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Determinants of Current Contraceptive Use among Female Apprentices in Lokossa, Benin: A Mixed-Methods Cross-Sectional Study

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Abstract

Female apprentices are a socially and economically vulnerable group, yet evidence on contraceptive use in this population remains limited in Benin. This mixed-methods cross-sectional analytical study assessed the prevalence and determinants of current contraceptive use among female apprentices in Lokossa. In 2025, 356 female apprentices were selected through a four-stage probabilistic sampling procedure. The primary outcome was current contraceptive use during the two months preceding the survey. Quantitative data were analyzed using logistic regression, while qualitative data from apprentices and maternity-unit providers were used to contextualize the findings. Current contraceptive use was 5.62%. Among sexually active apprentices (n = 267), the corresponding prevalence was 7.49%. and 85.0% of current users relied on modern methods. The median age was 18 years, 59.55% of participants were aged 15 - 19 years, and 74.44% were nulligravid. Overall contraceptive knowledge was insufficient in 62.08% of participants. In the final multivariable model, favorable perception of contraception (aOR = 10.46; 95% CI: 3.60 - 30.30), access to contraceptive information (aOR = 12.60; 95% CI: 1.61 - 98.30), and a stigma-related factor (aOR = 0.32; 95% CI: 0.11 - 0.90) remained associated with current contraceptive use. Qualitative findings highlighted fear of infertility and side effects, partner opposition, social judgment, and poor-quality information as major barriers. Current contraceptive use

among female apprentices in Lokossa was therefore very low. Interventions should prioritize accurate information, reduction of myths and fear, and youth-adapted counseling.

Keywords

Female Apprentices, Contraception, Reproductive Health, Young Women, Benin

1. Introduction

Contraception is a key intervention in sexual and reproductive health because it helps prevent unintended pregnancy, unsafe abortion, maternal morbidity, and related social consequences [1]. In Benin, modern contraceptive use has historically remained low. The 2011-2012 Demographic and Health Survey reported modern contraceptive use in only 9% of women aged 15 - 49 years, with marked differences according to marital status [2]. Although national and departmental indicators improved over time, the 2022 health statistics yearbook still showed important gaps, including in the Mono Department, where contraceptive use remained modest [3].

Female apprentices represent an understudied group within this broader context. They are often young, financially dependent, socially exposed, and less likely to benefit from structured school-based reproductive health education. Studies from sub-Saharan Africa have shown that contraceptive use among adolescents and young women varies widely and is shaped by age, education, parity, social norms, media exposure, economic context, and health-system factors [4]-[11]. Beninese studies have also shown that modern contraceptive use among adolescent girls and young women remains limited and socially patterned [5] [6].

However, little is known about contraceptive behavior among women in apprenticeship settings, despite the possible effects of unintended pregnancy on training completion, economic autonomy, and long-term social integration. This study, therefore, aimed to assess the prevalence of current contraceptive use among female apprentices in Lokossa, Benin, to identify associated factors, and to explore perceptions and contextual barriers surrounding contraceptive use in this population.

2. Materials and Methods

2.1. Study Design and Setting

We conducted a mixed-methods cross-sectional analytical study in the municipality of Lokossa, located in the Mono Department in southern Benin, in 2025. The quantitative component targeted female apprentices of reproductive age residing in the municipality, whereas the qualitative component explored percep-

tions among selected apprentices and maternity-unit providers.

2.2. Study Population and Sampling

Eligible participants for the quantitative component were female apprentices of reproductive age who had lived in Lokossa for at least six months and agreed to participate. Women who refused participation, had recently moved into the area, or had incomplete or inconsistent questionnaires were excluded from the final analysis. The minimum sample size was estimated using the Schwartz formula based on a contraceptive use prevalence of 14.1% in the Mono Department. After accounting for a design effect of 1.5 and an expected non-response rate of 10%, the minimum required sample size was 307 women. A total of 356 apprentices were ultimately included.

