Original Article

Unmet need for family planning in Pakistan: prevalence and factors influencing unmet need among women of reproductive age

Muhammad Imran[1] iD **Rehana Yasmeen[2]** iD

[1]College of Physicians and Surgeons Pakistan, Karachi-Pakistan.
[2]The Indus Hospital Health Network, Karachi-Pakistan.

Abstract

Background: Despite government efforts, the contraceptive prevalence rate is low in Pakistan. UMNFP still exists in Pakistan like other low-middle income countries. Our study aims to determine the prevalence and factors affecting the unmet need for family planning in Pakistan.

Methodology: The analysis was performed using PDHS 2017-18 data set. In our study, 11847 women of reproductive age were included out of 14498.

Results: In binary logistic regression, age, wealth index, and the number of living children were found statistically significant. UMNFP was lower in women of older age (45-49) in contrast to younger women of age between 15-19 years. Regarding the women's socio-economic status, those who belong to the middle socio-economic class had a lower UNMFP than the poorest. UMNFP was 1.7 times more in women with more than three children, in contrast, who had less than or equal to three children. However, women's age, socio-economic and working status were statistically significant with an unmet need for spacing in the multinomial model. In addition, the age of women, region, number of living children, socio-economic status, and knowledge of family planning was found to be statistically significant with an unmet need for limiting.

Conclusion: In the light of our study, overall unmet need is lower in older age and more affluent wealth while UNMFP is high in women who had more than three children. Policymakers should design interventions to target high-risk populations to overcome the issue of rapid population growth.

Keywords

Family Planning, Pakistan Demographic Health Survey, Unmet Need For Family Planning.

Introduction

In developing countries, most women of childbearing age want to postpone or limit their pregnancies. Still, they are unable to use family planning services[1,2]. Unmet need for family planning (UMNFP) is defined as women who want to limit or delay their pregnancy but cannot use family planning methods. UMNFP is sub-divided into spacing and limiting. Spacing is defined as a woman who wants to postpone the subsequent pregnancy during her reproductive life by at least two years. Limiting is defined as a woman who wants to limit pregnancy and doesn't want any more children in her reproductive life[1].

UMNFP has been considered the most effective method for the assessment and prediction of contraceptive use globally. In the last few decades, access and awareness regarding family planning services have been improved, but UMNFP is still high, especially in developing countries. In developing countries, around 214 million women of reproductive age have UMNFP, while 885 million women wanted to prevent unplanned pregnancies in 2017. This indicates that women want to limit or delay their pregnancy but don't have access to family planning methods[3].

In most of the developing countries, family planning programs had initiated in the early 1960s[1]. However, in the last few decades, knowledge regarding contraceptive use among women has improved, but still, most women have UMNFP due to various socio-demographic and economic factors[4,5]. In most developing countries, unmet need is high due to low contraceptive methods utilization[6]. Globally, around 1 in 3 women who want to limit or space the additional childbirth have been restricted to use a contraceptive method[1].

Particularly in developing countries common reason for unwanted pregnancies is high UMNFP. It contributes to a high fertility rate which ultimately leads to rapid population growth[7]. Moreover, unmet need is closely associated with high illiteracy, poverty, and gender inequality; UMNFP does not only affect the reproductive health of women but also affects their ability to contribute to educational and economic activities to improve wealth status and health conditions[8]. Globally, UMNFP is considered as a global health priority, tackled by MDG 4 (child mortality reduction) and Millennium development goal (MDG) 5 (universal access to reproductive rights) [9]. However, an increase in unmet need and low utilization of contraceptives in developing countries shows that access and adherence to family planning methods are under the influence due to various factors[1].

In 2017, Pakistan's population was more than 207,000,000, with an estimated growth rate of 2.4%. Pakistan has now been included in most populated countries, with this significantly high growth rate, being the sixth top contender. Being a nation with limited resources, if the population keeps growing at the expected rate, we might end up in a situation where even the basics needs of the majority of the people are jeopardized to be unmet[10]. As reported in Pakistan demographic health survey (PDHS) 2017-18, only 34.2% of women using family planning methods which is a decrease of 1% from PDHS 2012-13[11].

