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Access to family planning contributes up to a 44% reduction in maternal deaths and a 21% reduction in deaths of children under age 5. Since the majority of unplanned pregnancies and abortions occur in women who were either not using birth control or not using it consistently, greater access to contraception and more consistent use of contraception are crucial in the reduction of unplanned pregnancies and abortions. This study aims to determine the most common types of contraceptives that have been discontinued, the reasons for discontinuation, and factors that affect the discontinuation in Myanmar.

Methods

This study was a secondary data analysis of the 2015-16 Myanmar Demographic Health Survey. The study included women age 15-49 who used contraceptive methods within the 5 years before the survey. The dependent variable in the study was the number of women age 15-49 who used contraception in 5 years before the survey, and discontinued within 12 months after beginning its use. To describe the dynamic of contraceptive use, we used the Demographic and Health Survey calendar file that collected information about reproduction and contraception. Multivariable logistic regression was used to identify the predictors of discontinuation of contraceptives.

Results

The first-year discontinuation rate for all contraceptive methods was 39.1%. The discontinuation rates for short-term methods were remarkably high (43% for pills and 42% for injectables), while the rate for long-term methods was very low (7.3% for intrauterine devices). Discontinuation by those who in need of contraception was high (54.6%), although 27.6% of those women switched to other modern methods. After controlling for other factors with multivariable logistic regression, the predictors for contraceptive discontinuation were a woman's age, location (state/region), wealth index, and number of births within 5 years.

Conclusions

High rates of discontinuation by women in need of family planning are very alarming given the programs designed to reduce the unmet need for family planning and prevent unwanted pregnancies in Myanmar. Family planning programs must ensure timely, informed method-switching by women who discontinued contraception, strengthen the availability and accessibility of long-term contraceptive methods, and encourage proper counseling that ensures clients' informed and voluntary choice of family planning services.

KEY WORDS: Contraceptive, discontinuation, unmet need, family planning

ACRONYMS AND ABBREVIATIONS

aOR	adjusted odds ratio
CI	confidence interval
CPR	contraceptive prevalence rate
DHS	Demographic and Health Survey
FP	family planning
FP2020	Family Planning 2020
IUD	intrauterine device
LAM	lactation amenorrhea method
LARC	long-acting reversible contraception
MDHS	Myanmar Demographic and Health Survey
MMR	maternal mortality ratio
MII	method information index
OR	odds ratio
PRMR	pregnancy-related mortality ratio
SDG	Sustainable Development Goals

1 INTRODUCTION

Improving access to sexual and reproductive health services such as family planning (FP) is fundamental to achieving the Sustainable Development Goals (SDG) because this access is strongly interrelated with women's and children's health, as well as poverty, education, gender equality, and human rights (New et al. 2017).

The importance of FP is well established. Access to FP contributes up to a 44% reduction in maternal deaths and a 21% reduction of deaths in children under age 5 (Starbird, Norton, and Marcus 2016). Access enhances opportunities for women and girls to attain greater socioeconomic status through education, employment, and empowerment, and accelerates the development of the country by reducing healthcare costs (Kaye, Gootman, Ng, and Finley 2014).

Myanmar has the second highest maternal mortality ratio (MMR) (178/100,000 live births) among the Association of Southeast Asian Nations (ASEAN) countries (WHO 2015). Abortion-related complications were the second leading cause of maternal death (Department of Public Health 2019). In the 2014 Myanmar Population and Housing Census, the MMR in Myanmar was 282 deaths per 100,000 live births (Department of Population 2015). The pregnancy-related mortality ratio (PRMR) was 227 deaths per 100,000 live births in the 2015-16 Myanmar Demographic and Health Survey (MDHS) (MOHS and ICF 2017). Given these statistics, Myanmar has been working to improve accessibility to modern FP methods and to improve maternal and newborn health (MOHS 2013).

Reproductive, maternal, newborn, child, and adolescent health are priority public health issues in the Myanmar National Health Plan (2017-2021) (MOHS 2016). In 2013, Myanmar strongly committed to Family Planning 2020, a global initiative focused on reaching more women with life-saving information and access to contraceptives by the year 2020 (Department of Public Health 2014).

Myanmar's FP program began in 1991 as a pilot in one township. Since 2012, the government has increased the health budget, invested additional resources in the FP program, and increased the accessibility of contraceptives at the community level.

