Dynamics of contraceptive use among married women in North and South Yangon, Myanmar: findings from a cross-sectional household survey

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Abstract

Objective: The objective was to explore the sociodemographic factors associated with contraceptive use, the variation in prevalence and duration of contraceptive use across the age groups and parity among 18–49-year-old married women in North and South Yangon.

Study design: We conducted a cross-sectional study regarding contraceptive use among married women aged 18–49 in North and South Yangon from September to November 2016. We used a questionnaire based on the Demographic and Health Surveys Program, with additional questions on the duration of contraception along the life-course. Associations between contraceptive prevalence and sociodemographic factors were tested by χ².

Results: The contraceptive prevalence of modern methods was 66% (95% confidence interval: 61.5%–69.9%) with better coverage in rural (69.6%) than in urban women (61.5%). Contraceptive use varied by age and parity, demonstrating lower prevalence in the oldest age group (45–49) and high parity (parity five and above). The mean duration of contraceptive use rose with increased age and parity, except in the oldest-age and high-parity groups.

Conclusions: The findings called for greater attention to improve the contraceptive coverage of married women living in urban areas around Yangon city (periurban women).

Implications: The study identified the pockets of low contraceptive coverage in a region with the highest contraceptive prevalence in Myanmar. Women above the age of 40 and women who had high parity had low contraceptive prevalence. Women living near the city showed lower contraceptive coverage compared to their rural counterparts.

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1. Introduction

Globally, women and couples are increasingly using contraceptives to control the number and timing of child births and to avoid unwanted and mistimed pregnancies [1]. However, despite the availability of contraceptive information, as well as services and supplies by the family planning programs, contraceptive prevalence varies across the countries where substantial gaps remained in some population groups [1,2]. In 2017, an estimated 70 million women of reproductive age in Southern Asia were not using modern contraceptives despite wanting to avoid pregnancy [3].

Myanmar is a developing country in Southeast Asia. In Myanmar, both the public and private sectors provided birth spacing services since 1970s [4]. Although services were available, birth spacing officially launched as a public sector program in 1991 [5]. The population policy drafted in 1992 ensured that birth spacing services were available to all married couples [6]. Myanmar Reproductive Health Policy was introduced in 2002 and facilitated the alignment of reproductive health care.
services to the population policy [6]. The Ministry of Health implemented the successive Strategic Plans on Reproductive Health (2004–2008, 2009–2013 and 2014–2018) to conform to the national policy guidance and international agenda [6]. All of the plans included birth spacing services as one of their core elements. Myanmar is also one of the Family Planning 2020 focus countries and receiving support for family planning and contraceptive services [5].

Due to these policies, plans and activities, the contraceptive prevalence rate (CPR) of modern methods among married women increased from 13.6% in 1991 to 38.4% in 2007 [7,8] and reached 46% in 2010 [9]. The earlier surveys included oral contraceptive pills, injectables, intra-uterine devices, male and female sterilization and barrier methods as modern methods [7,8]. Implanted were included since the 2010 survey [9]. The 2015–2016 Myanmar Demographic and Health Survey (DHS) reported that the CPR (modern method) for currently married women was 51.3%, while only 1% reported using traditional methods [10]. Despite the attempt by Myanmar DHS to cover the whole country, including the areas not enumerated in the 2014 Myanmar census, they had to replace four clusters and drop one cluster during the fieldwork for security reasons [10].

The 2015–2016 Myanmar DHS indicated that almost all married women (98.5%) knew some form of modern contraceptives [10]. The CPR of married women increased with increasing educational level [10]. About 56% of married women in the highest wealth quintile and 46.3% in the lowest quintile used modern contraceptives [10].

Yangon is the most populated and urbanized region in Myanmar, hosting 30% of the total population [11]. Being the commercial center, with many industrial zones [11,12], Yangon had a relatively low poverty incidence in comparison to the other regions [13]. However, the population living in Yangon has a high cost of living. Yangon had the highest per adult equivalent daily consumption of all regions, with a larger share of expenditure on nonfood items [13]. This is attributed to high poverty density (highest among the regions) [13].