In South Asia, Pakistan was the first country in which a family planning program was introduced. Despite government efforts, the contraceptive prevalence rate is low in Pakistan. UMNFP still exists in Pakistan like other low-middle income countries. According to PDHS 2012-13, around 56% of women want to limit or postpone their pregnancies by using services of family planning but unfortunately, only 35% of females utilize those services. Therefore, overall, UMNFP is high in Pakistan, which is around 21%[12]. At the international and local levels, studies regarding the prevalence of overall unmet needs are available, but studies regarding socio-demographic factors associated with UMNFP in Pakistan are very scarce. Our study aims to determine the prevalence and factors affecting the UNMFP in Pakistan by using a nationally representative data set of Pakistan demographic health survey 2017-18. Our study will help to address the question; do socio-demographic factors affect the unmet need for family planning in Pakistan? It is necessary to address this question so strategies and policies can

be devised to control the rapid population growth in the country.

Methodology

Secondary data analysis was performed using PDHS 2017-18 data set. For PDHS 2017-18, data was collected from all provinces, including Sindh, Punjab, Khyber Pakhtunkhwa (KPK), and Baluchistan, and four regions that include Gilgit Baltistan, Azad Jammu Kashmir (AJK), FATA, and ICT (Islamabad Capital Territory). In PDHS 2017-18, two-stage stratified sampling was used. In total, 16 sampling strata were created. By using the two-stage selection, process samples were selected independently in each stratum. In PDHS 2017-18 data was collected from 16240 households. The sample includes married women of 15-49 years. Out of 15068 selected women, only 14498 were successfully interviewed for UMNFP. After excluding missing data, the final analysis was performed on 11847 married women of 15-49 years. For gathering information regarding the unmet need for family planning, a Women's questionnaire was used in PDHS. The Pakistan health research council approved the data collection protocol and questionnaire. After finalizing the initial questionnaire in the English version, it was translated into two different languages, i.e., Urdu and Sindhi. In PDHS 2017-18, data was collected on paper-based questionnaires, while for editing questionnaires in the field, computer-assisted field editing was used.

To identify the socio-demographic factors associated with UMNFP, we have divided the variable of unmet need into two groups, i.e., women have no unmet need labeled as 0 while women have unmet need labeled as 1. Later, UMNFP was further classified into three categories, i.e., no UMFP, unmet need for spacing, and limiting labeled as 0, 1, and 2, respectively. The predictor variables selected for analysis include: women's age, region, residence status, education level of women, education level of husband, women occupational status, wealth index, heard about family planning, and the number of children. STATA v16.0. was used to perform descriptive and inferential analysis. We used the "svy" command for logistic regression analysis (binary and multinomial logistic regression). In univariate analysis, a variable having a p-value < 0.25 was selected for multivariable analysis. To adjust the sample's intra-class correlation, STATA "svy" command was used to perform logistic regression analysis. The adjusted odds ratio for all variables, with 95% CI were calculated, taking a p-value less than or equal to 0.05 as significant.

The data of PDHS 2017-18 is freely available in the public domain. There is no restriction of using data for analysis by the National Institute of Population studies, so no ethical approval was required to use the data set for analysis.

Results

In our study, the mean age of women was 31.94 ± 8.33 years. Most of the women in our study belong to rural areas, 63.27%. Moreover, 21.09% of women aged between 25-29 years followed by 30-34 (19.79%) and 35-39 (17.28%). Most of the women were illiterate 48.82%, followed by secondary, primary, and higher education; 21.41%, 16.45%, and 13.33%, respectively. Furthermore, 21.10% of women belong to the richer wealth quintile, followed by the richer, middle, poorer and poorest; 20.90%, 20.34%, 19.42%, and 18.24%, respectively. However, 81.08% of women were non-working, and 61.6% had less than or equal to three children.
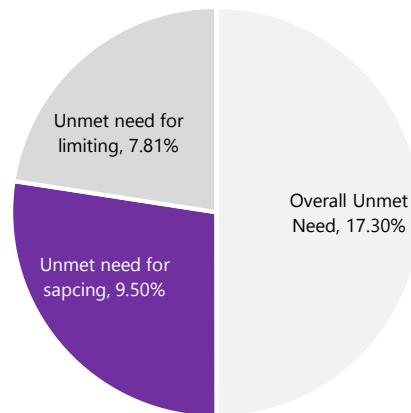
Figure 1: Prevalence of Unmet Need for Family Planning.

