

Socio-demographic and Reproductive Factors Influencing Contraceptive Use among Women with Rheumatoid Arthritis and Systemic Lupus Erythematosus

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ABSTRACT

Introduction: Rheumatoid arthritis (RA) and systemic lupus erythematosus (SLE) are chronic autoimmune diseases predominantly affecting women of reproductive age, presenting significant reproductive health challenges including infertility, reduced family size, and teratogenic medication exposure. Despite recommendations for effective contraception, evidence suggests low and inequitable contraceptive uptake among these patients. **Aim of the Study:** To examine the socio-demographic and reproductive factors influencing contraceptive use among women with RA and SLE attending rheumatology clinics in Bangladesh. **Methods & Materials:** This cross-sectional study was conducted from July 2022 to April 2023 at Bangladesh Medical University (formerly BSMMU), enrolling 83 married women aged 18-49 years with confirmed RA (n=42) or SLE (n=41). Data were collected on socio-demographic variables, reproductive factors, contraceptive practices, and contraceptive counselling receipt. Multivariable logistic regression was used to identify factors associated with contraceptive use. **Results:** The mean age was 30.75±5.32 years. Contraceptive prevalence was 74.7% (71.4% in RA, 78.0% in SLE). Condoms (31.3%) and oral contraceptive pills (25.3%) were the most common methods, with 54.2% receiving contraceptive counselling. High rates of unwanted pregnancy (43.4%) and abortion (30.1%) were documented. Multivariable analysis identified age ≥30 years as the sole significant predictor of contraceptive use (AOR=2.38, 95% CI: 1.03-5.50; p=0.042). No significant associations were found for BMI, education, residence, reproductive history, or disease type. **Conclusion:** Contraceptive use among women with RA and SLE in Bangladesh is comparable to the general population, with age ≥30 years as the key determinant. However, high rates of unwanted pregnancy and abortion, and predominant reliance on barrier methods, indicate critical gaps in reproductive healthcare. Targeted contraceptive counselling within rheumatology clinics is essential to improve outcomes in this vulnerable population.

Keywords: Contraception, Rheumatoid Arthritis, Lupus, Reproductive Health, Bangladesh

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INTRODUCTION

Rheumatoid arthritis (RA) and systemic lupus erythematosus (SLE) are chronic autoimmune diseases that predominantly affect women during their reproductive years. SLE is an autoimmune condition that is most common in women of reproductive age (15–50 years) [1]. Women with RA face parallel reproductive challenges: RA is associated with a relatively higher infertility rate compared to the general population [2], and multiple studies show that family size is reduced in women with RA, a pattern that may already be present before diagnosis [3]. Family planning is a critical component of care in this population. Family planning consultation is a major aspect of medical care in these patients because of the risk of disease activation and poor pregnancy and fetal outcomes [4]. Timing of conception relative to disease activity matters clinically, since fewer perinatal disease flares, higher neonatal birth weights, more live births, and fewer complications such as preeclampsia may occur among women with inactive versus active disease at the time of conception [5]. A major driver of the need for reliable contraception is exposure to teratogenic disease-modifying therapy.

Teratogenic medications such as methotrexate, mycophenolate mofetil, thalidomide, and cyclophosphamide are occasionally prescribed to patients with connective tissue disease [2]. Current EULAR recommendations state that patients receiving cyclophosphamide, methotrexate, and mycophenolate should use effective contraception, and these drugs should be discontinued before conception [6], and because some DMARDs have prolonged half-lives, they may need to be discontinued up to three months before conception [6], consistent contraceptive use is essential to avoid inadvertent fetal exposure. Despite this, patients should be aware that some of these medications can harm an unborn baby whether they are currently planning a pregnancy or not [6], leaving a persistent risk of unplanned, medication-exposed pregnancy. Available evidence indicates that contraceptive uptake remains low and unevenly distributed across sociodemographic groups. In a cross-sectional study of SLE patients, only 35.2% of patients with the possibility of pregnancy had received contraceptive consultation in the past year, with withdrawal as the most prevalent method used [4]. Racial disparities have also been documented: among

