Check for updates

Wiley
Health & Social Care in the Community
Volume 2024, Article ID 5981247, 9 pages
https://doi.org/10.1155/2024/5981247

WILEY

Research Article

Contraception Crisis in Somalia: Unveiling the Shocking Reality of a Nation Left Behind

Ibrahim Yasin Khalif,[1] Md Badsha Alam,[2] Md Mostaured Ali Khan,[3] Shimlin Jahan Khanam,[2] and Md Nuruzzaman Khan[2,4]

[1]*Faculty of Economics, Somali National University, Mogadishu, Somalia*
[2]*Department of Population Science, Jatiya Kabi Kazi Nazrul Islam University, Mymensingh, Bangladesh*
[3]*Maternal and Child Health Division, ICDDR,B, 68 Shaheed Tajuddin Ahmed Sarani, Mohakhali, Dhaka 1212, Bangladesh*
[4]*Nossal Institute for Global Health, Melbourne School of Population and Global Health, University of Melbourne, Melbourne, Australia*

Correspondence should be addressed to Md Nuruzzaman Khan; sumonrupop@gmail.com

Received 6 October 2023; Revised 14 April 2024; Accepted 7 August 2024

Academic Editor: Kumari Shweta Kalyani

Copyright © 2024 Ibrahim Yasin Khalif et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Background. Despite global efforts to promote contraceptive use and ensure reproductive health, Somalia continues to face significant challenges in this regard. This study aims to explore the prevalence of contraceptive use in Somalia and identify the determinants influencing its use. *Methods*. A total of 8,162 reproductive-aged women's data were analyzed extracted from 2020 Somali Health and Demographic Survey. The outcome variable was contraception use, classified as any contraception use (yes vs. no), any modern contraception use (yes vs. no), and any traditional contraception use (yes vs. no). The explanatory variables were factors at the individual, household, and community level. The multivariate binary logistic regression model was used to explore associations of outcome variables with explanatory variables. *Results*. The findings revealed low prevalence of contraceptive use among Somalia women, with only 7% reporting its use. Among them, less than 1% utilized modern contraceptive methods. Several determinants of contraception use were identified, including younger age, higher educational attainment (primary and secondary education), higher parity, exposure to family planning messages through mass media, urban place of residence, and residing in the northwest and northeast regions of Somalia. *Conclusion*. The results underscore the urgent need for substantial efforts to improve contraceptive use in Somalia. Strengthening healthcare facilities to provide comprehensive sexual and reproductive health services, with a particular focus on promoting contraception uptake, is crucial. Public awareness campaigns and educational programs should also be prioritized to enhance knowledge and understanding of contraception among Somali women.

1. Background

Modern contraception stands as a true game changer in the realm of global health, with profound implications for improving the well-being of mothers and children worldwide [1, 2]. By granting individuals control over their reproductive choices, it empowers them to plan and space pregnancies, resulting in a remarkable reduction in the high number of unintended pregnancies (121 million in 2021), maternal deaths (accounting for up to 44% of current occurrence), and the grim reality of unsafe abortions (contributing to up to 13% of total maternal deaths) [2–4]. Additionally, modern contraception assumes a pivotal role in curtailing the spread of sexually transmitted infections, including the relentless HIV/AIDS pandemic (witnessing 1.5 million new cases in 2020) [5]. By safeguarding public health and alleviating the burden on healthcare systems, it acts as a formidable shield. Moreover, modern contraception opens doors for women to embrace education, forge careers, and seize economic opportunities, thereby serving as an engine of socioeconomic development [6]. Astonishingly, for every dollar invested in modern contraception, the return on

investment can reach a $120 in benefits spanning health, education, and economic empowerment [7]. These compelling and concrete facts underscore the vital importance of modern contraception in reshaping global health outcomes and crafting a future that shines brightly for everyone.

