13 (8.1%)	24 (15.9%)		
	Implants	28 (17.4%)	55 (36.4%)		
	Total	161	151		
Duration of contraceptive use	<1 year	38 (23.6%)	18 (11.9%)	16.73	0.421
	1-2 years	42 (26.1%)	65 (43%)		
	3-5 years	40 (24.8%)	23 (15.2%)		
	6-10 years	20 (12.4%)	24 (15.9%)		
	> 10 years	21 (13.0%)	21 (13.9%)		
	Total	161	151		
Reason to use a method	Limiting birth	70 (43.5%)	68 (45%)	0.076	0.783
	Spacing birth	91 (56.5%)	83 (55%)		
	Total	161	151		
Place where a respondent get a method	Private clinic	37 (23.0%)	24 (15.9%)	19.3	0.046
	District hospital	15 (9.3%)	0		
	Health Center	67 (41.6%)	84 (55.6%)		
	health post	42 (26.1%)	43 (28.5%)		
	Total	161	151		
Getting clear information by Health care provider (HCP)	No	175 (49.7%)	177 (50.4%)	0.036	0.850
	Yes	177 (50.3%)	174 (49.6%)		
	Total	352	351		
Respondent intention to continue using method	No	60 (37.3%)	45 (29.8%)	1.94	0.164
	Yes	101 (62.7%)	106 (70.2%)		
	Total	161	151		
Respondent reason to discontinue using method	Husband disapproval and fear	0	5 (11.1%)	7.90	0.101
	religious opposition	11 (18.3%)	7 (15.6%)		
	Need to get pregnant	34 (56.7%)	26 (57.8%)		
	Fear of Rumor	7 (11.7%)	3 (6.7%)		
	Fear of side effect of methods	8 (13.3%)	4 (8.9%)		
	Total	60	45		
Respondent ever start using method and discontinue	No	238 (67.6%)	226 (64.4%)	0.815	0.367
	Yes	114 (32.4%)	125 (35.6%)		
	Total	352	351		
Respondent reason to discontinue method	Husband disapproval	11 (9.6%)	16 (12.8%)	5.937	0.039
	religious opposition	7 (6.1%)	16 (12.8%)		
	Need to have many children	11 (9.6%)	13 (10.4%)		
	Fear of Rumor	34 (29.8%)	40 (32%)		
	Fear of side effect of methods	51 (44.7%)	40 (32%)		
	Total	114	125		

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334 **Respondent attitude on modern contraceptive methods**

335 Among all married women interviewed about their attitude towards modern contraception
336 methods 46.9% and 58.1% monogamous and polygamous women perceive that using modern
337 contraceptive methods is important for the wellbeing of children and family. As for either
338 modern contraceptive are culturally accepted by the community or not 66.2% and 42.2% of
339 monogamous and polygamous women perceive modern contraception is culturally accepted
340 by the community. Among the respondents, 67.6% and 47.0% of monogamous and
341 polygamous women think their husband approves of using modern contraceptive method.

342 (Table 5)

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356 Table 5:- perception of modern contraceptive methods among married women in worebabo woreda in 2021 .

Variable	Category	Monogamous women	Polygamous women	X ²	P-value
		No	No		
Do you think FP is important to the wellbeing children and the family?	No/not sure	187 (53.1%)	147 (41.9%)	8.91	0.003
	Yes	165 (46.9%)	204 (58.1%)		
	Total	352	351		
Do you haven't fear of social stigma?	No	119 (33.8%)	203 (57.8%)	40.87	0.000
	Yes	233 (66.2%)	148 (42.2%)		
	Total	352	351		
Do you think religious leaders support FP use?	No	158 (44.9%)	147 (41.9%)	3.99	0.046
	Yes	194 (55.1%)	204 (58.1%)		
	Total	352	351		
Who is responsible to make decisions about number of children in a family?	Husband	127 (36.1%)	132 (37.6%)	33.63	0.011
	Both	168 (47.7%)	105 (29.9%)		
	Respondent	57 (16.2%)	114 (32.5%)		
	Total	352	351		
Don't you accept myths about contraceptives	No	146 (41.5%)	186 (53%)	9.34	0.002
	Yes	206 (58.5%)	165 (47%)		
	Total	352	351		
Do you have family pressure to use of modern contraceptive methods?	No	114 (32.4%)	186 (53%)	36.48	0.000
	Yes	238 (67.6%)	165 (47%)		
	Total	352	351		