The Binary adjusted model is shown in Table 1, in which three variables were found significant, having a p ≤ 0.05. Moreover, province, place of residence, education level of women and husband, women's occupation, and heard about family planning were statistically insignificant in the binary model. UMNFP was found to be lower in women of age group 35-39 as compared to those of age between 15-19 years (aOR 0.685). Moreover, UMNFP was further reduced in women of age 40-44 in contrast to women of age between 15-19 years. (aOR: 0.392) However, the UMNFP was also lower in women of age 45-49 in contrast to women of age between 15-19 years (aOR: 0.369). Regarding the women's wealth index, the UMNFP was lower in women belonging to middle socioeconomic status than the poorest (aOR: 0.766). Moreover, the UMNFP further decreases in women's richer and richest wealth index (aOR: 0.638 and aOR: 0.640 respectively). The UMNFP among women having more than three children was 1.7 times more in contrast to women who had less than or equal to three children (aOR: 1.753).

Table 1: Factors associated with unmet need for family planning among women of reproductive age in Pakistan: Binary Logistic Regression.

Characteristics	Crude OR(95% CI)	aOR(95% CI)
Place of residence		
Urban	1	
Rural	1.324 (1.134-1.546)	
Province		
Punjab	1	
Sindh	1.149 (0.961-1.373)	
KPK[4]	1.381 (1.124-1.697)	
Baluchistan	1.476 (1.119-1.947)	
ICT[5]	1.122 (0.861-1.462)	
FATA[6]	1.097 (0.746-1.613)	
Current age of the woman (years)		
15-19	1	1
20-24	1.044 (0.764-1.427)	1.068(0.779-1.465)
25-29	1.170 (0.862-1.587)	1.084(0.789-1.49)
30-34	1.160 (0.863-1.558)	0.926(0.678-1.263)
35-39	0.931 (0.676-1.282)	0.685(0.484-0.968)
40-44	0.562 (0.396-0.797)	0.392(0.271-0.566)
45-49	0.536 (0.361-0.796)	0.369(0.243-0.561)

Woman's education		
No education	1	
Primary education	0.703 (0.577-0.858)	
Secondary education	0.826 (0.698-0.977)	
Higher education	0.737 (0.592-0.919)	
Husband's education		
No education	1	
Primary education	0.992 (0.795-1.237)	
Secondary education	0.862 (0.738-1.006)	
Higher education	0.776 (0.645-0.934)	
Woman's occupation		
Not Working	1	
Working	0.920 (0.782-1.082)	
Wealth index		
Poorest	1	1
Poorer	0.811 (0.663-0.991)	0.84(0.685-1.03)
Middle	0.729 (0.588-0.904)	0.766(0.617-0.95)
Richer	0.583 (0.476-0.713)	0.638(0.519-0.784)
Richest	0.545 (0.256-0.330)	0.64(0.518-0.79)
Number of Children		
≤ 3 Children	1	1
>3 Children	1.309 (1.120-1.528)	1.753(1.492-2.059)
Heard about family planning		
No	1	
Yes	0.900 (0.765-1.059)	

OR-Odds Ratio; CI-Confidence Interval; Adjusted Odds Ration; KPK-Khyber Pakhtunkhuwan; ICT-Islamabad Capital Territory; FATA-Federally Administered Tribal Areas

