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Internal Migration and the Use of Modern Contraceptive Methods: Analysis of the 2015-16 Myanmar Demographic and Health Survey

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ABSTRACT

This paper addresses internal migration and contraceptive use in Myanmar. Migration is a multidimensional phenomenon of economic and social importance and has significant impacts on sustainable development. Myanmar remains a predominantly rural country with among the lowest levels of awareness and use of modern contraceptives. Rapid urbanization, however, is creating often remarkably large gaps between modern contraceptive use in rural and urban areas.

The study analyzed data from the 2015-16 Myanmar Demographic and Health Survey (MDHS), the first DHS survey conducted in the country. In our analysis, current use of modern contraception is the dependent variable, and the main independent variable is the migration stream, which was categorized as urban nonmigrant, urban-to-urban migrant, urban-to-rural migrant, rural-to-urban migrant, rural-to-rural migrant, and rural nonmigrant. The association between modern contraceptive use and migration is analyzed using cross tabulations with descriptive and logistic regression analysis.

The results show that urban-to-urban migration is associated with increasing use of modern contraception. This finding suggests that modern contraceptive behavior is influenced by changes in residence and the characteristics of the place of origin and destination. Other factors that show a strong correlation with the level of modern contraceptive use are women's age, education, empowerment, desire for another child, number of children, and household wealth quintile. The issue of internal migration is important to planners, researchers, and policymakers to achieve better fertility behavior and to improve public policy for family planning and health services programs.

1 INTRODUCTION

Internal migration is a basic major component of socioeconomic transformation in a country. When people migrate, they may face new social and economic environments that could provide different opportunities for health services. Understanding migration patterns is a requirement for effective and efficient social and economic policy. The amount and size of movement toward various areas of the country and the difference in characteristics between migrants and nonmigrants all need to be examined and explained. A change in place of residence could influence fertility behavior, and public policy interventions should account for the residential experience of women served by family planning in different places. The paper examines whether changes in residential status have an influence on modern contraceptive use. In Myanmar the use of reproductive and maternal health services has been given prime priority. Very little research, however, has been conducted in exploring the association of migration and use of reproductive health services in the context of Myanmar.

1.1 Background

Maternal and reproductive health remains a significant public health issue in Myanmar. The burden of infant mortality rates is one of the highest in the region, with reports as high as 105 deaths per 1,000 live births (Hoehn and Hoppenz 2009). Urbanization and internal migration have recently been gaining attention in Myanmar due to socioeconomic and political changes. As a result of environmental pressures (natural disasters), ethnic conflict and tensions, and refugee settlements, the level of migration has risen in Myanmar. Awareness and use of contraception among migrants, however, has not been well studied, even though it is a key determinant of fertility and reproductive health (Brockerhoff 1995). Given the increase in urban growth and mobile populations, it is important to support reproductive health programs and policies in urban areas.

Internal migrants face a number of challenges, including lower education status, discrimination, social isolation, conflicts between traditional and modern city values, and increased sexual opportunities. Other challenges faced by poor families in Myanmar include misinformation about sexual and reproductive health issues, widespread use of traditional forms of contraception, harmful traditional practices during deliveries, and the common practice of unsafe abortions (Sudhinaraset et al. 2016).

In Myanmar, as in other developing countries of the world, internal migration has become a major issue influencing government policies and program efforts. The Department of Population and UNFPA report also documented an increase in the level of migration between 1991 and 2007: a higher proportion of women moved, as evidenced by an increase in female migration in the urban-to-urban migration streams; and the positive relationship between migration and education strengthened over this period (Nyi 2013). According to the 2014 Population and Housing Census, 19% of individuals reported moving at least once in their lifetime. For internal migration within the 5-year period before the census, 7% reported moving. Almost half of the recent migration occurred between urban areas, while about 10% was from rural-to-urban areas. Females are more likely to migrate than males (Ministry of Immigration and Population 2015). Women in particular are more likely than men to move to join their families or work in the agricultural sector, with marriage being the most common reason for migrating (Subaiya 2007).

