USE OF DIFFERENT CONTRACEPTIVE METHODS AMONG YOUTHS IN INDIA - A STUDY FROM THE FOURTH ROUND OF NATIONAL FAMILY HEALTH SURVEY

Abstract

Introduction: This study examines contraceptive usages of youth women (15-24 years) in India by using the fourth round of the National family of Health Survey (NHFS-4) data (2015-16).

Methodology: The study usages bi-variate technique and multivariate regression method to find the distribution of modern and traditional method of contraception as well as potential determinants of using modern method over traditional method respectively.

Result: Among the youth women 80.02 % are modern contraceptive methods over total contraceptive usages. Among the modern contraceptive the most commonly usages are female sterilization (36%) followed by Condom (31%) and Pill (24.41%). The State wise distribution shows that in case of modern contraceptives, the percentage of usage is more among Dadra and Nagar Haveli (100 percent), followed by Mizoram (99.64 percent) and Puducherry (99.57 percent) and least in case of Lakshadweep (21.04 percent) followed by Manipur (37.61 percent and Uttar Pradesh (59.43 percent). The table on logistic regression shows that, when considering different variables, the likelihood of using modern contraceptive methods is greater than that of traditional methods.

Conclusions: After accounting for other factors, women belonging to the age group 20-24 years (odds ratio, 1.65, p-

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value < 0.001) exhibit a higher tendency to opt for modern contraception compared to women in the age group 15-19 years. In case of wealth quintiles, women from richest wealth quintile (1.21, p<.05) are having more chances of using modern contraception method. This study also finds the others potential determinants of using modern contraceptive method over traditional method.

Keywords: Traditional Contraceptive Method, Modern Contraceptive Method, Logistic Regression & OddsRatio

I. INTRODUCTION

Contraception implies intentionally preventing pregnancy using a variety of methods and strategies, including modified sexual practices, chemical agents, devices, medications, or surgeries. Hence, any action or strategy employed to avoid pregnancy in women falls within the ambit of contraception. From a societal standpoint, effective contraception allows couples to engage in sexual activities without much fear of an unplanned pregnancy. This results in empowering them to make informed choices about when to start a family. There are two main categories of contraceptive methods: traditional methods (e.g., lactational amenorrhea method, coitus interruptus or withdrawal method, rhythm method) and modern methods (such as oral contraceptive pills, emergency contraceptive pills, male and female condoms, injectable hormones).

In India, the usage of contraceptive methods among married young women of the age 15-24 years was found to be only 16% in 1992-1993. Among them, less than 50% of them chose sterilization as their preferred method of contraception. However, by 2005-2006, the proportion of couples using some form(s) of contraception increased to 27%, with nearly 33% of them opting for sterilization. Over this period (1992- 2006), there was a significant doubling in the adoption of modern family spacing methods, and this was mainly attributed to the higher usage of barrier contraceptives (condoms). However, the rate of sterilization among young women appeared to level off. Simultaneously, the reliance on traditional contraceptive methods, such as periodic abstinence and withdrawal, showed a rise (<4% to nearly 7%). This trend emphasizes the need for family planning services and underscores the importance of easily accessible and affordable programs for young couples. Many young couples in their reproductive age desire to control their fertility and plan their family based on their situations.

A fertile and sexually-active woman between of age 20-44 years has the potential to give birth nearly 12 times, even if she breastfeeds for one year. Abortion is sometimes chosen as a method of termination of the product of contraception; however, it can be an unsafe practice. To avoid the need for abortions, a woman must effectively utilize contraception for around 16-20 years within her roughly 25-years of fertile period. Couples often grapple with the challenge of balancing a fulfilling sexual life with their desire for a small family. When this balance is not achieved, unintended pregnancies can result, leading to the consideration of abortions. Unsafe abortion resulting from delays or seeking help from unqualified providers in unhygienic conditions pose significant threats to both reproductive and general maternal health and well-being. Ensuring accessible and consistent use of contraception by women worldwide who wish to prevent pregnancy could potentially reduce maternal deaths by 25-35%. In India, abortions contribute to result in 10-20% of all maternal deaths, underscoring the importance of raising awareness about effective contraceptive methods and promoting their proper and consistent use. This has the potential to significantly decrease the number of unwanted pregnancies, associated risks, and maternal mortality rates.