The multinomial adjusted model is shown in table 2. The unmet need for spacing was highest among women who live in Baluchistan, followed by Sindh and KPK in contrast to women who live in Punjab ([a]OR: 1.705, [a]OR:1.420 and [a]OR:1.356 respectively). Moreover, the women's age is inversely associated with an unmet need for spacing. The unmet need for spacing was significantly lower in women of age between 45-49 years followed by age group 40-44 years, 35-39 years, and 30-34 years in contrast to women of age 15-19 years ([a]OR: 0.056, [a]OR:0.078, [a]OR: 0.308 and [a]OR:0.678 respectively). Furthermore, the unmet need for spacing among working women was lower in contrast to non-working women ([a]OR: 0.571). While the unmet need for spacing was also found to be lower in women with richer wealth quintile ([a]OR: 0.677) in contrast to women with poorest wealth quintile. However, women lives in FATA had a lower unmet need for limiting in contrast to women lives in Punjab ([a]OR: 0.354). Moreover, women who live in Sindh had a lower unmet need for limiting in contrast to women who live in Punjab ([a]OR: 0.707). Women aged 25-29 have a more unmet need for limiting in contrast to women aged 15-19 years ([a]OR: 3.877). Moreover, women of age group 30-34, 35-39, 40-44, and 45-49 have a more unmet need for limiting in contrast to women of age between 15-19 years ([a]OR: 5.261, [a]OR: 5.169, [a]OR: 3.496 and [a]OR: 3.414 respectively). The unmet need for limiting reduces with improvement in wealth quintile. Compared to women in the socio-economic status, the unmet need for limiting was lower in women belongs to the middle socio-economic class in contrast to the poorest socio-economic class ([a]OR: 0.65). However, the unmet need for limiting was further reduced in women belong to the richer and richest wealth index ([a]OR: 0.508 and [a]OR: 0.435 respectively). Furthermore, the need for limiting among women having more than three children increased significantly in contrast to women who had less than or equal to three children ([a]OR: 2.819).

Moreover, the unmet need for limiting is more among women who heard about family planning in contrast to those who didn't hear about family planning ([a]OR:.1.434).

Table 2: Factors associated with unmet need for spacing and limiting among women of reproductive age in Pakistan: Multinomial Logistic Regression.

Characteristics	Unmet Need for Spacing		Unmet Need for Limiting	
	Crude OR (95% CI2)	aOR3 (95% CI)	Crude OR (95% CI)	aOR (95% CI)
Place of residence				
Urban	1		6.370 (5.350-7.560)	1
Rural	1.249 (1.025-1.523)		8.650 (7.580-9.850)	1.424 (1.126-1.799)
Province				
Punjab	1	1	1	1
Sindh	1.517 (1.207-1.906)	1.420(1.113-1.813)	0.804 (0.613-1.056)	0.707(0.536-0.934)
KPK[4]	1.590 (1.229-2.057)	1.356(1.043-1.762)	1.185 (0.893-1.571)	1.108(0.826-1.486)
Baluchistan	1.943 (1.332-2.833)	1.705(1.197-2.429)	1.040 (0.766-1.413)	0.822(0.588-1.148)
ICT[5]	1.030 (0.744-1.427)	1.164(0.832-1.63)	1.208 (0.782-1.866)	1.542(0.969-2.454)
FATA[6]	1.738 (1.153-2.620)	1.222(0.796-1.877)	0.496 (0.270-0.911)	0.354(0.185-0.676)
Current age of the woman (years)				
15-19	1	1	1	1
20-24	1.002 (0.719-1.397)	1.110(0.789-1.56)	1.634 (0.626-4.265)	1.594(0.616-4.122)
25-29	0.893 (0.645-1.237)	0.994(0.705-1.401)	5.119 (2.098-12.492)	3.877(1.606-9.358)
30-34	0.600 (0.423-0.853)	0.678(0.468-0.983)	9.150 (3.703-22.603)	5.261(2.145-12.901)
35-39	0.275 (0.179-0.422)	0.308(0.197-0.482)	10.307 (4.192-25.345)	5.169(2.086-12.805)
40-44	0.069 (0.037-0.127)	0.078(0.041-0.148)	7.599 (3.028-19.068)	3.496(1.403-8.715)
45-49	0.049 (0.025-0.094)	0.056(0.028-0.112)	7.501 (2.979-18.888)	3.414(1.364-8.544)
Woman's education				
No education	1		1	
Primary education	0.742 (0.561-0.982)		0.664 (0.512-0.861)	
Secondary education	0.961 (0.767-1.204)		0.688(0.532-0.891)	
Higher education	1.019 (0.769-1.349)		0.450 (0.327-0.619)	
Husband's Education				
No education	1		1	
Primary education	0.951 (0.693-1.304)		1.032 (0.779-1.367)	
Secondary education	1.020 (0.828-1.256)		0.706 (0.565-0.883)	
Higher education	1.015 (0.805-1.280)		0.541 (0.409-0.716)	
Woman's Occupation				
Not Working	1	1	1	1
Working	0.519 (0.396-0.678)	0.571(0.433-0.752)	1.509 (1.223-1.861)	1.169(0.926-1.475)

