

Assessment of Polygamous Marriage on Utilization of Contraceptive Service in Semera Town, Afar Region: A Comparative Cross-sectional Study

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Received: May 18, 2020, Manuscript No. IPJCS-20-4135; Editor assigned: May 22, 2020, PreQC No. IPJCS-20-4135; Reviewed: June 05, 2020, QC No. IPJCS-20-4135; Revised: June 28, 2022, QI No. Q-IPJCS-20-4135; Manuscript No. IPJCS-20-4135; Published: July 26, 2022

Citation: Ebrahim BA, Adhena MT, Belew MT, Gebreslassie AA (2022) Assessment of Polygamous Marriage on Utilization of Contraceptive Service in Semera Town, Afar Region: A Comparative Cross-sectional Study. J Reproduct Health Contracept Vol.7 No.6: 001

Abstract

Background: In Ethiopian, a higher proportion of uneducated women are in polygamous unions compared to the proportion of women with some degree of formal education. Polygamy is also shown to be higher among rural than urban women. In Ethiopia, polygamy is widely practiced in some regions such as Gambela, Afar and South Nations Nationality Region. There are few studies on factors associated with contraceptive use among polygamy.

Objective: To assess the polygamous marriage on the utilization of contraceptive service at Semra town.

Methods: Comparative community-based cross-sectional study design was employed. The systematic random sampling method was used to select study participants after listing both polygamous and monogamous women from the selected kebeles. A questionnaire was used to maintain a quality of data. Data entered into SPSS version 21 for analysis. Binary logistic regression analysis was carried out to see an association between an independent variable with the dependent variable at 95% CI and computed using the odds ratio. A p-value<0.05 in the multivariate logistic regression model was considered as statistically significant.

Results: Total of 504 currently married women (175 in polygamous and 329 in a monogamous union) aged 15-49 attended in this study. The result showed that women in a polygamous union were more likely to use contraceptive compared to those in monogamous union with [AOR=12.90, 95% CI) (3.36, 49.41)]. Employment status of the husband has a significant association with utilization of contraceptives, where employed are more likely to utilize contraceptive than unemployed with [AOR=5.24, 95% CI: (1.85, 14.87)]. Husband age has a significant association that younger age wives were more likely use contraceptive with [AOR=3.10, 95% CI: (1.70, 5.63)]. Mother education has a significant association with usage of contraceptive where illiterate women were less likely use contraceptive than the literate with [AOR=0.15, 95% CI (0.07, 0.29)].

Conclusion: Literacy is an important determinant factor for utilization of family planning, employment, and younger age also important factors but acceptors of polygamous marriage union were less likely utilizes the contraceptive compared to the non-acceptors of the polygamous marriage union.

Keywords: Polygamy; Contraception; Semera; Intrauterine; Monogamous

Abbreviation

CPR: Contraceptive Prevalence Rate; CSA: Central Statistics Agency; EDHS: Ethiopia Demographic Health survey; DHS: Demographic Health Survey; FP: Family Planning; HIV: Human Immuno Deficiency Virus; MOFED: Minister of Finance and Economic Development; SDM: Standard Days Method; STD: Sexual Transmitted Disease; SNNR: South Nations Nationality Region; SSA: Sub-Saharan Africa; TFR: Total Fertility Rate; UNICEF: United Nations Children Fund; US: United States; WDA: Women Development Army; WHO: World Health Organization

Introduction

Contraceptive use helps couples and individuals realize their basic right to decide freely and responsibly if, when and how many children to have. The growing use of contraceptive methods has resulted in not only improvements in health-related outcomes such as reduced maternal mortality and infant mortality but also improvements in schooling and economic outcomes, especially for girls and women. Contraceptive methods are classified as modern or traditional methods. Modern methods include female sterilization, male sterilization, the Intrauterine Contraceptive Device (IUD), implants, injectables, the pill, male condoms, female condoms, emergency contraception, Standard Day's Method (SDM), and Lactational Amenorrhea Method (LAM). Methods such as rhythm, withdrawal, and folk methods are grouped as traditional [1]. Prevalence of contraceptive in 2015 was several times as high in Northern Africa and Southern Africa 53% and 64%, respectively

as in Middle Africa 23% and Western Africa 17%. Contraceptive use has been increasing recently in Eastern Africa and now stands at 40% [2].