A study in Peru shows that rural migrant women are less likely to use modern contraceptive methods compared with urban nonmigrant women (Subaiya 2007). Another study in Guatemala showed that current use of modern contraceptive methods was positively associated with women's education (Lindstrom and Hernandez 2006). Another study also found that urban nonmigrants were more likely to use modern contraception compared with rural nonmigrants (Lindstrom and Muñoz-Franco 2006). According to the Myanmar Demographic and Health Survey (MDHS) (MOHS and ICF 2017), in general, among currently married women age 15-49, those living in urban areas (57%), those with higher education (57%), and those from the wealthiest households (56%) were more likely to report use of modern contraceptive methods compared with rural residents, less educated women, and less wealthy women.

In examining the relationship between migration and contraceptive use, we need to consider the possibility of selectivity—that is, that migrants are not randomly drawn from the populations in which they originally live, but rather are often selected for attributes that are associated with desired family size and contraceptive use (Ministry of Immigration and Population 2009). For example, communities in urban areas with high prevalence of high female socioeconomic status, female autonomy, or better availability of information and high-quality family planning services might enable female rural-urban migrants' access to contraceptives than those communities without those characteristics. Higher levels of female socioeconomic status—e.g., as measured by female education, female autonomy, and quality family planning services in the community—have been associated with using modern methods of contraception. As higher-status women are typically higher users of modern contraceptives, migrants living in communities with a high prevalence of higher-status women could acquire "knowledge and attitudes" relevant for using modern contraceptives "by communication or observation" of such women (Cau 2016).

This positive selection may occur according to observable characteristics such as age and education, as well as unobserved characteristics such as mobility aspirations, tolerance for risk, and openness to innovation. In our analysis, we control for social and demographic characteristics that are important predictors of contraceptive use, and we include a dummy variable for migration status to control for migrant selectivity along unobserved characteristics. The objective of this study is to assess the impact of women's migration in Myanmar on the reproductive health outcome of using a modern contraceptive method.

1.2 Research Question

What is the association between the internal migration status of women and levels of modern contraceptive use? We hypothesize that women's migration is an important factor for modern contraceptive method use. The study is based on the 2015-16 Myanmar Demographic and Health Survey.

