

Traditional Family Planning in Modern Times: Factors Determining Traditional Family Planning Use among Ever Married Women in Sri Lanka

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Original Article

Abstract

Introduction: Effective family planning improves the well-being of both mothers and children by reducing pregnancy-related and neonatal morbidity and mortality through the appropriate timing and spacing of births. However, traditional family planning (TFP) methods have higher failure rates than modern methods, leading to health risks such as unintended and pregnancies at advanced maternal age. In Sri Lanka, reliance on TFP remains high, yet the underlying reasons for this preference have not been statistically investigated. Therefore, the empirical findings will support researchers and policymakers in designing family planning strategies that promote the uptake of modern contraceptive methods among traditional method users by addressing their needs and preferences. The study aimed to identify the factors that significantly influence the use of TFP and to identify the characteristics of traditional and modern family planning users.

Methods: Using data derived from the most recently published Sri Lanka Demographic and Health Survey in 2016, with a sample of 10,835, a binary regression model was developed to determine the factors influencing the use of traditional methods.

Results: The predictive accuracy of the fitted model was 82.9%. Based on the final model, knowledge of family planning, women's age, number of children, education, and decision-making regarding family planning use, and receiving advice from a PHM significantly increase the likelihood of using TFP methods, while attendance at well-woman clinics and certain ethnic and religious factors reduce the likelihood of TFP use.

Conclusion: Employed women and older women were more likely to rely on traditional family planning methods. Women with advanced knowledge of family planning also showed a greater preference for using TFP, indicating that familial and socio-cultural influences affect family planning choices. Consequently, contraceptive services can be better targeted at key population groups, improving the effectiveness and efficiency of family planning interventions.

Key Words: binary regression model, demographic and health survey, ever-married women, factors, traditional family planning usage, Sri Lanka

Introduction

Globally family planning plays a vital role in enhancing child and maternal health. Growing demands for contraceptive use among both men and women are driven by the need to delay or space or limit the number of births and regulate the size of the family. Different contraceptive methods are used by women of reproductive age (15-49 years) who are married or in a union, in many parts of the world [1]. According to recent statistics published by the United Nations (UN), more than 900 million women worldwide use various forms of method of family planning methods. Contraceptive prevalence exceeds 70% in Latin America and the Caribbean, Northern America and Europe, while it remains below 30% in Middle and Western Africa [1].

Family planning can be defined as 'the ability of individuals and couples to anticipate and attain their desired number of children and to achieve the spacing and timing of their births, according to the World Health Organization-WHO [2]. In other words, family planning is voluntary, and a variety of contraceptive methods are available to meet individual needs, with effectiveness depending on correct and consistent use. [3]. Furthermore, the term 'family planning' is often used interchangeably with terms such as 'birth control and contraception'. The use of specific methods varies extensively across the globe. Contraceptive methods can generally be divided into two categories: modern and traditional family planning methods [4].

Traditional methods include the rhythm method and withdrawal method. Other traditional methods typically include long-term abstinence and prolonged breastfeeding [5]. Traditional methods can be referred to as natural methods,

and the effectiveness of these methods depends on their correct and consistent use by the user [6,7]. According to the SLDHS report 2016 [8], withdrawal and rhythm methods are among the most commonly used traditional family planning methods in Sri Lanka. Conversely, modern family planning methods can be defined as scientific methods used to prevent unintended pregnancies. These methods enable couples to engage in sexual activity at their preferred time with a reduced risk of conception [6, 9].

When considering the family planning history of Sri Lanka, the establishment of the Family Health Bureau and The Family Planning Association of Sri Lanka, in 1968, together with the training programmes and implementation of family planning services positioned Sri Lanka as a leading country in South Asia in the adoption of family planning. As a result, the country's contraceptive prevalence rate (CPR) increased to 61.7% by 1987, with consensual sterilizations accounting for approximately 50% of the total contraceptive prevalence. One of the major reasons for this increase was the expansion of sterilization services and the financial incentives provided by the government to individuals opting for voluntary sterilizations [10].

As an important point, contraceptive use is relatively high among rural women (70%) compared to women living in the estate sector (64%) in Sri Lanka [8, 11]. According to the WHO, modern family planning usage in Sri Lanka increased from 20.3% in 1975 to 53.6% in 2016. Nevertheless, traditional family planning usage declined from 26% in 1982 to 11% in 2016.

Further, according to the latest data available, the Sri Lanka Demographic and

Health Survey (SLDHS) in 2016 stated that the current national contraceptive prevalence rate was 65%. The report further reveals that 61.7% of women who ever married were using various contraceptive methods while 38.3% were not adopting any contraceptive technique or method. Nearly 10.4% used traditional methods and modern methods were used by 51.3% of ever-married women.

Globally, the use of contraceptives eliminates approximately 33% of pregnancy related deaths and 44% of neonatal deaths. This is due to appropriate family planning interventions for the timing and spacing of pregnancies. However, compared to modern contraceptive methods, the failure rate of traditional family planning methods is higher [12]. It may affect child and maternal health outcomes, especially premature births, abortions, maternal deaths, teenage pregnancies, and unintended pregnancies. This leads to an increased risk of pregnancies at advanced maternal age, as traditional methods are more commonly used by women in older reproductive age groups (40-49 years) [12,13].

On the other hand, while some modern contraceptive methods help to avert the risk of HIV/AIDS and other STIs, traditional methods cannot protect people from these infections [3]. Further, traditional family planning may increase the likelihood of contracting sexually transmitted infections. However, it is important to note that Sri Lanka has been identified as one of the countries with a high proportion of people who depend on traditional family planning methods compared with modern methods [10, 14]. Therefore, this research aims to explore why 10.4% of ever-married women in Sri Lanka are still using traditional methods.

Based on the 2030 Sustainable Development Agenda, SDG 3 was formed to enhance the health of the global population in each area under the common theme of good health and well-being. With regard to this goal, target 3.7 addresses the importance of sexual and reproductive health and family planning and aims to 'ensure universal access to sexual and reproductive healthcare services, including for family planning, information and education and the integration of reproductive health into national policies, strategies and programmes by 2030'.

Yet, when addressing family planning requirements and issues within the context of global policies, implementation cannot be uniform across all regions. Specifically, with regard to Sri Lankan adult females' family planning practices, it is important to understand the reasons for using traditional methods instead of modern contraceptive methods in the 21st century. Therefore, before implementing integrated national-level policies aimed at enhancing women's accessibility to family planning services and improving reproductive health and well-being, it is essential to identify how different factors influence their family planning choices, especially their choice of traditional methods.

Hence, this study will be helpful for policymakers, researchers and decision-makers in making informed decisions on family planning interventions and the family planning market, including how traditional family planning users can be encouraged to shift to modern methods by addressing their needs. Further, this research will provide insights into pathways for achieving the 2030 Sustainable Development Goals, including universal access to reproductive health by 2030, by addressing gaps in the

understanding of demographic, social and economic factors that influence women's traditional family planning practices.

Research Objectives

On the basis of the aforementioned rationale, the study has two main objectives: first, to identify the background characteristics of modern and traditional family planning users in Sri Lanka; and second, to model the determinants of traditional family planning use among ever-married women in Sri Lanka using a binary logistic regression approach.