A four-stage probabilistic sampling strategy was used for the quantitative component: random selection of two arrondissements, random selection of ten neighborhoods or villages, progressive selection of apprenticeship centers, and random selection of three apprentices per selected center. For the provider component, all maternity heads in public and private health facilities in the municipality were approached, yielding 12 respondents.

2.3. Variables and Data Collection

The dependent variable was current contraceptive use, defined as use of any contraceptive method during the two months preceding the survey. Independent variables covered individual and social characteristics, knowledge-related variables, environmental factors, and selected health-system factors. Knowledge of contraception was assessed through the definition of contraception, knowledge of its benefits, knowledge of side effects, and the number of contraceptive methods known. The overall knowledge score was converted into a percentage and classified as good when it was at least 60% and insufficient when it was below 60%.

Quantitative data were collected from March 15 to April 17, 2025, using a structured questionnaire administered with KoboCollect by trained surveyors. Daily supervision, real-time synchronization, and consistency checks were used to improve data quality. The qualitative component was conducted on April 20, 2025, using a phenomenological approach. Apprentices were purposively selected to ensure variation in age, apprenticeship sector, education, marital status, and place of residence. Semi-structured interviews and group discussion guides explored sources of information, perceptions of contraception, partner and family influence, stigma, barriers, and experiences with health services. The qualitative component included 12 individual in-depth interviews with purposively selected apprentices and three focus group discussions (approximately 24 apprentice participants in total). Participants were distributed across age groups (under 18; 18 - 24 years), apprenticeship sectors (hairdressing; tailoring), educational levels (no schooling to secondary), marital status, and rural or urban residence. Thematic saturation

was considered reached when two successive interviews produced no new codes or themes, as determined by consensus between the two analysts independently reviewing the transcripts.

2.4. Statistical and Qualitative Analysis

Quantitative data were exported from KoboToolbox to Excel and analyzed using STATA 15. Descriptive statistics were used to summarize participant characteristics. Univariable logistic regression identified candidate factors associated with current contraceptive use. Variables with $p < 0.20$ were introduced into a multivariable logistic regression model, and backward elimination was used until only variables with $p < 0.05$ remained. Model fit was assessed using the Hosmer-Lemeshow test. Missing data were handled by complete-case analysis. The stigma variable was available for 317 of 356 respondents; the final multivariable model was therefore based on the 317 participants with complete data on all variables retained. The four-stage cluster sampling design was not formally incorporated into the regression analysis through clustered standard errors, sampling weights, or survey-estimation commands (e.g., STATA svy). Standard logistic regression may consequently underestimate standard errors; this is acknowledged as a limitation of the present analysis.

Qualitative data were transcribed, manually coded, and analyzed thematically. Triangulation between quantitative and qualitative findings was used to strengthen interpretation.

2.5. Ethical Considerations

Administrative authorization was obtained before data collection. Study objectives were explained to participants in appropriate local languages, and informed consent was obtained before enrollment. For participants younger than 18 years, including those younger than 15 years (n = 21; 5.90% of the sample), written consent was obtained from the parent or legal guardian in addition to the participant's assent, in accordance with national ethical guidelines for research involving minors in Benin. No ethics waiver was applied for this age group. Anonymity and confidentiality were maintained throughout the study.

3. Results

3.1. Prevalence of Current Contraceptive Use

Among the 356 female apprentices surveyed, 20 reported current contraceptive use during the two months preceding the survey, corresponding to a prevalence of 5.62%. Among the 267 apprentices who reported ever having had sexual intercourse, these 20 current users represented a prevalence of 7.49%, providing a more informative estimate restricted to the sexually exposed subgroup. Among current users, 17 (85.0%) were using a modern method and 3 (15.0%) were using a traditional method. A total of 317 participants (89.04%) reported having used contraception at least once previously (**Table 1**).

Table 1. Sociodemographic and reproductive characteristics of the study participants (n = 356).