Myanmar has been working to increase contraceptive use by married couples and unmarried individuals through informed choice. National surveys conducted in Myanmar showed an increasing trend in the modern contraceptive prevalence rate (CPR) from 38% in 2007 to 51% in 2016, and a decreased trend in the unmet need for FP from 19% in 2007 to 16% in 2016 (MOHS and ICF 2017; Department of Population and UNPFA 2009). However, the CPR and the unmet need for FP are not adequate for achieving the FP2020 targets of greater than 60% CPR and less than 10% of unmet need (MOHS and ICF 2017; Department of Public Health 2016). In addition, there is much disparity in unmet need for FP among Myanmar's states and regions (MOHS and ICF 2017). Although the best approach to reducing unintended pregnancies is contraception, the high rate of unsafe abortion shows that women in Myanmar continue to experience challenges in contraceptive accessibility and use.

Since the majority of unplanned pregnancies and abortions occur in women who were not using birth control or were not using it consistently, greater access to and consistent use of contraception are crucial in the reduction of unplanned pregnancies and abortions (Kaye, Gootman, Ng, and Finley 2014). Furthermore,

unplanned pregnancies can lead to poor maternal and child health outcomes, which affect the development of the country (Kaye, Gootman, Ng, and Finley 2014).

The dynamics of continuing contraceptives, switching, and failing to achieve adequate contraception are important markers of how well public health programs are meeting the FP needs of women and couples (Ali, Cleland, and Shah 2012). Globally, research has focused on determining the reasons for discontinuation of different types of contraceptives. All discontinuation is not necessarily problematic. Some women discontinue a particular FP method because it is difficult to use, or because its use is unacceptable to either the woman or her partner, who subsequently switch to another more suitable method (Castle and Askew 2015). In contrast, women who discontinue contraception despite their desire to limit or delay childbearing represent an extremely important reproductive health problem (Azuike et al. 2017). Discontinuation for reasons other than "wanted to become pregnant" can become unwanted pregnancies if women do not adopt another contraceptive method, and some of these pregnancies lead to termination by unsafe methods (Castle and Askew 2015). On the other hand, we need to halt discontinuation among the women with met need and current contraceptive use, which contribute in reducing unmet need (Jain, Obare, RamaRao, and Askew 2013).

Studying the dynamics of contraception can identify problems in contraception use and the gaps in service provision (Ali, Cleland, and Shah 2012). The reasons for discontinuation of modern contraceptive methods and the characteristics of the women who discontinue contraception are necessary for the evaluation of FP strategy and the required resource allocation that can ensure the quality of and equitable access to FP information and services. The research on contraceptive discontinuation in Myanmar is very limited. Such information is critical for Myanmar's FP program and health providers who work to assure the consistent use of contraceptives by women in need. Thus, this study aims to determine the most common types of discontinued contraceptives, the reasons for discontinuation, and the factors that affect the discontinuation of contraceptives in Myanmar.

2 METHODOLOGY

This study was a secondary data analysis of the 2015-16 MDHS, which was the very first DHS survey conducted in Myanmar (Ministry of Health and Sports and ICF 2017). As a part of the worldwide DHS program, the MDHS was a nationally representative survey that provided current information on fertility, reproductive health, and FP. The MDHS included information on 12,500 households, 12,885 women, and 4,737 men, age 15-49, across 15 States and Regions, and the urban and rural areas in Myanmar.

Standard recode data files for the MDHS, as with other DHS surveys, are freely available for access by the public through The DHS Program website, https://www.dhsprogram.com/data/. Ethics approval for the MDHS was obtained from the Ethics Review Committee of the Department of Medical Research, Ministry of Health and Sports, Myanmar. The secondary data analysis for this study was conducted after obtaining the permission from the DHS program and the Department of Public Health, Ministry of Health and Sports, Myanmar.

This study included information on women, age 15-49, who used contraceptive methods during the 5 years before the survey. The data included sociodemographic characteristics and information on FP such as knowledge of contraception, exposure to FP messages and sources of information, and informed decision making on contraceptive use.