The national survey data demonstrated Yangon had a higher CPR than other regions. The CPR for Yangon region increased from 29% in 1991 to 57.2% in 2007 [14]. The 2015–2016 Myanmar DHS reported that 60.2% of the currently married women were using modern contraceptives [10]. However, in a population where the fertility rate is declining with a relatively high prevalence of contraceptive, some pockets of high fertility with low contraceptive use remained. The national survey reports could not provide data beyond the regional level; thus, there is a need for further analysis to evaluate the inequality within the region and to identify the subpopulation groups with low coverage.

The objectives of this paper are to (a) explore the sociodemographic factors associated with modern contraceptive use and (b) study the current and ever use of contraceptives by comparing the prevalence and duration of contraceptive use across the age groups and parity groups in married women aged 18–49 in North and South Yangon.

2. Methods

2.1. Study area

A cross-sectional study was conducted in Yangon from September to November 2016. According to the 2014 Myanmar census, Yangon is divided into four parts [15]. The central area that covers the eastern and western parts has almost 100% urban population [15]. The peripheral areas constituting the northern and southern parts (see Yangon region map in Figure 1 Appendix A) contain a mixture of urban and rural populations [15]. The urban areas in North and South Yangon are locally known as “periurban” since they are situated in the peripheral outskirts. A large number of industrial zones established in the Yangon periphery attract numerous people seeking better employment opportunities [15]. Thus, we purposively selected North and South Yangon to examine variations in contraceptive use across the population groups.

2.2. Sampling methodology

We used a multistage sampling method. The first stage was random selection of eight urban wards and eight rural villages from each part (North and South Yangon). The second stage was the random selection of households from the household list of each selected ward or village. The number of households in each sampling unit varied according to the population proportion of North and South Yangon and the proportion of urban–rural populations in each part [15]. We used the CPR of 46%, as estimated among married women in the Multiple Indicators Cluster Survey (2009–2010) for sample size determination [9].

We invited one married woman from each selected household and included only currently married women between 18 and 49 years of age. We did not include unmarried, separated/divorced women and widows in this study. In total, we recruited 1100 women after acquiring informed consent. The trained surveyors conducted face-to-face interviews using pretested questionnaires with similar questions as used in the DHS [16]. We added detailed questions on contraceptive duration covering the respondents’ whole reproductive life. We conducted the interviews in private secure places; the information obtained remained confidential. Before any interviews, we obtained ethical clearance in Myanmar (Ethical Committee of Medical Research) and Norway (Norwegian Centre for Research Data).

2.3. Statistical methods

We measured sociodemographic factors — age, education, urban/rural residence and occupation of the respondent, household income, family size/type, parity (number of children) and the traveling time to the health facility. Contraceptive use (either currently or previously) and the method and duration of contraception starting from the age of initiation and contraceptive use after each pregnancy or childbirth were measured to obtain the duration of contraception throughout the reproductive life.

We used Epidata software 3.1 for data entry and Stata 15 for data analysis. We used the “svyset” prefix for the analysis after declaring the survey design by weighting at different stages of sampling (using the 2014 Myanmar Census data).

We tested the differences in proportions of contraceptive use (modern methods) across the sociodemographic characteristics by \( \chi^2 \) and present these estimates with 95% confidence intervals (CIs). We describe the proportions of women who never used contraceptives and current nonusers within different age-groups (18–19, 20–24, 25–29, 30–34, 35–39, 40–44 and 45–49) and by parity in percentages and present the mean duration of contraceptive use (in months) with 95% CI.

The association between parity and current contraceptive use was estimated using logistic regression analyses, providing prevalence ratios with 95% CI. We present three models: crude (model 1), adjusted for age (model 2) and further adjusted for the other confounders (residence, income, education) (model 3). The strategy for analyzing logistic regression was based on directed acyclic graphic [17].

3. Results

Among the 1256 invitees, 1100 married women participated in the survey (87.6% response rate). Almost all the participants (99.7%) knew at least one method of modern contraceptives; 1035 women (94%) had used some form of contraceptives, while 1022 women (93%) reported having ever used modern methods.
3.1. Current use of modern contraceptives by sociodemographic characteristics and method mix

At the time of survey, 726 women were using modern contraceptives, yielding a CPR of 66% (95% CI: 61.5%–69.9%). Table 1 describes the variation of CPR with sociodemographic characteristics. The percentages indicate the point prevalence irrespective of the reason for contraceptive nonuse.