Variable	Category	n	%
Age group	<15 years	21	5.90
	15 - 19 years	212	59.55
	20 - 24 years	116	32.58
	≥25 years	7	1.97
Apprenticeship	Hairdressing	97	27.25
	Tailoring	255	71.63
	Other	4	1.12
Currently in a union	Yes	226	63.48
	No	130	36.52
Ever had sexual intercourse	Yes	267	75.00
	No	89	25.00
Gravidity	Nulligravid	265	74.44
	Primigravid and Above	91	25.56
Unwanted pregnancy among previously pregnant	Yes	37	40.66
	No	54	59.34
History of abortion among previously pregnant	Yes	27	29.67
	No	64	70.33
Perception of contraception	Favorable	77	21.63
	Unfavorable	279	78.37
Stigma related to contraception*	Yes	116	36.59
	No	201	63.41
Fear related to contraception	Yes	129	36.24
	No	227	63.76

*Reported among 317 respondents with available data.

3.2. Knowledge and Environmental Characteristics

More than half of the participants knew the definition of contraception (59.83%) and could report at least one benefit (60.39%). However, 51.97% could not mention any side effect, and overall knowledge was classified as insufficient in 62.08% of participants. Most apprentices lived in rural areas (94.66%). Slightly more than half (55.06%) reported access to information about contraception. Among previous users, the pharmacy was the main source of supply (Table 2).

Table 2. Contraceptive use, knowledge, and environmental characteristics (n = 356 unless otherwise stated).

Variable	Category	n	%
Current contraceptive use in the previous 2 months	Yes	20	5.62
	No	336	94.38

Continued

Type among current users (n = 20)	Modern	17	85.00
	Traditional	3	15.00
Ever used contraception	Yes	317	89.04
	No	39	10.96
Knows the definition of contraception	Yes	213	59.83
	No	143	40.17
Known benefits of contraception	None	59	16.53
	One Benefit	215	60.39
	More than One Benefit	82	23.03
Known side effects of contraception	None	185	51.97
	One Side Effect	71	19.94
	More than One Side Effect	100	28.09
Known examples of methods	None	23	6.46
	One or Two Methods	292	82.02
	Three or More Methods	41	11.52
Overall contraceptive knowledge	Good	135	37.92
	Insufficient	221	62.08
Residence	Rural	337	94.66
	Urban	19	5.34
Access to contraceptive information	Yes	196	55.06
	No	160	44.94
Main source of contraceptive supply among previous users (n = 317)	Health Center	115	36.28
	Pharmacy	191	60.25
	Other	11	3.47

3.3. Factors Associated with Current Contraceptive Use

In univariable analysis, increasing age, previous pregnancy, favorable perception of contraception, absence of fear, good contraceptive knowledge, and access to contraceptive information were associated with current contraceptive use. In the final multivariable model, three variables remained significantly associated with current use: favorable perception of contraception, access to contraceptive information, and a stigma-related factor. The model showed acceptable fit (Hosmer-Lemeshow p = 0.37) (Table 3).

Table 3. Factors independently associated with current contraceptive use.

Variable	Comparison	aOR	95% CI	p-Value
Perception of contraception	Favorable vs. Unfavorable	10.46	3.60 - 30.30	<0.001
Stigma-related factor	No vs. Yes	0.32	0.11 - 0.90	0.03
Access to contraceptive information	Yes vs. No	12.60	1.61 - 98.30	0.02

aOR: adjusted odds ratio; CI: confidence interval.

3.4. Qualitative Findings

The qualitative component helped explain the quantitative patterns. Apprentices mainly cited injections, tablets, and implants as known methods, and radio and peers were the main reported sources of information. Several participants expressed fear of infertility, uterine damage, bleeding, disease, or even death as possible consequences of contraceptive use. Partner opposition, fear of judgment from husbands, in-laws, or the wider community, and the need to use contraception secretly were recurrent themes.

At the health-system level, providers generally reported the availability of pills, implants, condoms, injectables, and intrauterine devices, although about half reported stock-outs during the previous six months. Providers emphasized husband reluctance and fear of contraception as the main barriers and recommended stronger community sensitization directed at both women and their partners. Some apprentices described respectful counseling and good reception from midwives as factors that encouraged contraceptive uptake.