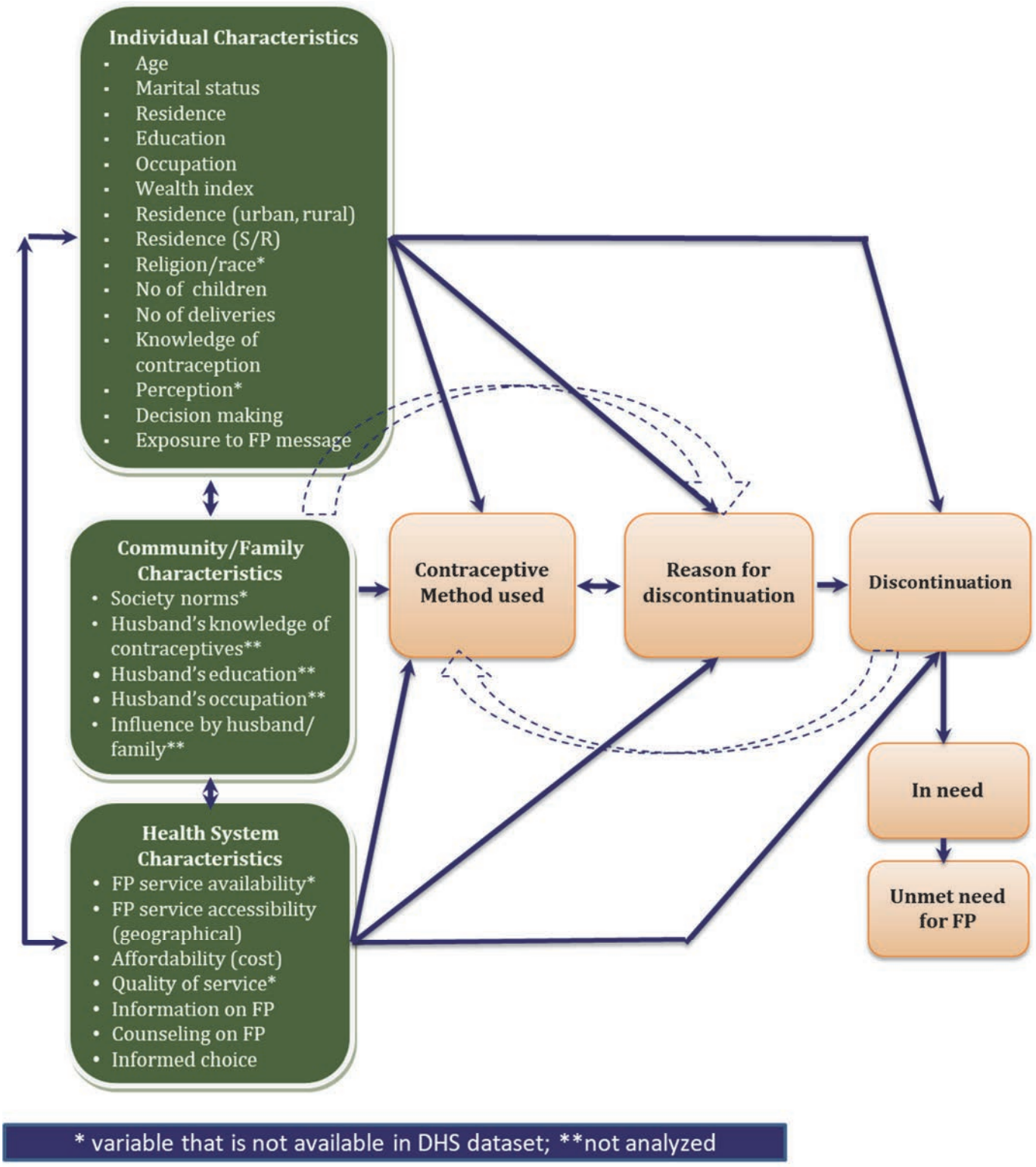
2.1 Variables

Knowledge of contraception was calculated as a knowledge score, which was the combined score of a woman's ability to name contraceptive methods and to know the ovulation cycle. There were 12 knowledge items in the knowledge score, with "high ≥7 correct" and "low ≤7correct." Informed choice for FP was assessed with the "method information index," which calculated a woman's "Yes" responses to three variables: 1) the woman was informed about the side effects or problems of the contraceptive method used, 2) the woman was informed about what to do if she experienced side effects, and 3) the woman was informed by a health or FP worker of other contraceptive methods that could be used.

