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KETERANGAN

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Yang bertanda tangan di bawah ini, Ketua LPPM Universitas Wiralodra, menerangkan dengan sebenarnya bahwa karya ilmiah yang diajukan sebagai bahan pertimbangan kelayakan kenaikan jabatan akademik dosen, atas nama:

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No	Karya Ilmiah	Judul	Identitas
1	2	3	4
1	Artikel	The Reappearance of Menstruation After Childbirth Associated with Contraceptive Use Among Women of Reproductive Age in Kyrgyzstan	Diterbitkan di: JURNAL INFO KESEHATAN, Vol. 23 No. 3 (2025); 2620-536X (Online) 0216-504X (Print); Penulis Pertama; DOI: https://doi.org/10.31965/infokes.Vol23.Iss3.2014
2	Artikel	Factors associated with knowledge of mother-to-child transmission (MTCT) of HIV/AIDS among young adults in Indonesia: Analysis of IYARHS Public Health of Indonesia	Diterbitkan di: International Journal of Public Health Science; Scopus Q4; Vol. 13 Issue. 1 (2024); ISSN 2752-6801 (Online); Penulis Keempat; DOI. 10.11591/ijphs.v13i1.23449
3	Artikel	The Impact of Maternity Health Education on Pregnant Women's Knowledge in Improving Reproductive Health in the Digital Era, Journal of the American Institute	Diterbitkan di: Journal of the American Institute; Terindeks Copernicus dan EBSCO; Vol. 2 No. 4 (2025); E-ISSN: 3066-3776; Penulis Pertama; DOI. https://doi.org/10.71364/7ymrxv38
4	Artikel	Penyebab Tingginya Angka Penderita <i>Influenza Like Illness</i> (ILI) pada Anak: Studi Kasus di Salah Satu Wilayah	Diterbitkan di: International Journal of Public Health Science (IJPHS) Vol. 13, No. 1, March 2024, pp. 245~252 ISSN: 2252-8806, DOI:

No	Karya Ilmiah	Judul	Identitas
1	2	3	4
		Kerja UPTD Kabupaten Indramayu	10.11591/ijphs.v13i1.23449
5	Artikel	Faktor Risiko Penyakit Diare di Wilayah Kerja UPTD Puskesmas Sindang, Kabupaten Indramayu	Diterbitkan di: Gema Wiralodra, Vol. 13 No. 1 (2022) P-ISSN: 1693-7945, E-ISSN: 2622-1969; Penulis Pertama; DOI. https://doi.org/10.31943/gemawiralodra.v14i1
6	Artikel	Pengaruh Kelas Persiapan Persalinan dengan Kecemasan Menjelang Persalinan pada Ibu Hamil Trimester III di Salah Satu Klinik di Indramayu	Diterbitkan di: Gema Wiralodra, Vol. 13, No. 2 (2022) P-ISSN: 1693-7945, E-ISSN: 2622-1969; Penulis Kedua; DOI. https://doi.org/10.31943/gemawiralodra.v14i1
7	Artikel	Hubungan Pengetahuan dan Sikap Terhadap Partisipasi Mengikuti Vaksin Booster Pada Pedagang di Kuliner Cimanuk Tahun 2022	Diterbitkan di: Graha Medika Public Health Journal, Vol. 2, No. 1 (2023) E-ISSN: 2829-1956; Penulis Kedua; link: https://journal.iktgm.ac.id/index.php/publichealth
8	Artikel	Hand Hygiene Effectiveness in Controlling the Spread of COVID-19: A Scoping Review	Diterbitkan di: Journal of Research in Science Education (Jurnal Penelitian Pendidikan IPA), Vol. 9 No. 10 (2023) e-ISSN: 2407-795X p-ISSN: 2460-2582; Penulis Kedua; DOI. https://doi.org/10.29303/jppipa.v9i1
9	Artikel	Factors influencing unable to eat healthy and nutritious food among Indonesian onset COVID-19 pandemic	Diterbitkan di: International Journal of Public Health Science (IJPHS), Vol. 13, No. 1, March 2024, pp. 245~252 ISSN: 2252-8806; Penulis Keenam; DOI. 10.11591/ijphs.v13i1.23449
10	Artikel	Dominant Factors that Affecting HIV AIDS Prevention In The Village "X" Bongas District Of Indramayu In 2023	Diterbitkan di: Gema Wiralodra, Vol. 15, No. 3 (2025) P-ISSN: 1693-7945, E-ISSN: 2622-1969; Penulis Ketiga; DOI. https://doi.org/10.31943/gemawiralodra.v14i1
11	Artikel	Pengaruh Metode <i>Handwashing Dance</i> Terhadap Pengetahuan, Sikap Dan Perilaku Cuci Tangan Pada Siswa SD Negeri Tunas Haarapan Desa Losarang Tahun 2023	Diterbitkan di: JURNAL WIYATA Vol 10 No 1 Tahun 2023, P-ISSN 2355-6498 E-ISSN 2442-6555; Penulis Pertama; DOI. https://doi.org/10.56710/wiyata.v11i1.832
12	Artikel	Factors Related to Behavioral Beautiful Behavior in Sambimaya	Diterbitkan di: Cleanliness: Journal of Health Sciences and Medical Research, Vol. 2 No. 1 Tahun 2025, E-