4. Discussion

This study found a very low prevalence of current contraceptive use among female apprentices in Lokossa. This result is lower than the levels reported for many other groups of adolescent girls and young women in sub-Saharan Africa [4] [8] [9]. The finding is particularly important because the study population was predominantly young, rural, and socioeconomically vulnerable, and because three-quarters reported previous sexual intercourse.

The contrast between ever use (89.04%) and current use (5.62%) suggests marked discontinuation or irregular use. The ever-use figure likely captured a heterogeneous set of experiences, including single-episode use, use of traditional or periodic abstinence methods, and emergency contraception, rather than sustained or consistent practice. It should therefore not be interpreted as evidence of regular contraceptive use. The large gap is most plausibly explained by high discontinuation, inconsistent use, and method abandonment following initial uptake. This pattern is consistent with the literature showing that uptake alone is not sufficient; continuation depends on beliefs about contraception, quality of information, social support, and access to responsive services [6] [11]-[13]. In the present study, a favorable perception of contraception was the strongest predictor of current use, which is consistent with evidence that social norms and individual attitudes shape reproductive behavior [6]-[10].

Access to contraceptive information was also a major determinant. However, only slightly more than half of participants reported access to such information, and qualitative data suggested that information often came from the radio and peers rather than from structured counseling. This helps explain why overall knowledge remained insufficient in nearly two-thirds of apprentices and why myths and fear remained highly prevalent. The role of misinformation and weak intergenerational communication has been described elsewhere in West Africa [14].

Fear and stigma emerged as major barriers. The qualitative findings highlighted fears of infertility and severe side effects, together with community judgment and partner opposition. These themes are compatible with prior studies showing that stigma, restrictive norms, and concerns about side effects frequently reduce contraceptive use among young women [8]-[10]. The stigma-related factor that remained significant in the final model should nevertheless be interpreted cautiously, because its direction may reflect coding complexity or residual confounding. Several limitations of this study should be noted. First, only 20 participants were current contraceptive users, which likely contributed to the wide confidence intervals observed—most notably for access to contraceptive information (aOR = 12.60; 95% CI: 1.61 - 98.30)—and requires cautious interpretation of the adjusted odds ratios. Larger studies are needed to confirm these associations. Second, the four-stage cluster sampling design was not incorporated into the regression analysis through clustered standard errors or survey-estimation commands, which may have resulted in underestimated standard errors and overstated precision for some associations.

The provider interviews were useful in showing that nominal availability of methods does not automatically translate into effective access. Youth-friendly counseling, respectful reception, confidentiality, and regular sensitization may be as important as product availability itself [12] [13]. Programs directed at apprentices should therefore combine accurate information, myth reduction, provider engagement, and broader community dialogue involving men and influential relatives.

5. Conclusion

Current contraceptive use among female apprentices in Lokossa, Benin, was very low. Favorable perception of contraception and access to information were the main positive correlates of current contraceptive use, whereas fear, social judgment, and partner opposition emerged as important barriers in the qualitative findings. Interventions tailored to apprenticeship settings should strengthen accurate contraceptive information, address myths and fears, and improve youth-adapted counseling and community engagement.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

[1] Sully, E.A., Biddlecom, A., Darroch, J.E., Riley, T., Ashford, L.S., Lince-Deroche, N., *et al.* (2020) Adding It Up: Investing in Sexual and Reproductive Health 2019. Guttmacher Institute.

[2] Institut National de la Statistique et de l'Analyse Économique (INSAE) and ICF International (2013) Enquête Démographique et de Santé du Bénin 2011-12. INSAE and ICF International.

[3] Ministère de la Santé du Bénin, Direction de la Planification, de l'Administration et

des Finances (2023) Annuaire des Statistiques Sanitaires Béninoises 2022. Ministère de la Santé.

