

DOI: 10.5455/msm.2022.34.107-111

Received: May 05 2022; Accepted: Jun 16, 2022

© 2022 Fatima Gavrankapetanovic, Armin Sljivo, Ilma Dadic, Alma Kubat

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0/>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ORIGINAL PAPER

Mater Sociomed. 2022 Jun; 34(2): 107-111

# Sexual Patterns, Menstrual Health Status and Prevalence of Modern Contraceptive Use Among Reproductive Aged Females in Bosnia and Herzegovina During the Covid-19 Pandemic

Fatima Gavrankapetanovic<sup>1</sup>, Armin Sljivo<sup>2</sup>, Ilma Dadic<sup>3</sup>, Alma Kubat<sup>4</sup>

<sup>1</sup>Clinical Center of University of Sarajevo, University of Sarajevo, Sarajevo, Bosnia and Herzegovina

<sup>2</sup>Emergency Medicine Department of Canton Sarajevo, Sarajevo, Bosnia and Herzegovina

<sup>3</sup>Health Center of Sarajevo Canton, Sarajevo, Bosnia and Herzegovina

<sup>4</sup>Health Center, Zenica, Zenica, Bosnia and Herzegovina

**Corresponding author:** Armin Sljivo. Emergency Medicine Department of Canton Sarajevo, Sarajevo, Bosnia and Herzegovina. Tel.: +387 62 256 507. Address: Danijela Ozme 12, 71 000 Sarajevo, Bosnia and Herzegovina. E-mail: sljivo95@windowslive.com. ORCID ID: <http://www.orcid.org/0000-0003-2865-0446>.

## ABSTRACT

**Background:** Nowadays, most women of reproductive age utilize various methods of contraception to avoid undesired pregnancy and regulate menstrual cycles. **Objective:** The aim of this study is to evaluate current sexual patterns, menstrual health status and use of contraceptive methods in reproductive aged females in Bosnia and Herzegovina during the COVID-19 pandemic. **Methods:** This cross-sectional study was conducted in the period between February 21<sup>st</sup> and March 5<sup>th</sup> 2022 via an online anonymous questionnaire which was distributed using social media platforms. **Results:** Menstrual periods were normally regular in 269 (85.7 %) of the females, whereas 45 (14.3 %) experienced irregular menstrual cycles. Females report having either one sexual partner 149 (47.5%) or no sexual partners 76 (24.2%) and typically no 92 (29.3%) or frequent (more than 8 sexual intercourses) sexual intercourses per month. The usage of contraceptive methods was reported among the majority 212 (67.5%) and mostly by using of male condom 104 (33.1%), followed by the withdrawal method 64 (20.4%), oral contraceptive pills 35 (11.1%), emergency contraceptive pills "after 24h" 2 (0.6%) and intrauterine device 7 (2.2%). The usage of contraceptive methods was higher among younger females ( $X^2=18.07, p<0.001$ ) and among those who were employed ( $X^2=10.86, p<0.001$ ). Those who used oral contraceptive pills used mostly pills that are combination of progesterone and oestrogen

32 (91.4%) and for the purpose of regulation of menstrual cycles 26 (74.2%) and to prevent unwanted pregnancies 9 (25.8%). Females who had no sexual intercourses per month (OR=0.27, 95% CI 0.09-0.79,  $p=0.018$ ) were less likely, while those who had irregular menstrual cycles (OR=2.44, 95% CI 1.04-5.71,  $p=0.039$ ) were more prone to use oral contraceptive pills. **Conclusion:** Bosnia and Herzegovina reproductive aged female had relatively regular menstrual cycles, the majority used modern contraceptive methods to prevent unwanted pregnancies or for the regulation of menstrual cycles during the COVID-19 pandemic.