reproductive-age Medicaid beneficiaries with SLE, Black and Asian women had lower odds of contraception dispensing, and Black women had lower odds of highly effective contraception use^[1]. Disparities extend to other groups as well, since SLE and inflammatory arthritis disproportionately affect reproductive-age Hispanic women, who experience more severe disease and worse outcomes, with certain factors contributing to disparities in reproductive health counseling^[7]. A more recent multi-disease survey similarly reported low effective contraception use among women aged 18 to 45 years with diagnoses including SLE and rheumatoid arthritis^[8]. This study therefore aims to examine the sociodemographic and reproductive factors influencing contraceptive use among women with RA and SLE, to inform more equitable and effective reproductive health counseling.

METHODS & MATERIALS

This cross-sectional study was conducted from July 2022 to April 2023 in the Department of Rheumatology at Bangladesh Medical University (BMU) formerly BSMMU, Dhaka, Bangladesh. The study population comprised married women of reproductive age (18-49 years) with a confirmed diagnosis of either rheumatoid arthritis (RA) or systemic lupus erythematosus (SLE) attending the respective specialty clinics at BMU (formerly BSMMU). A convenient sampling method was employed. The sample size was calculated using a standard formula for estimating a single proportion, based on an assumed contraceptive prevalence rate among rheumatology patients, with a 95% confidence level and 80% power, yielding a total of 83 participants. Data were collected

on socio-demographic variables (age, residence, occupation, education, type of family, type of house, body mass index, and type of rheumatic disease), reproductive factors (history of unwanted pregnancy, history of abortion, number of living children, and age of the last child), contraceptive practices, and receipt of contraceptive counseling. The primary outcome variable was current contraceptive use. Descriptive statistics were used to summarize the data, and associations between socio-demographic/reproductive factors and contraceptive use were analyzed using appropriate statistical tests.

Inclusion Criteria:

- Married women aged 18-49 years with a confirmed diagnosis of RA or SLE attending BMU (formerly BSMMU) rheumatology clinics.

Exclusion Criteria:

- Other rheumatic or major systemic illnesses.
- History of hysterectomy or infertility.
- Menopausal status.
- Severe disease activity (SELENA-SLEDAI >12 for SLE; CDAI >22 for RA).
- Refusal to provide informed written consent.

RESULTS

Table I: Socio-demographic Characteristics of Women with Rheumatoid Arthritis and Systemic Lupus Erythematosus (n=83)

Variables	RA (n=42)	SLE (n=41)	Total (n=83)
Age (years)			
<30 years	16 (38.1)	23 (56.1)	39 (47.0)
≥30 years	26 (61.9)	18 (43.9)	44 (53.0)
Mean ± SD	31.69 ± 5.50	29.78 ± 5.02	30.75 ± 5.32
BMI (kg/m ²)			
<25	21 (50.0)	26 (63.4)	47 (56.6)
≥25	21 (50.0)	15 (36.6)	36 (43.4)
Mean ± SD	25.23 ± 5.38	23.35 ± 4.28	24.24 ± 4.92
Education			
SSC or below	31 (73.8)	31 (75.6)	62 (74.7)
HSC or above	11 (26.2)	10 (24.4)	21 (25.3)
Occupation			
Service holder	27 (64.3)	25 (61.0)	52 (62.7)
Housewife	15 (35.7)	16 (39.0)	31 (37.3)
Family type			
Nuclear	31 (73.8)	30 (73.2)	61 (73.5)
Joint	11 (26.2)	11 (26.8)	22 (26.5)
Residence			
Rural	16 (38.1)	21 (51.2)	37 (44.6)
Urban	26 (61.9)	20 (48.8)	46 (55.4)
Type of house			
Pucca	17 (40.5)	14 (34.1)	31 (37.3)
Semi-pucca	25 (59.5)	27 (65.9)	52 (62.7)

The mean age of the participants was 30.75±5.32 years. More than half (53.0%) were aged ≥30 years. Most participants had education up to SSC level (74.7%), belonged to nuclear

families (73.5%), and were employed (62.7%). Urban residents constituted 55.4% of the study population (Table II).

