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Role of husband's attitude towards the usage of contraceptives for unmet need of family planning among married women of reproductive age in Pakistan

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Abstract

Background: Family planning services deliver a wide range of benefits to the well-being of females and the community. It can curtail the risk of maternal and neonatal mortality through the reduction in abortions and pregnancies. The government of Pakistan has been struggling to convince people about the usefulness of family planning programs. However, different factors related to social norms, values, and culture are important to determine the success of these programs. One such factor is the patriarchal structure of Pakistani society where most of the household decisions are made by men. The objective of this research is to examine the role of the husband's attitude towards the usage of contraceptives for the unmet need of family planning (UMNFP) among married women of reproductive age (MWRA) in Pakistan.

Method: The dataset of Pakistan Demographic and Health Survey 2017–18 is utilized to examine the role of the husband's attitude towards the usage of contraceptives in UMNFP among MWRA in Pakistan.

Results: The UMNFP was considerably lower among MWRA between 40 years and above compared to women 15–19 years. The odds of UMNFP were higher among women and men who were educated up to the primary level compared to those with no education. Odds of UMNFP were higher among women from the poor wealth quintile compared to the poorest wealth quintile; similarly, it was significantly lower among women who were from the richer and the richest wealth quintile compared to the poorest wealth quintile. The odds of UMNFP were lower among women who were employed compared to those who were not employed. Lastly, the odds of UMNFP were higher among women whose husbands opposed to using contraceptives, who perceived that there was a religious prohibition for such use and when a decision on the contraception use was solely made by the husband.

Conclusions: Husband's attitude towards the usage of contraceptives is an important predictor of UMNFP. Liaising with the community and religious leaders to persuade people particularly men about the usefulness of family planning programs and encouraging men to understand their women's say in using contraceptives should be encouraged.

Keywords: Husband's attitude, Unmet need, Pakistan

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Background

Unmet need for family planning (UMNFP) is described as "the proportion of married women of reproductive age (MWRA) who are not using any method but would like



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to postpone the next pregnancy (unmet need for spacing), or who do not want any more children (unmet need for limiting)" [1, 2].

Family Planning (FP) services deliver a wide range of benefits to the well-being of females and the community. It can curtail maternal and neonatal mortality through a falling number of abortions and pregnancies [3]. Reproductive health and FP programs significantly contribute to falling fertility and improving parental and child health in the less developed countries [1, 4–6]. UMNFP is the main cause behind childbearing at a very young age and closely spaced births [7–10], and often been found associated with physical abuse, unsafe abortion, and poor maternal health [11].

UMNFP occurs due to several reasons which include fewer choices of FP methods, lack of access to contraception, unaffordability, fear or experience of having side effects, religious and cultural opposition, men's dominance in decisions for using FP, and poor quality of available FP services [12].

The economic and social development of communities and countries determine the level of contraceptives and reasons for UMNFP [13]. Numerous health attributes of a population, economic and population policy of environments, individual attributes, and household formation were linked to contraceptive [14]. A number of FP methods available, cost of FP methods and fee for service, women's participation, and their socio-demographic and economic status, medical boundaries and misinterpretation have been reported as determinants of UMNFP [15]. Furthermore, a woman and her partner's education, knowledge about FP methods, access to media, support of family members to use contraceptives, migration status, age, parity, wealth status, place of residence, the experience of abortion, religious constraint are linked with the use of FP methods [14, 16, 17].

UMNFP is found to be higher among younger females who have lived in rural areas, who have fear of side effects, and who do not know contraceptive methods or their availability [3, 18, 19]. It is also noticed that UMNFP is significantly lower among women who are educated, whose husband is educated as well, already have other living children, and belong to high socioeconomic status [20–23].