The CPR was higher in rural (69.6%) than in the urban (61.5%) women (p value <0.05). Contraceptive use differed across age and parity, as women less than 40 years of age and women having one to four children showed a greater proportion of current use. The CPR was not significantly different across educational level, occupation, household income, family size or type and access to health facilities (defined in terms of travel time).

Most current users used hormonal injections (38.2%) followed by pills (20%). Nearly 5% of the women used permanent methods, while only 2.8% were using the long-acting reversible methods (intrauterine device or implants). More than half of the respondents obtained their contraceptive method from the public sector; however, this varied with residence as 67% of the rural women used the public sector, while only 34% of the urban women used the public sector.

3.2. Dynamics of contraceptive use across age groups

Contraceptive prevalence varied by age. The CPR ranged from 65% to 75% among women aged 18 to 44 years but was lower among women aged 45–49 years (34.6%) (Table 1). Moreover, this group included the highest percentage of women who had never used contraceptives (Table 2).

The mean duration of contraceptive use steadily increased (from 10 to 106 months) with increasing age until age 40–44 years. The duration was lower in the 45–49-year age group (101 months). Approaching menopausal ages could be a reason for less contraceptive use after age 40. However, only 14/329 women (4.3%) over age 40 self-reported being menopausal at the time of survey.

3.3. Contraceptive prevalence across the parity

The CPR also varied by parity; CPR was about 70% among women with parity one to four but was 50% or less among women with nulliparity or parity five and above (p value <0.01). Table 3 shows the variation in prevalence of current contraceptive use adjusted for possible confounders (age, residence, education and income). The contraceptive prevalence of nulliparous women was taken as the reference group.

The mean duration of contraceptive use also showed an increase with increasing parity (18 to 107 months from parity zero to four) but was lower among women with parity 5 and above (60 months) (Table 4).

4. Discussion

In this study, the CPR of modern contraceptives (66%) was higher than the 2015–2016 Myanmar DHS results for married women in the Yangon region (50.2%) [10]. Although nationwide surveys have reported a higher CPR in urban than the rural women [7–10], our study revealed that rural women had higher contraceptive prevalence than their urban counterparts in this particular population. The national surveys also indicated the increased in CPR (modern methods) of married women was greater among the rural population. In 1991, the CPR (modern) was 29.3% for urban and 7.6% for rural areas; however, in 2007, it increased to 49% for urban and 34.4% for rural areas at the national level [14]. The 2015–2016 Myanmar DHS reported a CPR of 57.3% in urban and 49.1% in rural areas, showing a smaller gap between urban and rural women [10]. A study of family planning practices among rural married women of reproductive age in Myanmar revealed even better coverage in that 73.3% of the women were using modern contraceptives [18].

In the Panel on Population Dynamics (2003), the Southeast Asia region displayed greater contraceptive use among the urban nonpoor but less use among the urban poor compared to rural women [19]. Public health facilities are generally located near the center of the city, and thus, the poor living in the periurban areas faced time and resource constraints to accessing health services [20]. The urban poor had low access to services in many parts of the Southeast Asian region [20]. A report on the health care for urban poor in Myanmar points out that the urban poor have limited access to the existing health care facilities [21]. A study on the access to reproductive health services in the Yangon also alludes to the reproductive health care needs of periurban women, terming them as “a hard to reach population living near the city” [22]. These findings support the need for greater emphasis on serving the urban poor in this region.

Age and parity were the other sociodemographic factors associated with contraceptive use. The CPR varied with fertility desire: whether to postpone the first pregnancy/birth, to pause/space between pregnancies/births or to stop child-bearing [1]. This study identified the highest CPR in the 35–39-year age group (75%) with a very low prevalence in the 45–49-year age group (34.6%). This age group also reported a lower mean duration of contraceptive use. The high proportion of women who had never used contraceptives in this age group contributes to the lower mean duration. Although this age group may have lower fecundity or be less sexually active, their needs have to be emphasized as only a small proportion of these women reported being in menopause. Moreover, the 2014 census found that the maternal mortality ratio was 282 per 100,000 live births, while that of 45–49-year age group was 1132.4 per 100,000 live births [23], indicating an extremely high risk of maternal deaths in this age group.