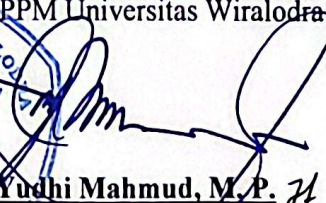
No	Karya Ilmiah	Judul	Identitas
1	2	3	4
		Village Juntinyuat Indramayu in 2019	ISSN 3063-8569; Penulis Ketiga; DOI. https://doi.org/10.61166/clean.v2i1.6
13	Artikel	Faktor Yang Berhubungan Dengan Prilaku Buang Air Besar Sembarangan di Desa Sambimaya Kecamatan Juntinyuat Indramayu Tahun 2019	Diterbitkan di: Cleanliness: Journal of Health Sciences and Medical Research, Vol. 2 No. 1 Tahun 2025, E-ISSN 3063-8569; Penulis Ketiga; DOI. https://doi.org/10.61166/clean.v2i1.6
14	Artikel	Faktor-Faktor yang Berhubungan dengan Perilaku Keselamatan Berkendara (<i>Safety Riding</i>) pada Pelajar SMA Negeri 2 Indramayu Tahun 2023	Diterbitkan di: Cleanliness: Journal of Health Sciences and Medical Research, Vol. 2 No. 1 Tahun 2025, E-ISSN 3063-8569; Penulis Keempat; DOI. https://doi.org/10.61166/clean.v2i1.10
15	Buku Ajar	Kesehatan Reproduksi	Diterbitkan di: Buku Ajar ber ISBN 978-623-174-134-9 berjudul: Kesehatan Reproduksi: Edisi Revisi
16	Buku Ajar	Metode dan Mode Pembelajaran	Diterbitkan di: Jurnal Akreditasi Buku Ajar ber ISBN 978-623-5442-31-0 berjudul: Metode dan Model Pembelajaran
17	Buku Ajar	Kesehatan Reproduksi Remaja Dan Ibu Hamil	Diterbitkan di: Jurnal Akreditasi Buku Ajar ber ISBN 978-623-5442-09-9
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Dinyatakan telah memenuhi syarat batas maksimal kemiripan (*similarity index* Turnitin kurang dari 25%) pada naskah tersebut. Surat keterangan ini digunakan untuk memenuhi salah satu syarat pengajuan jabatan akademik dosen. Adapun bukti cek plagiasi terlampir.

Demikian surat keterangan ini dibuat untuk digunakan sebagaimana mestinya.

