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

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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 21st and March 5th 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 (X²=18.07, p<0.001) and among those who were employed (X²=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

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the United States between the age od 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 Subsaharan 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 21st and March 5th 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, it’s 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 characteristics such as age, marital status, education level, living environment, employment, monthly income and COVID-19 related info among reproductive-aged females in Bosnia and Herzegovina

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

| Variable | Frequency (N) | Percentage (%) |
|----------|---------------|----------------|
| Age      |               |                |
| 18-29    | 261           | 83.1           |
| 30-39    | 38            | 12.1           |
| 40-49    | 15            | 4.8            |
| Marital status | |                |
| Single   | 70            | 22.3           |
| In a relationship | 144  | 45.9           |
| Married  | 86            | 27.4           |
| Divorced | 14            | 4.5            |
| Educational status | |                |
| 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            |
| Living environment | |                |
| Rural   | 38            | 12.1           |
| Urban   | 276           | 87.9           |
| Employment |               |                |
| Yes     | 134           | 42.7           |
| No      | 180           | 57.3           |
| Monthly income | |                |
| <500    | 100           | 31.8           |
| 500-1000| 61            | 19.4           |
| 1000-2000| 100       | 31.8           |
| >2000   | 53            | 16.9           |
| COVID-19 infection | |                |
| Yes     | 176           | 56.1           |
| No      | 138           | 43.9           |
| COVID-19 vaccinated | |                |
| 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
Sexual Patterns, Menstrual Health Status and Prevalence of Modern Contraceptive Use Among Reproductive Aged Females

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 ±5.5 with a range of 18 to 51 years. COVID-19 infection was reported among 176 (56.1%) subjects, while 230 (73.2%) subjects were vaccinated against COVID-19 infection. All other demographic characteristics of the study sample are presented in 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 (32.1%), 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%).

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

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

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

| Variable                      | Frequency (N) | Yes – N (%) (212) | No- N (%) (102) |
|-------------------------------|---------------|-------------------|-----------------|
| Age                           |               |                   |                 |
| 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 (0.1)         |
| Marital status                |               |                   |                 |
| 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)         |
| Educational status            |               |                   |                 |
| 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)         |
| Living environment            |               |                   |                 |
| Rural                         | 38 (12.1)     | 21 (9.9)          | 17 (16.7)       |
| Urban                         | 276 (87.9)    | 191 (90.1)        | 85 (83.3)       |
| Employment                    |               |                   |                 |
| Yes                           | 134 (42.7)    | 104 (49.0)        | 30 (29.4)       |
| No                            | 180 (57.3)    | 108 (51.0)        | 72 (70.6)       |
| Monthly income                |               |                   |                 |
| <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)       |

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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 ±5.5 with a range of 18 to 51 years. COVID-19 infection was reported among 176 (56.1%) subjects, while 230 (73.2%) subjects were vaccinated against COVID-19 infection. All other demographic characteristics of the study sample are presented in Table 1.

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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 use of 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.

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.

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