UMNFP also occurs because the providers do not offer adequate information as well as any motivation regarding FP usage [24]. The involvement of the community and religious leaders can play an important role in the success of FP programs [25]. Males are held responsible for most of the reproductive decisions of a female particularly in low- and middle-income countries (LMICs) [26, 27]. When the decision-making of contraception usage is shared between males and females, it results in

an effective continuation of contraceptive methods [26]. Studies have shown that when the decision-making for FP is mutual the use of contraceptives is greater [28, 29]. The dominant and important role of men in household decision-making regarding female employment, contraceptive use, and the reproductive decision has been persistently recognized by the global community [30–32]. Evidence from the literature shows that female preferences and behavior about reproduction and fertility are significantly influenced by their husband's reproductive stimulus. This is due to the female's financial and social dependency on the husband [33]. Such dependency on women is the result of traditional beliefs that women are subordinate to their husbands [31, 34]. In LMICs female dependency on men has been more crucial [35].

Effective FP programs can work to reduce UMNFP [36]. There is a huge gap found between current users and the total demand of FP [37]. In LMICs, 225 million women of reproductive ages would want to delay or stop bearing a child but are not using any FP method [12]. In Eastern Europe, Asia, and North Africa, around 45% of women are facing an issue of UMNFP [38]. Overall, from the current years, UMNFP is approximately 17% in Pakistan [39], 24% in Nepal [40], 22% in Ethiopia [41], 22% in Tanzania [42], 30% in Guyana [12], 32% in Peru [43], 11% in Indonesia [44], 12% in Bangladesh [45] and 13% in India [46]. The high prevalence of UMNFP is a major problem of less developed countries and therefore sympathetic causes and causal determinants of UMNFP would help in reducing the prevalence of UMNFP. In Pakistan, although the contraceptive uptake has been increasing by 1% per year; the rate of UMNFP is still high and over 56% of the married female of fertile age intend to use FP services and only 39% use them. Although the research has underscored the importance of UMNFP, it has not been completely associated with the role a husband plays in uptake on contraceptives in a nationally representative sample.

Pakistan is an LMIC with a strong patriarchal structure where men play a vital role in decision-making regarding family affairs especially reproduction. Therefore, it is important to study the role of the husband's attitude towards the usage of contraceptives in determining the UMNFP among married women in Pakistan. Such role has been rarely studied in the case of Pakistan probably due to the reason that past demographic surveys complied limited information about men's attitude towards the usage of FP services.

Methods

Data source

The Pakistan Bureau of Statistics provided the household lists for sampled zones in the country. The sample size Asif et al. BMC Women's Health (2021) 21:163 Page 3 of 7

based on 16,240 households, out of which 7,980 households were in urban areas and 8260 in rural areas was assessed to provide sensible accuracy for the survey indicators and involved two-stage sampling. At the first stage of sampling, 580 primary sample units (285 in urban areas and 295 in rural areas) were selected using systematic sampling technique and in the second stage of sampling, a static number of 28 households were arbitrarily selected in all cluster by an equal probability systematic sampling procedure. A total of 50,495 married women age 15–49 were interviewed in 2017–18 [39]. After removing participants with missing data, information on 12,113 women was analyzed.

Measurement

To examine the effects of husband's opposition on unmet need for FP, the functional form of the model used was:

UMNFP =
$$f(W.AGE, W.EDU, WSH, WES, H.EDU, HO, RC, DC)$$

The logistic regression equation for the above functional form of the model can be written as

$$Log(odds) = logit(P) = ln(P/1-P)$$

UMNFP = Logit(
$$p$$
) = $\alpha + b_1$ (W.AGE)
+ b_2 (W.EDU) + b_3 (WSH)
+ b_4 (WES) + b_5 (H.EDU)
+ b_6 (HO) + b_7 (RC) + b_8 (DC) + ε

where UMNFP = Unmet need for family planning. The variable has been constructed by extracting information from PDHS. Unmet need for family planning exists when a woman, who wants to use any method of family planning for spacing and limiting the children, does not do so due to any reason. Pakistan Demographic and Health Survey have presented the data on UMNFP. This information has been utilized to construct a dichotomous variable of UMNFP. It is divided into two categories as women having UMNFP (spacing and limiting) and women not having UMNFP.