A Review of Family Planning Research in Sri Lanka

As the main objective of identifying the factors which affect the use of traditional methods of family planning, it is worthwhile to understand how other researchers have identified factors associated with the use of traditional family planning methods in Sri Lanka.

As a South Asian country, Sri Lanka has been reported as a country with a high prevalence of traditional contraceptive method use.[14]. However, when referring to research conducted by other scholars regarding traditional family planning use in Sri Lanka, it is very difficult to find studies compared with other developing nations at the global level. In particular, the literature on factors associated with the use of traditional family planning methods has not been extensively examined in Sri Lanka [12,15-17].

Caldwell and others in 1987 [18] conducted research to examine the characteristics of traditional fertility regulation in Sri Lanka. The research highlighted that education and a substantial proportion of love marriages

had a significant association with the use of the rhythm method. In addition, the authors stated that cultural norms, especially ethnicity, religious beliefs, knowledge of modern and traditional contraceptives and myths regarding modern contraceptives influenced the use of traditional methods. However, the vital factors identified in this research have not been justified through any statistical analysis.

However, in 2012, Gunawardane and Hettiarachchi [12] conducted a statistically based research study to identify the factors influencing the use of modern and traditional contraceptive methods among women in rural Sri Lanka. According to the logistic analysis, women who were older than 35 years, Muslim, living in an extended household, childless, had the youngest child older than six years, lacked information on modern methods, did not receive public health midwife home visits, lived farther than 1 km from a clinic, did not utilize clinic services, held negative views about public health midwife services, held negative opinions regarding services at field clinics and had poor knowledge of modern family planning were identified as key factors which were connected with the use of traditional methods.

Gunawardane and Hettiarachchi's findings are supported by Perera (2014) [15], who examined factors influencing the preference for traditional family planning methods among Sri Lankan women. According to the bivariate analysis, traditional methods were most commonly used among women with 1–2 children (68%), those living in rural areas (86%), and women aged 40–44 years (54%).

Interestingly, 46% of users had completed the G.C.E. Ordinary Level or higher education, indicating that even educated

women may favor traditional methods. Perera's qualitative data further revealed that anxiety surrounding the side effects of modern methods, spousal support/cooperation, limited time to purchase modern contraceptives, misconceptions about modern methods, and confidence in the effectiveness of traditional methods influenced their continued use. Overall, these findings show that both socio-demographic and attitudinal factors shape women's preference for traditional family planning methods in Sri Lanka.

In such a case, the above-mentioned literature revealed that there is a lack of research in Sri Lanka on the reliance on natural family planning methods among women of reproductive age using SLDHS 2016 data. Additionally, it shows that there is a gap in statistical research on the use of traditional methods in Sri Lanka. Therefore, this research is expected to help develop a statistical model that can be used to identify the determinants of traditional family planning use among Sri Lankan ever-married women, and it contributes to bridging a research gap in family planning research in Sri Lanka.

Methods

This study is based on the secondary data obtained from the 2016 Sri Lanka Demographic and Health Survey (SLDHS) [8], conducted by the Department of Census and Statistics, Ministry of National Policies and Economic Affairs and Ministry of Health, Nutrition and Indigenous Medicine.

The SLDHS-2016 sample utilized a multilevel stratified probability sampling approach to ensure national representation. The study employed a two-phase stratified sampling approach. During the initial phase, census blocks (2500) were

chosen as primary sampling units, and in the subsequent phase, 12 housing units were selected from each primary unit as secondary sampling units. A total of 28,800 residential units were chosen for the whole study. Of these, 27,210 households were chosen, and comprehensive information was gathered from all ever-married women aged 15 to 49 years and their children. Among these households, 18,302 women were successfully interviewed.

Among the secondary data derived from SLDHS 2016, all women who are aged 15 to 49 years who were using any type of family planning method (Both TFP and MFP methods) were included in the current study sample. This sample included women from all districts and residential sectors (urban, rural and estate sectors) of Sri Lanka.

According to the selected sample, 10,835 ever married women (15 to 49 years) were using family planning methods. Among them, 1768 women were using traditional methods while the remaining 9067 women were using modern methods. For the development of the final binary logistic model, 10,835 women who used any kind of family planning method were included in the analysis.

Final dependent variable was developed as 1=traditional family planning users (TFP) and 2=modern family planning users (MFP) and the following criteria were used to construct this binary dependent variable. Women who used traditional methods, including the withdrawal and rhythm methods, or both, as well as those who used MFP methods in combination with the rhythm and/or withdrawal method were classified as traditional family planning users. Women who used only MFP method/s were classified as modern family

planning users. Ever-married women who had not used any contraceptive method were excluded from the study sample.

The independent variables included in the study were identified through a rigorous review of global and Sri Lankan literature

and subsequently organized within a conceptual framework that incorporated the key determinants. Further, the identified variables were categorized into three main categories; demographic, socio-economic and programmatic. Table 1 presents the variables used in the study.

Table 1. Independent variables, categories, codes, and reference groups used in the analysis

Demographic Characteristics	Independent variable	Category (Codes)
	Women's age (Years)	1 – '42-49' (WA1) 2 – '33-41' (WA2) 3 – '24-32' (WA3) 4 – '15-23' (WA4)**
	Husband's age (Years)	1 – '49-63' (HA1) 2 – '34-48' (HA2) 3 – '19-33' (HA3)**
	Marital Status	1 – 'Married or living together' (MS1) 2 – 'Divorce or separated' (MS2) 3 – 'Widowed' (MS3)**
	Number of Children	1 – 'Childless' (NC1) 2 – '1 - 2 children' (NC2) 3 – '3 or above children' (NC3)**
	Women's education level	1 – 'Degree & above' (WE1) 2 – 'Passed G.C.E A/L (WE2) 3 – 'Passed grade 1 to G.C.E O/L (WE3) 4 – 'No schooling or only preschool (WE4)**
	Husband's education level	1 – 'Degree & above' (HE1) 2 – 'Passed G.C.E A/L (HE2) 3 – 'Passed grade 1 to G.C.E O/L (HE3) 4 – 'No schooling or only preschool (HE4)**
	Sector	1 – 'Urban' (RS1) 2 – 'Rural' (RS2) 3 – 'Estate' (RS3)**
	Districts by FP usage	1 – 'High usage districts' (DU1) 2 – 'Moderate usage districts' (DU2) 3 – 'Lowest usage districts' (DU3)**
	Knowledge of FP	1 – 'Good' (FK1) 2 – 'Moderate' (FK2) 3 – 'Poor' (FK3)**
	Decision to use FP	1 – 'My decision' (FD1) 2 – 'Husband's decision' (FD2) 3 – 'Decision of both' (FD3) 4 – 'Decision of PHM' (FD4)**

(Continued)