The dependent variable in the study was the number of women age 15-49 who used contraception in 5 years before the survey and discontinued it within 12 months after beginning its use. The independent variables were age group, marital status (married, never/widowed/divorced/separated), education (highest level attained), residence (type of place of residence), state/regions, wealth quintile (household wealth index), working status (whether the woman is currently working or not), exposure to FP messages (if respondent heard about FP on radio, TV, and newspaper or not), knowledge about contraceptives (whether respondent has high or low knowledge of any FP method), decision making for contraceptive use (mainly women, mainly men, or both), informed choice of contraceptive use, contraceptive use (current use of any method), number of children born in previous 5 years, and the number of living children. The selection of variables was guided by the conceptual framework, shown in Figure 1 and available in the MDHS.

2.2 Conceptual Framework

Figure 1 Conceptual framework of the factors that influence contraceptive discontinuation among women age 15-49



In the conceptual framework used in this study, the factors that influence contraceptive discontinuation among women age 15-49 were individual characteristics, community/family characteristics, health system characteristics, and type of contraceptive methods used.

To describe the dynamics of contraceptive use, we used the DHS calendar file, which collected information on reproduction and contraception. From this DHS calendar, the study used the information on the dynamics of contraceptive use to create the event file in order to analyze the contraceptive discontinuation events among women age 15-49 who used contraception in 5 years before the survey and discontinued within 12 months after beginning its use. The unit of analysis was the number of discontinued events available for further analysis.

The data analysis used STATA (Version 15 STATA Corp., College Station, TX, USA). All tests were two-sided with a p-value of less than 0.05 considered statistically significant. Twelve-month discontinuation rates and reasons for discontinuation were described by frequency and percentages. All possible factors that might have influenced discontinuation such as sociodemographic characteristics, FP knowledge, exposure to FP messages, informed choice, decision making for FP, and contraceptive method used and discontinued were included in the bivariate analysis.

To identify the predictors for discontinuation of contraceptive, odds ratios (ORs) and their 95% confidence intervals (CIs) were estimated using multiple logistic regression.

3 RESULTS

3.1 Characteristics of Contraceptive Ever Users

Table 1 shows the sociodemographic characteristics of the women age 15 to 49 who used a contraceptive method within the 5 years before the MDHS. Among ever users (n=5,431), 62.5% were between age 25-39, only 2.5% were adolescents (age 15-19), and 12.2% were between age 20-24. Almost all (96%) users were married. Nearly half of the respondents have primary education and only 8% have higher education. One-third of the women were not working, and about 70% resided in rural areas.

About half of the women (53%) did not receive an FP message from any source, while 73% had a good FP knowledge score. The method information index was 23%, which means that only two in ten of the ever users had informed choice when they used FP methods. About two-thirds (64%) of the women made a joint decision when choosing a method, while one-third (33%) made the decision themselves.

Table 1 Characteristics of women (age 15-49) who ever used a contraceptive method within 5 years before the 2015-16 MDHS

Characteristics of contraceptive ever users	n %	N=5,431
Age group		
15-19	2.5	144
20-24	12.2	665
25-29	19.3	1,058
30-34	21.7	1,158
35-39	21.5	1,146
40-44	14.7	817
45-49	8.1	443
Marital status		
Married	96.9	5,252
Never married/widowed/divorced/separated	3.1	179
Education level		
No formal education	12.0	638
Primary	46.7	2,481
Secondary	32.6	1,842
Higher	8.7	470
Occupation (n=5,417)		
Not working	29.1	1,626
Professional/technical/managerial	4.7	289
Clerical	1.1	58
Sales	18.0	996
Agricultural-self employed	8.7	442
Agricultural-employee	5.5	301
Household and domestic	0.2	12
Services	0.7	33
Skilled manual	6.5	312
Unskilled manual	25.5	1,348
Wealth index		
Poorest	19.8	1,076
Poorer	20.3	1,100
Middle	19.2	1,069
Richer	20.3	1,126
Richest	20.5	1,060
Residence		
Urban	28.0	1,551
Rural	72.0	3,880

Continued...