Sub-Saharan Africa's modern Contraceptive Prevalence Rate (CPR) of 19% masks the important diversity in CPR values that exists across countries, ranging from 1% in Somalia to 60% in South Africa. However, in another study that assessed family planning use in 23 Sub-Saharan Africa women in a polygamous union was found less likely to use the service compared to those in the monogamous union [3].

In Ethiopia Overall, 36% of currently married women are using a method of family planning 35% are using a modern method, and 1% is using a traditional method. Among currently married women, the most popular methods are injectables (23 %), implants (8%), IUD, and the pill (2% each). The Contraceptive Prevalence Rate (CPR) among married women increases with age, peaking at age 25-29 (41%) before declining steadily to 19 % among women age 45-49. Urban women are much more likely than their rural counterparts to use any method of contraception (52% vs 33%). By region, contraceptive prevalence rate ranges from 2% in Somali to 56% in Addis Ababa [4].

In Afar region contraceptive use is an increase from year to year in some form of contraceptive but now any modern method 11.6%, female sterilization 0%, IUD 0.2%, implants 1.4%, injectables 9.5%, pills 0.4% and male condom 0.1% are using [5].

Despite the high proportion of polygamous marriage in Africa including Ethiopia, there is limited research on contraceptive utilization and factors affecting the use of contraceptive which is highly important for focused interventions to such population [6].

Many women die every year from pregnancy-related conditions and the Maternal Mortality Rate (MMR) in developing countries like the Central African Republic 882/100,000 compared to 3/100,000 in developed countries like Finland, Greece, and Poland but in Ethiopia still 353/100,000 deaths. In Africa, multiple cultures directly affect reproductive health. Additional factors, which have a significant effect upon reproductive health in Africa, are the high prevalence of extramarital, polygamy, a relatively low prevalence of contraceptive use, high incidence of STD and teenage pregnancy [7].

Semera town is newly established town in Afar region. The average population of the town is 38794, and the health service coverage of the region is 92%. According to the regional health, bureau 2008 E.C report the contraceptive utilization of the region is 42% but the EDHS 2016 G.C in the region is only 11, 6% which is the contraceptive utilization in the region is less compare to the country EDHS. Most of the people also move at any time from one place to another place to find out water and grass to the animals. Depending on this situation the town has not known study on the contraceptive utilization related to the polygamy and monogamy in the town. There are no studies that have examined the factors contributing to contraceptive utilization services related to the polygamy and monogamy

marriage in Semera town. The present study is intended to assess the polygamous marriage on contraceptive utilization [8,9].

Objectives

General objective: To assess the polygamous marriage on utilization of contraceptive service at Semera town.

Specific Objectives:

- To compare the prevalence of contraceptive among polygamous and monogamous women.
- To identify factors affecting contraceptive use among polygamous and monogamous women.

Methodology

Study design

A comparative cross-sectional study was conducted among polygamous and monogamous women regarding utilization of contraceptive in Semera town, Afar region.

Source population

All polygamy and monogamy married women in the age group of 15-49 years in Semera town Afar region was considered as a source population [14].

Study population

All polygamy and monogamy married women in the age group of 15-49 years in the area who are systematically selected kebele 1 and kebele 4.