W.AGE = The age of women has been categorized into seven age groups of five-year group interval i.e. 15-19 and so on.

W.EDU = Education of women is divided into four categories, i.e. no education, primary education, secondary education, and higher education.

WSH=Wealth status of the household. The variable was constructed by using a household asset and residence characteristics. Every household was given a score for all assets and a summation of the score was taken for every household. Each person was ranked as per scores of the households in which they resided. Wealth status

was divided into quintiles from poorest to richest [39]. If women belong to a household placed in the first quintile then coded as 1, if women belong to the household of the second quintile then coded as 2, if women reside in a household of the third quintile then coded as 3, if women reside in household belonging to the fourth quintile then coded as 4 and if women reside in household falling in the fifth quintile then coded as 5.

WES = Women's employment status. The variable has been categorized into two categories, i.e. currently unemployed, and currently employed. Coded as 1 if employed and 0 otherwise.

H.EDU = Husband's education is divided into four categories, i.e. no education, primary education, secondary education, and higher education.

HO=A question from measuring the husband's opposition is "Would you say that husband's opposed for not using contraceptive". It has been categorized into two categories, i.e. husband is opposed to using contraceptives, and the husband is not opposed to using the contraceptive.

RC=Religious constraint is measuring from the question "Would you say that religious prohibition for using contraceptive". It has been divided into two categories, i.e. religious constraint for using contraceptive and no religious constraint for using a contraceptive.

DC=A question from measuring the decision-maker for not using contraceptives is "Would you say that not using contraception is mainly your decision, mainly your husband's decision." It is divided into two categories, i.e. women's decision for not using contraceptive and husband's decision for not using a contraceptive.

Descriptive statistics were presented using frequency, percentage, and mean with standard deviation for categorical variables. For our empirical investigation, we have used binary logistic regression as the dependent variable was dichotomous i.e. having UMNFP or not having UMNFP. All analyses were performed in SPSS version 20.

Results

The socio-economic characteristics of the female are presented in Table 1. Data from 12,113 women were analyzed. Of these, the majority of the women were aged between 45 and 49 years old, and in total more than half of the women were 35 years and older. More than half of all women had no education (66.0%); similarly; one-third of all husbands (36.9%) had received no education. Almost half (51.1%) belonged to either the poor or poorest wealth quintile and 85% of the women were not currently employed. The majority (86%) of the husbands did not oppose contraceptive use and it was not a constraint because of religious reasons (95%). However, almost 86% of the time it was the husband's decision on

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Table 1 Description of socio-economic characteristics of women

Description of variables Frequency Percentage Age of women 15-19 101 0.8 20-24 606 5.0 25-29 1,590 13.1 30 - 341,889 15.6 35-39 2,621 21.6 40-44 2,511 20.7 45-49 2,795 23.2 Women's education 7,993 66.0 No education Primary 1.539 12.6 Secondary 1,690 14.0 891 Higher 74 Wealth status of women's household Poorest 3,185 26.3 Poorer 2,999 24.8 Middle 2,346 19.3 Richer 1,807 14.9 Richest 1,776 14.7 Women's employment status Currently unemployed 10,302 85.0 Currently employed 1,811 15.0 Husband's education No education 4,467 36.9 Primary 1,705 14.1 Secondary 3,869 31.9 Higher 2,072 17.1 Reason not using: husband opposed No opposed 10,458 86.3 Opposed 1,655 13.7 Reason not using: religious prohibition No prohibition 95.0 11,512 Prohibition 602 5.0 Decision maker for not using contraceptive Women 1.697 14.0 Husband 10,416 86.0 Unmet need for family planning No 5,863 48.4 Yes 6,250 51.6