Table 1—*Continued*

Characteristics of contraceptive ever users	n %	N=5,431
Region		
Kachin	2.4	278
Kayah	0.5	333
Kayin	2.2	303
Chin	0.4	166
Sagaing	10.8	448
Tanintharyi	2.3	321
Bago	11.1	469
Magway	7.4	362
Mandalay	11.1	393
Mon	3.6	339
Rakhine	5.4	353
Yangon	14.4	454
Shan	10.6	340
Ayeyarwady	15.3	473
Nay Pyi Taw	2.8	399
Number of births in last 5 years		
Number of births	49.8	2,574
1	42.9	2,355
2	06.5	451
3	00.7	51
Number of living children		
0	9.1	449
1	28.8	1,461
2	28.9	1,533
3	18.0	1,012
4+	15.1	976
Knowledge on family planning		
Poor	27.3	1,484
Good	72.7	3,947
Exposure to FP message/source of information		
No exposure	52.5	3,047
Exposure from any source	47.5	2,384
Decision making for contraceptive use		
Mainly women	33.0	1,215
Mainly husband	1.8	75
Jointly	64.9	2,437
Others	0.4	18
Informed choice		
Yes	22.6	806
No	77.4	2,873

3.2 12-Month Discontinuation Rate

As shown in Table 2, the first-year discontinuation rate for all methods was 39.1%. Among the different methods, the rate for the lactation amenorrhea method (LAM) was the highest. The discontinuation rates for short-term methods were remarkably high, with 43% for pills and 42% for injectables, while the rate for long-term methods was very low, with 7.3% for the intrauterine device (IUD).

Table 2 12-month contraceptive discontinuation rates among women age 15-49 who began an episode of contraceptive use within the 5 years before 2015-16 MDHS

Discontinuation by methods	(N=6,980) (%)
LAM	84.9
Pill	43.0
Injectable	41.5
All	39.1
Male condom	31.0
Withdrawal	23.0
Periodic abstinence/rhythm	19.5
IUD	7.1
Other	5.4
Implant	0.2

3.3 Reasons for Discontinuation

Table 3 shows the reasons for discontinuation. Health concerns/fear of side effects (31%) was the most common reason for discontinuing the use of a contraceptive method within 12 months after beginning its use.

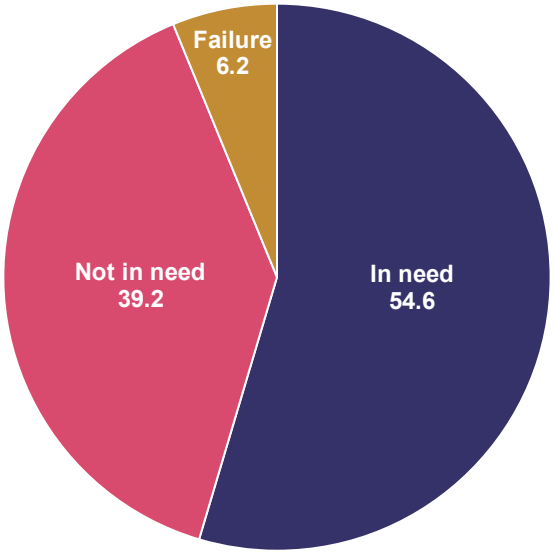
These reasons could be grouped as ***discontinued due to failure*** of contraceptive methods such as "became pregnant while using"; ***discontinued while in no need*** such as "wanted to become pregnant" as well as "other fertility-related"; and ***discontinued while in need*** like "health concerns/side effects" as well as "wanted a more effective method."

Table 3 Reasons for discontinuation among women age 15-49 who began an episode of contraceptive use within the 5 years before 2015-16 MDHS

Reasons for contraceptive discontinuation	(N=6,980) (%)
Health concerns/side effects	31.0
Wanted to become pregnant	26.7
Wanted a more effective method	12.5
Other fertility-related reason	12.4
Other method-related	6.3
Became pregnant while using	6.2
Don't know	4.9

As shown in Figure 2, almost 55% of the contraceptive users discontinued their contraceptive use within 12 months after beginning its use although they needed contraception.

Figure 2 Discontinuation rates by need



3.4 Factors Influencing the Discontinuation of Contraceptives

In the bivariate analysis, women age 45-49, not currently married, technical and skilled employees, from the richest quintile, and contraceptive methods used were factors that were significantly associated with discontinuation of a contraceptive within 12 months after beginning its use.