Wealth Index				
Poorest	1	1	1	1
Poorer	0.744 (0.560-0.988)	0.785(0.592-1.042)	0.888 (0.651-1.212)	0.811(0.589-1.116)
Middle	0.724 (0.541-0.970)	0.775(0.578-1.04)	0.735 (0.534-1.010)	0.65(0.46-0.918)
Richer	0.636 (0.488-0.829)	0.677(0.508-0.904)	0.521 (0.376-0.722)	0.508(0.35-0.737)
Richest	0.625 (0.471-0.830)	0.759(0.565-1.019)	0.452 (0.320-0.639)	0.435(0.294-0.643)
Number of children				
≤ 3 Children	1	1	1	1
>3 Children	0.493 (0.397-0.613)	1.029(0.821-1.288)	3.825 (3.066-4.773)	2.819(2.197-3.618)
Heard about family planning				
No	1	1	1	1
Yes	0.762 (0.614-0.945)	0.900(0.719-1.127)	1.082 (0.861-1.360)	1.434(1.113-1.847)

Discussion

The presence of UMNFP is used as an indicator for improvement in family planning programs in the country. To address the unmet need, it is essential for policymakers to focus on two main factors. Firstly, why couples not using contraceptive methods even they want to limit the number of children. Secondly, identify the couples with unmet needs and the main reasons for not using a contraceptive method. In this study, we attempt to determine the predictors of UMNFP in Pakistan by using a nationally representative data set of PDHS 2017-18.

In our study, the unmet need for family planning was 17.31%, while the spacing and limiting were 9.5% and 7.81%, respectively. The findings of our study were consistent with previous surveys[13,14]. However, at the national level, UMNFP decreased from 33% in 2001 to 17.3% in 2017, and the contraceptive prevalence rate improved from 28% to 35%[11]. Moreover, few studies conducted in a different part of reported low unmet need for family planning ranges from 7.4%-31.4%[15-20]. This difference may be due to difference in socio-demographic characteristics, and PDHS include only married women of reproductive age. But previous studies include both married and unmarried women of reproductive age. Furthermore, in our study number of the spacer is slightly higher than the limiter. Some previous studies were also found similar results[17,21], but some studies reported a higher number of limiters than

spacer[22,23]. This difference may be due to population demographics, as previous studies suggested that the unmet need for family planning is greatly influenced by socio-demographic factors[16,21,24].

In our study, the age of women, the number of living children, and socio-economic status were significant predictors of UMNFP in the binary model. However, in the Multinomial model, region, women age, socio-economic status, and women working status were found as predominant factors that influence the unmet need for spacing, while age of women, wealth index, number of living children, and heard about family planning were found as predominant factors that influence the unmet need for limiting. In our study, overall UMNFP and unmet need for spacing are lower in women of age > 29 years. Furthermore, the unmet need for limiting is high in women of age between 30-39 years. It is might possible that women of the middle age group attained their desired children and want to use contraceptives for limiting; that's why the unmet need for limiting is high in women of age 30-39 years. On the contrary, the unmet need for spacing is low in the older age group as it is expected that demand for spacing is low in older age as compared to younger age because women of younger age use contraceptives to delay or postpone their subsequent pregnancy. Similar findings were found in previous studies conducted in different regions of the world[4,12,25,26].

In our study unmet need for spacing was high in Baluchistan, followed by Sindh and KPK. The possible reason for high unmet needs in Baluchistan may be low contraceptive prevalence rate, lack of knowledge, marriage at an early age, and tribal system[26].

Regarding the wealth index, the women who belong to the richer wealth quintile had a low overall unmet need for family planning, unmet need for spacing, and unmet need for limiting. Previous studies done in different regions of the world reported that overall unmet need, spacing, and limiting are higher in poor socio-economic status[12,27-31]. This may be due to poor living conditions enforce them to switch their priorities in order to fulfill basic needs of life aggravated by their false beliefs regarding family planning. Moreover, the unmet need for spacing was lower in working women in contrast to non-working women. Pal et al. and Kumar et al. also reported that working women have lower unmet needs as compared to non-working women[32,33]. Unmet need is lower in working women because working women had more concern regarding the number of children because an increase in the number of children results in increased responsibility. Thus, an increase in responsibility can reduce devoted time to work. Therefore, working women are more worried regarding family size. Furthermore, women who had more than three living children have a more unmet need for limiting in contrast to women who had less than three children. The findings of our study are consistent with previous studies, which also show that an increase in the number of children results in increased unmet need for limiting[12,27,34].