Sample size determination

Since there was no previous study on prevalence of contraceptive use among polygamous women in the region, we consider 50% of contraceptive use among monogamous women and allowing a difference of 15% with 80% power to the study at 5% significance level [15]. The hypothesis of this study was the contraceptive utilization among women in polygamous union was much less than the proportion of those in monogamous union [16]. A double population proportion formula used to determine sample size:

$$n = \frac{Z\alpha/2 + Z\beta}{2} \left[\frac{P_1(1-P_1) + P_2(1-P_2)}{(P_1-P_2)^2} \right] \text{ Where } n = \text{total sample size}$$

n_1 = sample size of group 1 (women in polygamous union)

n_2 = sample size of group 2 (women in monogamous union)

$n_1 : n_2$ is 1:2

P = pooled prevalence

P_1 = prevalence of contraceptive use among women in polygamous union

P_2 = prevalence of contraceptive use among women in monogamous union.

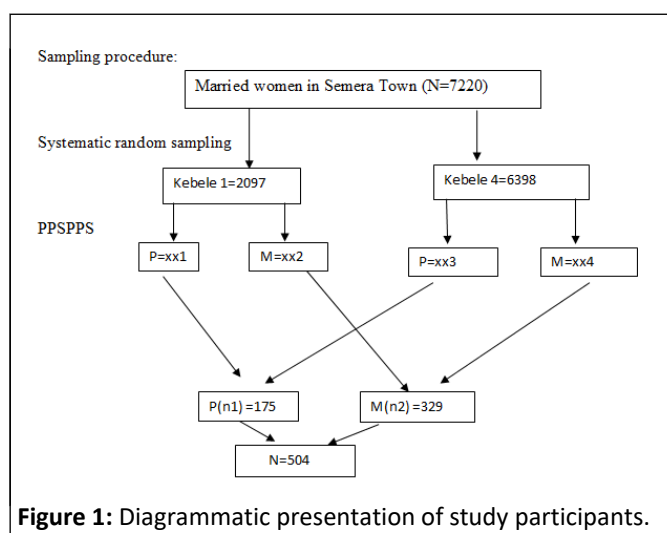
Using the EPI-INFO version 6 the computed possible sample size is **Table 1**.

P1	P2	A	B	n1	n2	N
35	50	0.05	0.2	160	298	458

Table 1: Considering 10% of non-response rate, the sample size was the sum up of 504 with n1 (polygamous)=176 and n2 (monogamous)=328.

Sampling procedure

A systematic random sampling was used to select study participants after doing census of married women (polygamous and monogamous) in the selected kebeles [17]. Then, from those women in polygamous marriage, 175 women were selected using systematic random sampling and 329 women were also selected in a similar way from monogamous women (**Figure 1**).



Variables under study

Dependent variable

Utilization of contraceptive

Independent variables: Socio demographic characteristics including: Age, education, polygamous and monogamous occupation and husband education in Semera town was collected for the purpose of the study.

- Reproductive health status in terms of fertility, use of family planning, number of children or family size
- Health system factors, access and availability of services
- Knowledge and sources of contraceptive information
- Type of marriage categorized as polygamous and monogamous [18].

Inclusion and exclusion criteria

Inclusion criteria: All women who reported as married either in Polygamy or monogamy

- Residence of Semera town.

Exclusion criteria

That who can't communicate with data collectors because of health-related issue (mental problem) was excluded.

Data collection tools

Data collection tool was adapted from previous studies. The questionnaire was prepared in english and amharic and then translated in to local language.

Data quality and management

Four urban health extension workers who can speak local language were recruited from the town to collect the data. Two days training was given to data collectors and supervisors. The aim of the training includes the study expectations, objectives, and use of the study tool. The questionnaire was pretested in the training before the actual study. Data cleaning was performed to check for frequency, accuracy, and consistency and missed values and variables. Any error identified was corrected [19].

Data analysis

The data was entered in SPSS version 21 statistical package. Frequencies, proportions and summary statistics used to describe the study population in relation to relevant variables multivariate logistic regression analysis was carried out to see the effect of each independent variable on the dependent variable. Odds ratio of 95% with p value less than 0.05 was used in the multivariate logistic regression model.