	Independent variable	Category (Codes)
Socio-economic characteristics	Women's ethnicity	1 – 'Sinhala' (RE1) 2 – 'Tamil' (RE2) 3 – 'Muslim' (RE3) 4 – 'Burgher' (RE4)**
	Religion of women	1 – 'Buddhism' (RR1) 2 – 'Catholic' (RR2) 3 – 'Islam' (RR3) 4 – 'Hindu' (RR4)**
	Wealth quantile	1 – 'Highest quantile' (WQ1) 2 – 'Middle quantile' (WQ2) 3 – 'Lowest quantile' (WQ3)**
	Women's occupation	1 – 'Manager, professional and administrative jobs (WO1) 2 – 'Clerical, sales, industry and machine related workers (WO2) 3 – 'Unemployed' (WO3) 4 – 'Eliminatory occupation' (WO4)**
	Husband's occupation	1 – 'Manager, professional and administrative jobs (HO1) 2 – 'Clerical, sales, industry and machine related workers (HO2) 3 – 'Eliminatory occupation' (HO3) 4 – 'Unemployed' (HO4)**
Programmatic Factors	Advice from a PHM	1 – 'No' (AP1)** 2 – 'Yes' (AP2)
	Family planning exposure via electronic media	1 – 'Yes' (EE1) 2 – 'No' (EE2)**
	Family planning exposure via printed media	1 – 'No' (EP1)** 2 – 'Yes' (EP2)
	Family planning exposure via digital media	1 – 'No' (ED1)** 2 – 'Yes' (ED2)
	Attendance at a well-woman clinic	1 – 'Yes' (AW1) 2 – 'No' (AW2) 3 – 'Not aware' (AW3)**

Source: Prepared by Author (2025)

Note: FP = family planning; PHM = Public Health Midwife; GCE A/L = General Certificate of Education Advanced Level; GCE O/L = General Certificate of Education Ordinary Level. ** = Reference categories used in the logistic models.

The Statistical Package for the Social Sciences (SPSS) version 22 was used to analyze the derived data. Charts, tables, and graphs were reproduced using Microsoft (MS) Excel software. To statistically examine the association between two variables, the Chi-square test

was used and Spearman's rank correlation was computed to assess the direction and strength of the monotonic relationship between the variables. As the dependent variable, the use of traditional methods of family planning among ever-married females had two possible outcomes,

namely, yes or no, therefore binary logistic regression analysis was utilized to develop the final regression model.

The modal for logistic regression can be written as:

$$\text{logit } p(x) = \log \frac{P(X)}{1 - P(X)}$$
$$p(x) = \frac{\exp(\beta_0 + \beta_1 x)}{1 + \exp(\beta_0 + \beta_1 x)}$$

Further to assess the goodness of fit of the logistic regression model, the Hosmer-Lemeshow statistical test was used and to measure the association between the outcome and the significant variables in the final model, odds ratios were employed.

Results

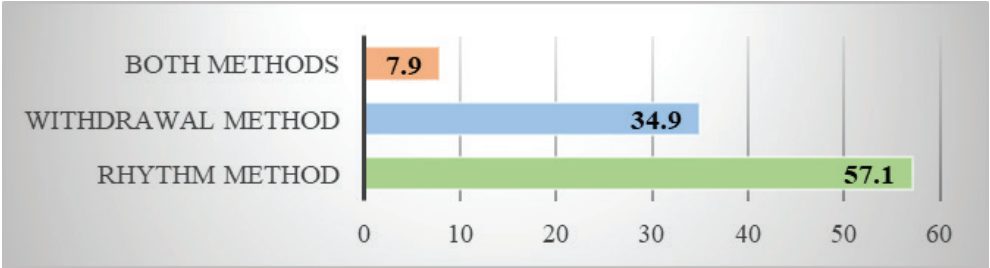
This section first provides an exploratory statistical analysis on Sri Lankan women using family planning methods. Further, it describes the characteristics of traditional method users and modern method users in Sri Lanka where only the percentage distribution among categories within each variable has been presented using 2-way frequency tables.

Among the family planning users, 16.3% of respondents used traditional family planning methods. The remaining 83.7%

used modern contraceptive methods. Notably, among the traditional users (TFP), nearly 35% used the withdrawal method, and 57% of respondents used the rhythm method (figure 1). It indicates that the majority of traditional method users preferred the rhythm method over the withdrawal technique. Further, nearly 8% of respondents used both the withdrawal and rhythm methods.

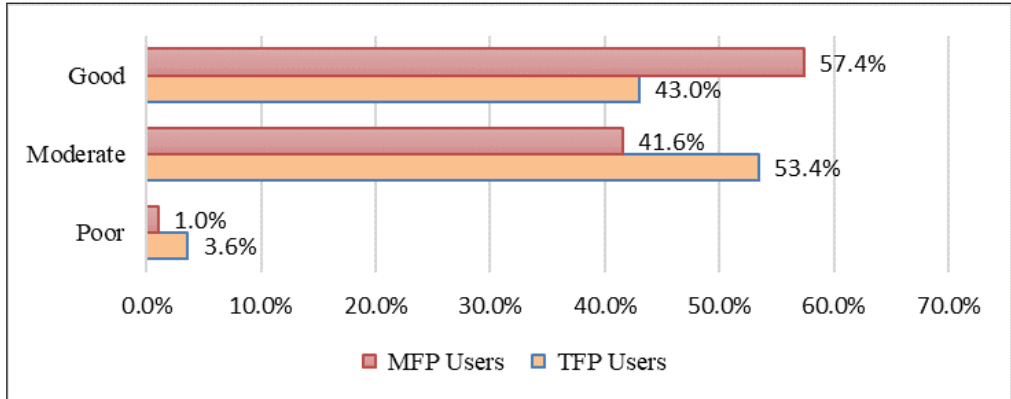
Family Planning Knowledge and Awareness

The level of understanding of family planning was assessed using 12 questions administered to respondents in the DHS 2016 questionnaire. The questions had two possible answers: 'yes' and 'no'. Correct answers were scored as 1, whereas incorrect responses received a value of 0. Respondents were divided into three categories based on their total score: Good knowledge (scored 09-12), Moderate knowledge (scores 05-08) and Poor knowledge (scores 00-04). Accordingly, family planning knowledge and awareness among traditional method users and modern method users are illustrated in Figure 2. The results indicate that 57.4% of traditional family planning method users had good knowledge of contraception, whereas only 1% of TFP users had poor knowledge.



Source: Author calculations based on SLDHS (2016) data N= 10835

Figure 1. Use of Traditional Family Planning among ever Married women in Sri Lanka by Method.



Source: Author calculations based on SLDHS (2016) data N= 10835

Figure 2. Knowledge of Family Planning among ever Married TFP Users and MFP Users.

Among MFP users, the majority exhibited moderate knowledge (53.5%), followed closely by those with good knowledge (43%). In contrast, only 3.6% of these users were classified as having poor knowledge. The results were statistically significant ($\chi^2(2) = 140.202$, $p = 0.001$), indicating that TFP users have significantly higher knowledge of family planning compared to MFP users.