The strength of our study is that sample was selected by using multistage stratified random sampling in the survey. Secondly, the sample size of the survey is nationally representative, so the findings of our study are generalized to the overall population of Pakistan. However, Pakistan's demographic health survey using a cross-sectional study design. So it prevents establishing the causal relationship between UMNFP and predictor variables. Moreover, data on spousal communication regarding family planning was not available in the survey, which was considered an important factor of UMNFP.

Conclusion

The Government of Pakistan is making efforts to control the growth of the population in the country because rapid population growth and an increase in the size of the population could affect economic development. However, the UMNFP act as a hurdle for these efforts. Thus elaborating the predictors of UMNFP in the country can be beneficial to control population growth and devise policies. Our study highlights some significant predictors of overall UMNFP among married women of reproductive age in Pakistan. In the light of our study findings, overall unmet need is lower in older age and richer wealth quintile while UNMFP is high in women who had more than three children. The possible reason for high unmet needs in the poorer wealth quintile may be limited access to health facilities and availability of resources. Policymakers should design interventions and policies to target high-risk populations to overcome the issue of rapid population growth. Moreover, the unmet need for spacing is more in Baluchistan while low in older age and working women. However, the unmet need for limiting is high in older age, and women belong to the richest quintile. Women who had more than three children and women who heard about family planning. It is concluded that provide easy access to family planning services, better living standards, and exposure to mass media results in the reduction of UNMFP. Community and religious stakeholders play their role in addressing the cultural and religious barriers in family planning.

Acknowledgment

References

1. Wulifan JK, Brenner S, Jahn A, De Allegri M. A scoping review on determinants of unmet need for family planning among women of reproductive age in low and middle income countries. BMC Women Health. 2015;16(1):1-15.

2. Bongaarts J, Bruce J. The causes of unmet need for contraception and the social content of services. Stud Fam Plann. 1995;26(2):57-75.

3. Darroch JE, Sully E, Biddlecom A. Adding it up: investing in contraception and maternal and newborn health, 2017—supplementary tables. New York, NY: The Guttmacher Institute. 2017.

4. Hailemariam A, Haddis F. Factors affecting unmet need for family planning in southern nations, nationalities and peoples region, ethiopia. Ethiop J Health Sci. 2011;21(2):77-89.

5. Palamuleni ME. Socio-economic and demographic factors affecting contraceptive use in Malawi. African J repro health. 2013;17(3):91-104.

6. Mekonnen W, Worku A. Determinants of low family planning use and high unmet need in Butajira District, South Central Ethiopia. Repro Health. 2011;8(1):1-8.

7. Sedgh G, Hussain R, Bankole A, Singh S. Women with an unmet need for contraception in developing countries and their reasons for not using a method. Occasional report. 2007;37:5-40.

8. Kabagenyi A, Jennings L, Reid A, Nalwadda G, Ntozi J, Atuyambe L. Barriers to male involvement in contraceptive uptake and reproductive health services: a qualitative study of men and women's perceptions in two rural districts in Uganda. Repro health. 2014;11(1):1-9.

9. Cates W. Family planning: the essential link to achieving all eight Millennium Development Goals. Contraception. 2010;81(6):460-461.

10. D J. Pakistan's population surges to 208 million: bureau 2017 [Cited 2021 January]. Available at: https://www.reuters.com/article/us-pakistan-census/pakistans-population-surges-to-208-million-bureau-idUSKCN1B51AU.

11. USAID. Pakistan Demographic Health Survey 2017-18 [Cited 2021 January]. Available at: https://www.statcompiler.com/en/#cc=PK&ucc=&ic=FP_CUSM_W_ANY,FP_NADM_W_UNT&scl=1000&dt=0&pt=0&ss=0&gr=1&si=FP_CUSM_W_ANY&sbv=.

12. Asif MF, Pervaiz Z. Socio-demographic determinants of unmet need for family planning among married women in Pakistan. BMC pub health. 2019;19(1):1-8.

13. Mahmood H, Hafeez A, Masood S, Faisal T, Ramzan N. Contraceptive use and unmet need of family planning among illiterate females of working class in Rawalpindi. PAFMJ. 2016;66(6):871-75.