Somalia, situated in the Horn of Africa, has faced significant challenges stemming from prolonged political instability, armed conflicts, and widespread poverty. These factors have profoundly impacted the healthcare infrastructure and reproductive health services in the country, resulting in high maternal (692 per 10000 population) and child (71 per 1000 population) mortality rates, which are among the highest globally [8]. Additionally, Somalia has become a hotspot for infectious diseases, including the devastating impact of HIV/AIDS [9]. The total fertility rate remains persistently high at 6.9, and malnutrition (23%) remains a prevalent concern [8]. Tackling these critical challenges necessitates prioritizing the availability, accessibility, and utilization of modern contraception. However, the country's healthcare infrastructure and prevailing social norms present formidable constraints. Compounding these obstacles is the unfortunate reality that no nationally representative scientific research has been conducted on modern contraception use in Somalia, leading to a dearth of reliable data. Available data generated at the regional level also have several limitations, such as being derived from small samples, analyzed with less precise methods, and conducted only for specific group [10, 11]. This knowledge gap hampers the development of targeted interventions and evidence-based policies that could revolutionize healthcare delivery and foster improved well-being for all Somali citizens. In light of this circumstance, this study aims to present the current status of contraception use in Somalia, along with the associated factors at the individual, household, and community levels.

2. Methods

2.1. Sampling of the Survey We Analyzed. This study utilized data from the 2020 Somali Health and Demographic Survey (SHDS), a nationally representative survey. The sample design of this survey aimed to provide estimates for the entire country and its eighteen prewar geographical regions, further stratified into urban, rural, and nomadic areas. However, due to security concerns, some regions were excluded, resulting in 47 sampling strata. Stratified random sampling was employed, with 1,433 Primary Sampling Units (PSUs) initially selected and 16,360 households sampled. Data were collected from 15,761 households, yielding an inclusion rate of 99.3%. Among these households, 12,888 eligible women were identified, with data successfully collected from 11,884 women, resulting in a response rate of 92.2%. Detailed description of the sampling procedure is available elsewhere [8].

2.2. Analytical Sample. We extracted and analyzed data from a subset of 8,162 women from the original sample of the 2020 SHDS. The selection of this sample was based on two specific criteria: (a) the women had to be married and capable of bearing children, ensuring their fecundity, and (b) they should not have been pregnant at the time of the survey. Any data that contained missing information for the selected variables were excluded from our analysis.

2.3. Outcome Variable. The outcome variable of this study was contraceptive use. To generate relevant variables, we utilized data collected by the SHDS through two different questions. Initially, the selected women were asked, "*Are you or your partner currently using any method to delay or avoid getting pregnant?*" The response options were dichotomous, with "yes" vs. "no." For those who responded affirmatively, follow-up questions were asked to determine the specific method being used by asking women *"Which method are you using?"* A list of contraception methods available in Somalia was provided, including the pill, injectable, implant, IUD, condoms, lactational amenorrhea method, and rhythm method. Participants were also given the option to write the name of their contraception method if it was not listed. In cases where multiple contraceptive methods were reported, participants were asked to report the most recent one used. These responses were then categorized into three groups: any contraception use (yes vs. no), any modern contraception use (yes vs. no), and any traditional contraception use (yes vs. no). Modern contraception included methods such as the pill, injectable, implant, IUD, and condoms, while traditional contraception encompassed methods like the lactational amenorrhea method and rhythm method. The classification of modern and traditional contraception was based on the World Health Organization's recommended list of contraception methods [12, 13].

2.4. Explanatory Variables. The selection of explanatory variables for this study was informed by a thorough review of the existing literature. The chosen variables were classified according to the socio-ecological model of health, encompassing individual, household, and community-level factors [6, 8, 10, 11]. At the individual and household levels, the variables included women's age (categorized as ≤19 years, 20–34 years, and ≥35 years based on continuous data available in the survey), age at first marriage (categorized as <18 years, 18–20 years, and >21 years based on continuous data available in the survey), education level (categorized as no education, primary, secondary, and higher, as reported in the survey), working status (reported as yes vs. no in the survey), parity (categorized as ≤2, 3-4, and >4 children based on continuous data available in the survey), husband's age (categorized as ≤24 years, 25–54 years, and >54 years based on continuous data available in the survey), exposure to mass media family planning messages (categorized as exposed vs. unexposed, calculated based on responses to three separate questions related to access to radio, television, and newspapers), and household wealth quintile (categorized as lowest, second, middle, fourth, and highest, as reported in the survey). The SHDS employed principal component analysis on pertinent variables, including household roof type, toilet type, and mass media accessibility, to generate

hsc, 2024, 1, Downloaded from https://onlinelibrary.wiley.com/doi/10.1155/2024/5981247 by Md Badsha Alam - Bangladesh Hinari NPL , Wiley Online Library on [07/11/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