Plan for dissemination of result

The results were submitted to Mekelle University, Semera Woreda health office and Afar Regional Health Bureau [20].

Operational definitions

Polygamy: Involves marriage with more than one spouse; when a man is married to more than one wife at a time.

Monogamy: Is a form of relationship individual has only one partner during his or her lifetime or at any one time.

Literate: Able to read and write.

Illiterate: He/she unable to read and write and even he/she never attend formal or informal education.

Results

Socio-demographic characteristics of study participants

The study identified and enrolled 504 married women aged 15-49 years with the response rate of 100%. The socio demographic conditions were found to be very different between the two groups of women. The mean age of the

women was 27. Both groups were mostly Afar in ethnicity (89.7%). One hundred seventy-five (34.72%) women in polygamous union and three hundred twenty-nine (65.28%) were in monogamous union. 482 (95.6%) were Muslims and twenty-two (4.4%) were Christians. 275 (54.6%) women were illiterate and 229 (45.4%) were literate. Furthermore, 60 (11.9%) women in polygamous and 45 (8.9%) in monogamous union had previous marriage respectively. 219 (43.5%) polygamous and monogamous husbands were illiterate and in contrast 285 (56.5%) of polygamous and monogamous husbands were literate [21].

Reproductive characteristics of respondents

Among the respondents the polygamous marriage has 81 (46.3%), 69 (39.4%) and 25 (14.3%) having two, three and four wives' respectively and the total contraceptive users are 189 (37.5%) and among the contraceptive users 133 (70.4%) use injectables contraceptives and monogamous marriage use contraceptives higher than to polygamous marriage [22].

Factors associated with contraceptive use: Types of marriage have significant association with usage of contraceptive, where polygamous marriage use contraceptives more likely than monogamous marriage with [AOR=12.90, 95% CI: (3.36, 49.41)]. Employment status of the husband has significant association with utilization of contraceptives, where those who have employed are more likely to utilize contraceptive than men who are unemployed with [AOR=5.24, 95% CI: (1.85, 14.87)]. Husband age has also significant association with the usage of contraceptive, where youth were more likely to utilize contraceptive than older men with [AOR=3.10, 95% CI: (1.70, 5.63)].

Mother education has significant association with usage of contraceptive where illiterate women were less likely use contraceptive than the literate women with [AOR=0.15, 95% CI (0.07, 0.29)].

Supporting or accepted for polygamy marriage type was significantly associated with usage of contraceptive where polygamy marriage supporters were less likely to use contraceptives than non-supporter of polygamy marriage with [AOR=0.12, 95% CI: (0.05, 0.27)] (Tables 2 to 4).

Variable	Category	Number (%)
Age of mother	15-24	230 (54.4)
	>+25	274 (45.6)
Educational status of mother	Illiterate	275 (54.6)
	Literate	229 (45.4)
Marriage type	Polygamy	175 (34.7)
	Monogamy	329 (65.3)
Mother's religion	Muslim	482 (95.6)
	Christian	22 (4.4)

Employment status of the mother	Employed	53 (10.5)
	Unemployed	451 (89.5)
Ethnicity of the mother	Afar	452 (89.7)
	Tigray	27 (5.4)
	Amhara	23 (4.5)
	Others	2 (0.4)
Husband age	15-24	261 (51.8)
	>=25	243 (48.2)
Husband education	Illiterate	152 (30.2%)
	Literate	352 (69.8%)

Table 2: Socio-demographic characteristics of study participants (N=504), February 2017.

Variable	Category	Number (%)
Number of wife's polygamous marriage	2 wives'	81 (46.3)
	3 wives'	69 (39.4)
	4 wives' +	25 (14.3)
Contraceptive use	Yes	189 (37.5)
	No	315 (62.5)
Type of contraceptive	Oral	52 (27.5)
	Injectables	133 (70.4)
	Implant	4 (2.1)
Use of contraceptive by type of marriage	Polygamy	48 (25.4)
	Monogamy	141 (74.6)

Table 3: Reproductive characteristics of study participants (N=504), 2017.