14. MICSPunjab. Bureau of Statistics, Government of Punjab 2014 [Cited 2021 January]. Available at: http://www.bos.gop.pk/mics2014.

15. Sultan MK, Bakr I, Ismail NA, Arafa N. Prevalence of unmet contraceptive need among Egyptian women: a community-based study. J prev med hyg. 2010;51(2):62-66.

16. Agha S, Rasheed B. Family planning and unmet need among Iraqi Kurds. EMHJ. 2007;13(6): 382-1391.

17. Khalil SN, Alzahrani MM, Siddiqui AF. Unmet need and demand for family planning among married women of Abha, Aseer Region in Saudi Arabia. MEFSJ. 2018;23(1):31-36.

18. Gebre G, Birhan N, Gebreslasie K. Prevalence and factors associated with unmet need for family planning among the currently married reproductive age women in Shire-Enda-Slassie, Northern West of Tigray, Ethiopia 2015: a community based cross-sectional study. Pan African Med J. 2016;23(1).

19. Genet E, Abeje G, Ejigu T. Determinants of unmet need for family planning among currently married women in Dangila town administration, Awi Zone, Amhara regional state; a cross sectional study. Repro health. 2015;12(1):1-5.

20. Worku SA, Ahmed SM, Mulushewa TF. Unmet need for family planning and its associated factor among women of reproductive age in Debre Berhan Town, Amhara, Ethiopia. BMC research notes. 2019;12(1):1-6.

21. Omwago MO, Khasakhala AA. Factors influencing couples' unmet need for contraception in Kenya. 2006.

22. Pakistan fertility and family planning survey, National institute of Population studies. 1996-1997 [cited 2021 January]. Available at: http://www.nips.org.pk/study_detailphp?detail=NDY=

23. Nepal Family Health Survey, National Institute of population. Studies, and Centre for Population Studies, London School of Hygiene and Tropical Medicine. 1996 [Cited 2021 January]. Available at: http://www.dhsprogram.com/pubs/pdf/fr78/fr78.pdf

24. Elgharabway RM, Ahmed AS, Alsuhaibani RA. Awareness, prevalence, and determinants of birth control methods use among women in Saudi Arabia. Int Archives Med. 2015;8.

25. Anand B, Singh J, Mohi M. Study of unmet need for family planning in immunisation clinic of a teaching hospital at Patiala, India. The Internet J Health. 2010;11(1):23-34.

26. Nazir S, Mittal A, Anand BK, Goel R, Singh J, Rashid A. Determinants of unmet need for family planning in a developing country: An observational cross sectional study. National J Community Med. 2015;6(1):86-91.

27. Lamichhane K. Unmet need for family planning among currently married young women in Nepal. J Develop and Admin Stud. 2017;25(1-2):83-94.

28. Mallick N, Paul B, Garg S, Dasgupta A, Ghosh A, Biswas B. Unmet need of family planning among married women of reproductive age: A clinic-based study in rural Bengal. Int J Med Sci Pub Health. 2018;1.

29. Khan A, Shankar H. Multinomial Logistic Regression of Contraceptive's Determinants and Unmet Need for Family Planning among Currently Married Women in India. IJRASB. 2021;8(3):144-149.

30. Singh S, Kalhan M, Malik J, Jangra A, Sharma N, Singh S. Assessment of unmet need for family planning and its determinants in a rural block of Haryana. IJCMPH. 2018;5(5):1968.

31. Vohra R, Vohra A, Sharma S, Rathore MS, Sharma BN, Sharma MP. Determinants of the unmet need for family planning among women of Jaipur, Rajasthan. IJAMHR. 2014;1(1):20.

32. Pal A, Mohan U, Idris M, Masood J. Factors affecting unmet need for family planning in married women of reproductive age group in urban slums of Lucknow. Indian J. Community Health. 2014;26(1):44-49.

33. Kumar A, Singh A. Trends and determinants of unmet need for family planning in Bihar (India): evidence from National Family Health Surveys. Adva in App Socio. 2013;3(2):157-63.

34. Mulenga JN, Bwalya BB, Mulenga MC, Mumba K. Determinants of unmet need for family planning among married women in Zambia. J Pub Health in Africa. 2020;11(1).