After controlling for the other factors with multivariable logistic regression, the predictors for contraceptive discontinuation were the women's age group, location (state/region), wealth index, and number of births within 5 years. Women aged 45-49 and those from the middle and richest quintile group were more likely to discontinue contraceptive use. Women with one child and those using short-term contraceptive methods were more likely to discontinue the contraceptive use.

Table 4 The predictors for contraception discontinuation among women age 15-49 who began an episode of contraceptive use within the 5 years before the 2015-16 MDHS

Characteristics	Contraceptive Discontinuation %	OR [95% CI]	aOR [95% CI]
Age group (n=4,982)			
15-19	23.4	Ref	Ref
20-24	26.33	1.16 [.77-1.76]	1.16 [0.76-1.79]
25-29	24.45	1.05 [.69-1.59]	1.04 [0.68-1.59]
30-34	24.0	1.03 [.67-1.56]	0.97 [0.63-1.49]
35-39	24.1	1.03 [.63-1.70]	0.94 [0.57-1.54]
40-44	31.3	1.48 [.93-2.36]	1.29 [0.82-2.05]
45-49	5.2	3.5 [1.59-7.75]	2.68* [1.31-5.46]
Marital status (n=5,884)			
Married	25.1	Ref	Ref
Never married/widowed/divorced/separated	95.0	5.47* [3.52-8.49]	
Education level (n=5,884)			
No formal education	25.5	Ref	
Primary	25.2	0.98 [0.72-1.35]	
Secondary	28.0	1.14 [0.77-1.68]	
Higher	25.8	1.02 [0.64-1.61]	
Occupation (n=4,971)			
Not working/dependent	22.3	Ref	
Professional/technical/managerial	37.5	2.09* [1.01-4.33]	
Clerical/sales/services	28.6	1.39* [1.02-1.91]	
Agricultural	27.0	1.29 [0.78-2.14]	
Manual worker	26.7	1.27 [1.02-1.58]	
Wealth index (n=4,982)			
Poorest	23.0	Ref	Ref
Poorer	25.1	1.12 [0.84-1.48]	1.13 [0.84-1.52]
Middle	30.0	1.43 [0.96-2.13]	1.42* [1.02-2.00]
Richer	24.0	1.05 [0.77-1.44]	1.19 [0.86-1.63]
Richest	29.7	1.41* [1.02-1.97]	1.66* [1.18-2.34]
Residence			
Urban	26.5	Ref	
Rural	26.1	0.98 [0.74-1.29]	
Region (n=5,884)			
Yangon	16.4	Ref	Ref
Kachin	21.8	1.41 [0.85-2.36]	1.62* [1.98-2.67]
Kayah	23.5	1.56* [1.05-2.33]	1.79* [1.19-2.68]
Kayin	37.6	3.07* [1.96-4.81]	3.53* [2.29-5.44]
Chin	28.8	2.05* [1.21-3.48]	2.12* [1.25-3.59]
Sagaing	26.8	1.86* [1.23-2.80]	2.06* [1.38-3.10]
Tanintharyi	56.4	6.58* [3.93-11.02]	7.87* [4.61-13.44]
Bago	15.5	0.93 [0.64-1.36]	1.08 [0.74-1.58]
Magway	36.4	2.90* [1.52-5.55]	3.27* [1.81-5.93]
Mandalay	23.7	1.58 [0.98-2.55]	1.80* [1.11-2.93]
Mon	42.3	2.72* [2.35-5.90]	4.03* [2.54-6.41]
Rakhine	34.2	2.64* [1.69-4.12]	3.19* [2.03-5.02]
Shan	32.2	2.42* [1.44-4.06]	2.52* [1.49-4.27]
Ayeyarwady	17.5	1.08 [0.72-1.61]	1.35 [0.89-2.02]
Nay Pyi Taw	23.1	1.53* [1.03-2.26]	1.76* [1.17-2.63]

Continued...