II. NEED FOR THE STUDY

Youth age Group TFR is maximum .So, there are several literature based on usages of contraceptive method among women in their reproductive age group (15-45 years).But, there

are scanty of literature covers the reproductive behavior of youth women in their belonging to their age-group(15-24 years). Reproductive behavior in this age-group (22-24 years) is very much Crucial as fertility rate reaches its peak in that age group and also in India maternal mortality is high in this age group. So, this study examines "Use of Different contraceptive methods among Youth Women in India- A study from the Fourth Round of National Family Health Survey "

III. OBJECTIVE OF THE STUDY

- To find out the distribution of different contraceptive use among youth women (15-24 years)in India
- To find out the state wise variation of different contraceptive use among youth women inIndia
- To identify the potential factors that influence the preference for modern contraception over traditionalmethods among young women in India

IV. SOURCES OF DATA

This study uses the women file of fourth round of National Family and Health survey data. This round of NFHS is conducted in 29 States and 7 Union Territories of India in 2015-16. Interviews for NFHS4 are conducted in all the 640 districts of India across different states and Union Territories. During the fourth round of the National Family Health Survey (NFHS), a two-stage sampling design was used for both urban and rural areas. For rural areas, the first stage involved selecting villages or groups of villages using the Probability Proportional to Size (PPS) scheme. In the second stage, a systematic random sampling scheme was employed to choose 22 households from each selected village or group of villages. Similarly, for urban areas, the first stage involved selecting Census Enumeration Blocks (CEBs) using the PPS scheme. In the second stage, a systematic random sampling scheme was used to select twenty-two households from each chosen CEB.

The women file constituted of 699,686 women aged 15-49 years. The information regarding the contraceptive use was asked about the mode of contraceptive use (no use, traditional contraception, modern contraception etc.) and within the mode, the different methods of contraception. As the study focuses on women in the youth (15-24 years), the analysis is restricted to 23210 samples.

V. METHODOLOGY

The analysis employs both bi-variate and multivariate analyses. In the multivariate analysis, a binary logistic regression model is used to examine the potential factors that influence the preference for modern contraceptive methods over traditional ones. In the logistic regression, dependentvariable is using contraception ("modern method" is coded as "1"and "traditional method" as "0"). The characteristics such as age of women, place of residence, region of residence, caste, religion, wealth index, educational qualification (for women and their partner), occupational status (for women and their partner, number of members in the house, owning the decision regarding the contraception use is used as independent variables. In this study, the region of residence for participants was categorized

into six geographic regions based on the29 States and the 7 Union Territories of India.

- The 'North' region included Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Chandigarh,Delhi, Uttarakhand, and Rajasthan.
- The 'Central' region included Uttar Pradesh, Madhya Pradesh, and Chhattisgarh.
- The 'East' region comprised Bihar, Jharkhand, West Bengal, Odisha, and Andaman & Nicobar.
- The 'Northeast' region included Assam, Arunachal Pradesh, Meghalaya, Manipur, Mizoram,Nagaland, and Tripura.
- The 'West' region included Gujarat, Dadra & Nagar Haveli, Daman & Diu, Maharashtra, and Goa.
- The 'South' region included Andhra Pradesh, Telangana, Karnataka, Kerala, Lakshadweep,Puducherry, and Tamil Nadu.

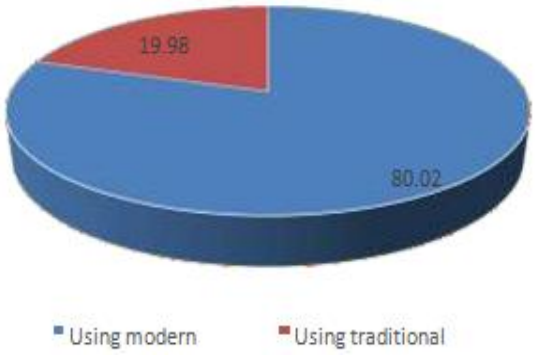

Figure 1: Distribution of Modern as well as Traditional Contraceptive method among youth women (15-24 years) in India in 2015-16