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358 **Factors associated with modern contraceptive use among married reproductive age**

359 **women who are in monogamous relationship**

360

361 Bivariate and multivariate logistic regression models were fitted to determine the presence of

362 an association between the dependent variable and the independent variables at (P < 0.05)

363 level of significance. Those variables that had a P-value ≤0.2 with modern contraceptive

364 utilization in the bivariate analysis were hired for multiple logistic regression analysis.

365

366 In the final multi-variable logistic regression model, variables such as educational status of

367 respondent, respondent number of live children, desire time for other children, getting clear

368 information by Health care provider, who decide on the number of children in respondents

369 family, family pressure to use of modern contraceptive, and accept myths about contraceptives
 370 were significantly associated with the utilization of modern contraceptive methods. (Table 6)

371

372 Table 6:- Factors associated with modern contraceptive use among married reproductive age women who are in
 373 monogamous relationship in 2021.

Variable	Modern contraceptive utilization		COR(95 CI)	AOR(95 CI)
	Non users(191)	Users(161)		
Educational status of respondent				
No formal education	102 (65.38%)	54(34.61%)	1	1
Primary level education	60 (46.15%)	70(53.84%)	2.20(1.36,3.55)	2.31(1.23,4.33)**
Secondary level and above	29 (43.93%)	37(56.03%)	2.41(1.33,4.33)	1.290(0.591, 2.82)
Respondent number of live children				
0	69(68.31%)	32(31.68%)	1	1
1-2	79(52.31%)	72(47.68%)	1.96(1.16,3.32)	2.56(1.248,5.24)*
3-4	15(41.66%)	21(58.33%)	3.01(1.37,6.61)	4.405(1.58,12.24)**
>=5	28(43.75%)	36(56.25%)	2.77(1.45,5.29)	3.87(1.67,9.03)**
Desire time for another child				
Less than two year	75(65.78%)	39(34.21%)	1	1
After two year	72(58.06%)	52(41.93%)	1.38(0.82, 2.35)!	1.206(0.632, 2.302)
No desire	44(38.59%)	70(61.40%)	3.05(1.78,5.25)	2.965(1.461,6.017)**
Getting clear information by Health care provider (HCP)				
No	119(68%)	56(32%)	1	1
Yes	72(40.67%)	105(59.32%)	3.09(2.00,4.79)	4.063(2.253,7.329)***
Who decide on number of children				
Husband	89(70.07%)	38(29.92%)	1	1
Both	79(47.02%)	89(52.97%)	2.639(1.62,4.289)	2.819(1.402,5.671)**
Respondent	23(40.35%)	34(59.64%)	3.46(1.805,6.641)	6.385(2.605,15.650)** *
Do you haven't fear of social stigma?				
No/Not sure	84(70.58%)	35(29.41%)	1	1
Yes	107(45.92%)	126(54.07%)	2.82(1.76,4.52)	1.704(0.929, 3.227)
Do you have family pressure to use of modern contraceptive methods?				
No/Not sure	92(80.70%)	22(19.29%)	1	1
Yes	99(41.59%)	139(58.40%)	5.87(3.45,9.99)	3.616(1.861, 7.024)***
Don't you accept myths about contraceptives				
No	106(72.60%)	40(27.39%)	1	1
Yes	85(41.26%)	121(58.73%)	3.77(2.38,5.96)	2.515(1.296,4.876)**

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375 **Factors associated with modern contraceptive use among married reproductive age**
 376 **women who are in polygamous relationship**

377 Bivariate and multivariate logistic regression models were fitted to determine the presence of
 378 an association between the dependent variable and the independent variables at (P < 0.05)
 379 level of significance. Those variables which had a P-value ≤ 0.2 with modern contraceptive
 380 utilization in the bivariate analysis were hired for multiple logistic regression analysis.

