CONTRACEPTIVE USE AMONG MARRIED WOMEN OF REPRODUCTIVE AGE GROUP WITH CHRONIC NON-COMMUNICABLE DISEASES IN ADDIS ABABA PUBLIC HOSPITALS, ETHIOPIA

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ABSTRACT

Women with chronic non-communicable diseases are at higher risk of adverse pregnancy outcomes, which may be minimized through optimal preconception care and appropriate contraceptive use. Information on the contraceptive use and affecting factors among women with chronic non-communicable diseases in Ethiopia is rare.

The objective of this study was to assess the magnitude of contraceptive use and associated factors among women with chronic non-communicable diseases in Addis Ababa's, public hospitals.

A hospital based cross-sectional study was performed on 357 married women of reproductive age group with chronic non-communicable diseases. Systematic sampling method was used to select the study participants. The Data were collected using interviewer administered structured questionnaires and was analyzed using SPSS version 20.0. Bivariate and multivariate logistic regression at 95% CI and P < 0.05 was used to determine the final predictor in the model.

Of the total 357women, only 124(34.2%) were contraceptive users. Majority of women with chronic non-communicable diseases were diabetic 140(39.2%), and hypertensive 134(37.5%). Those who discussed with their husband and got counselling were higher contraceptive users with AOR=2.5, 95% CI (1.3, 5.1) and AOR= 3.6, 95% CI (1.6, 8) respectively. Discussion with husband and counselling about contraceptive use were found the main predictors of contraceptive use.

In conclusion, a low proportion of women with CNCD were using contraceptives. Contraceptive use or non-use was associated with getting counselling from health care providers and discussion with spouse about contraceptive. Hence, it is recommended that getting adequate counselling and discussion with their husband's may increase contraceptive utilization of women with chronic non-communicable diseases.

KEY WORDS: Chronic non-communicable diseases, Diabetes, Hypertension, contraceptives, Addis Ababa.

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INTRODUCTION

Chronic health conditions are defined as conditions requiring "ongoing management over a period of years or decades" [1].Women of reproductive age are affected by many chronic medical conditions that have effects on preconception health and pregnancy outcomes. In addition, it can also affect women's contraceptive choices[2].

Even though, all reproductive age women with chronic non communicable diseases have the right to attain the highest standard of sexual and reproductive health on deciding and discuss freely on the number children, spacing between pregnancies and timing to have a child, they failed to do so[3].

Each pregnancy and childbirth carry health risks for women, and the risk is magnified in women with pre-existing chronic medical conditions [4,5].Women diagnosed with hypertension, diabetes, connective tissue diseases or heart disease are at a higher risk of pregnancy complications compared to healthy women6. This can lead to higher maternal morbidity and poorer fetal outcome, and some women can resort to unsafe methods of contraception[7-9].

The selection of a contraceptive method for a woman with a medical disease must address the possible adverse or beneficial interactions with the state and complications of the disease and possible drug interactions with the therapy. It must be recognized that a risk-free and efficacious contraceptive option may not exist. However, the successful avoidance of pregnancy may be a lower net risk, and a further reduction of any risk for the contraceptive method may be achieved with close surveillance for complications[10].

A study conducted in Malaysia showed that about two-third of women with chronic medical conditions who needed contraceptive did not use them despite the higher risk of pregnancy related complications[11]. Likewise a few studies have suggested that women with chronic conditions are at increased risk for unintended pregnancy[12,13]. The results of lower rates of contraceptive use in women with chronic medical conditions put them at greater risk[14,15].

Globally lack of modern contraception caused around 0.3% of deaths and 0.8% of Disabled Adjusted Life Year (DALY). Africa, South-East Asia and low and middle income countries in the Eastern Mediterranean region had the highest disease burden because of lack of contraception–accounting for around 0.5% of deaths and 1 up to 1.2% of DALYs in these regions[16].

A study conducted in Tehran showed that coital withdrawal method was the most common method in diabetic, obese/overweight and hypertensive women 41.2%, 28.0% and 35.4% respectively [17,18]. Use of a safe and modern method of contraception in women with chronic medical condition was low and needed more attention.

Another study conducted in Malaysia showed that of 450 women of reproductive age with chronic non-communicable diseases, 312 (69.3%) of them did not use contraceptive and only 30.7% of them reported using contraceptives. Contraceptive non-use was highest among the diabetics (71.2%), connective tissue patients (68.6%), and hypertensive patients (65.3%)[11].