Variable	Category	Contraceptive use		COR (95% CI)	AOR (95% CI)
		Yes	No		
Age of mother	15-24	108	122	2.11 (1.46, 3.04) *	1.04 (0.58, 1.88)
	>=25	81	193	1	1
Educational	Illiterate	124	151	0.48 (0.33, 0.70) *	0.15 (0.07, 0.29) *

Status of mother	Literate	65	164	1	1
Religion of mother	Muslim	179	303	0.71 (0.59, 3.33)	-
	Others	10	12	1	
Marriage type	Polygamy	48	127	0.50 (0.34, 0.75) *	12.90 (3.36, 49.41) *
	Monogamy	141	188	1	1
Employment status of the mother	Employed	41	12	6.99 (3.57, 13.71) *	1.96 (0.77, 5.01)
	Unemployed	148	303	1	1
Husband age	15-34	123	138	2.39 (1.65, 3.47) *	3.10 (1.70, 5.63) *
	>=35	66	177	1	1
Husband education	Illiterate	24	128	0.21 (0.13, 0.34) *	0.30 (0.07, 1.18)
	Literate	165	187	1	1
Mothers ethnicity	Afar	177	286	1.49 (0.33, 1.34)	-
	Others	12	29	1.00	
Perception to polygamy marriage	Accepted	19	144	0.133 (0.08, 0.22) *	0.12 (0.05, 0.27) *
	Not accepted	170	171	1	1
Husband	Employed	43	12	7.44 (3.81, 14.53) *	5.24 (1.85, 14.87) *
Employment	Unemployed	146	303	1	1
Number of children	0-4	126	222	0.59 (0.32, 1.10)	-
	44747	41	70	0.61 (0.30, 1.23)	

	>=8	22	23	1	
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Table 4: Bivariate and multivariate analysis of contraceptive use with some selected variables.

Discussion

The utilization of contraceptive among the study population was 37.50%. Of these, contraceptive use among polygamous marriage was 27.4%. Among the socio-demographic variables, marriage type, age of husband, employment status of the husband, mother's education and perception to polygamy marriage were found significant predictors of contraceptive use [23,24].

Types of marriage have significant association with usage of contraceptive, where polygamous marriage use contraceptives more likely than monogamous marriage with [AOR=12.90, 95% CI: (3.36, 49.41)]. According to the multivariate analysis women in polygamous union were more likely to have used modern contraceptive compared to those in monogamous union which is in contrast with a study conducted in Malawi which showed that women in polygamous marriages are less likely than their counterparts in monogamous marriages to use modern contraceptives. Moreover, this finding is inconsistent with a study done in sub-Saharan Africa in regard to use of family planning where women in polygamous union were less likely to use contraceptive service compared to those in monogamous union [24]. The possible reasons for this finding could be polygamous women may use contraceptive because of the economic burden of the mother to manage their children and the increasing cost of children's demand for schooling as well as basic needs like clothing and food because of less support from the husband. Besides, the declining of respect from family of polygamous men may also be related to use of contraceptive indicating less interest and closeness to the family.

Employment status of the husband has significant association with utilization of contraceptives, where those who have employed are more likely to utilize contraceptive than husband who are unemployed with [AOR=5.24, 95% CI: (1.85, 14.87)]. In support of this, a study conducted in Malawi has revealed the work status of husband has a strong linked with use of contraceptives. Husband who are employed have high rate of contraceptive use than husband who do not employed [12,18]. The possible explanation behind better use of contraceptive among employed than none employed could be those employed husband have access to information about the family planning and they also influence their wives to use contraceptive. Furthermore, employed husband have more influence over reproductive decisions and they help to their wives to use contraceptive without the influence of partner or other influential family members [25].