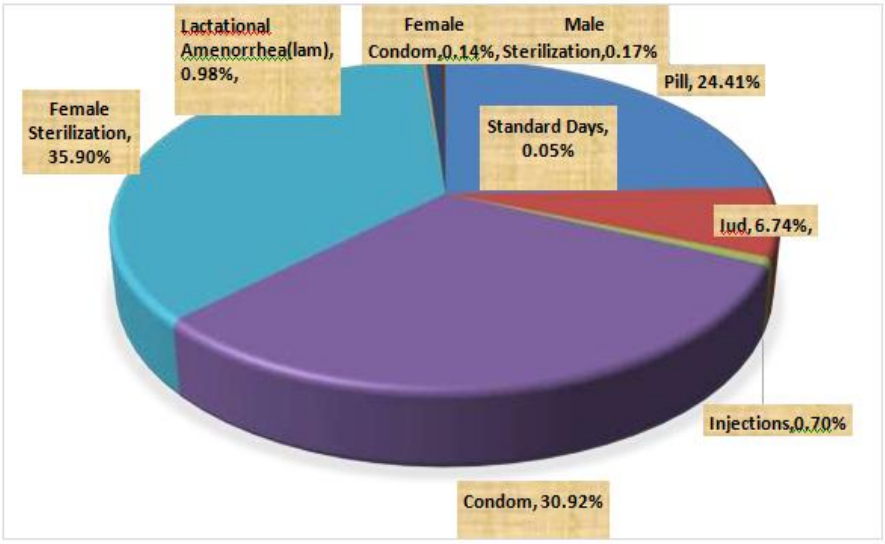

Figure 2: Distribution of Different Modern Contraceptive methods among Youth Women(15-24 years)in India in 2015-16

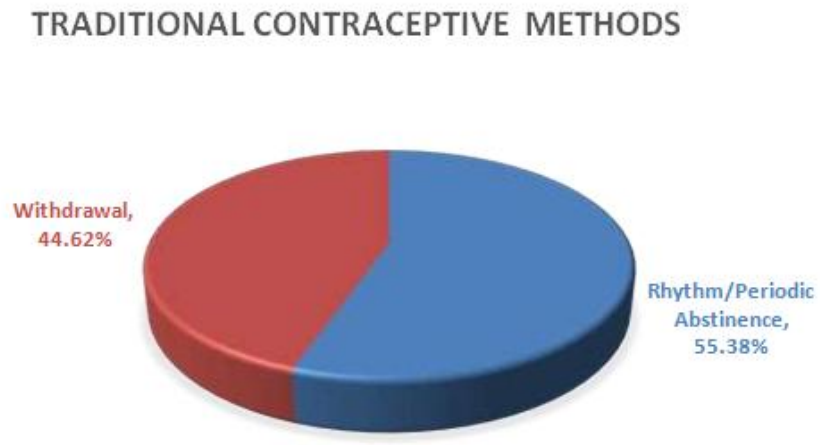

Figure 3: Distribution of different Traditional Contraceptive Methods among youth Women(15-24years) in India in 2015-16

VI. RESULTS

******Figure1***** depicts the distribution of Modern as well as Traditional method of contraceptive among youth women (15-24 years) in India in 2015-16. From the figure it can be seen that the usage of modern contraceptive is more (80.25 percent) than the traditional methods (19.98 percent).

*****Figure 2***** depicts the distribution of different Modern contraceptive methods among youth women belonging to the age group 15-24 years in India in 2015-16. From the figure it can beseen that among the methods of modern contraceptives, Female sterilization is the predominant contraceptive method used, accounting for 36 percent of overall usage. Condoms are the next most common method, representing 31 percent of contraceptive usage. The pill is also frequently used, accounting for 24.41 percent of contraceptive method preferences and the least used is standard days (0.05 percent) followed by female condom (0.14 percent) and malesterilization (0.17 percent).

******Figure 3***** depicts the distribution of different Traditional contraceptive methods among youth women belonging to the age group 15-24 years in India in 2015-16. From the figure it can be seen that among the methods of traditional contraceptives, the mostly used method is female sterilisation (36 percent) followed by condom (31 percent) and Pill (24.41 percent) and the least used is standard days (0.05 percent) followed by female condom (0.14 percent) and malesterilization (0.17 percent).

*****Figure4***** shows state wise distribution of Modern as well as Traditional contraceptive methods among youth women (15-24 years) in India in 2015-16. From the figure it can be seen that in case of modern contraceptives, the percentage of usage is more among Dadra and Nagar Haveli (100 percent), followed by Mizoram (99.64 percent) and Puducherry (99.57 percent) and least in case of Lakshadweep (21.04 percent) followed by Manipur (37.61 percent and Uttar Pradesh (59.43 percent).