In this study, both the CPR and duration of contraceptive use increased with parity, up to parity four. Lesser use of contraceptives in women with parity five or greater may be a reason they had so many children, that is, not necessarily because they wanted many children, but because of inadequate contraceptive availability or use. Women having more than four children are also at an increased risk for maternal mortality [24]. Contraception needs to reach women with the highest risk of maternal death to have a significant effect on reducing maternal mortality [25].

Although this study attempted to illustrate the dynamics of contraceptive use providing additional information to the Myanmar DHS, some limitations exist. Information bias could be encountered in asking the duration of contraception; to reduce this possible recall bias, we asked questions on contraceptive details only after establishing a good rapport.

Another limitation is that the study population included only currently married women aged 18–49 years and excluded the unmarried ones, thus not representing all women. Family planning and child bearing are considered as a topic only for married couples in Myanmar society [8]. Discussing contraception with unmarried women is considered socially sensitive, and thus, most of the fertility surveys have not included the unmarried women [26]. Exclusion of married women younger than 18 years of age could also introduce bias, but this will be minimal as only a small proportion of married women are teenagers. In the 2015–2016 Myanmar DHS, women aged 15–19 years constituted only 3% of the married women in the ages 15–49 years [10], and only 2.1% of the study population were teenagers in our study.

The survey of this study population revealed a better contraceptive prevalence than the 2015–2016 Myanmar DHS. Some population groups are still in need to improve contraceptive coverage: women over 40 years of age, women having high parity and women living in periurban areas. Family planning programs need to focus on older women and women with high fertility who are in general at higher risk of maternal death.
Appendix A. Appendix

Fig. 1. Yangon region map. Source: Yangon region report. 2014 Myanmar census.
Appendix B. Appendix

Table 1
Current use of modern contraceptives by sociodemographic characteristics among married women aged 18–49 years in North and South Yangon

| Sociodemographic factors (N = 1100) | Women using modern contraceptive | p value |
|-------------------------------------|---------------------------------|---------|
| Total                               | 726                             | 65.8    | 61.5–69.9 |
| Residence                           |                                 |         | .047     |
| Urban                               | 311                             | 61.5    | 55.7–67.1 |
| Rural                               | 415                             | 69.6    | 64.1–74.6 |
| Educationa                          |                                 |         | .144     |
| Low                                 | 31                              | 58.7    | 44.1–71.9 |
| Moderate                            | 453                             | 64.1    | 58.4–69.5 |
| High                                | 233                             | 69.8    | 64.4–74.7 |
| Occupation                          |                                 |         | .127     |
| Civil or private servant            | 41                              | 71.5    | 58.2–81.9 |
| Farmer                              | 43                              | 73.3    | 57.6–84.8 |
| Housewife                           | 363                             | 64.3    | 59.7–69.1 |
| Vendor                              | 115                             | 59.1    | 50.3–67.4 |
| Daily wedges                        | 96                              | 71.5    | 61.8–79.5 |
| Own business                        | 62                              | 70.6    | 60.4–79.1 |
| Household income                    |                                 |         | .408     |
| <25th percentile                    | 196                             | 66.4    | 61.3–71.2 |
| 25th to 75th percentile             | 355                             | 67.1    | 60.6–73.0 |
| >75th percentile                    | 170                             | 62.4    | 55.7–68.6 |
| Family size                         |                                 |         | .186     |
| Family members 5 & below            | 568                             | 64.9    | 59.9–69.6 |
| More than 5 family members          | 156                             | 69.3    | 63.8–74.3 |
| Family type                         |                                 |         | .487     |
| Nuclear                             | 567                             | 65.2    | 59.5–70.4 |
| Extended                            | 157                             | 68.1    | 62.2–73.4 |
| Travel time to health facility      |                                 |         | .157     |
| Within 15 min                       | 496                             | 64.0    | 59.5–68.3 |
| 15–30 min                           | 190                             | 70.1    | 62.4–76.8 |
| Over 30 min                         | 36                              | 69.4    | 58.6–78.4 |
| Age group                           |                                 |         | .000     |
| 18–19 years                         | 17                              | 73.5    | 49.4–88.7 |
| 20–24 years                         | 76                              | 71.4    | 57.5–82.1 |
| 25–29 years                         | 134                             | 67.7    | 60.0–74.6 |
| 30–34 years                         | 149                             | 71.4    | 64.8–77.2 |
| 35–39 years                         | 178                             | 74.9    | 67.6–81.0 |
| 40–44 years                         | 124                             | 65.0    | 58.8–70.6 |
| 45–49 years                         | 48                              | 34.6    | 25.8–44.6 |
| Number of children                  |                                 |         | .000     |
| 0                                   | 55                              | 43.9    | 35.4–52.9 |
| 1–2 children                        | 436                             | 70.4    | 63.4–74.9 |
| 3–4 children                        | 197                             | 70.0    | 63.9–75.4 |
| 5 children & above                  | 38                              | 50.0    | 40.1–59.8 |