**Keywords:** Contraceptive agents, sexual health, reproductive health, Bosnia and Herzegovina, COVID-19.

## 1. BACKGROUND

Nowadays, most women of reproductive age utilize various methods of contraception to avoid undesired pregnancy (1) with considerable disparities in contraceptive use among nations. According to a 2017 United Nations study on family planning, the prevalence of contraceptive use in Eastern Europe ranges from 65 % in Moldova to 76% in the Czech Republic (2). Another study revealed that in Poland, 61% of sexually active women utilize contraception, and that percentage is steadily growing (3). More than 99% of sexually active women in

the United States between the age of 15 and 44 have used at least one type of contraception in their lifetime, while 89% of women in reproductive age are currently using some form of contraception (4). On the other side, the region of Sub-Saharan Africa has a low prevalence of adopting modern contraceptive techniques, which may be associated with a high frequency of unplanned pregnancies, hazardous abortions, and women's deaths (5). African countries such as Ghana had a high degree of awareness (98 %) of modern contraceptives, yet only 21% of respondents utilized them. Factors associated with use of modern contraceptive methods are marital status, support from partner and religious beliefs (6).

Data from the region of West Balkan and Bosnia and Herzegovina regarding sexual patterns, menstrual health status and prevalence of modern contraceptive use among reproductive aged females are scarce. According to the most recent statistics from 2000, the prevalence of utilizing contemporary contraceptive techniques among Croatian women of reproductive age is 69 %, which is greater than the 58% prevalence in 1970 (7) indicating a rise in its consumption.

## 2. OBJECTIVE

The aims of this study were: a) to evaluate current sexual patterns, menstrual health status and use of contraceptive methods in younger and older women of reproductive age in Bosnia and Herzegovina; b) to investigate their attitude for certain contraception methods and to determine which factors influence the choosing of some contraceptive methods; and c) to bring the attention of authorities, institutions, and organizations in Bosnia and Herzegovina to the necessity of creating knowledge about the effectiveness of using contraceptive methods for reproductive health.

## 3. MATERIAL AND METHODS

This cross-sectional study was conducted in the period between February 21<sup>st</sup> and March 5<sup>th</sup> 2022 via an online anonymous questionnaire which was distributed using social media platforms to reproductive-aged females of Canton Sarajevo in Bosnia and Herzegovina during the COVID-19 pandemic. The study settings were done in accordance with all Helsinki declaration amendments.

### Subjects

Subjects which were sampled were reproductive-aged females of Canton Sarajevo in Bosnia and Herzegovina. Exclusion criteria were (i) not being resident of the Canton Sarajevo region, (ii) being younger than 18 years and (iii) not fully filling the study questionnaire. All subjects were informed about the data included in the study, its purpose, potential outcomes, anonymity of the data given in the study, including online informed consent and instructions how to fill up the study questionnaire.

### Study instruments and data collection

The study questionnaire based on a Ghana study (6) was tailored to cultural and local characteristics, translated to Bosnian/Croatian/Serbian language and distributed using social media networks such as Facebook®, WhatsApp®, Viber® and e-mail to the respondents. The questionnaire was divided into several sections as follows: (i) background

Variable	Frequency (N)	Percentage (%)
<b>Age</b>		
18-29	261	83.1
30-39	38	12.1
40-49	15	4.8
<b>Marital status</b>		
Single	70	22.3
In a relationship	144	45.9
Married	86	27.4
Divorced	14	4.5
<b>Educational status</b>		
Elementary school	2	0.6
High school	99	31.5
Bachelor's degree	148	47.1
Master's degree	58	18.5
PhD degree	7	2.2
<b>Living environment</b>		
Rural	38	12.1
Urban	276	87.9
<b>Employment</b>		
Yes	134	42.7
No	180	57.3
<b>Monthly income</b>		
<500	100	31.8
500-1000	61	19.4
1000-2000	100	31.8
>2000	53	16.9
<b>COVID-19 infection</b>		
Yes	176	56.1
No	138	43.9
<b>COVID-19 vaccinated</b>		
AstraZeneca®	52	16.7
Pfizer BioNTech®	135	43.0
Sinpharm®	29	9.2
Sinovac®	4	1.3
Sputnik V®	1	0.3
Moderna®	3	0.9
Johnson&Johnson®	6	1.9
Not vaccinated	84	26.7

Table 1. Age groups, marital status, educational status, living environment, employment, monthly income and COVID-19 related info among reproductive-aged females in Bosnia and Herzegovina

characteristics such as age, marital status, education level, living environment, monthly income, (ii) COVID-19 related info such as previous infection and COVID-19 vaccinal status and (iii) menstruation and contraceptives related questions (current trends, patterns and previous history of menarche and regularity of the menstrual cycles). The questionnaire was opened for 13 days and yielded 325 respondents.