Little is known about whether women with chronic medical conditions understand their pregnancy-related risks. Unintended pregnancy is not viewed as a result of inadequate contraceptive use, but rather decision by fate. A woman's perceived lack of control over her ability to avoid pregnancy is an additional barrier to contraceptive use and compliance[19].

In Ethiopia there is no study that shows the contraceptive use of women with chronic medical diseases. Therefore, this study aimed to assess contraceptive use and associated factors among women with chronic non-communicable medical conditions in Addis Ababa public hospitals, Ethiopia, from January-February 2017.

METHODS

Study settings and participants

The study was conducted from January 1st – February 28th 2017 in Addis Ababa, the capital city of Ethiopia. Addis Ababa is administratively divided into 10 kifle ketemas. According to 2007 population and housing census of Ethiopia, the projected total population of Addis Ababa in 2012 was 2,739,555 of this 1,434,164 were female (of this 947855-reproductive age group with 687,593 households). Addis Ababa has 12 governmental hospitals (5 under the Federal Ministry of Health, University hospital under the Addis Ababa University, 5

general hospitals and under the Addis Ababa Regional Health Bureau, 2 Army and Police), 35 private hospitals, and 710 private clinics of different levels and 26 health centers[20].

Married women of reproductive-aged (15-49 years) who had chronic non-communicable diseases and who were attending the selected public hospitals in Addis Ababa, Ethiopia were recruited for the study. After listing of the 12 public hospitals which have chronic diseases clinics such as the diabetic center, oncology, and other chronic diseases clinics, simple random sampling method was used to select the required hospitals. So, 3(25%) hospitals were selected using lottery method. The desired number of respondents (clients) from each hospital was determined based on the proportion to size allocation of total patients with chronic non communicable diseases (CNCD) in each of the hospitals and systematic random sampling was employed to select and approach each study subjects. Based on the married women attending CNCD clinic preliminary daily client load the first participant was selected using a simple random sampling technique (lottery method) then every kth interval was followed until the pre-determined sample size was obtained. In the case of selected participant refused to participate in the study, the next one was interviewed. An exit interview was conducted using a pretested structured questionnaire. So, a women with chronic non-communicable diseases eligible for contraceptive use in the selected hospitals were interviewed about contraceptive use after their diagnosis for chronic non-communicable diseases.

Hence, a total of 357 reproductive age women with chronic non-communicable diseases who came for regular checkup or were admitted in the selected hospitals participated in the study giving a response rate of 99.2%.

Study Design and Data Collection

The study was conducted in Addis Ababa public Hospitals. Hospital based cross sectional study design which contained quantitative methods of data collection was employed to answer the objectives of the study. Questionnaire comprised of information on socio-demographic variables, reproductive history, obstetric history and contraceptive use. The questionnaire were

adapted by reviewing different literature and considering the local situation of the study subjects[11, 21]. Before the actual data collection, the questionnaire was pre-tested on 5% (18 women) in Minilik Hospital outside of the study area. So, correction on questions which lack clarity to the participants was done accordingly. Six diploma nurse data collectors and six BSc. Nurse supervisors were trained for two consecutive days about quantitative methods, informed consent, how to approach participants, ethical procedure, general information on contraceptives, how to administer the questionnaires and the aim of the study. The questionnaire was checked on daily basis by the supervisors for completeness.

Data Management and analysis

Data was entered, edited, cleaned and analyzed using SPSS version 20.0 statistical software. Descriptive analysis was done for Socio- demographic characteristics, reproductive history, knowledge and attitude of the study participants. Bivariate logistic regression was used to determine the preliminary relationship between the socio demographic, knowledge and attitude related characteristics towards contraceptive and outcome variable (contraceptive use). Collinearity matrix and Hosmer and Lemshow test were used to test collinearity and assumption of goodness of fit, respectively. Finally, variables which were found significant at P<0.05 in bivariate logistic regression were taken to multivariate logistic regression to identify the independent predictors of contraceptive use.

The results were summarized and presented by texts, frequency tables and other summary statistics.

Ethical Considerations

Ethical clearance was obtained from Mekelle University, College of Health Sciences Research and Ethical Review Committee. Informed consent was obtained from each study participant.