a wealth index variable. Conversely, the variable "exposure to mass media family planning messages" was formulated by amalgamating women's responses to three distinct questions regarding the reception of family planning messages through radio, television, or newspapers. Additionally, women's place of residence (categorized as urban, rural, and nomadic, as reported in the survey) and region of residence (categorized as Northeast, Northwest, Central, and South, as reported in the survey) were considered as community-level factors. The Northwest region encompassed Awdal, Waqooyi Galbeed, Togdheer, Sool, and Sanaag. The Northeast region included Bari, Nugaal, and Mudug. The Central region consisted of Galgaduud, Hiraan, Middle Shabeele, and Banaadir. Finally, the South region encompassed Bay, Bakool, Gedo, and Lower Juba.

2.5. Statistical Analysis. Descriptive statistics were used to summarize the major characteristics of the respondents. To assess the significance of differences in contraceptive use across selected characteristics, Pearson chi-square and Fisher's exact tests were used. Additionally, a multivariate binary logistic regression model was employed to examine the associations between overall contraceptive use, as well as modern and traditional contraceptive methods, with individual, household, and community-level factors. The structure of the SDHS data exhibits clustering, with respondents nested within households and households nested within communities. Previous studies have shown that employing a normal logistic regression model in such scenarios can result in imprecise conclusions, underscoring the appropriateness of adopting a multilevel approach [14, 15]. However, due to the extremely low prevalence of contraception use, running this specific model was not feasible. Instead, we addressed this hierarchical structure in each model by incorporating the survey design using Stata's "svy" command. Prior to running each model, multicollinearity was assessed, and if detected, the relevant variable was removed to ensure the integrity of the model. The results were reported as adjusted odds ratios (aOR) with their corresponding 95% confidence intervals (95% CI). All analyses were conducted using Stata version 14.0 (Stata Corporation, College Station, Texas, USA).

3. Results

3.1. Background Characteristics of the Respondents. Table 1 provides an overview of the background characteristics of the respondents. Among the respondents, approximately 58% fell within the age range of 20–34 years. Around 44% of the respondents reported being married before the age of 18. The majority of the respondents, comprising almost 85%, had not received any formal education. Furthermore, nearly 44% of the respondents had four or more children at the time of the survey. Regarding exposure to mass media messages about family planning, approximately 83% of the respondents reported no exposure. In terms of household wealth quintile, 25.5% of the respondents belonged to the lowest quantile. Geographically, a significant proportion of the women resided in nomadic areas, accounting for approximately 36.8%. Moreover, 38% of the women interviewed were from the Northwest region, while 30.5% were from the Northeast region.

3.2. Distribution of Contraception Use. Table 2 presents the prevalence of current contraceptive use among respondents. The overall prevalence of any contraception use among the respondents was only 7.0%. Of this, modern contraceptive methods were utilized by only 0.9% of the total respondents. The most commonly used modern contraceptive method was pills (0.4%), followed by implants (0.2%), injectables (0.1%), IUDs (0.05%), condoms (0.03%), and the lactational amenorrhea method (LAM) (0.1%). On the other hand, traditional contraception methods were more prevalent among the respondents, with a usage rate of 6.1%. The most used traditional method was the rhythm method (6.1%).

3.3. Contraception Use Distribution across Respondents' Individual, Household, and Community Characteristics. The current distribution of any contraception use, any modern contraception use, and any traditional contraception use is presented in Table 3. Significant variations in contraceptive use were observed at the individual level based on age, age at first marriage, husband's age, women's education, women's working status, and parity. Women aged 20–34 had the highest prevalence of any contraception use (73.4%), while those aged ≥35 had the lowest (14.6%). Women with no education had the highest prevalence (76.5%) of any contraception use, while those with higher education had the lowest (2.7%). Working women had lower contraception use (5.3%) compared to nonworking women (94.7%). Higher parity was linked to increased contraception use. Regarding media exposure, women exposed to family planning messages had higher contraception use (24.6%) compared to those unexposed (75.4%). At the household level, wealth quintile was significantly associated with contraception use. The lowest quintile had the lowest prevalence (21.2%), while the highest quintile had the highest (23.2%). At the community level, residence type and region showed differences in contraception use. Urban women had higher prevalence (43.3%) than rural (27.3%) and nomadic areas (29.4%). The Northeast region had the highest prevalence (37.4%), while the South had the lowest (5.8%).

