Research Article

Prevalence of Contraception in Southeast Asia: A Systematic Review.

Asfa Ejaz[1*], Ashbeelia Yasin[2], Asma Iqbal[3], Ayesha Anwar[4], Ayesha Ashraf[5], Ayesha Eman[6], Akmal Elahi[7], Ali Afzal[8], Ali Azmat[9], Ali Imran[10], Faiza Aziz[11], Saira Afzal[12].

[(1-12)]Department of Community Medicine King Edward Medical University Lahore, Pakistan.

Abstract

Background: Contraception is an effective way of planning pregnancies and avoiding unintended pregnancies, which can be beneficial for population control and obstetric health problems, reducing pregnancy-related morbidity and mortality. Although substantial improvement has been made for better coverage of family planning services worldwide, there is still a large gap in effectively meeting the contraceptive needs and family planning goals in LMICs.

Methods: We conducted electronic literature searches in PubMed, Google Scholar, and Science-direct for relevant articles published from 2012-2022. All study designs were selected to retrieve all the available literature, PRISMA criteria were followed first with the duplicates removed, and the articles were screened based on title and abstract. After a comprehensive search through various databases, we included 9 studies in our systematic review.

Results: Southeast Asian contraception prevalence for modern contraceptives (47%) is less than the global average (56%). The CPR was found to be highest for Thailand, followed by Indonesia Vietnam, Myanmar, Laos, Philippines, Cambodia, and Timor. It was found that Indonesia, Malaysia, Cambodia, Thailand, Laos, Philippines, Timor-Leste, and Vietnam had higher contraceptive rates in the rural populations while Myanmar was found to have higher urban contraceptive rates (57.3%). Most countries involve higher contraceptive prevalence in women with less than secondary education,with Myanmar having higher contraceptive rates (57.8%) in women with secondary or higher education.

Conclusion: This study concludes that Southeast Asia has an average contraception rate of 46%, which is in line with the 47%, as mentioned by the Asian Development Bank, 2012.

Corresponding Author: Asfa Ejaz

Supervisor: Prof. Dr. Saira Afzal | Department of Community Medicine, KEMU, Lahore | sairamust@gmail.com

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INTRODUCTION:

Contraception is an effective way of planning pregnancies and avoiding unintended pregnancies, which can be beneficial for population control and obstetric health problems. However, some complications resulting from the use of contraceptives, such as an increased risk of venous thrombosis from oral contraceptives. (1) On the other hand, lack of planning results in complications of unintended pregnancies such as low birth weight, preterm labor, and pre-eclampsia (2). Male operative procedures mostly show maximal efficacy with adverse effects such as temporary scrotal enlargement and mild scrotal and inguinal region pain. (3) Moreover, contraception utilization can be linked to availability and affordability. These factors may be involved in dictating the trends of contraception prevalence in different populations. Many underdeveloped nations have seen a drastic increase in fertility rates accompanying unintended pregnancies, especially among youth, due to a lack of reproductive health facilities. (4-5) Sustainable development goals (SDGs) Goal 3 under Target 3.7 states, "By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programs". (6) With the advent of the recent world population explosion and subsequent awareness policies, countries in Southeast Asia such as Myanmar have improved contraceptive usage over time and the fertility rate has been on a decline since. (7) Different studies indicate that the prevalence of contraception in people with lower socioeconomic status including rural and less educated populations is generally low. It seems to arise due to a lack of awareness and affordability of effective means of contraception. (8) About 220 million women in low- and middle-income countries who want to avoid pregnancy are not adopting current procedures or techniques to do so. (9) According to the Pakistan Bureau of Statistics Annual Contraceptive Performance Report 2017-18, the overall contraceptive prevalence rate is 41.0%, (10) whereas it was 64% in the U.S women in 1995. (11)