Table 4—*Continued*

Characteristics	Contraceptive Discontinuation %	OR [95% CI]	aOR [95% CI]
Number of births in last 5 years (n=4,982)			
Number births	30.3	Ref	Ref
1	23.1	0.69* [0.54-0.89]	0.78* [0.62-0.98]
2	28.5	0.92 [0.66-1.29]	1.01 [0.73-1.40]
3	37.6	1.38 [0.85-2.26]	1.66 [0.98-2.82]
Number of living children (n=4,982)			
0	27.7	Ref	
1	27.2	0.97 [0.73-1.29]	
2	23.5	0.80 [0.57-1.14]	
3	23.0	0.78 [0.55-1.11]	
4+	31.4	1.19 [0.83-1.72]	
Knowledge on family planning			
Poor	25.8	Ref	
Good	26.4	1.03 [0.84-1.26]	
Exposure to FP message/source of information (n=4,982)			
No exposure	26.5	Ref	
Exposure from any source	25.9	0.97 [0.80-1.17]	
Decision making for contraceptive use (n=3,494)			
Mainly women	18.0	Ref	
Mainly husband	12.1	0.62 [0.19-2.01]	
Jointly	14.6	0.78 [0.54-1.11]	
Informed choice			
No	15.6	Ref	
Yes	15.9	1.02 [0.74-1.40]	
By methods(n=1,458)			
LARC	2.0	Ref	
Pills	31.0	22.40* [5.24-95.4]	
Injection	27.3	18.74* [4.43-79.18]	
Other including condom	14.1	8.17* [1.70-39.13]	
Natural method	12.6	7.17* [1.30-39.47]	

*p<0.05

4 DISCUSSION AND CONCLUSIONS

4.1 Discussion

This study was a secondary data analysis of the first nationally representative 2015-16 MDHS that included 12,885 women age 15-49 from both the urban and rural areas in Myanmar.

The findings have a number of policy and practice implications for the national FP program because the MDHS was a nationally representative survey. Among the 5,431 women who ever used contraception, nearly three-fourths had a good knowledge score, which is the combined score of a woman's ability to name contraceptive methods and to know the fertility period. In the MDHS, 96.7% of all women had heard of a contraceptive method, which was consistent with the 2007 Fertility and Reproductive Health Survey, in which knowledge of FP was 95% (Department of Population and UNPFA 2009). However, in a small Myanmar study, only 20% of married women had a knowledge score that reflected detailed information of contraceptive usage such as eligibility, benefits, side effects, and warning signs of different methods (Nwe Tin 2017). The MDHS found that about half of the women who ever used contraceptives did not receive the FP message from any source (MOHS and ICF 2017). This highlights the need to strengthen the provision of comprehensive FP information so that women can be more knowledgeable about method choice, and more likely to choose a satisfactory method that they can use for a longer period of time (WHO and Johns Hopkins Bloomberg School of Public Health 2018).

In this study, the 12-month contraceptive discontinuation rate among women age 15-49 who started an episode of contraceptive use within the 5 years before the MDHS was 39.1% for all methods. This was quite high when compared with DHS data from 34 developing countries, in which the discontinuation rate for all countries combined was 19% (Jain, Obare, RamaRao, and Askew 2013). However, the rate in this study is consistent with the 38% 12-month discontinuation data from 60 surveys in 25 countries (Ali, Cleland, and Shah 2012).

Discontinuation of short-term methods is usually higher than the long-term methods. In the MDHS, the discontinuation was about 40% for pills or injections versus 7.3% for the IUD (MOHS and ICF 2017). These results were similar to the results of 60 surveys in 25 countries (40% for pills and injections versus 13% for IUD) except for condom use (50%) (Ali, Cleland, and Shah 2012). The MDHS results were also consistent with a study from Senegal, in which the 12-month discontinuation rate was 34% and there were low discontinuation rates found in the long-term methods (6.3% and 18.4% for implants and IUD, respectively) versus 38% for pills and 32.7% for injections (Barden-O'Fallon, Speizer, Calhoun, and Corroon 2018).

In Myanmar, short-term methods are readily available at both public and private health facilities, pharmacies, drug shops, and vendors in some rural communities. In hard-to-reach areas, untrained community health volunteers provide injections of Depo-Provera without providing any important user information (PSI and FPwatch 2016). In the 2015-16 MDHS, the source for pills was the private sector (47%) and other sources (39%), while the source for injections was mainly the public sector (74%).

In the MDHS, the method information index for all methods was 23%. For short-term methods, the index was quite low (13% for pills and 26% for injections), compared with long-term methods (64% for implants and 53% for IUD). This suggests that short-term methods may be being given without proper counseling and information in both the public and private sectors. This also highlights the critical importance of proper restrictions on selling injections to unskilled individuals, proper information-sharing with clients by drug shops and pharmacies, and awareness training on FP for drug sellers, as well as quality counseling on informed choice by all healthcare providers.