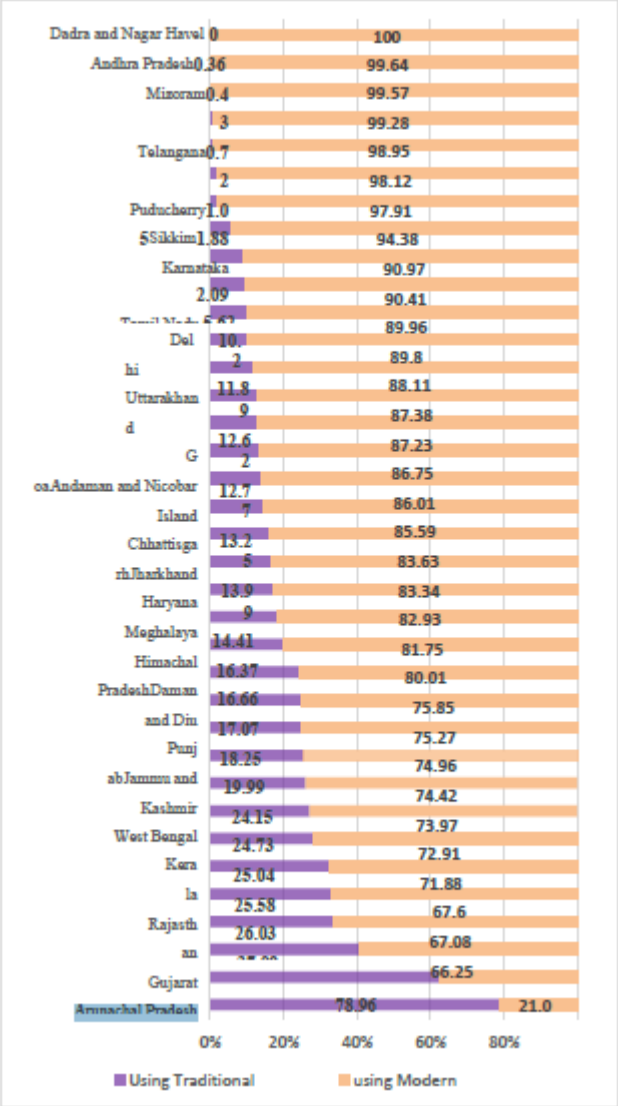

Figure 4: State Wise Distribution of Modern as well as Traditional Contraceptive Methods among Youth Women (15-24 years) in India in 2015-16

The Table 1 shows Logistic regression for finding the potential determinants of using Modern method over Traditional method among young women (15-24 years) in India. The table depicted that women belonging to the age group 20-24 years (1.65, p<.001) are more likely to use moderncontraception than those in the age group 15-19 years when the other covariates are controlled. In case of wealth quintiles, women from richest wealth quintile (1.21, p<.05) are having more chances of using modern contraception method. The study results in increasing the likelihood of modern contraception usage than the traditional one who are residing with more family members (1.01, p<0.1). Women residing in Southern (3.88, p<0.001) and West (1.64, p<.001) region are more likely and belonging to Eastern (0.77,p<.001), Central (0.63,p<.001) or North Eastern region (0.46, p<.001) region are less likely to use modern contraception over traditional method. Women involved in any kind of job (1.53, p<.001)whose contraceptivedecision taken by her husband or partner (1.27, p<.05) and from Christian (1.55, p<.001) and Buddhist religion (3.13, p<.001) are more likely to use

modern contraceptive methods than the traditional one. On the other side, women from rural area (0.87, p<.05), husband or partner is having higher education (0.63 p<.0.5), belonging to and with OBC category (0.92, p<0.1) are less likely to use modern method than the traditional method.

Table 1: Logistic Regression for finding the Potential Determinants of using Modern method over Traditional method among Young Women (15-24 years) in India

Variables	Odds Ratio	95% Conf. Interval	P-value
Age (in 5 years)			
20-24	**1.65*** **	**[1.49,1.83]**	**0**
Area of residence			
rural	**0.87** **	**[0.80,0.95]**	**0.002**
Highest educational level			
primary	1.04	[0.92,1.18]	0.51
secondary	0.97	[0.88,1.07]	0.56
higher	0.90	[0.78,1.05]	0.18
Wealth Index			
poorer	1.02	[0.91,1.13]	0.76
middle	0.97	[0.86,1.08]	0.57
richer	0.93	[0.82,1.06]	0.27
richest	**1.21** **	**[1.04,1.40]**	**0.01**
No. of household Members	**1.01***	**[1.00,1.02]**	**0.10**
Decision maker for using a particular type of contraception			
mainly husband, partner	**1.27** **	**[1.08,1.50]**	**0.01**
joint decision	1.08	[0.96,1.23]	0.21
other	2.35	[0.80,0.90]	0.12
Highest Education level			
primary	1.14	[0.79,1.65]	0.49
secondary	0.83	[0.61,1.12]	0.23
higher	**0.63** **	**[0.44,0.90]**	**0.01**
don't know	0.87	[0.55,1.37]	0.55