There is a discrepancy among commonly used techniques of contraception that should be particularly considered. The usage of long-term contraception has been found to be low as compared to temporary methods. Only 6.4% of women in Latin America and the Caribbean (7.7% in the Caribbean, 9.5% in Central America, and 4.8% in South America) use long-acting reversible contraceptives such as intrauterine devices for contraception, (12) while higher socioeconomic status was linked to more frequent use of permanent and long-acting reversible contraception in five of the nations studied (Bolivia, Colombia, Dominican Republic, Guyana, and Peru). (13) The decreased prevalence of contraception may be attributed to general misconceptions about the risks associated with contraceptives, as well as the status of education, income, and role of women in decision-making. (14) Many studies have been conducted regarding the availability and usage of different contraceptives in

different South East Asian populations, but a Systematic review of the prevalence of different contraceptives concerning the socioeconomic features of respective populations in the whole of Southeast Asia has not been conducted yet. Our aim with this study is to find out the average prevalence of contraception in Southeast Asia and to highlight the hurdles that are faced by women regarding the usage of contraceptives, to aid in awareness.

Methodology:

Study setting:

A literature search on 9 Southeast Asian countries (Cambodia, Indonesia, Laos, Timor-Leste, Thailand, Philippines, Vietnam, Myanmar, and Malaysia) was conducted for data on contraception prevalence in married women in three electronic databases (PubMed, Google Scholars, Science- direct) for relevant articles published in 2012-2022. Data from Multiple indicators clustersurveys for Thailand and Vietnam; the National Population and Family Development Board (NPFDB)for Malaysia, and the Demographic Health Survey (DHS) for the rest of the countries were used for demographic data on contraception. Only articles published in English and reporting the prevalenceof contraceptive use among married women aged 15-49, were eligible for inclusion. Data on the prevalence of contraceptive use among married women aged 15-49 in these countries were extracted and analyzed according to the PRISMA guidelines.

Study Population:

Southeast Asian countries including Myanmar (2015), Cambodia (2014), Timor-Leste (2016), Indonesia (2017), Laos (2017), Malaysia (2014), the Philippines (2017), Thailand (2019), and Vietnam (2014) were included in the review. The available literature on selected databases from the current decade span, i.e., 2012-2022 were filtered and the collected articles provided data from the 2014 to 2019 period.

Sample size:

Using data from multiple surveys for 9 Southeast Asian countries yielded a total sample size of 125,705. (Details in Table 3)

Sampling technique:

For a sampling of all the retrieved articles from selected databases, stepwise scrutiny was conducted within Preferred Reporting Items for Systematic Review and Meta-analyses (PRISMA).

Study selection and data extraction:

Inclusion Criteria:

- Contraception prevalence surveys that concern various population groups of married women in Southeast Asia
- The criteria for inclusion include studies on the prevalence of contraceptive use in South- east Asian nations.
- Cross-sectional, case-control, and cohort design studies published in English from inception to 2022 on various contraceptive methods.

Exclusion Criteria:

- Case series/reports, conference papers proceedings, and articles available only in abstract form.

- Editorial reviews, letters of communications, commentaries, systematic reviews, and grey literature on studies outside South East Asia.
- Articles in languages other than English.

Variables:

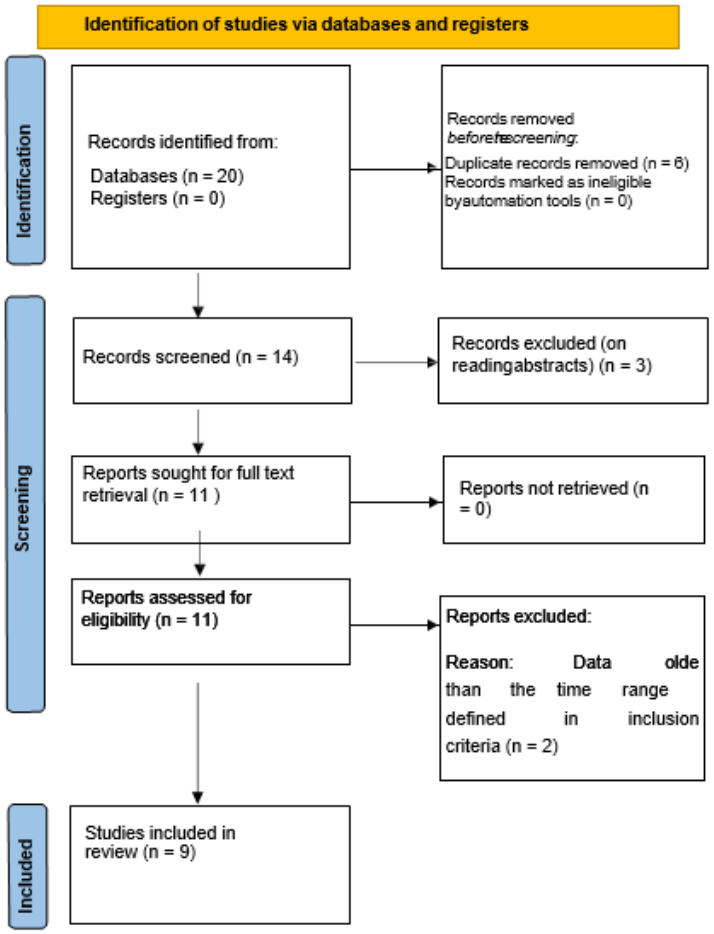
Contraception utilization or prevalence rate, based on age (range 15-49 years), education (no education /primary/secondary/higher), and residence (urban-/rural).