Table 2 Results of binary logistic regression

	В	Sig	Odds ratio	95% C.I. for odd	
				Lower	Upper
Constant	.271	.242	1.311	-	_
Age of women					
15–19	Reference				
20-24	170	.434	.843	.550	1.292
25–29	.013	.950	1.013	.673	1.524
30-34	.145	.484	1.156	.770	1.736
35–39	072	.726	.930	.622	1.393
40-44	- .711	.001	.491	.328	.735
45-49	-1.130	.000	.323	.216	.484
Women's education					
No education	Reference				
Primary	.153	.012	1.165	1.035	1.312
Secondary	.121	.052	1.128	.999	1.275
Higher	.082	.001	1.026	.916	1.575
Wealth status of women's	s household				
Poorest	Reference				
Poorer	.141	.008	1.151	1.037	1.277
Middle	063	.283	.939	.837	1.053
Richer	305	.000	.737	.648	.839
Richest	391	.000	.677	.584	.783
Women's employment sto	atus				
Currently unemployed	Reference				
Currently employed	- .107	.048	.899	.809	.999
Husband's education					
No Education	Reference				
Primary	.145	.016	1.156	1.028	1.300
Secondary	.094	.628	1.105	.929	1.130
Higher	.082	.212	1.085	.954	1.235
Reason not using: husbar	nd opposed				
No opposed	Reference				
Opposed	.853	.000	2.347	2.087	2.639
Reason not using: religiou	ıs prohibitior	1			
No prohibition	Reference				
Prohibition	.151	.089	1.163	.977	1.383
Decision maker for not us	sing contrace	ptive			
Women	Reference				
Husband	.290	.000	1.336	1.215	1.469

contraception use. Overall, half of the women (51.6%) had UMNFP.

The results of binary logistic regression are presented in Table 2. The UMNFP was significantly lower among women between 40 years and above compared to women 15–19 years. The odds of UMNFP were higher among women and men who were educated up to the primary

level compared to those with no education. Odds of UMNFP were higher among women from the poor wealth quintile compared to the poorest wealth quintile; similarly, it was significantly lower among women who were from the richer and the richest wealth quintile compared to the poorest wealth quintile. The odds of UMNFP were lower among women who were employed compared to those who were not employed. Lastly, the odds of

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UMNFP were higher among women with husbands who opposed the use of contraception, the women who perceived that there was a religious prohibition for such use and when a decision on the use was solely made by the husband. The results indicate that religious prohibition of the use of contraception as well as husbands' opinion about the use were important factors to determine UMNFP. However, a comparison of the odds of UMNFP from both of these variables indicates that the effects of husbands' opinions toward contraception are larger than the effects of religious prohibition.

Discussion

Both husband's attitudes towards the usage of contraceptives and religious constraints are the important indicators that affect UMNFP. Women with husbands who opposed and religious prohibition to use FP are more likely to have UMNFP. Husband's opposed to using FP is also a strong predictor of UMNFP. It is the responsibility of the community and religious leaders to address their community regarding the use of FP. UMNFP is higher in those women whose less participate for the decision to use FP as compared to husband. It is concluded that men and women can use contraception effectively if they discuss it more often and will probable to have fewer children. Husband plays a critical role in the decision-making regarding the use of contraception, especially in the early years of marriage.

Women's age and the level of unmet need are comprehensibly associated with each other. Unmet need is related to spacing births at a young age for women whereas in old age it is to limit births. Unmet need, typically for most women, rises to the top till the late thirties and declines in forties. The possibility of UMNFP is highest among women of age early thirties, but it is proved insignificant statistically. UMNFP declines with the increase in age. As most of the women attain the desired number of children till the age of 35-39, they will be likely to use contraceptives. Therefore UMNFP is highest among women belongs to the middle age group. On the other, for postponing their next pregnancy, the tendency of young women to space is expected to be higher. Our results stand consistent with the results of previous studies [18, 21, 47–50].