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The Reappearance of Menstruation After Childbirth Associated with Contraceptive Use Among Women of Reproductive Age in Kyrgyzstan

By Tating Nuraeni

The Reappearance of Menstruation After Childbirth Associated with Contraceptive Use Among Women of Reproductive Age in Kyrgyzstan

Abstract

The return of menstruation after childbirth is an important aspect of women's reproductive health, especially in the context of contraceptive use. This study aims to explore how the return of menstruation after childbirth is closely connected to contraceptive use, with various factors such as age, marital status, region, place of residence, education level, ethnicity, and wealth index in Kyrgyzstan playing a role. This study employed secondary data from the Kyrgyzstan 2023 Multiple Indicator Cluster Survey (MICS), focusing on women of reproductive age (15-49 years). The analysis utilized a final sample of 1,059 women and applied binary logistic regression to examine the relationship between contraceptive use and the return of menstruation after childbirth while controlling for factors such as age, marital status, region, education level, ethnicity, and wealth index. The study found that among 1,059 women who had given birth, 30.88% were using contraceptive methods, and 64.68% experienced the return of menstruation post-childbirth. The multivariate analysis indicates that menstrual return after giving birth, having marital status formerly married/in union, in Naryn, Talas, and Chui region, and having the richest wealth index significantly influence contraceptive use among women of reproductive age. These results underscore the importance of comprehensive sexual health education, improved healthcare services, and targeted communication strategies to increase contraceptive use in the region.

Keywords: Contraceptive Use, Kyrgyzstan, Multiple Indicator Cluster Survey (MICS), Reproductive Health, Return Of Menstruation.

1. INTRODUCTION

The return of menstruation after childbirth typically occurs between six weeks to one year postpartum, influenced by factors such as breastfeeding, hormonal changes, and the use of contraceptives (Robinet et al., 2023). Breastfeeding, particularly exclusive breastfeeding, has a notable effect on the timing of the return of menstruation. It is well-documented that exclusive breastfeeding can delay the resumption of ovulation and menstruation, thereby acting as a natural form of contraception (Reddy et al., 2019). This phenomenon is often referred to as lactational amenorrhea, which can provide a temporary contraceptive effect during the early postpartum period. However, many women may not be aware that ovulation can occur before the return of menstruation, leading to unintended pregnancies (Essien et al., 2024).

In Kyrgyzstan, the cultural context surrounding menstruation and postpartum practices plays a significant role in women's health decisions. Cultural beliefs may dictate the timing of sexual activity postpartum, with some women adhering to traditional practices that discourage sexual intercourse until menstruation resumes (Shabangu & Madiba, 2019). This cultural abstinence can impact the uptake of modern contraceptive methods, as women may perceive themselves as protected from pregnancy during the amenorrhea phase. However, studies indicate that the resumption of sexual activity is a significant predictor of contraceptive use in the postpartum period (Maretalinia et al., 2023). Women who resume sexual intercourse before the return of menstruation are more likely to seek out contraceptive options to prevent unintended pregnancies (Demie et al., 2018).

Moreover, the timing of the return of menstruation can influence women's perceptions of their fertility status. Women may mistakenly believe that the absence of menstruation equates to a low risk of pregnancy, which can lead to a lack of contraceptive use (Tesfu et al., 2022). These misunderstanding underscores the need for comprehensive education on reproductive health, emphasizing that ovulation can occur before the return of menstruation, thus increasing

the risk of unintended pregnancies (Vanwesenbeeck, 2020). In addition to biological and educational factors, socioeconomic status and access to healthcare services significantly affect contraceptive use among postpartum women (Habibov & Zainiddinov, 2017; Robinet et al., 2023). Women with higher levels of education and those who have access to healthcare facilities are more likely to utilize modern contraceptive methods (Dagnew et al., 2020). There is a lack of country-specific evidence on how cultural beliefs, misconceptions about fertility during lactational amenorrhea, and variations in education and healthcare access interact to shape postpartum contraceptive behaviors. These gaps underscore the need for comprehensive, context-specific research in Kyrgyzstan to better inform policies and interventions that address unintended pregnancies in the postpartum period.