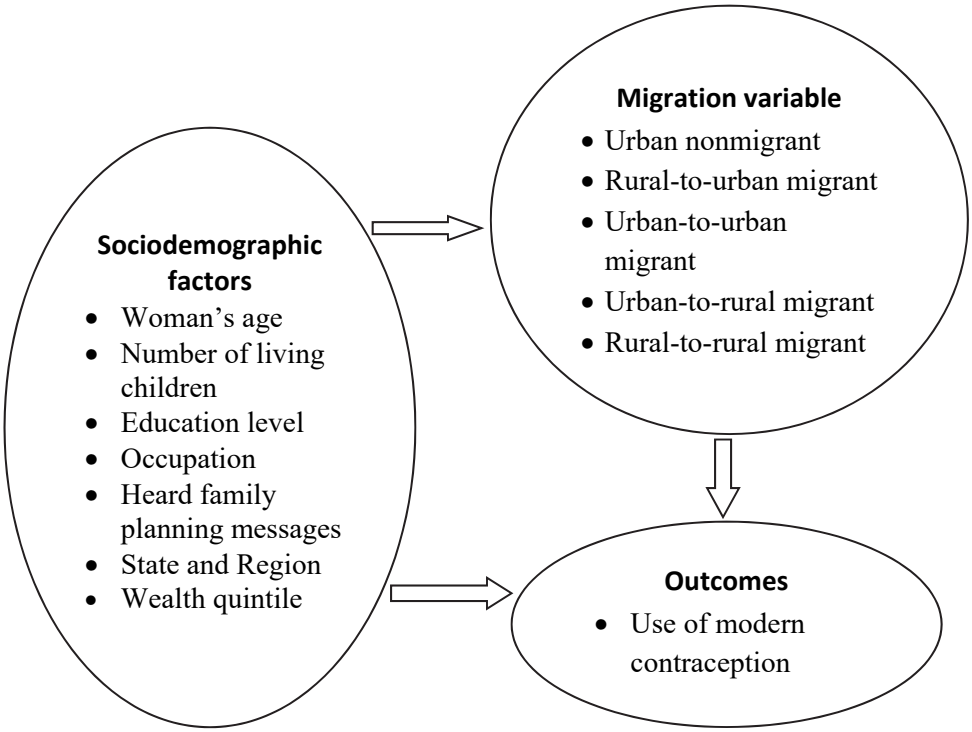
1.3 Conceptual Framework

The conceptual framework of the study explains the interconnections between use of modern contraception, migration streams, and background variables. On the basis of this framework, we first examine whether migration is associated with current use of modern contraceptive methods. In addition, we examine if any relationship between migration and contraceptive use might be moderated by sociodemographic factors.

Modern contraceptive use is the dependent variable, which is influenced by migration streams. Women's age, education, occupation, empowerment, children still living, desire for another child, State and Region, household structure, and wealth status are the sociodemographic factors that are assumed to also affect the

use of modern contraception. The conceptual framework presented below shows the relationship between migration variables, background characteristics, and outcomes.

Figure 1 Conceptual framework of the study



2 DATA AND METHODS

2.1 Data and Measures

This paper uses the 2015-16 MDHS as its primary data source. The MDHS is the first survey of its kind to be implemented in the country as part of the worldwide Demographic and Health Surveys (DHS) Program. The survey was implemented by the Ministry of Health and Sports (MoHS), and data collection took place from December 7, 2015, to July 7, 2016. Funding was provided by the United States Agency for International Development (USAID) and the Three Millennium Development Goal Fund (3MDG). ICF provided technical assistance through The DHS Program. The Myanmar Demographic and Health Survey (MDHS), 2015-16 followed a stratified two-stage sample design and was intended to allow estimates of key indicators at the national level, for urban and rural areas, and for each of the seven States and eight Regions of Myanmar. The first stage involved selecting sample points (clusters) consisting of enumeration areas (EAs) or ward/village tracts. A total of 442 clusters (123 urban and 319 rural) were selected from the master sample. At the second stage a fixed number of 30 households was selected from each of the selected clusters (a total of 13,260 households).

The analysis is restricted to women age 15-49 currently in a union or living with a man at the time of the survey. In order to ensure uniform comparisons, the analysis excluded women who stated that they had moved to the area from abroad (n=46). The total weighted number of internal migrants and nonmigrant women eligible for the study is 7,713.

The outcome variable, modern contraceptive use, was coded as a binary: 'yes' for women who reported using a modern method of contraception, and 'no' for women not using currently, using traditional contraceptive methods. Contraceptive methods considered 'modern' included male sterilization, female sterilization, intrauterine devices (IUD), pill, injectables, implants, male condoms, and lactational amenorrhea.

The migration variable is generated using reports on current place of residence and previous place of residence as reported by the respondents. The DHS asked the question, "Have you changed your usual place of residence compared with this time last year?" Women who answered 'no' are classified as nonmigrants and as either rural or urban, based on their current place of residence. Women who answered that they were living elsewhere a year ago in terms of either a State/Region or other country were asked a further question on whether their previous place of residence before the current residence was rural or urban. This information was used to construct six categories of migration status, that is, urban nonmigrants, rural-to-urban, urban-to-urban, urban-to-rural, rural-to-rural, rural nonmigrants.

The background variables included in this study are women's age, education, occupation, heard family planning messages, empowerment, children still living, want another child, household structure, residence, and wealth quintile. Women's age is categorized into seven groups—15-19, 20-24, 25-29, 30-34, 35-39, 40-44, and 45-49. Occupation is grouped in two categories—not working and working, where working women includes women employed in professional/technical/managerial, clerical, sales and services, skilled manual, unskilled manual, domestic service, and agriculture. Heard family planning messages in the past

few months in the media has five categories—radio, television, newspaper/magazine, internet, and billboards.