In this study, the primary reasons for discontinuation were health concerns or fear of side effects. This was similar to the evidence from 60 surveys, which also found that proper counseling and information services were inadequate (Castle and Askew 2015). Contraceptives that were discontinued due to method failure were 6.2%, which was similar (7.46%) to the findings of a study in Pakistan (Rizvi and Irfan 2012). This might be a result of inadequate counseling or incorrect information on correct use (Haq, Sakib, and Talukder 2017), because failure rates are less than 1% for all methods (Castle and Askew 2015; WHO and Johns Hopkins Bloomberg School of Public Health 2018).

In the MDHS, the discontinuation rate for those who are in need of contraception was high (54.6%), although 27.6% of those women reported switching to other modern methods. High discontinuation in combination with the need for contraception is very alarming in light of the country's efforts to reduce the unmet need for family planning and to prevent unwanted pregnancies. Family planning programs must ensure timely, accurate information on method-switching to those women who have discontinued contraception in order to prevent unintended pregnancies and unsafe abortion (Castle and Askew 2015).

According to the MDHS, the unmet need for FP in Myanmar was 16.2%. For women who wish to limit their families this was 11%, and for women who wish to space their children, 5%. There was considerably high use (68.4%) of short-term methods (pills or injections), even though these women would like to limit births. Since this might lead to unsustainable use of contraception and discontinuation, there is the need to improve service quality and counseling that can help women make an informed choice.

When identifying the factors that influence discontinuation, women age 45-49, not currently married, technical and skilled employees, from the richest quintile, and contraceptive method used were significantly associated in the MDHS with discontinuation of contraceptive use in the binomial logistic regression. In a similar analysis of the 2013 Nigeria DHS data, the predictors for discontinuation were women's age, residence, education, number of under-5 children, marital duration, women's occupation, men's occupation, and wealth index (Azuike et al. 2017). Family size and actual number of children were associated with discontinuation in the Pakistan study (Rizvi and Irfan 2012).

After controlling for the other possible confounding factors in this study, the multivariable logistic regression analysis illustrated that the predictors for contraceptive discontinuation were the women's age group, location (state/region), wealth index, and number of births within 5 years. Among the predictors for contraceptive discontinuation, the type of method used was the most important factor, although it could not be included in multivariable analysis due to the small sample size in the IUD group. Women who used short-term methods were more likely to discontinue than long-term methods users (Castle and Askew 2015).

It was noted in the MDHS that the method information index for long-term methods was high and discontinuation rate quite low, which was the opposite for short-term methods. It is possible that long- term contraceptives are provided by trained medical physicians who provide professional counseling. Although there was not a significant association between the discontinuation rate, the method information index, and the types of contraceptive methods used, FP programs should promote long-term methods that assure sustained contraception. Long-term methods are cost-effective methods as compared with short-term contraceptives, and also align with Myanmar FP 2020 commitments to increase access to and consistent use of contraception in Myanmar (Government of Myanmar 2017; Mavranezouli 2009).

4.2 Strengths and Limitations

This study utilized data from the 2015-16 MDHS, the first nationwide representative survey conducted in Myanmar. The study used DHS-standardized data collection tools, data management strategies, and data analysis techniques, which generate nationally representative data that can be compared with data from other countries where DHS were conducted. The study had some limitations. Husband/family/community factors and some health system factors (service availability, accessibility, and quality of services) were not assessed in the study because this information was not available in the MDHS. Since this study was based on cross-sectional analysis, some association factors were limited, which decreased our understanding of the experience of individuals and couples that contributes to the discontinuation of contraception.

4.3 Conclusions

The first-year discontinuation rate for all methods was high, primarily because of discontinuation of short-term methods. The contraceptive discontinuation rate while in need was also considerably high, with health concerns/fear of side effects cited as the most common reason for discontinuation. The method information index was not significantly associated with discontinuation, although it was quite high in long-term method users. This study's findings support the Myanmar FP Program's goal to reduce contraceptive discontinuation while women are in need. Women who have discontinued contraception need timely and accurate information on method switching. The country must improve the availability and accessibility of long-term contraceptive methods, and encourage counseling that promotes informed choice and voluntary FP services. In addition, qualitative research could explore the other potential family/community and health service factors that might influence contraceptive discontinuation.

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