Table II: Reproductive Characteristics of Women with Rheumatoid Arthritis and Systemic Lupus Erythematosus (n=83)

Variables	RA (n=42)	SLE (n=41)	Total (n=83)
History of unwanted pregnancy	18 (42.9)	18 (43.9)	36 (43.4)
History of abortion	11 (26.2)	14 (34.1)	25 (30.1)
Number of living children			
No child	22 (52.4)	22 (53.7)	44 (53.0)
One child	5 (11.9)	6 (14.6)	11 (13.3)
≥2 children	15 (35.7)	13 (31.7)	28 (33.7)
Duration of marriage (years), Mean ± SD	14.79 ± 7.78	12.37 ± 6.71	13.59 ± 7.32

Overall, 43.4% of women reported a history of unwanted pregnancy and 30.1% had experienced abortion. More than half (53.0%) had no living child, while one-third (33.7%) had

two or more children. The mean duration of marriage was 13.59±7.32 years (*Table III*).

Table III: Contraceptive Use Pattern among Women with Rheumatoid Arthritis and Systemic Lupus Erythematosus (n=83)

Variables	RA (n=42)	SLE (n=41)	Total (n=83)
History of unwanted pregnancy	18 (42.9)	18 (43.9)	36 (43.4)
History of abortion	11 (26.2)	14 (34.1)	25 (30.1)
Number of living children			
No child	22 (52.4)	22 (53.7)	44 (53.0)
One child	5 (11.9)	6 (14.6)	11 (13.3)
≥2 children	15 (35.7)	13 (31.7)	28 (33.7)
Duration of marriage (years), Mean ± SD	14.79 ± 7.78	12.37 ± 6.71	13.59 ± 7.32

Among the 83 participants, 74.7% were current users of contraception. Condoms were the most commonly used method (31.3%), followed by oral contraceptive pills (25.3%).

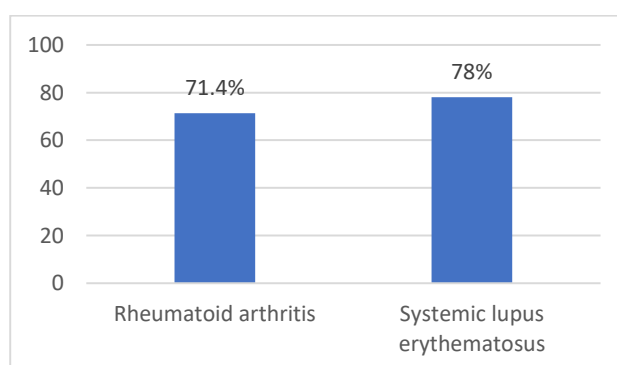
More than half (54.2%) had received contraceptive counselling (*Table IV*).

Table IV: Multivariable Logistic Regression Analysis of Factors Associated with Contraceptive Use among Women with Rheumatoid Arthritis and Systemic Lupus Erythematosus (n=83)

Variables	Adjusted OR	95% CI	p-value
Age ≥30 years	2.38	1.03–5.50	0.042
BMI ≥25 kg/m ²	1.24	0.56–2.74	0.592
Education ≥HSC	1.48	0.61–3.60	0.384
Employment status	1.31	0.59–2.91	0.505
Urban residence	1.18	0.53–2.63	0.679
History of unwanted pregnancy	1.62	0.71–3.67	0.249
History of abortion	0.94	0.38–2.31	0.894
≥2 living children	1.89	0.79–4.51	0.152
SLE versus RA	1.41	0.61–3.29	0.421

Multivariable logistic regression showed that women aged ≥30 years were significantly more likely to use contraception compared with younger women (AOR=2.38, 95% CI: 1.03–5.50; p=0.042). No significant association was observed for

BMI, education, residence, reproductive history, number of living children, or disease type.

**Figure 1: Prevalence of Contraceptive Use among Women with Rheumatoid Arthritis and Systemic Lupus Erythematosus**

Contraceptive use was slightly higher among women with SLE (78.0%) than among those with RA (71.4%), indicating that

most participants in both groups were current contraceptive users (*Figure 1*).