RESULTS

Socio-demographic characteristics of women

A total of 360 reproductive age women with chronic non-communicable diseases were approached for the study and 357 respondents participated in this study making the response rate of 99.2%. Majority 152(42.6%) of the respondents were between the age of 30-49 years with mean age of 34.19(SD+8.144) and range of 15 to

49. Around 166(46.5%) of the respondents had above secondary school education and a total of 284(79.5%) of their husbands had secondary and above secondary school of education. Regarding ethnicity, above one third 131(36.7%) were Amara. The predominant religion was Orthodox Christianity 191(53.5%). Looking at occupation of the respondents majority 240(67.2%) were employed. From the total women with chronic non-communicable diseases, 140(39.5%) were diabetic, 134(37.5%) hypertensive, 39(10.9%) with heart disease, 30(8.4%) with cervical cancer, 14(4%) with renal dysfunction and other diseases. Regarding hospital admission around 196(54.6%) had history of at least one hospitalization. **(Table 1)**

Table1: Socio-demographic characteristics of women with chronic non-communicable diseases in Addis Ababa, Ethiopia, 2017

Variable	Frequency (%)
Current Age in years	
15-29	99(27)
30-39	152(42.6)
40-49	106(29.7)
Religion	
Orthodox Christianity	191(53.5)
Islam	107(30)
Protestant Christianity	48(13.4)
Catholic and others*	11(3.1%)
Respondent's occupation	
Housewife	117(32.8)
Employed	240(67.2)
Respondents Educational status	
Below secondary school	132(37)
Secondary school completed	59(16.5)
Above secondary school	166(46.5)
Family size	
2-4	137(38.4)
5-7	161(45.1)
>7	59(16.5)
Husband's Occupation	
Farmer	23(6.4)
Merchant	146(40.9)
Daily laborer and job less	38(10)
Employed	150(42)
Husband's Education	
<Secondary school	73(20.5)
Secondary school completed	140(39.2)
>Secondary School	144(40.3)

Others*= Adventist &No Religion

Pregnancy status of women with chronic non-communicable diseases, in public hospitals of Addis Ababa, Ethiopia

Regarding pregnancy status of the respondents, 322(90.2%) of women had ever gotten pregnancy. The highest gravida (total pregnancy) was ten with median and inter quartile range (IQR) of 3.0 (the IQR showed that 82.6% of the women were pregnant for 1 to 6 times. The highest parity was ten. About 53.2% of women had 2-4 children, 58 (16.2%) women reported that they had at least one times history of abortion and stillbirth. Majority 31(54.3%) of the abortion and stillbirth was unwanted pregnancy. **(Table 2)**

Table2: Distribution of obstetrics and reproductive characteristics of women with chronic non-communicable diseases in Addis Ababa, Ethiopia, 2017

Variable	Number (%)
Gravidity	
0-1	64(17.9)
2-4	182(51)
>=5	111(31.1)
Pregnancy history	
Yes	322(90.2)
No	35(9.8)
Ever given birth to a child	
Yes	317(88.8)
No	40(11.2)
Number of children	
<=2	161(45.1)
3-4	54(15.1)
>=4	142(39.8)
History of Still Birth	
Yes	39(10.9)
No	318(89.1)
History of Abortion	
Yes	116(32.5)
No	241(67.5)
History of unwanted Pregnancy	
Yes	58(16.2)
No	264(74)

Majority 325(91%) of respondents had heard about contraceptives. Three hundred and nineteen (89.4%) knew 3 or more different types of contraceptives, and 330 (92.5% knew where to find contraceptives. Regarding the perception towards using contraceptives, 146(40.9%) had supportive perception from the total contraceptive users.