Operational definitions:

Reversible Contraceptives: IUDs, Oral contra-ceptives (COCs and POCs), Injections, Condoms.

Irreversible Contraceptives: Surgical sterilization of Females.

Utilization: Using any of the above modern contraceptive methods to space the child andprotect against unwanted pregnancy.



DATA COLLECTION PROCEDURE:

Papers published in search engines such as PubMed, Google Scholar, and Science-direct as well as DHS, NPFDB, and MICS surveys assessing contraception use in Southeast Asia were included. Time was filtered for articles published within the current decade span (2012-2022) in the English language. All study designs were selected to retrieve all the available literature. Studies fitting the inclusion criterion were uploaded on Mendeley and PRISMA criteria were followed, first with the duplicates removed, the articles were screened based on title and abstract, after which the full-text articles were reviewed.

RESULTS

We are considering the following variables in the context of our research (Table 2, Figures 1 and 2)

1. AGE GROUP:

While considering the age group, our review found that CPR was highest among women of age 30-40 years, while lower among women who are <30 years or >40 years of age. Cambodia [47.4%] Philippines [47%], and Timor-Leste [31.1%] have the highest CPR in the 30-34 years age group. While, Indonesia [63.9%], Laos [60%], Myanmar [61.8%], Thailand [75.1%], and Vietnam [66.1%] have the highest CPR among women of age 35-39 years. However, for Malaysia, it was found that women of age 40-44

years are more likely to use contraceptives i. e CPR is 42.6% and lowest in the age group of 45-49 years [27.4%].

2. RESIDENCE:

In eight out of the ninth included southeast Asian regions i.e Cambodia, Indonesia, Laos, Malaysia, Philippines, Thailand, Timor-Leste, and Vietnam the CPR is found to be greater in rural areas than in urban areas. While in Myanmar CPR is greater in urban areas [57.3%] than in rural areas [49.1%].

The CPRs for the rural population of these countries are Cambodia [39.8%], Indonesia [59.2%], Laos [50.5%], Malaysia [39.5%], Philippines [42.2%], Thailand [72%] Timor-Leste [24.5%], Vietnam [58] respectively.

3. EDUCATION:

Our study found that illiterate women with primary education are more likely to use contraception in eight out of ninth included southeast Asian regions while Myanmar was found to be having highest CPR among women who have secondary and higher education [57.8%].

Among Southeast Asian regions having the highest CPR in illiterate women in Cambodia [39.9%] ,Malaysia[41%], and Vietnam [63.2%] .While those having the highest CPR among women who have primary education are Indonesia [61.8%], Laos [54.4%], Philippines [41.4%], Thailand [73.3%], and Timor-Leste [28.8%].

Those women having secondary and higher education were found to have the lowest contraceptive use in Cambodia [36.7%], Malaysia [34.9%], Vietnam [55.6%], Laos [42.3%], Thailand [73.3%] while illiterate women were least likely to use contraception in Indonesia [34.5%], Philippines [19.1%], Timor-Leste [21.1%], Myanmar [37.5%].