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382 In final multi-variable logistic regression model variables such as educational status of
 383 respondent, type of religion respondent follows, desire time for other children, getting clear
 384 information by Health care provider, who decide on the number of children in respondents
 385 family, fear of social stigma, and accept myths about contraceptives were significantly
 386 associated with utilization of modern contraceptive methods. (Table 7)

387 **Table 7:-** Factors associated with modern contraceptive use among married reproductive age women who are in
 388 polygamous relationship in 2021.

Variable	Modern contraceptive utilization		COR(95 CI)	AOR(95 CI)
	Non users	Users		
Educational status of respondent				
No formal education	119 (65.74%)	62(34.25)	1	1
Primary level education	72 (52.17%)	66(47.82)	1.759(1.118,2.769)	2.321(1.298,4.15)**
Secondary level and above	9 (30%)	23(71.87)	4.905(2.14,11.24)	2.936(1050,8.163)
Type of respondents religion				
Muslim	156 (62.65%)	93(37.34)	1	1
Orthodox	44 (43.13%)	58(56.86)	2.211(1.38,3.532)	2.387(1.298,4.39)**
Desire time for another child				
Less than two year	74 (41.80%)	25(25.25)	1	1
After two year	76 (56.71%)	58(43.28)	2.259(1.280,3.985)	2.309(1.125,4.741)
No desire	50 (42.37%)	68(57.62)	4.026(2.249,7.205)	3.243(1.518,6.928)**
Getting clear information by Health care				

provider (HCP)				
No	130 (73.44%)	47(26.55	1	1
Yes	70 (40.22%)	104(59.77	4.109(2.619,6.449)	5.414(3.032,9.669)***
Who decide on number of children				
Husband	107 (81.06%)	25(18.93	1	1
Both	45 (42.85%)	60(57.14	5.707(3.188,10.215)	5.560(2.596,11.908)***
Respondent	48 (42.10%)	66(57.89	5.885(3.320,10.433)	5.216(2.564,10.612)***
Do you haven't fear of social stigma?				
No/Not sure	149 (80.97%)	54(29.34	1	1
Yes	51 (34.49%)	97(65.54	5.24893.312,8.315)	3.109(1.697,5.697)***
Don't you accept myths about contraceptives				
No	121 (65.05%)	65 (34.94	1	1
Yes	79 (47.87%)	86(52.12	2.026(1.319,3.112)	3.895(1.072,3.350)*

389

390 **Factors associated with modern contraceptive use among married reproductive age**
391 **women who are in monogamous and polygamous relation**

392

393 Bivariate and multivariate logistic regression models were fitted to determine the presence of
394 an association between the dependent variable and the independent variables at (P < 0.05)
395 level of significance. Those variables which had a P-value ≤ 0.2 with modern contraceptive
396 utilization in the bivariate analysis were hired for multiple logistic regression analysis.

397

398 In final multi-variable logistic regression model variables using such as educational status of
399 respondent, respondent type of religion, desire time for other children, getting clear
400 information by Health care provider, who decide on the number of children in respondents
401 family, fear of social stigma, family pressure to use of modern contraceptive, and accept myths

402 about contraceptives were significantly associated with utilization of modern contraceptive
 403 methods. (Table 8)

404 Table 8:- Factors associated with modern contraceptive use among married reproductive age women who are in
 405 monogamous and polygamous relation in 2021.