Regarding to the type of contraceptive used before diagnosis of the chronic non-communicable disease, majority of 308 (86.4%) were using modern contraceptives and the most common contraceptive was injectable 214(59.9%), followed by pills 88 (24.6%). After diagnosis of the medical condition, contraceptive prevalence rate decreased by around 40% which was 122 (34.2%). The most common contraceptive used by the respondents at this stage were injectable 139(45.2%), followed by pills 75(24.4%). Majority 40(73%) of IUCD users were hypertensive and diabetic women. Thirty women with cervical cancer who participated in this study were using contraceptives before their disease diagnosis was confirmed. Majority used injectables 17(57%), followed by IUCDs 11(37%). **(Table 3)**

Table 3: Distribution of contraceptive practice of women before diagnosis of chronic non-communicable medical diseases in Addis Ababa, Ethiopia, 2017

Characteristics	All diagnosis (n=357)	Hypertension (n=134)	Diabetes (n=140)	Heart disease (n=39)	Cervical cancer (n=30)	Renal disease & other* (n=14)
Pills (a)	75	30	31	4	7	3
IUCD(b)	55	20	20	11	3	1
Injectable(c)	139	51	50	17	17	4
Implants(d)	33	13	14	3	2	1
Female condom(f)	4	1	3	0	0	0
Tubal ligation(g)	2	0	1	0	1	0
Modern contraceptive user	308(86.3)	115(85.8%)	119(85%)	35(89.7%)	30(100%)	9(64.3%)

After the diagnosis of CNCD, the most common contraceptive utilized was 48(39.7%) IUCD, followed by 18(15%) tubal ligation. Among the 48 IUCD users, the highest were diabetic 19(39.5%) and hypertensive 18(37.5%) patients. Tubal ligation was the second most common contraceptive method utilized with 18 (15%) and the majority of these users were 9(50%) diabetic, and 6(33.3%) hypertensive. The highest non-users were renal, goiter, and asthmatic patients 11(79%). **(Table 4)**

Table 4: Type of contraceptive used by women after diagnosis of chronic non-communicable diseases in Addis Ababa, Ethiopia, 2017

Characteristics	All diagnosis (n=357)	Hypertension (n=134)	Diabetes (n=140)	Heart disease (n=39)	Cervical cancer (n=30)	Renal disease & other* (n=14)
Pills (a)	12	5	3	3	0	1
IUCD(b)	48	18	19	6	4	1
Injectable(c)	14	8	5	0	0	1
Implants(d)	13	0	3	5	5	0
Foamy tablet(e)	1	0	0	0	1	0
Female condom(f)	1	0	1	0	0	0
Tubal ligation(g)	18	6	9	0	3	0
Male condom(h)	17	5	5	4	3	0
Calendar method(i)	2	2	0	0	0	0
Modern contraceptive user	122(34.2%)	44(33%)	46(33%)	18(46%)	16(53%)	3(21)
Non-users + calendar	235(65.8%)	90(67%)	94(67%)	21(54%)	14(47%)	11(79)

Factors affecting contraceptive use of married reproductive age women with chronic non-communicable disease

After adjusting for all variables, multivariate analysis revealed that contraceptive use in women who were ever counselled about contraceptive were 3.6 times more likely to use contraceptive compared to women who never got counselling about contraceptive (AOR=3.6 and p=0.003). Women who ever discussed with their husbands about contraceptive were 2.5 times more likely to use contraceptive compared to women who never had a discussion about contraceptive (AOR=2.51, P=0.01). **(Table 5)**

Table 5: Factors affecting contraceptive use of women with chronic non-communicable diseases in Addis Ababa, Ethiopia, 2017

Variables	Contraceptive use		COR	AOR
	Yes	No		
Respondent's Education				
Below secondary school	33(25%)	99(75%)	0.4(0.3,0.7)	1.3(0.9,1.9)
Secondary completed	18(31%)	41(69%)	0.6(0.3,1.1)	0.7(0.4,1.7)
Above secondary school	73(44%)	93(56%)	1	1
Husband's Education				
Below secondary school	17(23.3%)	56(76.7%)	0.4(0.2,0.8)	0.8(0.5,1.3)
Secondary school completed	47(33.6%)	93(66.4%)	0.7(0.4,1.2)	0.8(0.4,1.5)
Above secondary school	60(41.7%)	84(58.3)	1	1
Respondent's Age at marriage in years				
<18years	46(29%)	113(71%)	0.6(0.4,0.98)	1.5(0.9,2.5)
>=18years	78(39.4)	120(60.6%)	1	1
Ever discussed contraceptive with husband				
Yes	102(55%)	85(45%)	1	1
No	24(14%)	145(86%)	7.2(4,12)	2.5(1.2,5)
Decision maker on family size				
Husband	2(13%)	13(87%)	0.2(0.04,0.8)	1.2(0.7,2.1)
Myself	29(20.4%)	113(79.6%)	0.3(0.2,0.5).	7(0.3,1.2)
Husband and wife	93(46.5)	107(53.5%)	1	1
Ever counselled about contraceptive				
Yes	107(53.5%)	93(46.5%)	1	1
No	17(11%)	140(89%)	9.6(5.4,17)	3.6(1.6,8)
Ever used contraceptive				
Yes	103(40%)	155(60%)	1	1
No	21(21%)	78(79%)	2.5(1.4,4)	1.4(0.7,2.6)