The role of healthcare providers is also pivotal in facilitating the adoption of contraceptive methods among postpartum women in Kyrgyzstan (World Health Organization, 2022). Training healthcare professionals to provide counseling on family planning options during the postpartum period can significantly influence women's choices (Robinet et al., 2023). Furthermore, integrating family planning services into maternal healthcare can ensure that women receive timely information and support regarding their reproductive health needs. Cultural practices surrounding menstruation and postpartum recovery can also impact women's health behaviors. In some cultures, women may be considered "unclean" until menstruation resumes, which can affect their willingness to engage in sexual activity or seek contraceptive services (Shabangu & Madiba, 2019). Understanding these cultural nuances is essential for developing effective health interventions that resonate with women's lived experiences and beliefs. This study to examine the reappearance of menstruation after childbirth is intricately linked to contraceptive use, influenced by a multitude of factors including women's age, marital status, region, place of residence, educational level, ethnicity, and wealth index in Kyrgyzstan.

2. RESEARCH METHOD

This study employed a cross-sectional design using secondary data from the Kyrgyzstan 2023 Multiple Indicator Cluster Survey (MICS). The MICS is a nationally representative household survey conducted using a multistage, stratified cluster sampling design. It provides comprehensive data on health, education, and demographic indicators. The survey provides a comprehensive overview of health, education, and living conditions nationwide. The survey highlights critical disparities in access to services and overall well-being in a country where 68.5% of the population resides in rural areas (National Statistical Committee of the Kyrgyz Republic and UNICEF, 2024). Key findings include insights into early childhood nutrition, school attendance rates, and other issues affecting Kyrgyzstan's youth. With data on 177 unique indicators, including 31 aligned with the Sustainable Development Goals (SDGs), the MICS equips policymakers and development partners with evidence-based tools to track progress, address inequalities, and implement targeted interventions to improve living standards across the country.

The primary objectives of the Kyrgyzstan MICS 2023 were to assess the situation of children, adolescents, women, and households while generating high-quality, disaggregated data to inform policies promoting social inclusion of vulnerable groups. Additionally, the survey aimed to provide data for monitoring national and global SDG indicators, validate existing data, and generate internationally comparable statistics. This collaborative effort was made possible through partnerships between the National Statistical Committee of the Kyrgyz Republic, UNICEF, USAID, the Government of Switzerland, and the United Nations Population Fund (UNFPA). National Statistical Committee of the Kyrgyz Republic and UNICEF. 2023 Kyrgyzstan Multiple Indicator Cluster Survey, Snapshots of Key Findings. Bishkek, Kyrgyzstan: National Statistical Committee of the Kyrgyz Republic and UNICEF, 2024, Kyrgyzstan. The dataset is open to public upon registered, that can be assessed through

the website <https://mics.unicef.org/news/just-released-kyrgyzstan-2023-mics-survey-findings-snapshots-and-datasets>.

The total sample in MICS Kyrgyzstan was 7,200 individuals who were only 6,715 occupied and 6,639 interviewed. For women of reproductive age, among 5,753 who were eligible for interview, 98% or 5,629 of them were interviewed. In this current study, after data management processes and data cleaning, the final sample size was 1,059 women. The inclusion criteria of the study sample of the current study were women of reproductive age 15 to 49 years old, and experienced childbearing. The exclusion criteria were those who did not complete the women's questionnaire.

This study focused on women of reproductive age 15 to 49 years old. The dependent variable of this study is using method to prevent the pregnancy (no/yes). The main independent variable is experienced of return the menstruation after giving birth (no/yes). The control variables including women's age (in years old), marital status (currently married/in union or formerly), region, place of residence, educational level, ethnicity, and wealth index. The multivariate data analysis was done using binary logistic regression using STATA software.

The procedure and tools of MICS was approved by UNICEF. As the study utilized anonymised data, ethical approval was not required.