3.4. Factors Associated with Contraception Use at the Individual, Household, and Community Levels. The factors associated with contraception use, as determined through multivariate binary logistic regression model, are presented in Table 4. Our findings indicate that women aged 20–34 (aOR: 0.50, 95% CI: 0.32–0.77) and ≥35 (aOR: 0.14, 95% CI: 0.08–0.23) had a lower likelihood of using any contraception compared to those aged ≤19 years. These findings were consistent for traditional contraception use but not for modern contraception use. Additionally, women who married after reaching 21 years of age reported a lower

hsc, 2024, 1, Downloaded from https://onlinelibrary.wiley.com/doi/10.1155/2024/5981247 by Md Badsha Alam - Bangladesh Hinari NPL , Wiley Online Library on [07/11/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Table 1: Background characteristics of the respondents, SDHS, 2020 ($N = 8,162$).

Characteristics	Percentage	95% confidence interval
Individual level		
Women's age		
≤19 years	7.8	7.1–8.6
20–34 years	58.1	56.4–59.8
≥35 years	34.1	32.4–35.7
Age at first marriage		
<18 years	43.5	40.7–46.4
18–20 years	16.0	14.7–17.4
>21 years	40.5	37.7–43.2
Husband's age		
≤24 years	11.5	10.3–12.8
25–54 years	76.4	74.7–78.0
>54 years	12.1	11.1–13.2
Women's education		
No education	85.1	83.5–86.6
Primary	11.0	9.9–12.3
Secondary	2.6	2.1–3.2
Higher	1.2	1.0–1.6
Women's working status		
Yes	7.9	7.0–8.8
No	92.1	91.2–93.0
Parity		
≤2	30.0	28.7–31.4
3-4	26.4	25.0–27.8
>4	43.6	41.8–45.3
Media exposure of family planning message		
Unexposed	83.4	81.7–84.9
Exposed	16.6	15.1–18.3
Household level		
Wealth quintile		
Lowest	25.5	22.2–29.0
Second	20.4	18.3–22.7
Middle	17.5	14.8–20.7
Fourth	19.1	17.0–21.4
Highest	17.5	15.4–19.8
Community level		
Place of residence		
Urban	33.8	29.9–38.0
Rural	29.4	23.0–36.9
Nomadic	36.8	32.4–41.4
Region of residence		
Northwest	38.0	32.9–43.3
Northeast	30.5	25.2–36.4
Central	24.4	20.6–28.6
South	7.1	5.0–10.2

The Northwest region includes Awdal, Waqooyi Galbeed, Togdheer, Sool, and Sanaag. The Northeast region includes Bari, Nugaal, and Mudug. The Central region includes Galgaduud, Hiraan, Middle Shabeele, and Banaadir. The South region includes Bay, Bakool, Gedo, and Lower Juba.

likelihood of using modern contraception (aOR: 0.40, 95% CI: 0.17–0.93) compared to those who married before the age of 18. The likelihood of modern contraception use was also lower among women whose husbands were over 54 years old (aOR: 0.18, 95% CI: 0.03–1.18) compared to husbands aged ≤24 years. On the other hand, women with primary (aOR: 2.42, 95% CI: 1.21–4.84) and secondary (aOR: 5.26, 95% CI: 2.21–12.54) education had higher odds of using modern contraception compared to those with no education. However, women with secondary education had lower odds of using traditional contraception (aOR: 0.34, 95% CI: 0.16–0.72) compared to women with no education. We observed a gradual increase in the likelihood of using any contraception and traditional contraception with an increase in the number of children beyond two. Furthermore, women who were exposed to family planning messages through mass media had higher odds of using any contraception (aOR: 1.48, 95% CI: 1.08–2.03) and modern contraception (aOR: 4.79, 95% CI: 2.43–9.45) compared to women who were not exposed to mass media messages. At the community level, urban residence was associated with higher odds of using any contraception (aOR: 1.63, 95% CI: 1.01–2.63) compared to nomadic areas. Regarding the region of residence, women in the

hsc, 2024, 1, Downloaded from https://onlinelibrary.wiley.com/doi/10.1155/2024/5981247 by Md Badsha Alam - Bangladesh Hinari NPL , Wiley Online Library on [07/11/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Table 2: Prevalence of current contraceptive use among married fecund women, SDHS, 2020 ($N = 8{,}162$).