DISCUSSION

This cross-sectional study examined socio-demographic and reproductive factors influencing contraceptive use among 83 women diagnosed with rheumatoid arthritis (RA) or systemic lupus erythematosus (SLE), revealing a contraceptive prevalence of 74.7%. This rate is broadly consistent with national estimates from Bangladesh, where the prevalence of modern contraceptive use was reported at 72.16% in the 2017–18 Bangladesh Demographic and Health Survey.^[9] Women with SLE showed a marginally higher uptake (78.0%) compared with those with RA (71.4%), a pattern documented in the RISE Registry study. This finding contrasts with the RISE Registry, where contraceptive documentation rates were lower among women with SLE than among those with RA, the discrepancy may reflect differences in patient populations, healthcare delivery systems, contraceptive counseling practices, or documentation methods which assessed contraception documentation among women of childbearing age with SLE and RA in large United States electronic health records.^[10] The multivariable logistic regression analysis identified age ≥ 30 years as the sole statistically significant predictor of contraceptive use (AOR=2.38, 95% CI: 1.03–5.50; $p=0.042$), with older women being more than twice as likely to use contraception as their younger counterparts. This finding is notable within the Bangladeshi context, where prior national survey data have shown that older reproductive-aged women (35–49 years) are, paradoxically, less willing to use modern contraceptive methods compared with younger women (RRR: 0.28, 95% CI: 0.21–0.37).^[9] The divergence observed in our study may be explained by the specific clinical context: older women with RA or SLE are more likely to have received explicit reproductive counselling regarding the risks of pregnancy with active autoimmune disease, thereby motivating stronger adherence to contraception.^[11] The 2019 American College of Rheumatology (ACR) guideline emphasizes that contraception counselling is imperative for women with autoimmune diseases, particularly those with active disease or severe organ damage where pregnancy would carry high maternal risk.^[11] Condoms were the most frequently used contraceptive method (31.3%), followed by oral contraceptive pills (25.3%). This pattern reflects the documented tendency of women with rheumatic diseases to favor barrier methods, owing to concerns about the safety and potential disease-modifying effects of hormonal contraception.^[12] A narrative review by Lopane et al. noted that women with RA or autoimmune disorders often prefer the withdrawal method or a barrier method such as condoms due to fears about hormonal interactions with disease activity, even though combined oral contraceptives may confer additional therapeutic benefits in RA by potentially reducing disease severity and slowing radiological progression.^[13] A randomized clinical trial conducted among women with RA in Tehran demonstrated that oral contraceptive pills significantly improved disease activity scores (DAS-28), supporting their utility as a dual-purpose contraceptive option in this population.^[14] The safety of estrogen-containing contraceptives in women with SLE has been extensively evaluated. A landmark single-blind randomized controlled trial involving 162 women with SLE found that combined oral contraceptives did not lead to a statistically significant increase in lupus flares compared with progestin-only pills or copper intrauterine devices, provided disease was stable or inactive.^[15] A subsequent systematic literature review corroborated these findings, concluding that combined oral contraceptives did not worsen disease activity in women with stable SLE, and that progestogen-only contraceptives did not