3. RESULTS AND DISCUSSION

The results of this study offer univariate and multivariate. Table 1 below describes the general characteristics of the samples. It revealed that among 1,059 women ever given birth, 30.88% of them are using methods to prevent pregnancy. According to the main independent variables, 64.68% of the women were returned the menstruation after giving birth. The women's age explains the mean of 30 years old with standard deviation 5.95 years. The marital status of them revealed the majority of them were in marriage or union at the time of survey (98.11%). In terms of the region, the highest proportion is shown by Osh (16.43%), Batken (13.50%), and Jalal-Abad (13.03%). Based on two categories of place of residence, those lived in rural were took more than half (65.82%). The educational level of the study samples shows the percentage of those graduated from secondary school was the highest one (37.96%). The ethnic majority was predominantly by Kyrgyz ethnic group (78.09%). The highest proportion of wealth index was found for those in the fourth (23.32%).

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Table 1. The general characteristics of the study sample.

Variables	Frequency/mean (standard deviation)	%
Using contraceptive		
No	732	69.12
Yes	327	30.88
Menstrual return after giving birth		
No	374	35.32
Yes	685	64.68
Women's age	29.60 (5.95)	
Marital status		
Currently married/in union	1,039	98.11
Formerly married/in union	20	1.89
Region		
Batken	143	13.50
Jalal-Abad	138	13.03
Issyk-kul	70	6.61
Naryn	132	12.46
Osh	174	16.43
Talas	113	10.67

Chui	95	8.97
Bishkek c	59	5.57
Osh c	135	12.75
Place of residence		
Urban	362	34.18
Rural	697	65.82
Education level		
Pre-school or none/primary	5	0.47
Basic secondary	107	10.10
Complete secondary	402	37.96
Professional primary/middle	244	23.04
Higher	301	28.42
Ethnicity		
Kyrgyz	827	78.09
Russian	13	1.23
Uzbek	182	17.19
Others	37	3.49
Wealth index		
Poorest	223	21.06
Second	207	19.55
Middle	202	19.07
Fourth	247	23.32
Richest	180	17.00

Table 2 below offers the multivariate analysis results. It revealed that menstrual return effect on contraceptive use by 3.40 times compared to those who experienced unreturn the menstruation. Additionally, compared to women with currently married/in union, the former married/union were decreased 95% probability to use contraceptive use. Moreover, compared to those lived in the Batken region, women lived in Naryn , Talas, and Chui were more likely to use contraception by 6.53, 2.69, and 3.44 times, respectively. According to their wealth index, compared to those were poorest, those richest were 2.01 times more likely to use contraception. However, there are other control variables that were found insignificantly associated with using contraceptive use. Those variables including women's age, place of residence, educational level, and ethnicity. The model in Table 2 was describing the factors influencing contraceptive use by 12.93%.

Table 2. The binary logistic regression of the effect of menstrual return on contraceptive use.

Variables	AOR	95 % CI (lower-upper)		p-value
Menstrual return after giving birth				
No	ref			
Yes	3.40	2.44	4.75	0.000
Women's age	1.03	1.00	1.05	0.052
Marital status				
Currently married/in union	ref			
Formerly married/in union	0.05	0.01	0.39	0.005
Region				
Batken	ref			
Jalal-Abad	1.46	0.78	2.73	0.232
Issyk-kul	0.85	0.37	1.95	0.706
Naryn	6.53	3.44	12.37	0.000

Osh	1.27	0.68	2.36	0.458
Talas	2.69	1.38	5.23	0.004
Chui	3.44	1.76	6.70	0.000
Bishkek c	1.20	0.50	2.89	0.686
Osh c	1.79	0.88	3.65	0.110
Place of residence				
Urban	ref			
Rural	0.88	0.56	1.38	0.575
Education level				
Pre-school or none/primary/basic secondary	ref			
Complete secondary	0.78	0.45	1.36	0.383
Professional primary/middle	1.01	0.56	1.82	0.974
Higher	0.96	0.53	1.73	0.897
Ethnicity				
Kyrgyz	ref			
Russian	2.54	0.69	9.32	0.161
Uzbek	0.97	0.58	1.63	0.913
Others	1.41	0.63	3.14	0.402
Wealth index				
Poorest	ref			
Second	1.34	0.82	2.18	0.244
Middle	1.14	0.68	1.92	0.616
Fourth	1.25	0.74	2.12	0.401
Richest	2.01	1.07	3.80	0.030
Cons	0.04	0.01	0.13	0.000