Demographic Characteristics of Modern and Traditional Family Planning Users

The mean age of the TFP users is 37.5 years with the standard error (SE) of 7.5 while the mean age of modern family planning users (MFP) is 35.7 years with an SE of 7.5. This indicates that the age distributions of both TFP and MFP users are negatively skewed, suggesting that family planning users are concentrated in the older age groups. When considering women's age categories, 38.4% of TFP users belong to the age category of 33–41 years, followed by (36.2%) women in the 42–49 years category. The lowest percentage (4.8%) was reported among women in the 15–23 years age category (Table 2).

However, the proportions of MFP users in all three age categories below 41 years are greater than the proportions of traditional method users. Notably, MFP users belonging to the 42–49 age cohort (25.2%) represented a lower proportion than traditional family planning users (36.2%) within the same age group.

When considering women's education levels, among the TFP users more than 55% of women belonged to the educational category of Grade 1 to G.C.E Ordinary Level (O/L). Further it shows that among the TFP users 33.6% of women had passed G.C.E Advanced Level (A/L) and 8% of women had obtained a degree or higher qualification. However, the women who belonged to those two categories among MFP users were represented by lower percentages, respectively, at 22.7% and 3.5% compared to the TFP users. This suggests that traditional family planning methods were more commonly used among women with higher educational attainment in Sri Lanka.

Among the MFP users, more than two-thirds (71.9%) of women had attained education from Grade one to G.C.E

Table 2. Socio-demographic characteristics of ever-married women in Sri Lanka by family planning type

Characteristic	Category	TFP users (%)	MFP users (%)
Age	15-23 (years)	4.8	6.4
	24-32 (years)	20.6	27.6
	33-41 (years)	38.4	40.8
	42-49 (years)	36.2	25.2
	Total	100.0	100.0
Education	No schooling or only preschool	0.6	2.0
	Attend grade 1 - GCE O/L	57.6	71.9
	Passed GCE A/L	33.6	22.7
	Degree or above	8.1	3.5
	Total	100.0	100.0
Employment	Unemployed	59.8	69.9
	Eliminatory occupation	12.0	12.0
	Clerical, sales, industry and machine related workers	15.3	11.2
	Managers, professionals and administrators	12.9	6.9
	Total	100.0	100.0

Source: Author calculations based on SLDHS (2016) data N= 10835

Note: TFP = traditional family planning; MFP = modern family planning. Percentages are presented within each characteristic category and may not sum exactly to 100.0 due to rounding.

Ordinary Level (O/L), and 2% of MFP users belonged to the lowest level of educational attainment, namely no schooling or preschool education only. Nevertheless, the representation of TFP users in the lowest educational category (0.6%) was very low. This was supported by the Chi-square test statistic ($\chi^2(3) = 207.822$, $p < 0.001$) which shows that a significant difference exists across educational levels between traditional and modern method users.

When considering women's occupational status, according to Table 2 above, nearly 60% of TFP users were unemployed. However, 12.9% of TFP users belonged to the occupation category of managers, professionals and administrators. When compared with the percentage of MFP users belonging to the same occupation category of managers, professionals and administrators, the proportion was nearly 7%. It can be statistically emphasized that

women who are in higher occupational groups are more prone to relying on traditional methods than modern methods ($\chi^2(3) = 109.527$, $p < 0.001$).

Among the MFP users, nearly 70% of women were unemployed and 12% of women were engaged in eliminatory occupations. However, industry, machine, clerical, and sales related workers were more likely to use TFP methods (15.3%) compared to MFP (11.2%) users.

Based on the sectoral classification of TFP users, the dominant proportion of women (80.7%) represented the rural sector. As a notable point, the urban sector accounted for 16.9% of traditional method users and 12.9% of modern method users. The results were statistically validated ($\chi^2(2) = 54.570$, $p = 0.001$), which indicates that urban women favored traditional methods over modern methods. The comparison

between traditional and modern family planning users across the three different sectors is presented in Figure 3.

The above trend is different among women in the estate sector compared to urban women. Within the estate sector 6.1% are modern family planning users compared to 2.4% of traditional family planning users. However, a notable difference is not visible among the traditional and modern method users in the rural sector.

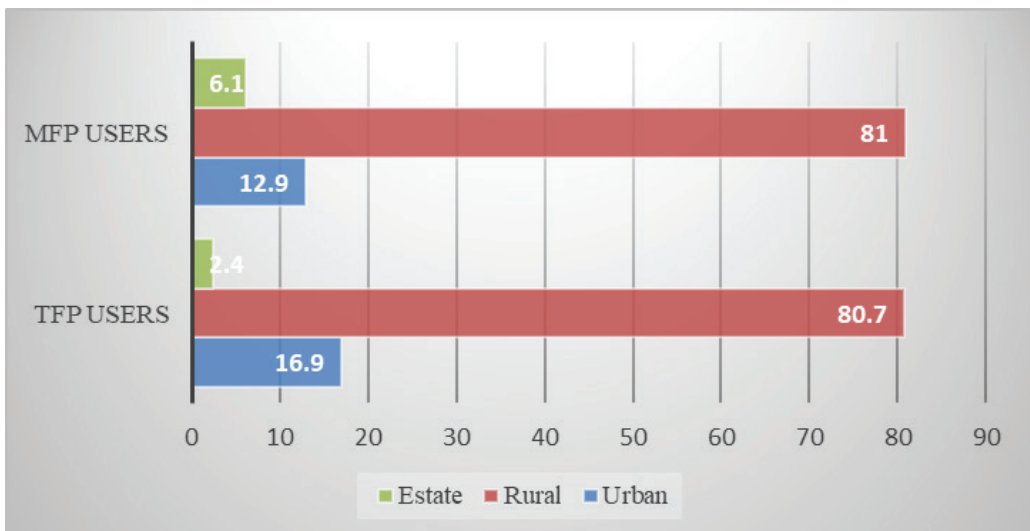
On the other hand, according to Figure 4 shown below, the majority (69.6%) of traditional family planning users have 1-2 children. Notably, the use of traditional methods is very low (2.5%) among women with three or more children. However, as an important point, nearly 28% of TFP users are women who are childless.

The same trend can be seen among the MFP users with the highest percentage represented in the 1-2 children category (73%). A notable proportion of MFP users

(9.1%) belong to the category of having three or more children. It emphasizes that women who have three or more children mostly prefer to use modern methods rather than traditional methods. On the other hand, amongst childless women, the majority rely on traditional methods (27.9%) rather than modern methods (18%). Further, this can be statistically justified by the substantial difference in the number of children and the use of TFP and MFP methods. Chi-square statistics- ($\chi^2(2) = 155.825, p = 0.001$).