[4] Michael, T.O., Ojo, T.F., Ijabadeniyi, O.A., Ibikunle, M.A., Oni, J.O. and Agboola, A.A. (2024) Prevalence and Factors Associated with Contraceptive Use among Sexually Active Adolescent Girls in 25 Sub-Saharan African Countries. *PLOS ONE*, **19**, e0297411. https://doi.org/10.1371/journal.pone.0297411

[5] Ahissou, N.C.A., Benova, L., Delvaux, T., Gryseels, C., Dossou, J., Goufodji, S., *et al.* (2022) Modern Contraceptive Use among Adolescent Girls and Young Women in Benin: A Mixed-Methods Study. *BMJ Open*, **12**, e054188. https://doi.org/10.1136/bmjopen-2021-054188

[6] Acotchéou, P.E., Affo, M.A., Dansou, J., Delvaux, T. and Saizonou, Z.J. (2023) Modern Contraceptive Use among Adolescents in Benin: Trends, Determinants and Prospects. *Sexual and Reproductive Health Matters*, **31**, Article ID: 2267200. https://doi.org/10.1080/26410397.2023.2267200

[7] Gebrekidan, H., Alemayehu, M. and Debelew, G.T. (2024) Individual and Community Level Factors Associated with Modern Contraceptive Utilization among Women in Ethiopia: Multilevel Modeling Analysis. *PLOS ONE*, **19**, e0303803. https://doi.org/10.1371/journal.pone.0303803

[8] Ahinkorah, B.O., Obisesan, M.T., Seidu, A. and Ajayi, A.I. (2021) Unequal Access and Use of Contraceptives among Parenting Adolescent Girls in Sub-Saharan Africa: A Cross-Sectional Analysis of Demographic and Health Surveys. *BMJ Open*, **11**, e051583. https://doi.org/10.1136/bmjopen-2021-051583

[9] Ahinkorah, B.O. (2020) Predictors of Unmet Need for Contraception among Adolescent Girls and Young Women in Selected High Fertility Countries in Sub-Saharan Africa: A Multilevel Mixed Effects Analysis. *PLOS ONE*, **15**, e0236352. https://doi.org/10.1371/journal.pone.0236352

[10] Yeboah, P.A., Adzigbli, L.A., Atsu, P., Ansong-Aggrey, S.K., Adu, C., Cadri, A., *et al.* (2024) Unmet Need for Contraception among Women in Benin: A Cross-Sectional Analysis of the Demographic and Health Survey. *International Health*, **16**, 302-312. https://doi.org/10.1093/inthealth/ihad049

[11] Gilano, G. and Hailegebreal, S. (2021) Assessment of Intention to Use Contraceptive Methods with Spatial Distributions and Associated Factors among Women in Ethiopia: Evidence from EDHS 2016. *Archives of Public Health*, **79**, Article No. 109. https://doi.org/10.1186/s13690-021-00631-2

[12] Lince-Deroche, N., Hendrickson, C., Moolla, A., Kgowedi, S. and Mulongo, M. (2020) Provider Perspectives on Contraceptive Service Delivery: Findings from a Qualitative Study in Johannesburg, South Africa. *BMC Health Services Research*, **20**, Article No. 128. https://doi.org/10.1186/s12913-020-4900-9

[13] Pleaner, M., Kutywayo, A., Beksinska, M., Mabetha, K., Naidoo, N. and Mullick, S. (2024) Knowledge and Uptake of Contraceptive and Other Sexual Reproductive Health Services among In-School Adolescents in Three South African Townships: Baseline Findings from the Girls Achieve Power (GAP Year) Trial. *Gates Open Research*, **6**, Article No. 67. https://doi.org/10.12688/gatesopenres.13636.3

[14] Silva, M., Kassegne, S., Nagbe, R.Y., Babogou, L., Ezouatchi, R., Ado, A.L., *et al.* (2022) Changing the Script: Intergenerational Communication about Sexual and Reproductive Health in Niamey, Niger. *Journal of Health Communication*, **27**, 755-763. https://doi.org/10.1080/10810730.2022.2160527