The variable 'women's empowerment' has two categories—do not participate in all household decisions, and participate in all household decisions, where women participate in household decisions if they make decisions alone or jointly with their husband in the following areas: (1) woman's own health care, (2) major household purchases, (3) visits to the woman's family or relatives, and (4) the well-being of their children. The variable 'want another child' was coded as a binary: 'yes' for women who reported want at the time (planned birth), at a later time (mistimed birth), and 'no' for unwanted birth.

The household structure has three categories—nuclear, extended, and alone family, where the nuclear family group consists only of parents and children, extended family group includes grandparents and other relatives, and alone family group includes only one household member. Household wealth quintile is based on the number and kinds of assets the household owns, ranging from a television to a bicycle or car, plus housing characteristics such as source of drinking water, toilet facilities, and flooring materials.

2.2 Statistical Analysis

The analysis was done using STATA v.15. In order to provide context to the study, a descriptive analysis of the sociodemographic characteristics of respondents is presented. The bivariate analysis explores the association between modern contraceptive use and the selected background variables. Tests of significance such as chi-square tests determine the factors that are significantly associated with contraceptive use. Multivariate logistic regression was fitted to predict correlates of modern contraceptive use in the presence of selected background variables. All the analyses were weighted to account for differences in sampling probabilities. The results are presented in odds ratios (OR).

3 RESULTS

3.1 Distributions by Background Characteristics

As Table 1 shows, only 2% of the women are migrants, while 73% are rural nonmigrants and 25% are urban nonmigrants. Among the States and Regions of Myanmar, overall about two-thirds of the study population live in Sagaing, Bago, Mandalay, Ayeyarwaddy, Yangon, and Shan. The women are distributed fairly evenly across household wealth quintiles.

Table 1 also shows the study population of women currently married age 15-49. Nearly 40% of the women are age 30-39, while 30% are under age 30, and the other 30% are age 40 and older. About 15% of women have no education, while almost half (47%) completed primary education, 29% completed secondary education, and 8% completed more than secondary. Regarding occupation, the large majority of women (71%) are working.

Table 1 Characteristics of currently married women age 15-49 by selected background characteristics, Myanmar DHS 2015-16

Characteristics	Percent	Total
Migration		
Urban nonmigrant	25.3	1,950
Rural-to-urban migrant	0.2	18
Urban-to-urban migrant	0.6	47
Urban-to-rural migrant	0.3	23
Rural-to-rural migrant	0.6	48
Rural nonmigrant	73.0	5,627
Age		
15-19	2.9	225
20-24	10.7	824
25-29	16.2	1,248
30-34	19.4	1,499
35-39	19.1	1,476
40-44	16.5	1,277
45-49	15.1	1,164
Education level		
No education	15.4	1,189
Primary	47.2	3,635
Secondary	29.4	2,266
Higher	8.0	620
Occupation		
Not working	29.3	2,256
Working	70.7	5,456
Heard family planning messages		
No	66.0	5,087
Yes	34.0	2,626
Empowerment		
Do not participate in all household decisions	1.9	149
Participate in all household decisions	98.1	7,564
Children still living		
None	11.7	905
1	26.0	2,005
2	26.4	2,033
3	17.8	1,371
4+	18.1	1,399
Want another child		
No	66.7	5,147
Yes	33.3	2,564

Continued...