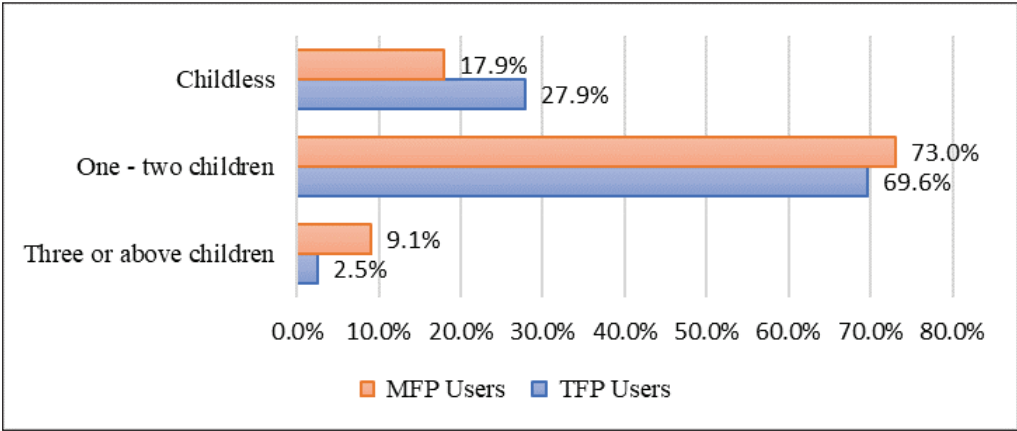
Socio-Economic Characteristics of Modern and Traditional Family Planning Users

The classification of traditional and modern family planning users by ethnicity is presented in Figure 5. According to the results, most traditional family planning users are Sinhalese (85.5%) and the lowest percentage (0.2%) is represented by Burghers. Further according to the analysis, nearly 8% of traditional family planning users can be identified as Muslims.



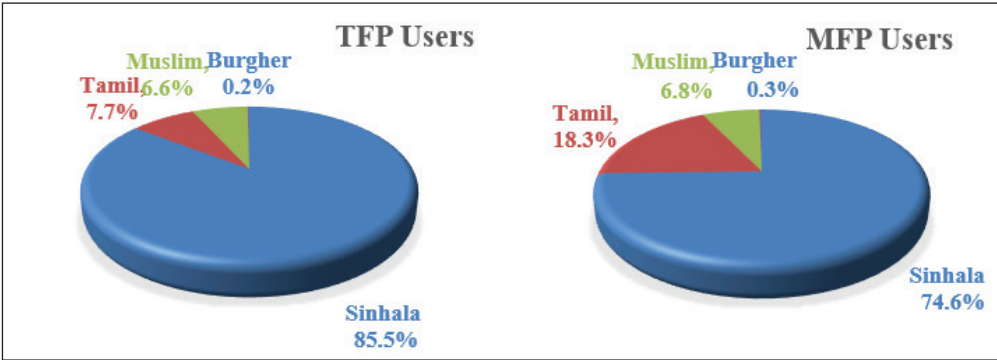
Source: Author calculations based on SLDHS (2016) data N= 10835

Figure 3. Sectoral Distribution among ever Married TFP Users and MFP Users.



Source: Author calculations based on SLDHS (2016) data N= 10835

Figure 4. Distribution of Number of Children among ever Married TFP Users and MFP Users.



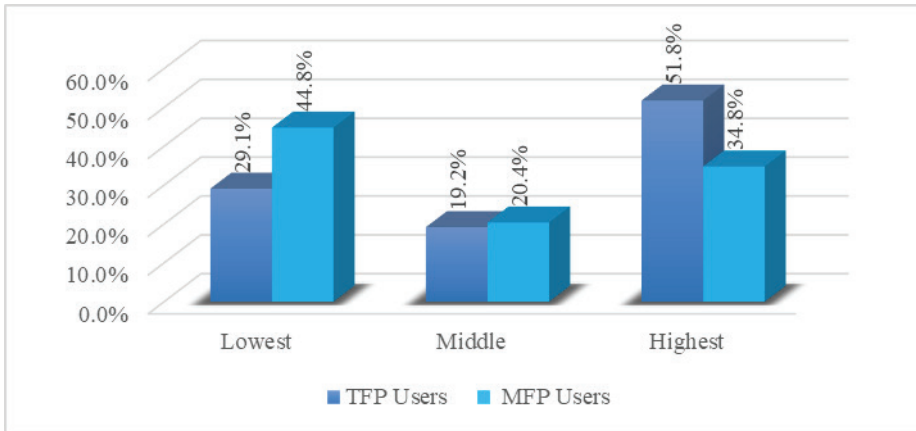
Source: Author calculations based on SLDHS (2016) data N= 10835

Figure 5. Distribution of ever-married women using traditional versus modern family planning methods, categorized by ethnicity.

As an important point, among the MFP users, 74.6% are Sinhalese, while 18.3% are Tamils. It emphasizes that the percentage of Sinhalese TFP users is higher than the percentage of Sinhalese MFP users. However, MFP use among Tamils is higher (18.3%) compared to TFP usage (7.7%). Statistically it can be justified that there is a difference between TFP and MFP users by their ethnicity ($\chi^2(3) = 124.118, p < 0.001$) which highlights the influence of ethnicity on family planning practices.

When studying the wealth quintiles of the respondents, more than fifty percent of (51.8%) traditional family planning users belonged to the highest wealth quantile. On the other hand, nearly 30% of TFP users belonged to the lowest wealth quantile. The distribution of TFP and MFP users according to their wealth quantile is shown in Figure 6.

Among the MFP users, nearly 45% of women belong to the lowest wealth quantile, while the highest wealth quantile was represented



Source: Author calculations based on SLDHS (2016) data N= 10835

Figure 6. Distribution of ever-married traditional and modern family planning users in Sri Lanka by wealth quintile.

by only 35% of MFP users. It shows that women who belonged to the highest wealth quintile were more likely to use traditional methods rather than modern methods. However, a similar trend can be seen among TFP users and MFP users within the middle wealth quintile. Statistically, the above can be justified by the Chi-square test statistic which indicates that ($\chi^2(2) = 270.65$, $p < 0.001$) there was a difference between TFP and MFP users by their wealth quantiles.

Programmatic Characteristics of Modern and Traditional Family Planning Users

Media exerts a substantial influence on the dissemination of family planning information and the enhancement of reproductive health awareness among women. Table 3 below reveals the composition of TFP and MFP users according to their exposure to family planning information via media. It was revealed that 50.7% of TFP users had heard or seen a message about family planning through electronic media on family planning. However, only 42.4% of

MFP users had been exposed to family planning messages via electronic media. The Chi-square test statistic ($\chi^2(1) = 41.138$, $p < 0.001$) shows that there is a significant difference between TFP users and MFP users in terms of exposure to contraceptive related information through electronic media.

As an important point, 43.6% of the TFP users have seen or read a message regarding family planning through printed media such as newspapers and magazines. However, MFP users' exposure to contraception related information through printed media is quite low (33.6%) compared to TFP users. This difference is statistically significant, as indicated by the Chi-square test statistic ($\chi^2(1) = 63.701$, $p < 0.001$).

As a notable point, exposure to family planning information through digital media among both TFP and MFP users is very low. It represents 8% of the TFP users and 4.3% of the MFP users. This indicates that digital media, such as the internet, is used by a very low percentage of women

to obtain information about contraception. Further, it reveals that traditional method users' exposure to all three types of media regarding family planning is higher than that of MFP users.