Variable	Modern contraceptive utilization		COR(95 CI)	AOR(95 CI)
	Non users	Users		
Educational status of respondent				
No formal education	221(65.57)	116(34.42)	1	1
Primary level education	132(49.25)	136(50.74)	1.963(1.413,2.726)	2.143(1.428,3.216)***
Secondary level and above	38(38.77)	60(61.22)	3.008(1.891,4.786)	1.843(1.044,3.253)*
Type of respondents religion				
Muslim	273(60.93)	175(39.06)	1	1
Orthodox	118(46.27)	137(53.72)	1.726(1.256,2.374)	1.704((1.144,2.539)**
Desire time for another child				
Less than two year	149(69.95)	64(30.07)	1	1
After two year	148(50)	148(50)	1.730(1.180,2.538)	1.672(1.06,2.639)*
No desire	94(50)	94(50)	3.418(2.307,5.064)	3.17(1.939,5.183)***
Getting clear information by Health care provider (HCP)				
No	249(70.73)	103(29.26)	1	1
Yes	142(40.45)	209(59.54)	3.558(2.601,4.867)	4.624(3.132,6.828)***
Who decide on number of children				
Husband	196(75.67)	63(24.32)	1	1
Both	124(45.42)	149(54.57)	3.738(2.581,5.415)	3.054(1.93,4.832)***
Respondent	71(41.52)	100(58.47)	4.382(2.890,6.643)	4.775(2.850,8.003)***
Do you haven't fear of social stigma?				
No/Not sure	233(72.36)	89(27.63)	1	1
Yes	158(41.469)	223(58.53)	3.695(2.688,5.079)	2.482(1.666,3.699)***
Do you have family pressure to use of modern contraceptive methods?				
No/Not sure	214(69.70)	93(30.29)	1	1
Yes	177(44.69)	219(55.30)	2.847(2.080,3.897)	1.855(1.351,2.75)**
Don't you accept myths about contraceptives				
No	227(68.37)	105(31.62)	1	1
Yes	164(44.20)	207(55.79)	2.729(2.003,3.717)	1.878(1.278,2.761)**

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DISCUSSION

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414 The prevalence of women who use modern contraceptives among women who are in
415 monogamous relationships is 161 (45.7%), [95% CI (40.2, 51.0)], and 151 (43.0%) on
416 polygamous women [95% confidence interval (37.9, 48.4)]. This result shows that there is no
417 difference between the two groups with regard to the utilization of modern contraceptives.
418 These findings are in line with other similar studies done in Ethiopia South nation [33]. On the
419 other hand studies done in Ethiopia found that polygamous women are less likely to use
420 modern contraceptive methods when compared with monogamous women [3]. On the
421 contrary, a comparative study done in Nigeria showed that contraception was found to be more
422 widely used by women in polygamous than in monogamous marriages [34]. These variations
423 might be due to dissimilarities in socio-cultural, health service utilization, and economic
424 variations among study participants.

425 In accordance with this study finding, the odds of using modern contraceptive methods among
426 married women with primary and secondary level education were 2.14 and 1.84 times higher
427 than married women without formal education respectively. The relationship between
428 utilization of modern contraceptive and educational status of respondents was also shown in
429 similar studies done in different places of Ethiopia [26,35]. Being educated will increase the
430 awareness of contraceptive utilization and its advantages.

431

432 The study result showed that respondents' type of religion has a statistically significant
433 association with the utilization of modern contraceptives, the odds of utilization of modern
434 contraceptive methods is higher for respondents who follow the orthodox Christian religion by
435 1.704 times than the respondents who follow the Muslim religion. This result is supported by a
436 study done in western Ethiopia [26]. The qualitative study also showed that religious leaders'

437 attitudes toward modern contraceptive methods are negative. Because of this, married women
438 got difficulties from their husbands and others when they try to utilize modern contraceptive
439 methods. Although religion has a major influence on a variety of social attitudes, the
440 relationship between religion and its insight on contraceptives has remained largely
441 unexplored [36].