Number of obs = 1,059
LR chi2(22) = 169.27
Prob > chi2 = 0.0000
Log likelihood = -569.95701
Pseudo R2 = 0.1293

Based on the findings of this study, menstrual return after giving birth significantly influences contraceptive use among women of reproductive age in Kyrgyzstan. It is in line with another study that found in the postpartum period, factors such as educational attainment, family planning counseling during prenatal and postnatal care, resumption of sexual activity, and return of menstruation significantly influence modern contraceptive use (Abraha et al., 2017). The results of the same study were also shown in research from other countries, such as Ethiopia, which showed that knowledge about the return of menstruation after giving birth was significantly related to the use of modern contraception after childbirth (Ashebir & Tadesse, 2020). Television-based family planning messages have been shown to have a positive impact on contraceptive use in Kyrgyzstan, increasing the likelihood by 11% (Habibov & Zainiddinov, 2017). Postpartum contraceptive use and unmet need for contraception is low in low- and middle-income countries (Dev et al., 2019).

The other result of this study showed having marital status formerly married/in union is also significantly associated with contraceptive use. In particular, married men in Kyrgyzstan showed higher contraceptive use with more children and lower socioeconomic status (Kogay & Itua, 2017). Across 73 low- and middle-income countries, married adolescents without children had the lowest contraceptive prevalence, suggesting cultural norms significantly influence use (de Vargas Nunes Coll et al., 2019). A similar pattern was found in Nepal, where contraceptive use was associated with early marriage and earlier births (Adhikari et al., 2019).

These findings highlight the need for targeted interventions that take into account cultural context and socioeconomic factors.

Research on contraceptive use among women of reproductive age reveals various socioeconomic and demographic factors influencing uptake. This study showed wealth index is significantly associated with contraceptive use, although the relationship varies across studies. In Nepal, poorer women were more likely to use contraception than the richest (Pokhrel et al., 2022). Conversely, in Kyrgyzstan, men in richer quintiles were less likely to use modern contraceptives (Kogay & Itua, 2017). Education level, age, number of living children, and exposure to contraceptive information were significant determinants in Rwanda (Habyarimana & Ramroop, 2018). In Burkina Faso, household wealth, having a living son, and proximity to health facilities positively influence contraceptive use (Wulifan et al., 2017). Other factors influencing contraceptive use include religious affiliation, women's working status, and husband's desire for more children (Habyarimana & Ramroop, 2018). These findings highlight the complex interplay of factors influencing contraceptive use and the need for targeted interventions to increase uptake. Several limitations should be acknowledged. First, the cross-sectional design prevents causal inference as both menstruation status and contraceptive use were measured at the same time. Second, the reliance on self-reported data may be subject to recall or social desirability bias, particularly regarding sensitive issues such as fertility and contraceptive practices. Third, the analysis was limited to variables available in the MICS dataset, and potentially important factors such as partner influence, cultural norms or quality of healthcare counseling could not be assessed. Finally, restricting the analysis to women who had given birth within two years may reduce generalizability to all reproductive-age women. For future research longitudinal and mixed-methods studies are needed to explore cultural, behavioral, and healthcare factors influencing postpartum fertility and contraceptive use in Kyrgyzstan.

4. CONCLUSION

In conclusion, the study highlights that the return of menstrual return after giving birth, having marital status formerly married in union, in Naryn, Talas, and Chui region, and having the richest wealth index were key factors influencing contraceptive use among women in Kyrgyzstan, while other regions, place of residence, education level, ethnicity and under richest of wealth index were not significantly associated. These findings provide valuable insights for targeted interventions to improve reproductive health and contraceptive use in the country.

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