Table 2
Prevalence of women who had never used contraceptives and currently not using contraceptives, and mean duration of contraception in ever users across age groups among married women aged 18–49 years in North and South Yangon

| Age group | Total | Never used contraceptive | Currently not using contraceptive | Duration of using contraceptive in women who ever used contraceptive (months) |
|-----------|-------|---------------------------|-----------------------------------|--------------------------------------------------------------------------------|
| N         | n     | %                         | n                                | %                                | Mean | 95% CI                          |
| 18–19     | 23    | 9.7                       | 6                                | 26.5                             | 9.3  | 61.1–12.6                      |
| 20–24     | 106   | 3                         | 2.9                              | 30                               | 28.6 | 17.6–31.0                      |
| 25–29     | 197   | 4                         | 2.0                              | 63                               | 32.3 | 37.9–42.3                      |
| 30–34     | 208   | 8                         | 3.8                              | 59                               | 28.6 | 62.8–56.5                      |
| 35–39     | 237   | 8                         | 3.3                              | 59                               | 25.1 | 81.7–95.1                      |
| 40–44     | 191   | 17                        | 8.8                              | 67                               | 35.0 | 105.7–116.5                    |
| 45–49     | 138   | 23                        | 16.3                             | 90                               | 65.4 | 101.2–116.8                    |
| Total     | 1100  | 65                        | 5.8                              | 374                              | 34.2 | 70.3–64.4–74.3                 |

Table 3
Current use of contraceptives across the parity among married women aged 18–49 years in North and South Yangon

| Parity      | Model 1 (crude) | Model 2 (adjusted for age) | Model 3 (age, education, income and residence are adjusted) |
|-------------|-----------------|---------------------------|----------------------------------------------------------|
| Prevalence ratio (95% CI) | Prevalence ratio (95% CI) | Prevalence ratio (95% CI) |
| 0 (ref)     | 1.00 (1.00–1.00)| 1.00 (1.00–1.00)          | 1.00 (1.00–1.00)                                         |
| 1–2 children| 1.63 (1.32–2.02)| 1.96 (1.60–2.41)          | 1.96 (1.59–2.41)                                         |
| 3–4 children| 1.62 (1.30–2.02)| 2.34 (1.86–2.93)          | 2.41 (1.92–3.02)                                         |
| 5 children  | 1.16 (0.86–1.58)| 1.73 (1.27–2.36)          | 1.83 (1.34–2.50)                                         |

This analysis only includes the observations without missing values.

Table 4
Prevalence of women who had never used contraceptives and currently not using contraceptives, and mean duration of contraception in ever-users across the parity among married women aged 18–49 years in North and South Yangon

| Parity | Total | Never used contraceptive | Currently not using contraceptive | Duration of using contraceptive in women who ever used contraceptive (months) |
|--------|-------|---------------------------|-----------------------------------|--------------------------------------------------------------------------------|
| N      | n     | %                         | n                                | %                                | Mean | 95% CI                          |
| 0      | 125   | 12                        | 9.7                              | 56.1                             | 17.9 | 11.5–24.3                      |
| 1–2 children | 618   | 18                        | 2.8                              | 182                              | 29.6 | 65.9–72.2                      |
| 3–4 children | 281   | 18                        | 6.3                              | 84                               | 30.0 | 106.5–119.4                    |
| 5 children & above | 76   | 17                        | 22.1                             | 38                               | 50.1 | 60.8–77.8                      |
| Total   | 1100  | 65                        | 5.8                              | 374                              | 34.2 | 70.4–64.3–76.3                 |

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Total includes nine women with missing information on education, six on occupation, five on income, four on traveling time to health facility and two on family type and size.

* Education — low: illiterate, read and write; moderate: primary and middle school; high: high school and university level.

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