Socio-demographic characteristics:

A total of data on 125,705 married women was found with ages ranging from 15 to 49 years, out of which 47,545 (37.823%) were urban and 78,160 (62.177%). 58,023 (46.158%) of the women received none or primary education while the rest had secondary or higher education (Table 1) (15-23)

Contraceptive prevalence rates (CPR):

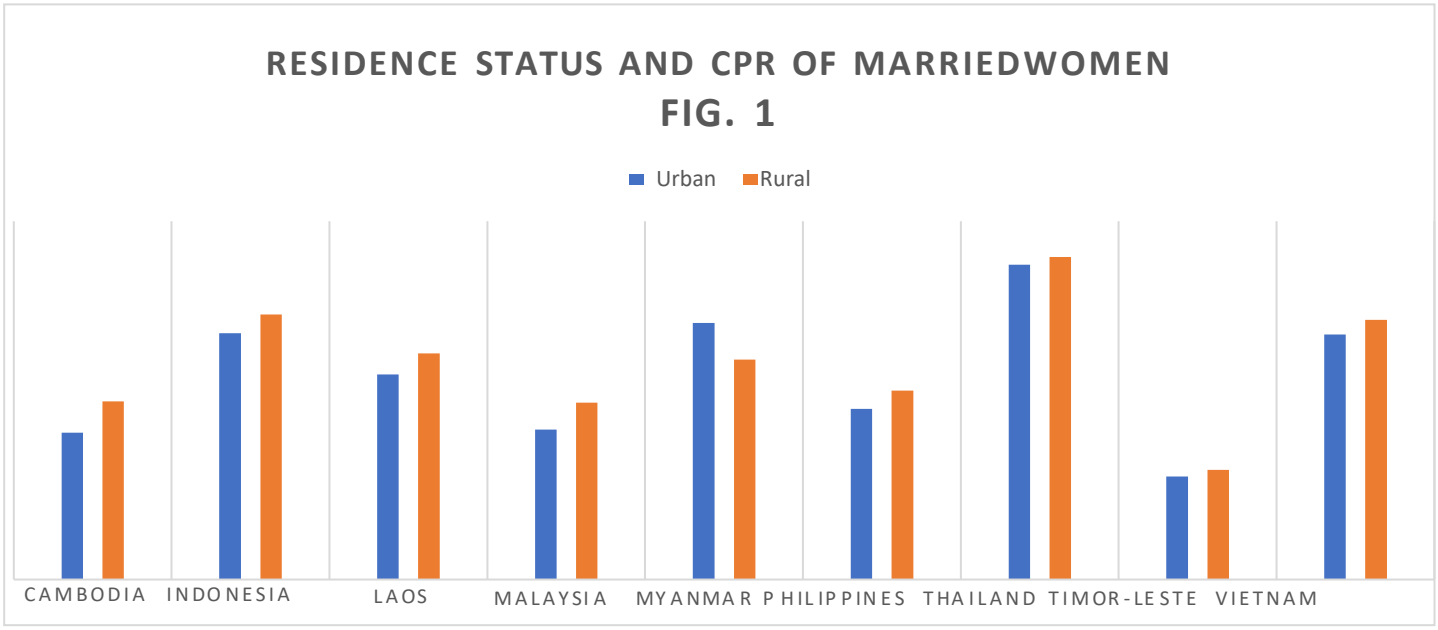
It was found that Indonesia, Laos, Malaysia, Cambodia, Thailand, Philippines, Timor-Leste, and Vietnam had higher contraceptive rates in Rural populations while Myanmar was found to have higher urban contraception rates (57.3%). Most countries involved higher contraception prevalence in women with less than secondary education, with Myanmar having higher contraceptive rates (57.8%) in women with secondary or higher education. (Table 2, Figures 1 and 2)