### Statistical analysis

All data were statistically analyzed using the Statisti-

Variable	Frequency (N)	Percentage (%)
<b>Menarche</b>		
Yes	314	100.0
No	0	0.0
<b>Entering menopause</b>		
Yes	5	1.6
No	309	98.4
<b>Number of sexual partners</b>		
Zero	76	24.2
One	149	47.5
Two to three	57	18.2
Four to six	32	10.1
<b>Frequency of sexual intercourses per month</b>		
Zero	92	29.3
One to three times	63	20.1
Four to seven times	75	23.9
Eight and more times	84	26.8
<b>Number of pregnancies</b>		
Zero	250	79.6
One	27	8.6
Two	26	8.3
Three	11	3.5
<b>Number of labours</b>		
Zero	257	81.8
One	30	9.6
Two	22	7.0
Three	5	1.6
<b>Number of abortions</b>		
Zero	295	93.9
One	16	5.1
Two	3	1.0

Table 2. Female sexual background characteristics among reproductive-aged females in Bosnia and Herzegovina

cal Package for the Social Sciences (SPSS) version 23.0. If data were normally distributed, they were distributed as frequencies, percentage and by mean  $\pm$  standard deviation, and if they were not normally distributed by median (25<sup>th</sup>, 75<sup>th</sup> percentile). Chi square test was used to assess various variable association, while binary logistic regression model investigated various independent predictors for the outcome variables. Statistical significance level for our study was set at  $p < 0.05$ , two sided.

#### 4. RESULTS

The study questionnaire was filled out by 325 reproductive-aged females and after excluding 11 cases because of the exclusion criteria the final sample consisted of 314 subjects. The study sample was predominately in a relationship 144 (45.9%), had a Bachelor's degree 148 (47.1%), unemployed 180 (57.3%) with an either <500 BAM or between 1000 and 2000 BAM income and living in an urban environment 276 (87.9%). The mean age of the study sample was  $25.5 \pm 5.5$  with a range of 18 to 51 years. COVID-19 infection was reported among 176 (56.1%) subjects, while 230 (73.2%)

Variable	Frequency N (%)	Current use of modern contraceptives	
		Yes – N (%) (212)	No- N (%) (102)
<b>Age</b>			
18-29	261 (83.1)	163 (76.8)	98 (96.1)
30-39	38 (12.1)	35 (16.5)	3 (2.9)
40-49	15 (4.8)	14 (6.7)	1 (1.0)
<b>Marital status</b>			
Single	70 (22.3)	23 (10.8)	47 (46.1)
In a relationship	144 (45.9)	117 (55.2)	27 (26.5)
Married	86 (27.4)	65 (30.7)	21 (20.6)
Divorced	14 (4.5)	7 (3.3)	7 (6.9)
<b>Educational status</b>			
Elementary school	2 (0.6)	0 (0.0)	2 (2.0)
High school	99 (31.5)	63 (29.7)	36 (35.3)
Bachelor's degree	148 (47.1)	102 (48.1)	46 (45.1)
Master's degree	58 (18.5)	42 (19.8)	16 (15.7)
PhD degree	7 (2.2)	5 (2.4)	2 (2.0)
<b>Living environment</b>			
Rural	38 (12.1)	21 (9.9)	17 (16.7)
Urban	276 (87.9)	191 (90.1)	85 (83.3)
<b>Employment</b>			
Yes	134 (42.7)	104 (49.0)	30 (29.4)
No	180 (57.3)	108 (51.0)	72 (70.6)
<b>Monthly income</b>			
<500	100 (31.8)	61 (28.8)	39 (38.2)
500-1000	61 (19.4)	47 (22.2)	14 (13.7)
1000-2000	100 (31.8)	68 (32.1)	32 (31.4)
>2000	53 (16.9)	36 (16.9)	17 (16.7)

Table 3. Prevalence of contraceptive use and female demographic characteristics among reproductive-aged females in Bosnia and Herzegovina

subjects were vaccinated against COVID-19 infection All other demographic characteristics of the study sample are presented in the Table 1.