The tendency of UMNFP is less in educated women than uneducated women. It is because of the higher level of awareness that educated women have access to FP services. In the same way, educated women are more empowered in decision-making for the use of contraceptives. Our results are aligned with earlier studies [18, 21, 51, 52]. The chances of UMNFP are less for women of wealthier families as compared to those who belong

to poorer families. Because wealthy women are capable to access modern contraceptives in a better way than poor women [1]. The odds ratio indicates that currently employed women are less probable to have UMNFP as compared to currently unemployed women. Moreover, women's employment is also found to be associated with their empowerment and hence they can be in a better position to decide on the use of contraceptives [53]. Similarly, the husband's education also plays a vital role in the reduction of UMNFP, as it promotes mutual decision making and [1, 54, 55].

The results are extracted from the data provided by the women respondents belong to the age group of 15–49. The perception of the respondents regarding the family planning service, related views, and socioeconomic characteristics laid vital influence on the family planning methods, its cost and availability issue. Specifically, In the context of Pakistan the mentioned fact can be considered as reality in LMICs. Further empirical support will be useful to establish the significance of the prevailing factors of the UMNFP. Furthermore, there is a need to investigate the reasons for region base differences of wide UMNFP.

Conclusions

The study has identified that women's age, education, their employment status, wealth index, husband's education, husband's attitude towards the usage of contraceptives, religious prohibition, and husband's decision on contraception are significantly associated with UMNFP. Understanding these determinants is essential for planning and executing behavior change exercises to underscore the importance of implementing gender-transformative interventions and to influence FP choice among couples, particularly in societies where socio-cultural norms pre-dominantly exist. In light of the results from this paper, national policies in Pakistan should also consider integrating FP programs with education, employment, and media sectors. It important that government takes measures to improve the educational and literacy status of the population particularly girls; which will bring about changes in the employment and economic status of the population. Creating employment opportunities for women with effective public policies, and effective use of media in raising awareness can all bring a positive change in society which can also impact on improving UMNFP. Liaising with the community and religious leaders to persuade people particularly men about the usefulness of FP programs and encouraging men to understand their women's say in using contraceptives should be encouraged.

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Abbreviations

FP: Family planning; PDHS: Pakistan Demographic and Health Survey; UMNFP: Unmet need for family planning; LMICs: Low- and middle-income countries; MWRA: Married women of reproductive age.

Acknowledgements

The authors gratefully acknowledge the insightful comments and suggestions of the editor and reviewers which were quite helpful to improve the quality of the article

Authors' contributions

MFA, ZP, and ZL substantially contributed by developing the conceptual framework and design of the study. MFA, JRA and GA substantially contributed through the acquisition and analysis of the data. MFA, ZP and ZL were involved in drafting and critically revising the article. All authors have read and approved the final manuscript.

Funding

Not applicable.

Availability of data and materials

We have used the secondary data of PDHS 2017–18. Available at: https://www.nips.org.pk/PDHS_Data_Set.htm.

Declarations

Ethics approval and consent to participate

Not applicable.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

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Received: 16 October 2020 Accepted: 13 April 2021 Published online: 19 April 2021

References

- Asif MF, Pervaiz Z. Socio-demographic determinants of unmet need for family planning among married women in Pakistan. BMC Public Health. 2019;19(1):1–8.
- Islam AZ, Mostofa MG, Islam MA. Factors affecting unmet need for contraception among currently married fecund young women in Bangladesh. Eur J Contracept Reprod Health Care. 2016;21(6):443–8.
- Westoff CF. New estimates of unmet need and the demand for family planning. DHS Comparative Report No.14. Calverton, MD: Macro International, Inc. 2006.
- Chaudhary AR. An economic analysis of pakistan's investment in population control. Pak Econ Soc Rev. 2000;1:167–92.
- Sinding SW, Ross JA, Rosenfield AG. Seeking common ground: unmet need and demographic goals. Int Fam Plan Perspect. 1994;1:23–32.
- 6. Westoff CF, Bankole A. Unmet need: 1990–1994. DHS Comparative Report No. 16. Calverton, MD: Macro International, Inc. 1995.
- Bankole A, Hussain R, Sedgh G, Rossier C, Kaboré I, Guiella G. Unintended pregnancy and induced abortion in Burkina Faso: causes and consequences. New York, NY: Guttmacher Institute; 2014.
- Okonofua FE, Odimegwu C, Ajabor H, Daru PH, Johnson A. Assessing the prevalence and determinants of unwanted pregnancy and induced abortion in Nigeria. Stud Fam Plan. 1999;30:67–77.