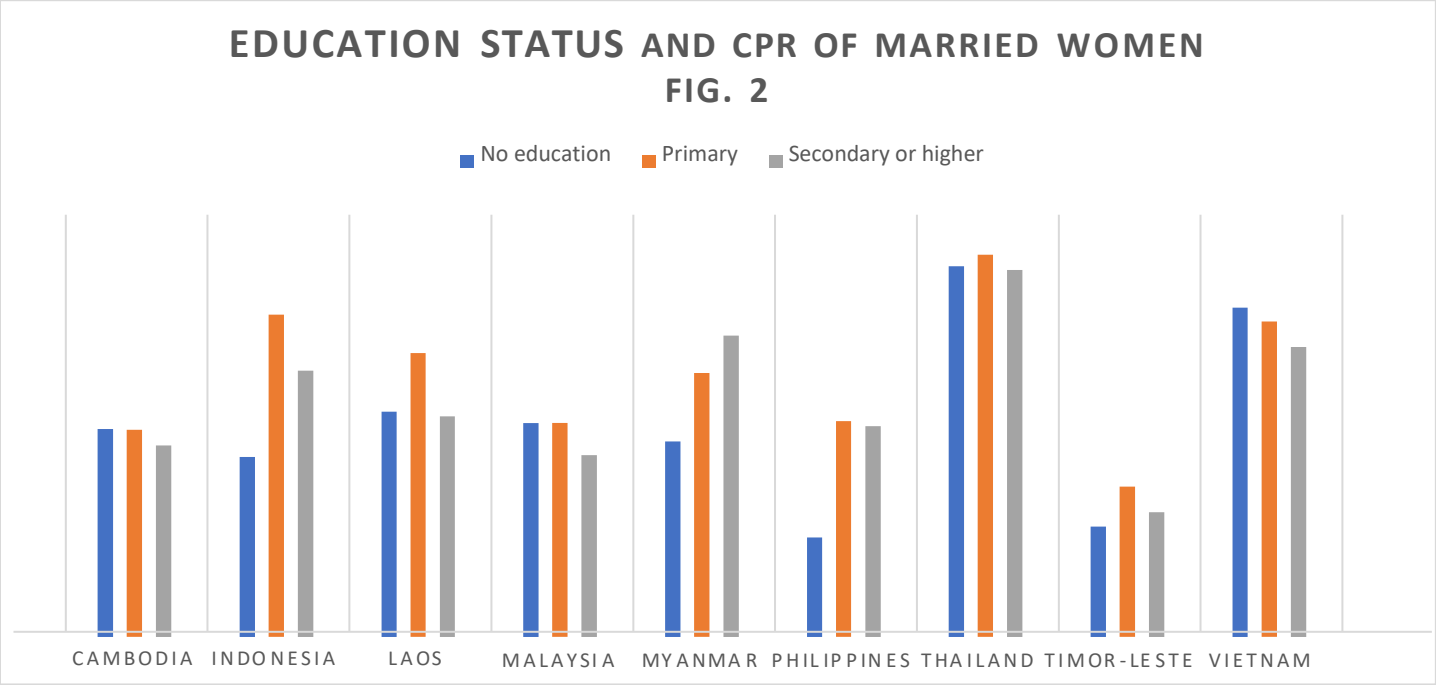
Table 1: Sample distribution

	Cambodia (n=11,898)		Indonesia (n=35,681)		Laos (n=19,614)		Malaysia (n= 5,175)		Myanmar (n=7,759)		Philippines (n=15,016)		Thailand (n=15,827)		Timor-Leste (n=7,697)		Vietnam (n=7038)
AGE	**No. of Women**	**n%**	**No. of Women**	**n%**	**No. of Women**	**n%**	**No. of Women**	**n%**	**No. of Women**	**n%**	**No. of Women**	**n%**	**No. of Women**	**n%**	**No. of Women**	**n%**	**No. of Women**
15-19	450	3.8	700	2.0	1,108	5.6	367	7.1	227	2.9	419	2.8	273	1.7	245	3.2	133
20-24	1,833	15.4	3,317	9.3	2,722	13.9			834	10.7	1,718	11.4	1,123	7.1	1,031	13.4	687
25-29	2,249	18.9	5,531	15.5	3,569	18.2	740	14.3	1,258	16.2	2,628	17.5	1,917	12.1	1,575	20.5	1102
30-34	2,625	22.1	6,588	18.5	3,619	18.5	997	19.3	1,505	19.4	2,663	17.7	2,363	14.9	1,574	20.4	1396
35-39	1,573	13.2	7,259	20.3	3,331	17.0	968	18.7	1,482	19.1	2,775	18.5	2,928	18.5	1,006	13.1	1260
40-44	1,673	14.1	6,428	18.0	2,990	15.2	1,021	19.7	1,283	16.5	2,443	16.3	3,480	22.0	1,301	16.9	1279
45-49	1,495	12.6	5,858	16.4	2,277	11.6	1,082	20.9	1,169	15.1	2,372	15.8	3,743	23.6	965	12.5	1182
RESIDENCE																	
Urban	1,818	15.3	17,268	48.4	6,206	31.6	1,912	36.95	2,022	26.1	6,769	45.1	7,144	45.1	2,252	29.3	2154
Rural	10,080	84.7	18,413	51.6	13,408	68.4	3,263	63.05	5,737	73.9	8,247	54.9	8,683	54.9	5,445	70.7	4884
EDUCATION																	
No education	1,774	14.9	662	1.9	3,771	19.2	637	12.3	1,195	15.4	156	1.0	414	2.6	2,201	28.6	392
Primary	6,399	53.8	12,081	33.9	8,020	40.9			3,657	47.1	2,633	17.5	4,537	28.7	1,430	18.6	1290
Secondary and higher	3,726	31.3	22,938	64.3	7,823	39.9	4,538	87.7	2907	37.5	12,227	81.4	10,876	68.7	4,066	52.8	5,356