Further, public health midwives (PHM) play a pivotal role in promoting family planning and providing guidance on sexual and reproductive health practices to married couples across Sri Lanka (SLDHS, 2016). According to the results, among the TFP users, nearly 33% of respondents received advice from a PHM. However, the majority of TFP users (67.5%) did not receive any advice from a PHM. Conversely, 39% of the MFP users received advice from a PHM, while the others did not receive advice from a PHM. It shows that the majority of TFP users (67.5%) and MFP users (61.2%) did

not receive any advice from a PHM. This can be statistically demonstrated by the Chi-square test statistic ($\chi^2(1) = 25.426$, $p < 0.001$) which indicated a significant difference between TFP and MFP users in receiving advice from a PHM.

Modeling of Traditional Family Planning Usage

Before developing the final logistic regression model, individual regression models and Chi-square tests for each independent variable were conducted. All explanatory variables were found to significantly influence the use of traditional methods when considered individually. The overall predictive power of the individual models was greater than 83% (Table 4).

Table 3. Differences between TFP Users and MFP Users among ever-married women in Sri Lanka by Exposure to Family Planning via Media

Media source	Electronic		Printed		Digital	
Exposure	TFP Users (%)	MFP Users (%)	TFP Users (%)	MFP Users (%)	TFP Users (%)	MFP Users (%)
Yes	50.7	42.4	43.6	33.6	8.0	4.3
No	49.3	57.6	56.4	66.4	92.0	95.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Author calculations based on SLDHS (2016) data N= 10835

Table 4. Summary Table of Chi-square Test statistics and Individual Binary Logistics Models

Domain	Variable	χ^2 test p-value	Classification accuracy (%)	Crude OR (95% CI)
Demographic variables	Women's age			
	42- 49 (years)	P < 0.001	83.7%	1.898 (1.487- 2.423)
	33- 41 (years)			1.908 (1.658-2.196)
	24- 32 (years)			1.517 (1.345-1.710)
	Husband's age			
	49-63 (years)	P < 0.001	83.1%	1.753 (1.484- 2.069)
	34-48 (years)			1.422 (1.245-1.625)
	Marital Status			
	Married or living together	P < 0.001	83.7%	0.065 (0.009-0.466)
	Divorce or separated			0.325 (0.033-3.129)

(Continued)

Domain	Variable	χ^2 test p-value	Classification accuracy (%)	Crude OR (95% CI)
Demographic variables	Number of Children			
	Childless	P < 0.001	83.7%	0.180 (0.131-0.247)
	1 or 2 children			0.294 (0.216-0.399)
	Women's education level			
	Degree & above	P < 0.001	83.7%	7.588 (4.000-14.385)
	Passed G.C.E A/L			2.932 (2.381-3.610)
	Completed Grade 1 to G.C.E O/L			1.587 (1.277-1.973)
	Husband's education level			
	Degree & above	P < 0.001	83.1%	3.255 (2.580-4.107)
	Completed G.C.E A/L			2.433 (1.877-3.154)
	Completed Grade 1 to G.C.E O/L			1.690 (1.323-2.159)
Socio-economic variables	Sector			
	Urban	P < 0.001	83.7%	0.298 (0.212-0.418)
	Rural			0.391 (0.284-0.537)
	Districts by FP usage			
	High usage districts	P < 0.001	83.7%	0.233 (0.198-0.274)
	Moderate usage districts			0.406 (0.343-0.481)
	Knowledge of FP			
	Good	P < 0.001	83.7%	0.202 (0.123-0.331)
	Moderate			0.347 (0.212-0.568)
	Decision to use FP			
	My decision	P < 0.001	83.7%	0.216 (0.121-0.386)
	Husband's decision			0.035 (0.020-0.061)
	Decision of both			0.062 (0.036-0.105)
	Ethnicity of women	P < 0.001	83.7%	
	Sinhala			0.839 (0.244-2.884)
	Tamil			2.293 (0.660-7.966)
	Muslim			0.995 (0.285-3.470)
	Religion of women	P < 0.001	83.7%	
	Buddhism			0.980 (0.815-1.178)
	Catholic			2.761 (2.119-3.597)
	Islam			1.177 (0.905-1.532)
	Wealth quantile	P < 0.001	83.7%	
	Highest quantile			4.077 (3.398-4.891)
	Middle quantile			1.976 (1.693-2.306)
	Women's occupation			
	Manager, professional and administrative jobs	P < 0.001	83.2%	2.176 (1.845-2.566)
	Clerical, sales, industry and machine related workers			1.860 (1.506-2.297)
	Unemployed			1.365 (1.115-1.671)
	Husband's occupation			
	Manager, professional and administrative jobs	P < 0.001	83.7%	0.920 (0.707-1.197)
	Clerical, sales, industry and machine related workers			0.544 (0.472-0.627)
	Eliminatory occupation			0.720 (0.631-0.823)

(Continued)

Domain	Variable	χ^2 test p-value	Classification accuracy (%)	Crude OR (95% CI)
Programmatic variables	Having advice from PHM Yes	P < 0.001	83.7%	1.320 (1.185-1.471)
	FP exposure via electronic media Yes	P < 0.001	83.7%	0.717 (0.647-0.794)
	FP exposure via printed media No	P < 0.001	83.7%	0.657 (0.592-0.729)
	FP exposure via digital media No	P < 0.001	83.7%	0.520 (0.426-0.635)
	Attend to well women clinic Yes	P < 0.001	83.7%	0.725 (0.626-0.840)
	No			0.635 (0.558-0.722)

Source: Author calculations based on SLDHS (2016) data N= 10835

Note: χ^2 p-values are from bivariate chi-square tests assessing the association between each independent variable and traditional family planning use. Classification accuracy refers to the percentage of cases correctly classified by each separate unadjusted binary logistic regression model. Crude OR = unadjusted odds ratio; CI = confidence interval; FP = family planning; PHM = Public Health Midwife.

Additionally, the significance of all the explanatory variables was assessed using Wald test statistics and the results confirmed the significance of all predictors in relation to the dependent variable, with p-values less than 0.05. Therefore, all the explanatory variables were selected for inclusion in the final binary logistic regression model.

Additionally, to identify the strength of the relationships between independent variables, a Spearman's rank correlation analysis was conducted. According to the resulting correlation coefficient matrix, all bivariate correlations among independent variables showed a very weak relationship, with correlation values less than 0.5 and the p-values less than 0.05. Therefore, it can be concluded that the independent variables selected for the final model development were not strongly correlated with each other, therefore, variance inflation factors (VIFs) were not calculated.

Final Fitted Model

Based on the final fitted logistic regression model, when all the variables are considered simultaneously, the independent variables of knowledge of family planning, seeking advice from a PHM, ethnicity, decision making family planning use, women's education level, women's age, districts by FP usage, women's occupation, number of children, and wealth quintile significantly increase the likelihood of using TFP methods. However, attendance at a well-woman clinic, religion and a husband's occupation significantly reduce the likelihood of using traditional family planning methods (Table 5).

Notably, husbands age, husband's education, marital status, residential sector and media exposure to family planning were removed from the final fitted model due to their lack of statistical significance.