#### Female sexual background characteristics and prevalence of modern contraception use

All 314 females (100%) reported menarche, whereas just 5 (1.6%) were in menopause. Menstrual periods were normally regular in 269 (85.7%) of the females, whereas 45 (14.3%) experienced irregular menstrual cycles. Females report having either one sexual partner 149 (47.5%) or no sexual partners 76 (24.2%) and typically no 92 (29.3%) or frequent (more than 8 sexual intercourses) sexual intercourses per month. The vast majority wasn't ever pregnant 250 (79.6%) and didn't have child birth 257 (81.8%), while only 19 (6.0%) had an abortion which were elective 11 (57.9%) or spontaneous 8 (42.1%). All other female sexual background characteristics are presented in Table 2. The usage of contraceptive methods was reported among the majority 212 (67.5%) and mostly by using of male condom 104 (33.1%), followed by the withdrawal method 64 (20.4%), oral contraceptive pills 35 (11.1%), emergency contraceptive pills "after 24h" 2 (0.6%) and intrauterine device 7 (2.2%).

The usage of contraceptive methods was higher among younger females ( $X^2=18.07$ ,  $p<0.001$ ) and among those who were employed ( $X^2=10.86$ ,  $p<0.001$ ). Those who used oral contraceptive pills used mostly pills that are combination of progesterone and oestrogen 32 (91.4%) and for the purpose of regulation of menstrual cycles 26 (74.2%) and to prevent unwanted pregnancies 9 (25.8%). Binary logistic regression model showed that females who had no sexual intercourses per month (OR+0.27, 95% CI 0.09-0.79,  $p=0.018$ ) were less likely, while those who had irregular menstrual cycles (OR=2.44, 95% CI 1.04-5.71,  $p=0.039$ ) were more prone to use oral contraceptive pills. Still 102 (32.5%) females didn't use any contraceptive methods. All demographic characteristics compared with the usage of contraceptive methods are presented in Table 3.

## 5. DISCUSSION

To our knowledge, this is the first study in the country that is assessing sexual behaviours, menstrual hygiene and patterns of contraceptive usage during the COVID-19 pandemic. Our study sample which was mostly in a relationship, held higher education degree, unemployed, living in an urban environment and COVID-19 positive, showed relatively regular menstrual periods. The usage of contraceptive methods which was higher among younger and employed females, was reported among the majority and mostly by using of male condom, followed by the withdrawal method and oral contraceptive pills. Those who used oral contraceptive pills used mostly pills that are combination of progesterone and oestrogen and for the purpose of regulation of menstrual cycles and to prevent unwanted pregnancies. Females who had no sexual intercourses per month were less likely, while those who had irregular menstrual cycles were more prone to use oral contraceptive pills.

When compared to the initial study (6), our study sample was more in a relationship, similar age group, more educated and had higher monthly incomes. The overall prevalence of modern contraceptive usage among Bosnia and Herzegovina reproductive-aged females was higher (67.5% vs 21%) than in Ghana which could be attributed not only to cultural differences, but to more prevalent sexual and family planning education and widely available and early gynecologist examinations among reproductive aged females in Bosnia and Herzegovina. The result was likewise comparable to the Croatian prevalence of modern contraception usage (69.0% vs 67.5%), demonstrating a regional trend and pattern. Furthermore, the rate of modern contraceptive usage was higher than in other middle- and low-income countries (8,9,10). The most commonly used contraceptive method was the male condom which was already confirmed by a previous Balkan study (11). This phenomenon is likely as male condoms represents a low-cost strategy contraceptive approach to avoid undesired pregnancy and sexually transmitted illnesses while not interfering with female natural hormonal balances. Our argument is further expanded upon, as oral contraceptives were the third contraceptive method of choice among our females. Female sterilization wasn't reported among our females. On the contrary, these findings were different than in India (12) where female sterilization was the most preva-

lent contraceptive method due to overpopulation problem, monetary incentive and male-dominated patriarchal society where male sterilization is still not socially accepted (13). Younger and employed females were more likely to use modern contraceptive methods which isn't attributed only to sexual behaviors, but to busy and stressful lifestyle which interferes with regularity of female menstrual cycles. Chronic psychosocial stress leads to irregular menstruation and amenorrhea as part of prolonged activation of the hypothalamic-pituitary adrenal axis which may alter hormonal balance thus leading to disruption of normal ovulation and menstrual cycles (14). Our females, also reported having either one sexual partner or no sexual partners and typically no sexual intercourses per month which is likely associated with cultural and religious in heritage, as well as fear of society stigmatisation.