secondary	0.83	[0.61,1.12]	0.23
higher	**0.63****	**[0.44,0.90]**	**0.01**
don't know	0.87	[0.55,1.37]	0.55
Occu_Women			
yes	**1.53*****	**[1.22,1.92]**	**0**
occu_Men			
yes	0.99	[0.69,1.40]	0.94
Region			
South	**3.88*****	**[4.67,7.41]**	**0**
East	**0.77*****	**[0.69,0.86]**	**0**
West	**1.65*****	**[1.40,1.94]**	**0**
Central	**0.64*****	**[0.58,0.71]**	**0**
North east	**0.46*****	**[0.41,0.52]**	**0**
Belong to a scheduled caste			
schedule tribe	1.09	[0.97,1.23]	0.14
obc	**0.92***	**[0.84,1.01]**	**0.08**
none of them	1.02	[0.91,1.13]	0.75
don't know	1.35	[0.86,2.13]	0.19
Religion			
muslim	0.92	[0.82,1.02]	1.02
christian	**1.55*****	**[1.26,1.91]**	**0**
sikh	0.98	[0.79,1.22]	0.85
9uddhist/neo-buddhist	**3.13*****	**[1.95,5.04]**	**0**
jain	0.60	[0.19,1.97]	0.41
no religion	1		
other	**1.57****	**[1.08,2.29]**	**0.19**
_cons	**2.90*****	**[1.78,4.75]**	

*** indicates p<0.001, ** indicates p<.05, * indicates p<0.1

VII. SUMMARY AND CONCLUSION

Among the youth women 80.02 % are modern contraceptive methods over total contraceptive usages. Among the modern contraceptive the most commonly usages are female sterilization (36%) followed by Condom(31%) and Pill (24.41%) .The State wise distribution shows that in case of modern contraceptives, the percentage of usage is more among Dadra and Nagar Haveli (100 percent), followed by Mizoram (99.64 percent) and Puducherry (99.57 percent) and least in case of Lakshadweep (21.04 percent) followed by Manipur (37.61 percent and Uttar Pradesh (59.43 percent). According to the logistic regression table, there is an indication that individuals who reside with more family

members are more likely to use modern contraception compared to traditional methods (1.01, p<0.1). Women residing in Southern (3.88, p<0.001) and West (1.64, p<.001) region are more likely and belonging to Eastern (0.77,p<.001), Central (0.63,p<.001) or North Eastern region (0.46, p<.001) region are less likely to use modern contraception over traditional method. Women involved in any kind of job (1.53, p<.001)whose contraceptive decision taken by her husband or partner (1.27, p<.05) and from Christian (1.55, p<.001) and Buddhist religion (3.13, p<.001) are more likely to use modern contraceptive methods than the traditional one. On the other side, women from rural area (0.87, p<.05), husband or partner is having higher education (0.63 p<.0.5), belonging to and with OBC category (0.92, p<0.1) are less likely to use modern method than the traditional method.

VIII. DECLARATIONS

1. **Ethical Approval:** The analysis is based on the secondary dataset & there have no identification about the respondents on the survey participants.NHFS-4 Survey conducted by Ministry of Health and Family Welfare, coordinated by the International Institute for Population Sciences, Mumbai. In theNHFS-4 Survey, all the survey protocols were approved by the Institutional Ethical Review Board.

2. **Competing Interest:** Authors have no Competing Interest.

3. **Authors' Contributions:** Sandipan Paul has conceived the idea, acquired the data, analysed it , prepared all figures and tables, and wrote the manuscript. Dulumoni Das, Apyayee Sil and Satyapriya Roy fine-tuned the project idea, co-wrote the manuscript and interpret finally.

4. **Funding:** Not applicable.

5. **Data Availability:** The data is available on the Institutional Website & can be easily downloaded for the research purpose by the students, faculty & other researchers in India.