The final logistic regression model exhibited a satisfactory goodness-of-fit to the observed data. No evidence of model

misfit was observed, as the Hosmer–Lemeshow goodness-of-fit test was not statistically significant ($p = 0.233$). The final model correctly classified 82.9% of cases overall. Nevertheless, the pseudo-R-squared values suggested modest explanatory power, with a Cox

and Snell R^2 of 0.100 and a Nagelkerke R^2 of 0.168. Accordingly, the model accounted for approximately 10.0% to 16.8% of the variation in traditional family planning use, implying that additional factors not captured in the present analysis may also contribute to this behavior.

Table 4. Multivariable logistic regression model of factors associated with traditional family planning use among ever-married women in Sri Lanka

Variables	B	S.E.	Wald	df	P Value	aOR (95% CI)
Knowledge on FP			28.013	2	< 0.001	
Knowledge level (1) - Good	.286	.062	21.281	1	< 0.001	1.331 (1.246-1.826)
Knowledge level (2) - Moderate	.961	.296	10.556	1	< 0.001	2.613 (1.320-2.987)
Seeking advice from PHM (1) -No	.219	.066	11.167	1	< 0.001	1.245 (1.116-1.448)
Attendance at a well-woman Clinic			19.034	2	< 0.001	
Attendance at a well-woman Clinic (1) -Yes	-.286	.073	15.353	1	< 0.001	0.751 (0.234-1.076)
Attendance at a well woman Clinic (2) – No	-.357	.096	13.914	1	< 0.001	0.700 (0.560-1.210)
Religion			8.147	3	.043	
Religion category (1) -Buddhism	-.317	.117	7.322	1	.007	0.728 (0.597-0.973)
Ethnicity			9.209	3	.027	
Ethnicity category (1) - Sinhala	.617	.232	7.065	1	.008	1.854 (1.143-2.168)
Decision to use FP			212.262	3	< 0.001	
Decision to use FP category (1) - My decision	-1.920	.179	115.566	1	< 0.001	0.147 (0.065-0.418)
Decision to use FP category (2) - Husband's decision	-1.225	.137	79.846	1	< 0.001	0.294 (0.128-0.418)
Decision to use FP category (3) - Decision of both	1.450	.302	23.093	1	< 0.001	4.264 (3.786-5.265)
Husband's occupation			11.143	3	.011	
Husband's occupation category (2) - Clerical, sales, industry and machine related workers	-.325	.138	5.590	1	.018	0.722 (0.613-1.005)
Husband's occupation category (3) - Eliminary occupation	-.416	.143	8.483	1	.004	0.660 (0.438-1.004)
Women's Age			55.468	3	< 0.001	
Women's Age category (1) - 42- 49 years	.397	.081	23.728	1	< 0.001	1.487 (0.877-1.546)
Women's Age category (2) - 33- 41 years	.850	.116	53.355	1	< 0.001	2.339 (1.276-3.076)
Women's Age category (3) - 24- 32 years	.632	.182	12.023	1	< 0.001	1.881 (0.478-4.264)

(Continued)

Variables	B	S.E.	Wald	df	P Value	aOR (95% CI)
Women's occupation			19.020	3	< 0.001	
Women's occupation category (2) - Clerical, sales, industry and machine related workers	.222	.109	4.162	1	.041	1.248 (0.982-2.974)
Women's education level			13.698	3	.003	
Women's education level (2) - Passed G.C.E A/L	.322	.154	4.393	1	.036	1.380 (0.787-1.810)
Women's education level (3) - Passed grade 1 to G.C.E O/L	.890	.398	5.009	1	.025	2.436 (1.241-4.078)
Number of children			62.699	2	< 0.001	
Number of children category (1) – Childless	.352	.071	24.723	1	< 0.001	1.423 (0.943-1.788)
Number of children category (2) - 1 to 2 children	1.382	.184	56.615	1	< 0.001	3.983 (2.315-5.783)
Districts by FP usage			28.742	2	< 0.001	
Districts by FP usage category (1) - High usage	.334	.064	27.033	1	< 0.001	1.396 (0.794-2.354)
Districts by FP usage category (2) - Moderate usage	.570	.228	6.257	1	.012	1.769 (0.767-3.241)
Wealth Quantile			8.854	2	.012	
Wealth Quantile category (1) - Highest quantile	.213	.079	7.302	1	.007	1.237 (0.621-2.251)
Wealth Quantile category (2) - Lowest quantile	.185	.081	5.216	1	.022	1.204 (0.607-2.104)
Constant	.937	.281	11.095	1	< 0.001	2.552

Note: aOR = adjusted odds ratio; CI = confidence interval; FP = family planning; PHM = Public Health Midwife; SE = standard error. Reference categories are omitted from the table. P-values less than 0.001 are presented as < 0.001.

Discussion

When interpreting the final fitted model by regression coefficients, women with good knowledge (+0.286) and moderate knowledge levels on family planning (+0.961) have a higher tendency to utilize TFP approaches. According to the respondent's education levels, those who have passed G.C.E. A/Ls (+0.322) and G.C.E. O/Ls (+0.89) are also more likely to use TFP methods. It indicates that higher educational levels are associated with greater use of TFP methods, which may reflect informed choice rather than lack of access. The results can be justified by the study conducted using 80 national

surveys in 2022, which stated that levels of traditional family planning use increase with each additional level of educational attainment [18].

When considering women who seek advice from PHMs (+0.219), they are more likely to use TFP methods, which indicates their dependency on familiar or culturally accepted methods. However, women who attend well-woman clinics are less likely (-0.286 and -0.357) to use TFP methods, suggesting that they are more inclined toward MFP methods due to exposure to clinical services and counselling. This finding is clearly supported by Sri Lankan

research, which shows that non-utilization of clinical services and limited interaction with PHMs are significantly associated with higher use of traditional family planning methods [11].

Notably, when considering socio-cultural factors, women who identify as Buddhist (-0.317) are less likely to prefer the use of traditional methods, while on the other hand, Sinhalese women exhibit a greater likelihood (+0.617) of selecting TFP techniques, highlighting the nuanced ethnic influence beyond religious affiliation on family planning practices. Prior studies in Sri Lanka have similarly emphasized that contraceptive behavior is shaped not only by religion but also by household structure, social norms, and community-level influences [11, 19].

Further women's demographic factors such as age play a crucial role that, older women are more likely (42-49 years = +0.397 and 33-41 years = +0.85) to use TFP methods, indicating a preference for or continuation of natural methods. Interestingly these findings can be justified by the research conducted by Bertrand in 2025 which emphasized that, older women (age 30-49 years) shows a greater preference for traditional methods than younger women [18]. Further Sri Lankan studies have similarly found that women above 35 years are significantly more likely to use traditional methods [11].

Additionally, the final model reflects that working woman are more likely (+0.222) to use TFP methods which can be justified by a study conducted in Turkey, which shows that women's employment status and spouses' occupation are strongly correlated with family planning attitudes and choices [20].

Notably, women with few children (Childless = +0.352 and 1-2 children = +1.382) are more likely to use TFP methods, possibly for initiating and spacing births rather than limiting their births. Further, it revealed that, women who have higher wealth exhibit a greater tendency to utilize traditional methods (Higher wealth quantile = +0.213 and Middle wealth quantile = +0.185) suggesting that TFP usage is not limited to poorer groups and extends beyond economic factors. Notably recent literature also revealed that women in the higher wealth quintiles, as well as childless women and women with 1 or 2 children, prefer traditional methods compared to women in lower wealth quantiles and women with more children [18-19].