COR=Crude Odds Ratio, AOR= Adjusted Odds Ratio

DISCUSSION

Contraceptive prevalence rate (CPR) in this study was 34.2%. This is almost similar to studies conducted in Malaysia [14, 21] which were 30.7% and 34.4% respectively.

In this study CPR was very low when compared with studies conducted in Thailand, Indonesia, and Vietnam with 79.2%, 56.4% and 79% respectively[8, 22]. This discrepancy might be due the Thailand, Indonesia and Vietnam might have better health service distribution and better educational status compared to Ethiopia.

This study revealed that perception towards contraceptive does not have any association with the contraceptive use, which is in line with studies conducted in Malaysia and Iran[11, 23].

In the current study, quite a high percentage of women with chronic medical conditions did not use contraceptive because they did not receive any counselling about it

during their encounter with the medical personnel and this finding is similar with a study conducted in Iran and Turkey [21, 23].

This study has shown that women who were ever counselled about contraceptive were about 3.6 times more likely using contraceptive as compared to women who never got counselling about contraceptive and this indicated that counselling has a huge influence on use or non-use of contraceptive in women with chronic medical conditions. This study also has shown that women who discussed with their husbands about contraceptive were about 2.5 times more likely to use contraceptive as compared to women who never discussed with their husbands. Therefore, with their husband could be a major predictor of preventing unwanted pregnancies and minimizing the risk that occur during pregnancy.

Studies conducted in Malaysia and Iran showed that having children and increasing age had an association with contraceptive use, but in this study these variables were not explanatory for the response variable [11, 18].

The number and percentages of study participants who had at least one stillbirth or abortion 58(16.2%) and unwanted pregnancies 31(53.4%) were similar with other studies [10, 11,19].

Women with chronic medical conditions need special attention regarding to contraceptive counselling and this finding is similar with two studies conducted in Iran and Turkey which showed that quite a high percentage of women with chronic medical conditions did not use contraceptive because they did not receive any counselling about it during their encounter with the medical personnel [21, 23].

The prevalence of any modern contraceptive use in this study was slightly higher than the national prevalence (29.9%) and lower than Addis Ababa 63% according to EDHS, 2011 report[6]. Low prevalence of contraceptive use shows that there is a high unmet need of contraception among women with chronic medical conditions.

In this study discussing with husband about contraceptives was noted to be significantly associated with contraceptive use which was consistent with studies conducted in Nigeria[24]. Discussion between spouses is expected to increase contraceptive use, because one reason women cite for not using contraception is their husband's disapproval, despite never having discussed family planning with their husbands. In a study conducted in Ghana, married women who discussed family planning with their partners were three times as likely to be current users of contraception as compared to their counterparts who had never had such discussion[25]. Intervention programs aimed at increasing contraceptive use may need to involve different approaches, including promoting couples' discussion of fertility preferences[26].

CONCLUSION and RECOMMENDATIONS

In conclusion, this current study showed that low proportions of women with CNCD were using contraceptives. Contraceptive use or non-use was associated with getting counselling from health care providers and discussion with spouse about contraceptive. In addition, this study revealed that the most common contraceptive used by women with CNCD was IUCD followed by permanent contraceptive like tubal ligation. Therefore, getting adequate counselling and discussion with their husband's may increase contraceptive utilization of women with chronic non-communicable diseases.

Contribution of Authors

Hailay Gebremichael and Teame Gebretinsae originated the study idea, designed the study, contributed to statistical analysis of the study and prepared the manuscript. Mussie Alemayehu and Gebremeskel Miruts reviewed the study protocol, contributed significantly to statistical analysis. All authors read and approved the final manuscript.

The authors declare that they have no competing interests and the content of the manuscript has neither been previously published nor being considered for publication elsewhere.

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