Table 1 Continued

Characteristics	Percent	Total
State and Region		
Kachin	3.1	236
Kayah	0.5	40
Kayin	2.6	200
Chin	0.8	65
Sagaing	10.7	826
Tanintharyi	2.2	172
Bago	10.0	775
Magway	8.3	640
Mandalay	10.8	836
Mon	3.5	270
Rakhine	5.8	444
Yangon	13.5	1,042
Shan	11.7	899
Ayeyarwaddy	13.9	1,074
Naypyitaw	2.5	194
Household structure		
Nuclear	51.0	3,930
Extended	48.9	3,768
Alone	0.1	15
Wealth quintile		
Poorest	21.0	1,612
Poorer	20.5	1,577
Middle	20.0	1,544
Richer	19.4	1,500
Richest	19.2	1,480
Total (Weighted)	100.00	7,713

3.2 Bivariate Analysis

Table 2 presents the results of bivariate analysis on modern contraceptive use by women's background characteristics and migration streams. All of the background characteristics except women's occupation are significantly associated with modern contraceptive use.

A description of the 7,713 women who use modern contraceptives is shown in Table 2. Slightly more than half (51.2 %) of the respondents reported current use of a modern method of contraception. The use of modern contraceptives was high among urban-urban migrant women (77.8%), followed by urban nonmigrant women (57%), rural nonmigrant women (49.4%), rural-urban migrant women (42.1%), rural-rural migrant women (40.5%), and urban-rural women (38.8%).

By age group, women age 35-39 have the highest percentage of modern contraceptive use, at 62%, while women age 45-49 have the lowest percentage, at 22%. Among women with a secondary education or more than a secondary education, 58% and 57%, respectively, use modern contraception compared with 38% of women with no education, and 51% of women with only a primary education.

Modern contraceptive use slightly differs between married women who have heard recent family planning messages in the media and those who have not (57% versus 49%). Regarding women's empowerment, women who participate in all household decision have the highest proportion of modern contraceptive use, while only 5% of women who do not participate in all household decision use a modern method. In addition, use of modern contraception is very low for women with no children and those who wish to have another child. In contrast, use of a modern method is higher for women with one or more children and women who do not wish to have another child. By State and Region, women in Chin, Rakhine, and Kayin States are less likely to practice modern contraceptive use.

Table 2 Percentage distribution of currently married women age 15-49 using modern contraception by selected background characteristics, Myanmar DHS 2015-16

Characteristics	Modern contraceptive use (%)	95% CI	p value
Migration			
Urban nonmigrant	57.0	54.1-59.9	0.000
Rural-to-urban migrant	42.1	16.4-72.9	
Urban-to-urban migrant	77.8	65.0-86.9	
Urban-to-rural migrant	38.8	22.1-58.3	
Rural-to-rural migrant	40.5	26.7-56.1	
Rural nonmigrant	49.4	47.4-51.4	
Age			
15-19	53.5	45.9-61.0	0.000
20-24	59.5	55.4-63.4	
25-29	58.0	54.4-61.5	
30-34	57.2	53.9-60.5	
35-39	61.9	58.7-65.0	
40-44	46.8	43.4-50.2	
45-49	22.4	19.8-25.3	
Education level			
No education	37.7	33.0-42.6	0.000
Primary	50.7	48.5-53.0	
Secondary	58.1	55.6-60.6	
More than secondary	57.1	52.4-61.7	
Occupation			
Not working	51.7	48.9-54.4	0.800
Working	51.2	49.4-53.1	
Heard family planning messages			
No	48.7	46.7-50.7	0.000
Yes	56.5	54.2-58.9	
Empowerment			
Do not participate in all household decisions	4.8	2.1-11.0	0.000
Participate in all household decisions	52.3	50.7-53.9	
Children still living			
None	29.8	25.9-34.0	0.000
1	56.3	53.7-58.8	
2	60.2	57.5-62.8	
3	56.3	53.2-59.4	
4+	40.6	37.4-43.9	
Want another child			
No	53.9	52.1-55.7	0.000
Yes	46.4	43.7-49.5	
State and Region			
Kachin	41.4	34.9-48.1	0.000
Kayah	50.6	41.6-59.7	
Kayin	39.3	33.3-45.6	
Chin	25.1	19.2-32.3	
Sagaing	51.0	44.8-57.1	
Tanintharyi	43.6	38.8-48.5	
Bago	60.5	57.0-64.0	
Magway	45.6	39.8-51.5	
Mandalay	55.3	50.3-60.1	
Mon	45.4	40.0-50.9	
Rakhine	37.2	30.5-44.4	
Yangon	60.2	55.9-64.4	
Shan	46.2	40.1-52.4	
Ayeyarwaddy	55.4	50.8-59.8	
Naypyitaw	54.8	49.9-60.6	
Household structure			
Nuclear	52.2	50.1-54.3	0.020
Extended	50.7	48.5-52.9	
Alone	9.5	1.3-45.2	
Wealth quintile			
Poorest	46.4	42.9-50.0	0.000
Poorer	50.2	47.2-53.3	
Middle	49.8	47.0-52.7	
Richer	54.9	51.6-58.1	
Richest	56.1	52.5-59.6	
Total	51.2	49.8-53.0	