exacerbate disease activity.^[16] Despite this evidence, the preference for barrier methods observed in our cohort suggests that risk-averse clinical messaging may be discouraging the adoption of more effective hormonal options. More than half of participants (54.2%) reported having received contraceptive counselling. Although this represents a majority, a substantial proportion remained uncounseled, reflecting a recognized gap in reproductive health service delivery for women with autoimmune conditions.^[17] A qualitative study on contraception decision-making among reproductive-aged women with autoimmune diseases found that many did not receive patient-centred counselling and perceived hormonal contraception as unsafe, citing medication fatigue and disease-related safety concerns as primary barriers.^[17] These perceptions are clinically significant because suboptimal contraceptive use in this population is directly associated with unintended pregnancies, which carry considerable maternal and fetal risk.^[11] Approximately 43.4% of participants reported a history of unwanted pregnancy, and 30.1% had previously experienced abortion. These rates are strikingly high and underscore the inadequacy of reproductive health planning among women with RA or SLE in this clinical setting. Unplanned pregnancies are of particular concern in this population because active disease at conception markedly worsens obstetric outcomes.^[18] A retrospective cohort study of SLE pregnancies found that the majority of unplanned pregnancies resulted in abortion, highlighting the critical role of effective contraception in preventing such adverse events.^[19] Women with RA similarly face elevated risks of miscarriage, preterm birth, pre-eclampsia, and caesarean delivery compared with healthy pregnant controls, reinforcing the necessity of planned pregnancies and consistent contraceptive practice in this group.^[19] No statistically significant associations were found between contraceptive use and BMI, educational attainment, employment status, residential area, history of abortion, number of living children, or disease type (SLE vs. RA). The absence of an association with educational level differs from general Bangladeshi population data, in which higher educational attainment was linked to a greater likelihood of contraceptive use.^[20] This discrepancy suggests that disease-specific factors and access to rheumatology care may exert a stronger influence on contraceptive behavior than socio-demographic characteristics in this clinical population. The lack of a significant difference between RA and SLE patients in contraceptive uptake also contrasts with assumptions that the more stringent guidance typically provided to SLE patients particularly those with antiphospholipid antibodies, for whom estrogen-containing contraceptives are contraindicated due to thrombotic risk would result in measurably higher overall uptake.^[11]

LIMITATION

The cross-sectional design and small sample size from a single center limit generalizability and causal inference.

CONCLUSION

Contraceptive use among women with RA and SLE in Bangladesh is comparable to the general population, with age ≥ 30 years being the key determinant; however, the high rates of unwanted pregnancy and abortion, coupled with predominant reliance on condoms, highlight critical unmet reproductive health needs in this vulnerable population.

RECOMMENDATION

Rheumatology clinics should integrate routine, patient-centred contraceptive counselling as a standard component of care for all reproductive-aged women with RA and SLE, guided by established ACR and EULAR reproductive health guidelines. Healthcare providers should offer comprehensive education on safe and effective contraceptive options, including hormonal methods, while addressing safety concerns through evidence-based discussions. Targeted interventions should particularly focus on younger women (<30 years) who demonstrated lower contraceptive uptake, and health systems should ensure consistent access to a full range of contraceptive methods. Future research should employ larger, multicentre prospective studies to explore disease-specific barriers and facilitators to effective contraception use, and evaluate the impact of structured counselling programmes on pregnancy outcomes in this population.