REFERENCES

[1] A. Basu, Female Schooling, Autonomy and Fertility Change: What Do These Words Mean In South Asia?, in R. Jeffery and A. Basu, eds. “Girls' Schooling, Women's Autonomy and Fertility Change in South Asia,” Sage Publications, 1996.
[2] B. Bernanrd, “Path to fertility reduction: the policy cube,” Fam. Plan. Pers., vol. 9, pp. 213-219, 1977.
[3] D.J. Hernandez, “Fertility Reduction Policies and Poverty in Third World Countries: Ethical Issues”, Studies Fam. Plan., vol. 16, pp. 76-87, 1977.
[4] G.R. Davidson, “Political Will and Family Planning: The Implications of India's Emergency Experience,” Pop. Dev, vol. 5, pp. 29-59, 1979.
[5] International Institute for Population Sciences and ORC Macro. 2000. National family Health Survey-2, Mumbai, India, 1998-1999.
[6] A. Sen. Fertility and Coercion. The University of Chicago Law Review, Edition, vol. 63, pp.1035-1061, 1996.
[7] United Nations, Report of the International Conference on Population and Development, Cairo, 1994.
[8] R. Jain and S. Muralidhar, “Contraceptive method:needs,options and utilization,” J. Obstet. Gynecol. India. Vol., 61, pp. 626-634, 2011.

[9] A.T., Alukal AT, L. George, and R.C. Raveendran, "Awareness and practice of contraceptive methods among women in Kerala," India. Int. J. Reprod. Contracept. Obstet. Gynecol., vol. 7, pp. 1501-1504, 2018.
[10] P. Renjhen, A. Kumar, S. Pattanshetty, A. Sagir, and C.M. Samarasinghe, "A study on knowledge, attitude and practice of Contraception among college students in Sikkim," J. Turk. Ger. Gynecol. Assoc., vol. 11, pp. 78-81, 2010.
[11] H. Tuladhar and R. Marahatta R, "Awareness and practice of family planning methods in women attending gyne OPD at Nepal medical college teaching hospital," Nepal Med. Coll. J., vol. 10, pp. 184-191, 2008.
[12] B.I. Santoso and R. Surya, "Knowledge,attitude,and practice of contraception among pregnant women in Ende districet, east Nusa Tennaggara, Indonesia," J. South Asian Feder. Obst. Gynae, vol. 9, pp. 110-118, 2017.
[13] I. Singh, A. Shukla, J.V. Thulaseedharan, G. Singh, "Contraception for married adolescents (15-19 years) in India: insights from the National Family Health Survey-4 (NFHS-4)," Reprod. Health, vol. 18, pp. 253, 2021.
[14] S. Srivastava, P. Mohanty, T. Muhammad, M. Kumar, "Socio-economic inequalities in non-use of modern contraceptives among young and non-young married women in India," BMC. Public Health, vol. 23, pp. 797, 2023.
[15] A. Kumar, A.K. Jain, F. Ram, R. Acharya, A. Shukla, A. Mozumdar A, et al., "Health workers' outreach and intention to use contraceptives among married women in India," BMC. Public Health, vol. 20, pp. 1041, 2020.
[16] A. Sarkar, V. Chandra-Mouli, K. Jain, J. Behera, S.K. Mishra, S. Mehra, "Community based reproductive health interventions for young married couples in resource-constrained settings: a systematic review," BMC. Public Health, vol. 15, 2015.
[17] M. Das, A. Anand, B. Hossain, S. Ansari, "Inequalities in short-acting reversible, long-acting reversible and permanent contraception use among currently married women in India," BMC. Public Health, vol. 22, pp. 1264, 2022.
[18] G. Alekhya, S.P. Parida, P.P. Giri, J. Begum, S. Patra, D.P. Sahu, "Effectiveness of school-based sexual and reproductive health education among adolescent girls in Urban areas of Odisha, India: a cluster randomized trial," Reprod. Health, vol. 20, pp. 105, 2023.
[19] E. Tobey, A. Jain, A. Mozumdar, "Differences in Quality of Care of Family Planning Services Received by Age and Contraceptive Continuation Among Young Mothers in India," J. Adolesc. Health, vol. 72, pp. 88-95, 2023.
[20] K. Yadav, M. Agarwal, M. Shukla, J.V. Singh, V.K. Singh, "Unmet need for family planning services among young married women (15-24 years) living in urban slums of India," BMC. Womens Health, vol. 20, pp. 187, 2020.
[21] A, Sreedevi, K. Vijayakumar, S.S. Najeeb, V. Menon, M.M. Mathew, L. Aravindan, et al., "Pattern of contraceptive use, determinants and fertility intentions among tribal women in Kerala, India: a cross-sectional study," BMJ. Open, vol. 12, pp. e055325, 2022.