3.3 Multivariate Analysis

Table 3 shows the results of the logistic regression. Use or nonuse of modern contraceptives is taken as the dependent variable. Among women's background characteristics, the following variables show a significant effect on the odds of either using or not using a modern contraceptive method: urban-to-urban migration; age; education; heard family planning messages; occupation; empowerment; children still living; want another child; State and Region; and wealth quintile. The odds ratio of using modern contraception for urban-to-urban migrants is 3.15 times higher than for urban nonmigrants. Women age 20 and older are less likely to use modern contraceptives compared with women under age 20. It appears that the use of contraception increases with women's age. Also, women with a primary, secondary, or tertiary level of education are much more likely to use modern contraceptives compared with women with no education.

Working women are more likely to use contraceptives because they are better educated than women who do not work. Women who have heard family planning messages in the media are more likely to use contraceptives than those who have not. Also, women who participate in all household decisions—reflecting women's empowerment—are more likely to use modern contraceptive methods than women who do not participate in decision-making. Women who do not want another child are more likely to use modern contraceptives compared with women who want another child. Similar patterns are also noted for contraceptive use by the number of living children. Among States and Regions, women in socioeconomic development regions like Bago, Yangon, Mandalay, Nay Pyi Taw, Ayeyarwaddy, Sagaing, Magway, and Mon are more likely to use modern contraceptives compared with women in Kachin State. On the other hand, women in Chin State are less likely to use modern contraceptives compared with women in Kachin State. Regarding wealth quintiles, women in rich households have a higher probability of using contraceptives compared with women in poor households.

Table 3 Association between currently married women age 15-49 using modern contraceptive and background characteristics of migrant and nonmigrant women 15–49 years, Myanmar DHS 2015-16

Characteristics	Modern contraceptive use	
	Odds ratio	95% CI
Migration stream		
Urban nonmigrant	1	-
Rural-to-urban migrant	0.69	0.18-2.57
Urban-to-urban migrant	3.15**	1.46-6.79
Urban-to-rural migrant	0.46	0.20-1.04
Rural-to-rural migrant	0.63	0.32-1.23
Rural nonmigrant	0.97	0.81-1.16
Age		
15-19	1	-
20-24	0.67*	0.45-0.99
25-29	0.35***	0.24-0.52
30-34	0.25***	0.17-0.38
35-39	0.25***	0.16-0.38
40-44	0.11***	0.07-0.17
45-49	0.03***	0.02-0.05
Education level		
No education	1	-
Primary	1.42**	1.14-1.76
Secondary	1.72***	1.35-2.19
More than secondary	1.61**	1.18-2.20
Occupation		
Not working	1	-
Working	1.19*	1.04-1.37
Heard family planning messages		
No	1	-
Yes	1.21*	1.05-1.39
Empowerment		
Do not participate in all household decisions	1	-
Participate in all household decisions	18.76***	7.66-45.92
Children still living		
None	1	-
1	4.21***	3.34-5.30
2	6.84***	5.29-8.84
3	7.51***	5.68-9.94
4+	6.49***	4.80-8.77
Want another child		
No	1.79***	1.52-2.10
Yes	1	-
State and Region		
Kachin	1	
Kayah	1.47	0.89-2.42
Kayin	1.15	0.77-1.71
Chin	0.53**	0.33-0.86
Sagaing	1.87**	1.24-2.81
Tanintharyi	1.36	0.92-2.01
Bago	2.93***	2.03-4.22
Magway	1.59*	1.09-2.32
Mandalay	2.28***	1.58-3.29
Mon	1.53*	1.04-2.26
Rakhine	1.49	0.98-2.27
Yangon	2.83***	2.00-4.00
Shan	1.29	0.87-1.91
Ayeyarwaddy	2.30***	1.60-3.30
Naypyitaw	2.36***	1.58-3.52
Household structure		
Nuclear	1	-
Extended	0.87*	0.77-0.98
Alone	0.23	0.02-2.52
Wealth quintile		
Poorest	1	-
Poorer	1.26*	1.03-1.53
Middle	1.44***	1.19-1.73
Richer	1.63***	1.28-2.06
Richest	1.75***	1.30-2.35
N (weighted)	3,963	