- 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 No. 37. New York: Guttmacher Institute. 2007.
- USAID. Family planning and the MDGs. Saving lives, saving Resources. Task Order. 1–8. 2009.
- Wulifan JK, Jahn A, Hien H, Ilboudo PC, Meda N, Robyn PJ, Hamadou TS, Haidara O, De Allegri M. Determinants of unmet need for family planning in rural Burkina Faso: a multilevel logistic regression analysis. BMC Pregnancy Childbirth. 2017;17(1):426.
- WHO. Family planning. http://www.who.int/mediacentre/factsheets/ fs351/en/index.html.2018.
- 13. Gage AJ. Sexual activity and contraceptive use: the components of the decisionmaking process. Stud Fam Plann. 1998;1:154–66.
- Hogan DP, Berhanu B, Hailemariam A. Household organization, women's autonomy, and contraceptive behavior in southern Ethiopia. Stud Fam Plan. 1999;30(4):302–14.
- 15. Campbell M, Sahin-Hodoglugil NN, Potts M. Barriers to fertility regulation: a review of the literature. Stud Fam Plan. 2006;37(2):87–98.
- Babalola S, Fatusi A. Determinants of use of maternal health services in Nigeria-looking beyond individual and household factors. BMC Pregnancy Childbirth. 2009;9(1):43.
- Creanga AA, Gillespie D, Karklins S, Tsui AO. Low use of contraception among poor women in Africa: an equity issue. Bull World Health Organ. 2011;89:258–66.
- 18. Ojakaa D. Trends and determinants of unmet need for family planning in Kenya. DHS working papers no. 56. Calverton, MD: Macro. International Inc; 2008.
- Pasha O, Fikree FF, Vermund S. Determinants of unmet need for family planning in squatter settlements in Karachi, Pakistan. Asia-Pac Popul J. 2001;16(2):93–108.
- Bhandari GP, Premarajan KC, Jha N, Yadav BK, Paudel IS, Nagesh S. Prevalence and determinants of unmet need for family planning in a district of eastern region of Nepal. Kathmandu Univ Med J KUMJ. 2006;4(2):203–10.
- Devis DR, Rastogi SR, Retherford RD. Unmet need for family planning in Uttar Pradesh. National Family Health Survey Subject Reports. 1(1–27). Mumbai: International Institute for Population Sciences; 1996.
- 22. Stash S. Explanations of unmet need for contraception in Chitwan. Nepal Stud Fam Plan. 1999;30(4):267–87.
- 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;51:62–6.
- DHS Program. Women's lives and experiences: a decade of research findings from the Demographic and Health Surveys Program. Accessed on 29 Sept 2015. http://www.unicef.org/pon95/fami0007.html. 1994.
- Adelekan A, Omoregie P, Edoni E. Male involvement in family planning: challenges and way forward. Int J Popul Res 2014.
- Khan M, Patel BC. Male involvement in family planning: a KABP study of Agra district India, Final Report 1997.
- Mistik SE, Naçar ME, Mazicioğlu M, Çetinkaya FE. Married men's opinions and involvement regarding family planning in rural areas. Contraception. 2003;67(2):133–7.
- Toure L. Male involvement in family planning. A Review of the Literature and Selected Program Initiatives in Africa. 1996.
- World Bank. Efective family planning programs. Washington, DC: Google Scholar; 1993.
- Bankole A, Singh S. Couples' fertility and contraceptive decision-making in developing countries: hearing the man's voice. Int Fam Plan Perspect. 1998;24(1):15–24.
- 31. Karra MV, Stark NN, Wolf J. Male involvement in family planning: A case study spanning five generations of a South Indian family. Stud Fam Plan. 1997;28(1):24–34.
- Omondi O. Men's participation in family planning decisions in Kenya. Pop Stud. 1997;51(1):29–40.
- 33. Ezeh AC. The influence of spouses over each other's contraceptive attitudes in Ghana. Stud Fam Plan. 1993;24(3):163–74.
- Sathar ZA, Kazi S. Women's autonomy, livelihood and fertility: A study of rural Punjab. Women's autonomy, livelihood and fertility: A study of rural Punjab. 1997.