This study had several limitation factors. Firstly, the study types make inferring causality difficult thus future studies should be done in prospective manner with more detailed gynaecological interview. Secondly, the online questionnaire-based study types focused only on those females who had specific online accounts and internet access thus limiting our study sample. Lastly, the small study sample should be expanded and the same study should be done over a large population scale.

## 6. CONCLUSION

Bosnia and Herzegovina reproductive aged female had relatively regular menstrual cycles, the majority used modern contraceptive methods to prevent unwanted pregnancies or for the regulation of menstrual cycles during the COVID-19 pandemic. Governmental and health agencies should further conduct the ongoing policies and campaign to further fortify these behaviors.

- **Author's contribution:** All authors were involved in the preparation of this article. Final proofreading was made by the first author.
- **Conflicts of interest:** There are no conflicts of interest.
- **Financial support and sponsorship:** None.

## REFERENCES

1. Department of Economic and Social Affairs United Nations, Division for the Advancement of Women Staff and United Nations Publications. Trends in Contraceptive Use Worldwide 2015. United Nations, Department of Economic and Social Affairs, Population Division, 2016.
2. "United Nations, Department of Economic and Social Affairs, Population Division, World Fertility Report 2013: Fertility at the Extremes." Population and Development Review, vol. 41, no. 3, 2015, p. 555. doi:10.1111/j.1728-4457.2015.00081.x.
3. Główny Urząd Statystyczny [Internet]. Stat.gov.pl. 2022 [cited 24 April 2022]. Available from: <https://stat.gov.pl>
4. NSFG–Key Statistics from the National Survey of Family Growth11. [Internet]. 2022 [cited 24 April 2022]. Available from: <https://www.cdc.gov/nchs/nsfg/index.htm>
5. Orach C, Otim G, Apomom J, et al. Perceptions, attitude and use of family planning services in post conflict Gulu district, northern Uganda. Conflict and Health. 2015; 9(1).
6. Beson P, Appiah R, Adomah-Afari A. Modern contraceptive use among reproductive-aged women in Ghana: prevalence, predic-

- tors, and policy implications. *BMC Women's Health*. 2018; 18(1).
7. Contraceptive Prevalence, Any Methods (% of Women Ages 15-49)–Croatia | Data.” *TheWorldBank*, [data.worldbank.org/indicator/SP.DYN.CONU.ZS?locations=HR&st=rt=1999](https://data.worldbank.org/indicator/SP.DYN.CONU.ZS?locations=HR&st=rt=1999). Accessed 13 Dec. 2020.
  8. Roudi-Fahimi F. Iran's family planning program: responding to a nation's needs. MENA policy brief. Population reference bureau, Washington. DC. 2002: 21.
  9. Zegeye B, Ahinkorah B, Idriss-Wheeler D, et al. Modern contraceptive utilization and its associated factors among married women in Senegal: a multilevel analysis. *BMC Public Health*. 2021; 21(1).
  10. Forty J, Rakgoasi S, Keetile M. Patterns and determinants of modern contraceptive use and intention to use contraceptives among Malawian women of reproductive ages (15–49 years). *Contraception and Reproductive Medicine*. 2021; 6(1).
  11. Delva W, Wuillaume F, Vansteelandt S, et al. Sexual behaviour and contraceptive use among youth in the Balkans. *The European Journal of Contraception & Reproductive Health Care*. 2007; 12(4): 309-316.
  12. Ewerling F, McDougal L, Raj A, et al. Modern contraceptive use among women in need of family planning in India: an analysis of the inequalities related to the mix of methods used. *Reproductive Health*. 2021; 18(1).
  13. Why do Indian women go to sterilisation camps? [Internet]. *BBC News*. 2022 [cited 24 April 2022]. Available from: <https://www.bbc.com/news/world-asia-india-29999883>
  14. Rafique N, Al-Sheikh M. Prevalence of menstrual problems and their association with psychological stress in young female students studying health sciences. *Saudi Medical Journal*. 2018; 39(1) :67-73.