Mother education has significant association with usage of contraceptive where illiterate women were less likely use contraceptive than the literate husband with [AOR=0.15, 95%CI (0.07, 0.29)]. Similarly the study conducted in the geographical variation and factors influencing modern contraceptive use among married women in Ethiopia shown that the educated

women improve positive attitudes toward contraceptive use, secondary school education, and couple's discussion on contraceptive use contributed the most to increases in contraceptive use [26]. The possible explanations would be literate mother has better awareness, knowledge and accessibility of the use of contraceptive utilization [27].

Husband age has also significant association with the usage of contraceptive, where youth were more likely to utilize contraceptive than older men with [AOR=3.10, 95% CI: (1.70, 5.63)]. Another study conducted in Ethiopia some selected regions that younger age was more likely use contraceptive than the older men unions. The possible reason for the younger husbands were more likely utilize contraceptive than the older husbands, this were logically younger people have accepted the new ideas and they have access to information about the family planning and the use of the contraceptive.

Supporting or accepted for polygamy marriage type was significantly associated with usage of contraceptive where polygamy marriage supporters were less likely to use contraceptives than non-supporter of polygamy marriage with [AOR=0.12, 95% CI: (0.05, 0.27)] A similarly study conducted at Zulu migrants has shown that substantial number of polygamous women who did accept polygamy were less likely to use contraceptive. Some of the reasons women tend to accept for polygamy were economic factors, wife services, and the education of children and fear of religion [28].

Strength and limitation of the study

In this study, the strength was using standard questionnaire, applied pretest before actual data collection and the data collectors were urban health extension worker. Other strengths of this study are we did close supervision to maintain the data quality and the data collectors were well trained.

As the study design is cross sectional, it is difficult to establish cause and effect. As polygamy might be sensitive to some study participants it would have been good to be triangulated by using qualitative study such as in-depth interviews or focus group discussions.

Conclusion and Recommendation

Among the total participants, 175 (34.70%) were in polygamy marriage. Polygamous marriage has a significant association with contraceptive use. Other variables such as educational status of the women, husband's age, husband's employment and acceptance of polygamy were found to be associated with contraceptive use.

Educational intervention in regard to the importance of contraceptive use in a community where the culture of polygamy is dominant it is very critical. Though the effect of polygamy on health and economic burden needs further study, the sharing effect of resources of polygamous men may have a residual effect in the inadequacy of child nutrition. Women empowerment to make decision regarding contraceptive is imperative and creating employment opportunities and income

generating mechanisms to obtain economic support is also very important.

Ethical Consideration

Ethical clearance was obtained from Ethical Committee of Mekelle University, College of health science. Informed consents of the study participants were obtained by explaining the purpose of the study and by assuring for there was no danger resulting from participation into the study. Confidentiality of the information was assured by limiting access to the study team only Ethics approval and consent to participate.

Consent for Publication

All authors agreed to publish in this journal.

Availability of data and material.

All necessary data are available in secure computer with key locked by the author.

Competing Interests

There is no any competing interest of authors regarding this article.

Funding

Mekelle University

Authors' Contributions

Author's Contributions BAE: MTA: MTB: AAG: Had taken a principal role in the conception of ideas, developing methodologies, data collection, analyses and write up of the article. All authors read and approved the manuscript. Author 1 BA: Initiated the research, wrote the research proposal, conducted the research, did data entry and analysis and wrote the manuscript. Author 2 MT: Involved had taken a principal role in the conception of ideas, developing methodologies, data collection, analyses and write up of the article. All authors read and approved the manuscript. Author 1 AA: Conducted the research, did data entry and analysis and wrote the manuscript.

Acknowledgements

I would like to pass my sincere thanks to my advisers. Mekelle University College of health sciences department of public health for their valuable guidance and constructive advice throughout the whole process of the thesis development.

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