*** p<0.001, ** p<0.01, * p<0.05

4 DISCUSSION AND CONCLUSION

The results show that the use of modern contraception varies by women's sociodemographic characteristics, and by migration experience. Bivariate analysis indicates that migration streams are significantly associated with modern contraceptive use. Furthermore, logistic regression results show that use of modern contraception is higher among urban-to-urban migrant women compared with urban nonmigrant women. Marriage was the most common reason for female internal migration in Myanmar (Ministry of Immigration and Population 2009).

Among the different socioeconomic and demographic factors, women age 20 and older have a lower likelihood of using modern contraceptive methods compared with women age 15-19. The likelihood of using contraception decreases with women's age. Women's education has a positive association with modern contraceptive use. Women with a secondary level of education are significantly more likely to use modern contraception compared with women with no education. Contraceptive use increases as women's educational level increases. The fact that educated women are more likely than uneducated women to use modern contraceptives may imply that they have more say on the choice of contraceptive methods.

In terms of family size, women with three children have the highest odds (7.51) of using modern contraception compared with women with no children, and also higher than women with fewer than three children. This may reflect that fact that women with three children have reached their desired family size. Regarding occupation, the use of modern contraceptives is more common among working women than nonworking women. This could be because women who are employed are more likely to be educated, while work may also promote social and physical separation that may encourage use of contraceptives in different environments.

The odds of modern contraceptive use among women who participate in all household decisions are higher compared with women who do not participate in decision-making. Empowered women are nearly 19 times more likely to use modern contraception than women who do not participate in all household decisions. This may be because such women are able to make their own decisions about family planning choice and they may have more children.

Among States and Regions, there is variation in the use of contraception, with women from more developed regions showing higher odds of modern contraceptive use than women in Kachin State. However, women in Chin State have low levels of contraceptive use, and this may reflect the preference of women in the region for use of traditional methods. The difference in levels of contraceptive use across Regions and States may reflect the different attitudes, cultures, and social values regarding reproductive health among the regions. The fact that women in the higher household wealth quintiles are more likely to use modern contraceptives may be because they are more reluctant than poorer women to have additional children in their family.

The 2015-16 MDHS provides a good data set for analysis of the association between modern contraceptive use, migration, and socioeconomic characteristics. The study, however, excludes longer-duration migration because the DHS survey questionnaire mainly asked for short-distance moves by urban and rural areas. Thus, it only captures temporal living (within one year), while migration that occurred earlier than in the past year is not included. Another constraint is the exclusion of the migration experience prior to age 15.

Overall, these findings may have implications for understanding fertility characteristics and trends in urban areas and for promoting the reproductive health of recent migrants in those areas. The results have important policy implications for expanding equitable access to high-quality family planning services that respond to the effects of internal migration in Myanmar.

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