Contraception Prevalence Rates (CPR) for Married women in Southeast Asian countries (Table 2)

	Cambodia (n= 11,898)	Indonesia (n= 35,681)	Laos (n= 19,614)	Malaysia (n= 5,175)	Myanmar (n= 7,759)	Philippines (n= 15,016)	Thailand (n= 15,827)	Timor- Leste (n= 7,697)	Vietnam (n= 7038)
AGE					**CPR**				
15-19	20.2	43.8	29.1	32.3	53.2	29.7	74.1	8.1	29.4
20-24	34.4	55.4	42.9	32.3	59.3	44	72.4	18.7	43.8
25-29	43.8	55.7	50	32.4	57.9	43.2	66.7	26.5	56.4
30-34	47.4	61	57.1	36.4	57.1	47	72.2	31.1	65.4
35-39	47.1	63.9	60	40.6	61.8	44.7	75.1	29.4	66.1
40-44	38.4	60.8	49.9	42.6	46.6	40	73.9	23.5	61.6
45-49	18.6	44.6	34.7	27.4	22.3	24.4	67	13.5	43.4
TOTAL	**38.8**	**57.2**	**49**	**35.7**	**51.3**	**40.4**	**71.3**	**24.1**	**57**
Residence									
Urban	32.8	55	45.8	33.5	57.3	38.1	70.3	23	54.7
Rural	39.8	59.2	50.5	39.5	49.1	42.2	72	24.5	58
Education									
No education	39.9	34.5	43.2	41	37.5	19.1	71.1	21.2	63.2
Primary	39.7	61.8	54.4		50.6	41.4	73.3	28.8	60.5
Secondary & higher	36.7	51.1	42.3	34.9	57.8	40.4	70.4	23.9	55.6





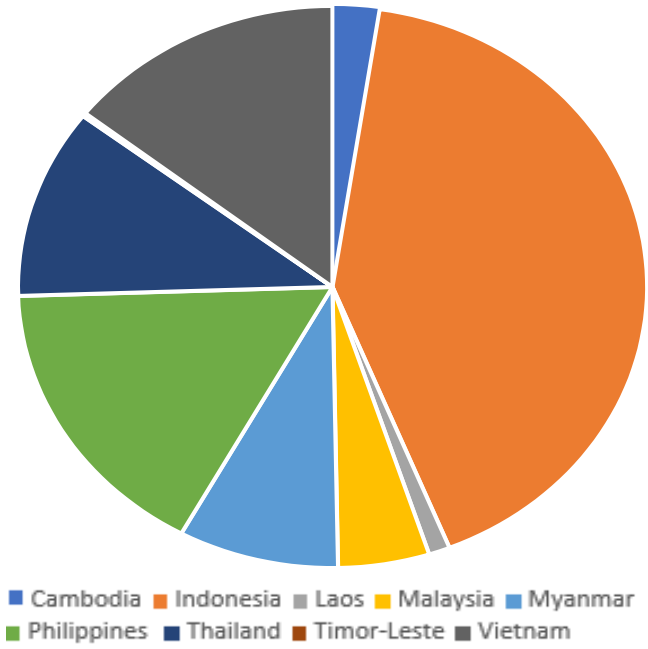
Region-wide CPR:

Considering population record according to the years in which the data surveys took place, the weighted average for 9 Southeast Asian countries i.e., Myanmar (2015), Cambodia (2014), Timor-Leste (2016), Indonesia (2017), Laos (2017), Malaysia (2014), the Philippines (2017), Thailand (2019) and Vietnam (2014) were found to be 47.336% (Table 3 & Figure 3)

A weighted average of CPR for Southeast Asian countries (Table 3)

COUNTRY		**POPULATION (Millions)**	CPR (Weighted Average)	Sample Size
Cambodia	2014	15.27	38.8	11898
Indonesia	2017	264.7	57.2	35681
Laos	2017	6.953	49	19614
Malaysia	2014	29.87	35.7	5175
Myanmar	2015	52.68	51.3	7759
Philippines	2017	105.2	40.4	15016
Thailand	2019	69.63	71.3	15827
Timor-Leste	2016	1.219	24.1	7697
Vietnam	2014	91.71	57	7038
Total		**637.232**	**47.336**	**125705**

Southeast Asian Countries, Population distribution fig. 3



DISCUSSION:

This study concludes that Southeast Asia has an average contraception rate of 47.336%, which is in

line with the 47%, mentioned by the Asian Development Bank, 2012. The CPR was found to be highest for Thailand, followed by Indonesia, Vietnam, Myanmar, Laos, Philippines, Cambodia, and Timor. The results of our systematic review showed that there are significant variations among southeast Asian regions regarding the utilization of contraceptive methods by married women of reproductive age concerning age, education, and residence. Contraceptive utilization and women's age showed an inverted U shape relationship having the highest likelihood of contraceptive utilization among women of age 30-40 years. These findings show significant similarities to the previous studies conducted in these regions. This could be linked with the number of births per woman that influences their decisions regarding contraceptive utilization. Moreover, it was interesting to find out that the rural population under our study had a higher likelihood of contraception utilization than the urban regions. Some previous studies also showed the same association and this may be explained by the successful implementation of the national family planning programs by the government that mainly target these regions to aid in awareness regarding the importance of family planning and the health of women and children.

Our study is the first of its kind to evaluate the pooled prevalence of contraception in Southeast Asia, taking into account the various parameters of women's age, residence, and educational status. The sample size covered is larger than most questionnaire-based cross-sectional studies. Consequently, the results can be generalized to the women of various Southeast Asian regions.

However, the studies included assessed the prevalence of contraception in 9 Southeast Asian countries, while we couldn't find any appropriate study on CPR in Singapore and Brunei. Also, our systematic review focused only on CPR in married women of reproductive age, men were not targeted. Only articles included in the English language were considered to conduct this review which may result in missing studies that could have been published in other languages. Moreover, this study doesn't include the parameters such as Odds ratios or analyses of a forest plot as it is not a meta-analysis, which would have provided deeper insight into the correlation between variables and CPRs.

CONCLUSION:

Southeast Asian contraception prevalence between the years 2014-19 is below the global average. The study of literature tells us about the hurdles to modern contraceptive use in Southeast Asian countries. These hurdles include limited awareness, poor health care system, and religious and cultural issues. Awareness should be provided through mass media communication (like national TV, radio, newspapers, magazines, the internet, and public forums), sexual health education programs for medical officers and paramedics; and by establishing youth-friendly service centers. Religious and community leaders should get to know about the importance of family planning. Women should have the liberty to make their own decisions on health. This can be achieved by promoting education and

gainful employment for women. The establishment of a healthcare system and promoting awareness about family planning is required particularly in areas with widespread poverty, low literacy, and rural populations. Coordination among various healthcare sectors is required to provide awareness about family planning among women. Modern ways to provide family planning services include counseling and follow-up. Healthcare specialists should provide information to women about contraceptive use along with their side effects and how to manage them. The key to achieving this is the establishment of collaboration and coordination among the public and private sectors. Both the availability and accessibility of family planning supplies and services should be ensured by these sectors. Men should play their role by practicing and supporting family planning. In this study, more focus has been placed on women, and men are nottargeted (25).

Implementing these strategies among southeast Asian countries may empower women to use contraceptive methods effectively resulting in maternal health improvement. This will not only benefit maternal health but also help the government to achieve its developmental goals.

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