Asif et al. BMC Women's Health (2021) 21:163 Page 7 of 7

- Kiani MF. Motivation and involvement of men in family planning in Pakistan. Pak Dev Rev. 2003;42(3):197–217.
- 36. Kols A. Reducing unmet need for family planning: evidence-based strategies and approaches. Outlook. 2008;25(1):1.
- 37. Ranjan A. Studies in population of Madhya Pradesh. Bhopal, India: Shyam Institute; 2004.
- 38. Westoff CF. Unmet need for modern contraceptive methods. DHS Analytical Studies No. 28. Calverton, Maryland, USA: ICF International. 2012.
- Pakistan NIPS. Pakistan demographic and health survey 2017–18
 Islamabad. Pakistan: National Institute of Population Studies and Macro International Inc.; 2018.
- 40. Ministry of Health. Nepal; New ERA; and ICF. Nepal Demographic and Health Survey. Kathmandu, Nepal: Ministry of Health, Nepal; 2016.
- 41. Central Statistics Agency. Report of 2016 Ethiopian Demographic and Health Survey (EDHS). 2016.
- Tanzania Demographic and Health Survey. Tanzania: 2015–16 Demographic and Health Survey and Malaria Indicator Survey. Key Findings. https://dhsprogram.com/pubs/pdf/FR321/FR321.pdf. 2016.
- Sedgh G, Ashford LS, Hussain R. Unmet need for contraception in developing countries: examining Women's reasons for not using a method. New York Guttmacher Institute. 2016;2:2015–6.
- 44. IDHS. Indonesia Demographic and Health Survey 2017. National Population and Family Planning Board, Statistics Indonesia, Ministry of Health, The DHS Program. https://www.dhsprogram.com/pubs/pdf/FR342/FR342.pdf. 2017.
- NIPORT. Bangladesh Demographic and Health Survey 2017–18. National Institute of Population Research, Training medical Education, Family Welfare Division, Ministry of Health and Family Welfare, Dhaka, Bangladesh. 2018.
- International Institute for Population Sciences. India Demographic and Health Survey 2015–16. India: International Institute for Population Sciences-IIPS; 2017.

- 47. Anand BK, Singh J, Mohi MK. Study of unmet need for family planning in immunization clinic of a teaching hospital at Patiala. India Int J Health. 2010;11(1):23–4.
- 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):77–90.
- 49. Westoff CF. The potential demand for family planning: a new measure of unmet need and estimates for five Latin American countries. Int Fam Plan Perspect. 1988;14(2):45–53.
- 50. Woldemicael G, Beaujot R. Currently married women with an unmet need for contraception in Eritrea: profile and determinants. Can Stud Popul. 2011;38(1–2):61–81.
- 51. Choudhary S, Saluja N, Sharma S, Gaur D, Pandey S. A study on the extent and reasons of unmet need for family planning among women of reproductive age group in rural area of Haryana. Int J Health. 2011;12(1):1–7.
- 52. Klijzing E. Are there unmet family planning needs in Europe? Fam Plan Perspect. 2000;32(2):74–88.
- Riaz S, Pervaiz Z. The impact of women's education and employment on their empowerment: An empirical evidence from household level survey. Qual Quant. 2018;52(6):2855–70.
- 54. Jejeebhoy, S. J., and Sebastian, M. P. Actions that protect: Promoting sexual and reproductive health and choice among young people in India. 2003.
- Santhya KG, Acharya R, Jejeebhoy SJ, Ram U. Timing of first sex before marriage and its correlates: evidence from India. Cult Health Sex. 2011;13(3):327–41.

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