REFERENCE

- Williams JN, Xu C, Costenbader KH, Bermas BL, Pace LE, Feldman CH. Racial differences in contraception encounters and dispensing among female medicaid beneficiaries with systemic lupus erythematosus. *Arthritis care & research*. 2021 Oct;73(10):1396-404.
- Nakai T, Fukui S, Ozawa H, Kitada A, Okada M, Kishimoto M. Management of pregnant with rheumatoid arthritis: Preconception care, pregnancy and lactation strategies, and maternal-fetal outcomes. *Best Practice & Research Clinical Rheumatology*. 2025 Mar 1;39(1):102022.
- Smeele HT, Dolhain RJ. Current perspectives on fertility, pregnancy and childbirth in patients with rheumatoid arthritis. In *Seminars in arthritis and rheumatism* 2019 Dec 1 (Vol. 49, No. 3, pp. S32-S35). WB Saunders.
- Mobini M, Mohammadpour RA, Salehi Y, Niksolt F. Contraceptive prevalence and consulting service in women with systemic lupus erythematosus: a cross-sectional study. *Ethiopian Journal of Health Sciences*. 2021 Mar 1;31(2).
- Birru Talabi M, Clowse ME, Blalock SJ, Moreland L, Siripong N, Borrero S. Contraception use among reproductive-age women with rheumatic diseases. *Arthritis care & research*. 2019 Aug;71(8):1132-40.
- Rüegg L, Pluma A, Hamroun S, Cecchi I, Perez-Garcia LF, Anderson PO, Andreoli L, Wirstrom SB, Boyadzhieva V, Chambers C, Costedoat-Chalumeau N. EULAR recommendations for use of antirheumatic drugs in reproduction, pregnancy, and lactation: 2024 update. *Annals of the rheumatic diseases*. 2025 Jun 1;84(6):910-26.
- Alhassan E, Kobashigawa L, Ramos V, Rodman J, Wise L. Disparities and Reproductive Health in Rheumatic Diseases: Deficits in Counseling and Contraception Use in an Urban Female Hispanic Population in Los Angeles. *Arthritis Care & Research*. 2026 Jan 1.
- Uthurriague M, Delattre C, Barnette T, Lazaro E, Truchetet ME, Hocke C, Mehsen-Cetre N, Bernard V, Richez C. Prevalence of effective contraceptive use among patients with rheumatic diseases: a descriptive study. *BMC rheumatology*. 2026 Feb 12;10(1):25.
- Kundu S, Kundu S, Rahman MA, Kabir H, Al Banna MH, Basu S, Reza HM, Hossain A. Prevalence and determinants of contraceptive method use among Bangladeshi women of reproductive age: a multilevel multinomial analysis. *BMC public health*. 2022 Dec 16;22(1):2357.
- Clowse ME, Li J, Talabi MB, Eudy AM, Schmajuk G. Frequency of contraception documentation in women with systemic lupus erythematosus and rheumatoid arthritis within the rheumatology informatics system for effectiveness registry. *Arthritis care & research*. 2023 Mar;75(3):590-6.
- Sammaritano LR, Bermas BL, Chakravarty EE, Chambers C, Clowse ME, Lockshin MD, Marder W, Guyatt G, Branch DW, Buyon J, Christopher-Stine L. 2020 American College of Rheumatology guideline for the management of reproductive health in rheumatic and musculoskeletal diseases. *Arthritis & Rheumatology*. 2020 Apr;72(4):529-56.
- Chakravarty E, Clowse ME, Pushparajah DS, Mertens S, Gordon C. Family planning and pregnancy issues for women with systemic inflammatory diseases: patient and physician perspectives. *BMJ open*. 2014 Feb 1;4(2):e004081.
- Lopane CM, Comstock B, Nagel AK, Gandhi MA. Combined oral contraceptive use in rheumatoid arthritis for the purpose of pregnancy prevention and additional benefits: a narrative review. *Journal of Obstetrics and Gynaecology Research*. 2022 Feb;48(2):306-12.
- Amini L, Kalhor M, Haghighi A, Seyedfatemi N, Hosseini F. Effect of oral contraceptive pills on rheumatoid arthritis disease activity in women: A randomized clinical trial. *Medical journal of the Islamic Republic of Iran*. 2018 Jul 20;32:61.
- Sánchez-Guerrero J, Uribe AG, Jiménez-Santana L, Mestanza-Peralta M, Lara-Reyes P, Seuc AH, Cravioto MD. A trial of contraceptive methods in women with systemic lupus erythematosus. *New England Journal of Medicine*. 2005 Dec 15;353(24):2539-49.
- Gensous N, Doassans-Comby L, Lazaro E, Duffau P. Systemic lupus erythematosus and contraception: a systematic literature review. *La Revue de Medecine Interne*. 2017 Feb 1;38(6):358-67.
- Stransky OM, Wolgemuth T, Kazmerski T, Chodoff A, Borrero S, Talabi MB. Contraception decision-making and care among reproductive-aged women with autoimmune diseases. *Contraception*. 2021 Feb 1;103(2):86-91.
- Cadir EK, Bilge NS, Bilgin M, Kasifoglu T. The Effect of Lupus on Pregnancy and the Foetus: Should we really be Worried? A Single-Centre Retrospective Study. *Mediterranean Journal of Rheumatology*. 2024 Sep 30;35(3):464.
- Al Emadi S, Satti E, Hadwan N, Elmallahi N, Cackamvalli P, Kunjumon N, Alam FS, Abdulla N, Yaqoub SA. Impact of Rheumatoid Arthritis on Pregnancy Outcomes: Increased Risks of Abortion and Low Birth Weight in a Prospective Case-Control Study. *Mediterranean Journal of Rheumatology*. 2025 Dec 31;36(4):557.
- Hossain MB, Khan MH, Ababneh F, Shaw JE. Identifying factors influencing contraceptive use in Bangladesh: evidence from BDHS 2014 data. *BMC public health*. 2018 Jan 30;18(1):192.