	Weighted (%)
Contraceptive use	
Any contraception use	**7.0**
None	**93.0**
Segregation of any contraception use	
Modern contraception use	**0.9**
Pills	0.4
Injectable	0.1
Condoms	0.03
IUD	0.05
Implants	0.2
Lactational amenorrhea method (LAM)	0.1
Traditional contraception use	**6.1**
Rhythm method	6.1

The bold values indicate they are sum up value.

Northeast region had higher odds of using modern contraception (aOR: 4.34, 95% CI: 1.43–13.21) compared to the South region.

4. Discussion

The objective of this study was to explore the prevailing prevalence of contraception use in Somalia and identify the factors influencing its utilization. Our findings revealed that only 7% of women in Somalia reported using any form of contraception, with less than 1% utilizing modern contraception methods. Several significant determinants of contraception use were identified, including younger age, primary and secondary education, higher parity, exposure to family planning messages through mass media, urban place of residence, and residence in the northwest and northeast regions. These findings underscore the vulnerable situation faced by the Somalia population, highlighting a substantial failure of global efforts aligned with the Millennium Development Goals and Sustainable Development Goals to ensure safe motherhood and universal health. Urgent attention is warranted at the global level to address and improve this critical situation.

The utilization of contraception in Somalia is very low, with rates approximately six times lower than the global average of 46% and even lower than other African countries where low contraceptive use is widely recognized, ranging from 30% to 54% [16–20]. This striking disparity underscores Somalia's significant contribution to the estimated 160 million women worldwide who lacked access to contraception in 2019, despite their strong desire to not having another child [20, 21]. The exceptionally low prevalence of contraception use in Somalia can be attributed to deeply ingrained societal and cultural norms that perceive having additional children as a blessing [10, 22]. Moreover, concerns about the potential side effects of contraceptive methods further deter women from using contraception [21]. Additionally, Somalia women commonly hold the belief that they may risk losing their partner if they fail to bear children as per their partner's desires [10, 21]. This perception stems from the prolonged illiteracy prevalent in Somalian society, resulting from the destruction of the education system during decades of conflict and the long-standing tradition of polygamy [23]. The limited access to education severely affects women's knowledge and awareness regarding the importance of contraception use and their involvement in reproductive decision-making processes [22, 24, 25]. Access to alternative sources of family planning and contraception information, such as mass media including radio and television, is severely limited in Somalia [8]. However, the few available sources that do exist have been shown to play a significant role in increasing contraception uptake, as reported in this study. Somalia's community and religious leaders also hold several misconceptions on fertility, birth spacing, and family planning [26, 27]. Collectively, these factors contribute to the persistently low utilization of contraception in Somalia.

The remarkably low utilization of contraception in Somalia is also intricately connected to the nonavailability of any family planning policies and inadequacies within the healthcare facility infrastructure [28–30]. The prolonged periods of conflict and political instability have taken a severe toll on the healthcare system in Somalia, resulting in a scarcity of healthcare facilities and a shortage of well-trained healthcare providers [31]. This dearth of resources directly impacts the availability and accessibility of contraception services throughout the country [8]. Numerous healthcare facilities in Somalia lack the essential supplies and equipment necessary to offer a wide range of contraceptive methods effectively [32]. Furthermore, the limited number of skilled healthcare providers hampers the provision of comprehensive family planning counseling and services [10, 32]. Women residing in remote and conflict-affected regions encounter even greater obstacles in accessing healthcare facilities, as these areas are often underserved or completely devoid of adequate healthcare infrastructure [8]. The absence of reliable and easily accessible healthcare facilities and services not only impedes women's ability to access contraception but also restricts their access to accurate information and support for making well-informed decisions regarding their reproductive health [25]. Moreover, there is evidence of significant misconceptions among healthcare providers who discourage women from utilizing contraception unless there are specific health concerns [11]. This situation diverges from other countries where healthcare providers play a pivotal role in advocating for and facilitating increased contraceptive uptake [33].

The findings of this study underscore the urgent need to prioritize sexual and reproductive healthcare services in Somalia, with a particular emphasis on improving access to modern contraception. Achieving this goal requires a multifaceted approach, including strengthening healthcare facilities and implementing comprehensive education programs that incorporate family planning. Mobilizing the community and fostering greater engagement are vital components of raising awareness and promoting the importance of family planning and contraception. Additionally, the development of multisectoral programs that encompass various stakeholders is crucial for ensuring widespread access to contraception.

hsc, 2024, 1, Downloaded from https://onlinelibrary.wiley.com/doi/10.1155/2024/5981247 by Md Badsha Alam - Bangladesh Hinari NPL , Wiley Online Library on [07/11/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Table 3: Distribution of contraception use across respondents' individual, household, and community level factors, SDHS, 2020 ($N = 8,162$).