The regression coefficients obtained from the final fitted model can be further justified by the corresponding odds ratios, which verify both the trend and magnitude of the relationships between the predictor variables and the likelihood of TFP usage. The odds ratios derived from the final logistic regression analysis show that women with moderate and good knowledge of contraception have 2.613 times and 1.331 times higher odds, respectively, of practicing traditional methods, than women with poor knowledge, when all other variables are held constant.

The odds of using of traditional methods are 1.245 times greater among individuals not utilizing public health midwife services than among those who do, while all other variables are fixed. Further, the odds of using traditional methods are 1.854 times greater among Sinhalese women compared to their Burgher counterparts.

Notably, the odds of using traditional methods when the decision is made

mutually by both partners are 4.264 times greater than when the decision is influenced solely by a public health midwife, while all other variables are held constant.

Additionally, the odds of using traditional methods are 1.881 times, 2.339 times and 1.487 times, higher respectively among women aged 24- 32 years, 33- 41 years, and 42- 49 years than among women aged 15- 23 years, while all other variables in the model are held constant.

On the other hand, the odds of using traditional methods among women who are working as machine, industry, sales, and clerical related workers are 1.248 times greater than those among unemployed women.

The odds of using traditional methods are 1.38 times higher among women who have passed G.C.E Advanced Level and 2.436 times higher among women who have studied from Grade 1 up to G.C.E Ordinary Level than among women who have not attended school or have only attended pre-school, while all other variables in the model are held constant.

As a highlighted point, the odds of using traditional methods among women who have 1 or 2 children and childless married women are respectively 3.983 times and 1.423 times higher than among women with three or more children when all the other variables are held constant in the model. Further, the odds of using traditional methods among females in the highest wealth quantile is 1.237 times higher and 1.204 times higher among women in the lowest wealth quantile than among those in the middle wealth quantile, while all the other variables in the model are held constant.

Overall, the consistency between regression coefficients and adjusted odds ratios confirms both the direction and strength of these associations. Notably, when interpreted alongside existing literature, the findings suggest that TFP in Sri Lanka should not be viewed as a residual or minor practice. Instead, it represents a complex behavioral outcome shaped by knowledge, cultural norms, service exposure, reproductive intentions, and individual choices.

Conclusion

The study was carried out to model the key factors significantly influencing the adoption of traditional family planning (TFP) methods among ever-married women in Sri Lanka, using data collected by the Demographic and Health Survey of Sri Lanka (SLDHS).

Knowledge of family planning, number of children, women's age, decision-making on family planning utilization, education, and seeking advice from a PHM significantly increase the likelihood of using TFP methods, while well-woman clinic attendance and certain ethnic and religious factors reduce the likelihood of using TFP methods. The use of traditional methods is considerably higher among women who are receiving advice from public health midwives, indicating that there are deeper familial and cultural influences on family planning decisions rather than programmatic factors alone.

Higher knowledge of family planning is expected to decrease the TFP use, however myths around modern family planning methods, socio-cultural factors and anxiety surrounding the potential side effects of modern methods increase the

TFP use among women. Women in the older age groups are more likely to prefer TFP methods than women in the younger age group (15 to 23 years), which indicates that older women may be dependent on previous experiences they had at younger ages, while habits and cultural continuity sustain TFP use.

As a notable finding, results indicate that more working women are using TFP methods than unemployed women. This may be because working women usually have greater independence and decision-making power, enabling them to choose their preferred family planning method more privately and reducing the need for open discussion on contraception, which can be sensitive in some social settings.

Limitations

This study relied on a secondary analysis of the Sri Lanka Demographic and Health Survey 2016, which was the most recently published national-level dataset available for examining family planning use in Sri Lanka. While the age of the data may limit the contemporaneity of the findings, the dataset remains an important, nationally representative source in the absence of a more recent national survey. In addition, the cross-sectional nature of the data does not permit causal inference, the analysis was limited to variables available in the DHS, self-reported data may have led to recall or social desirability bias, and interaction effects between explanatory variables were not assessed.

Recommendations

The identified factors provide contemporary and robust evidence to enable more effective and efficient targeting of key female groups in need of contraceptive

facilities. Notably, women in older age groups within the reproductive age span should be made aware of modern methods and the misconceptions associated with them through well-woman clinics.

The Ministry of Health should actively identify traditional family planning users in Sri Lanka and provide them with accurate, hands-on information related to the use of modern contraception methods and the advantages of using them.

The Family Planning Association of Sri Lanka and the Family Health Bureau should organize contraceptive awareness campaigns conducted by health professionals to reach Sri Lankan working educated women. It is essential to conduct awareness sessions for employed women at their designated work locations.

Further it is recommended that modern family planning service providers understand the requirements of contraceptive users in the country and make efforts to bridge the gap in family planning services by addressing unmet needs for contraception. Additionally, media awareness programmes should be conducted to address misconceptions about modern contraceptive methods among married women, and these can be delivered via state television and radio channels.

New family planning interventions should be developed to promote modern methods among Sinhalese women and women in older age categories. Digital platforms should be created using social media such as TikTok, Facebook, Twitter, Instagram, and other digital platforms to promote accurate information about family planning methods among the general public in Sri Lanka.

Ethical Approval

This study was based on a secondary analysis of microdata from the Sri Lanka Demographic and Health Survey 2016 and involved no new data collection or direct contact with human participants. Therefore, separate ethical approval was not required. Formal authorization to reuse the dataset for the present study was granted by the Additional Director General (Statistics), Department of Census and Statistics, Sri Lanka (Reference No. DCS/2026/DHS/07, dated on 9th April 2026).

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Conflict of Interests

The authors declare there are no conflict of interests.

Data Availability Statement

Use of the Sri Lanka Demographic and Health Survey 2016 microdata file for this secondary analysis was formally approved by the Department of Census and Statistics, Sri Lanka (DCS/2026/DHS/07

dated on 9th April 2026). The approval authorized the reuse of the dataset for the present study and its publication, and the analysis was undertaken within the scope of that permission and under the governance of the data custodian.

Statement on the Use of AI

During the preparation of this work, the author utilized ChatGPT (GPT-5.1) only for minor language editing and to improve readability. No AI tool was used to generate scientific content, interpret findings, or draw conclusions. The author carefully reviewed and edited the manuscript and takes full responsibility for the content of the publication.

Disclaimer

The views and interpretations expressed in this publication are solely of author. The Department of Census and Statistics, Sri Lanka, bears no responsibility for the study's findings, interpretations, or conclusions.

Disclosure of Previous Related Publication

The author acknowledges that an earlier article, titled "Modelling the Use of Traditional Family Planning by Women in Sri Lanka," was published in the SLIIT Journal of Humanities and Sciences in year 2020 based on the same dataset. The present article, however, represents a substantially developed and distinct analysis, incorporating more comprehensive statistical analyses, detailed methodological explanations, and an extended interpretation and discussion of the findings.

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