442

443 The odds of using modern contraceptive methods among women who desire to have other
444 child after two years and those who don't have a desire to have another child are 1.672 and
445 3.17 times higher than women who desire to have another child within two years, respectively.
446 This finding is in line with a study done in the Debre Birhan District of Ethiopia [14]. It was
447 obvious that women who desired children were not ready to use contraceptives.

448

449 The other independent predictor which had a very strong association with married women in
450 monogamous and polygamous relationship is getting clear information by Health care
451 provider. The result showed that the odds of using modern contraceptives by women who have
452 get clear information by HCP was found to be 4.62 times higher than those who didn't get
453 clear information by HCP. This finding is supported by different studies done in different
454 place [37,38]. This can be explained by HCP give information that covers the advantages and
455 limitations of contraceptive methods, management of common side effects, and how to obtain
456 contraception services which may raise women's overall awareness of different family
457 planning method.

458

459 With regard to decision making on the number of children a family should have, the study
460 result showed that the odds of using modern contraceptive methods for women who decide

461 together with their husband and by themselves was found to be 3.0 and 4.7 higher than those
462 women whose husband decides on the number of children, respectively. This result is in line
463 with the study done in western Ethiopia, the study found that women who made joint
464 decisions about the number of children were more likely to use modern contraceptives than
465 those who did not make joint decisions [35]. The qualitative study also showed that married
466 women's ability to decide on the number of children they want to have compromised by their
467 husbands, since like in most rural parts of the country, the husband is a source of income
468 which gives him the power of decision.

469
470 The perception of women about fear of social stigma towards modern contraceptive utilization
471 has an independent effect, those who haven't fear of social stigma have higher odds of using
472 modern contraceptives by 2.48 times than women who have fear of social stigma to use
473 modern contraceptive methods. This finding is supported by a study done in Kenya, and India
474 [39,40]. Hence, those women who have fear of social stigma to use modern contraceptive are
475 less likely to freely decide and use it.

476
477 Women who have family pressure to use of modern contraceptive have higher odds of using
478 modern contraceptives by 1.85 times than women who have not family pressure to use modern
479 contraceptives. This finding is supported by other studies done in Malawi and India [41,42].
480 The possible reasons might be the family approval and consent, which motivates the women to
481 make a decision towards modern contraceptive utilization.

482
483 In accordance with this study finding, women who didn't accept myths about contraceptives
484 was found to be 1.87 more likely to use modern contraceptives than those women who accept

485 myths about contraceptives. This finding is supported by a study done in different places
486 [43,44]. This could be due to some of the misconceptions include rumors' about
487 contraceptives can reduce the interest of women to use modern contraceptive.

488 **Conclusion**

489 This study identified lower modern contraceptive method utilization by married women in the
490 study area, and the prevalence of utilization between the two groups is not different from one
491 another. It's recommended that healthcare programmers at the federal, regional, zonal, and
492 woreda levels by collaborating with other partners should initiate new initiatives/interventions
493 that target cultural and social relationships to encourage the utilization of modern
494 contraceptive methods in areas where socio-cultural factors are more prominent. It is
495 mandatory for all stockholders to work on increasing women's empowerment by helping
496 women to get education, which will help them to decide on their fertility. Finally, awareness
497 creation should be done by health extension professionals about the importance of modern
498 contraception to all community members by involving those husbands, religious leaders, and
499 significant others.

500 **Data Availability**

501 The datasets employed in the current study can be available from the corresponding author
502 upon a reasonable request.

503 **Author contributions**

504 E.T: protocol development, data collection, data analysis, manuscript Writing; Y.F data
505 analysis, manuscript editing.

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Declarations

Ethics approval and consent to participate

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Consent for publication

Informed and written consent was taken from the patient to publish the research article.

Competing interests

All authors declare that they have no competing interests.

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