Characteristics	Any contraception use, % (95% CI)[+]	Modern contraception use, % (95% CI)[+]	Traditional contraception use, % (95% CI)[+]
Individual level			
Women's age	***	***[†]	***
≤19 years	12.0 (9.1–15.6)	4.1 (1.3–12.7)	13.2 (10.0–17.2)
20–34 years	73.4 (69.2–77.3)	76.3 (61.2–86.8)	73.0 (68.5–77.1)
≥35 years	14.6 (11.2–18.8)	19.5 (9.9–35.0)	13.8 (10.2–18.4)
Age at first marriage			
<18 years	43.8 (38.0–49.7)	51.0 (35.0–66.8)	42.7 (36.5–49.1)
18–20 years	15.6 (11.7–20.5)	23.8 (11.5–43.0)	14.4 (10.4–19.5)
>21 years	40.6 (34.8–46.7)	25.1 (14.1–40.7)	42.9 (36.5–49.6)
Husband's age	***	*	***
≤24 years	15.1 (11.4–19.6)	16.4 (6.9–34.3)	14.9 (11.1–19.6)
25–54 years	76.1 (70.9–80.6)	81.0 (63.7–91.1)	75.4 (69.7–80.3)
>54 years	8.8 (6.0–12.8)	2.6 (0.5–12.8)	9.8 (6.6–14.3)
Women's education	***	***	**
No education	76.5 (71.3–81.1)	42.0 (28.6–56.7)	81.8 (76.6–86.0)
Primary	17.2 (13.1–22.2)	30.2 (18.3–45.6)	15.2 (11.3–20.2)
Secondary	3.6 (1.9–6.8)	20.1 (9.2–38.4)	1.1 (0.5–2.2)
Higher	2.7 (1.4–5.1)	7.7 (2.5–21.5)	1.9 (0.8–4.4)
Women's working status	***		***
Yes	5.3 (2.9–9.4)	16.8 (7.8–32.6)	3.5 (1.7–7.3)
No	94.7 (90.6–97.1)	83.2 (67.4–92.2)	96.5 (92.7–98.3)
Parity	*		*
≤2	26.9 (22.9–31.3)	32.0 (19.2–48.2)	26.1 (21.9–30.8)
3-4	31.8 (26.7–37.4)	37.6 (24.1–53.3)	30.9 (25.6–36.7)
>4	41.3 (35.4–47.5)	30.4 (19.2–44.6)	43.0 (36.5–49.8)
Media exposure of family planning message	***	***	
Unexposed	75.4 (69.4–80.5)	31.8 (20.4–45.9)	82.0 (76.2–86.5)
Exposed	24.6 (19.5–30.6)	68.2 (54.1–79.6)	18.0 (13.4–23.8)
Household level			
Wealth quintile	***	***[†]	
Lowest	21.2 (14.7–29.4)	2.5 (0.5–12.6)	24.0 (16.7–33.2)
Second	16.5 (13.0–20.7)	4.8 (1.7–12.7)	18.3 (14.3–23.0)
Middle	18.3 (13.6–24.3)	18.3 (9.3–32.9)	18.3 (13.4–24.7)
Fourth	20.8 (16.1–26.3)	25.3 (14.2–40.8)	20.1 (15.4–25.8)
Highest	23.2 (17.8–29.7)	49.1 (32.7–65.6)	19.3 (14.4–25.4)
Community level			
Place of residence	***	***	
Urban	43.3 (35.9–51.1)	77.7 (64.0–87.3)	38.1 (30.7–46.2)
Rural	27.3 (19.0–37.4)	17.1 (8.9–30.3)	28.8 (19.7–40.0)
Nomadic	29.4 (22.5–37.5)	5.2 (1.7–14.2)	33.1 (25.2–42.1)
Region of residence	*	***	
Northwest	35.3 (28.1–43.2)	36.1 (22.8–51.8)	35.2 (27.2–44.0)
Northeast	37.4 (29.1–46.6)	47.8 (32.3–63.6)	35.9 (26.7–46.1)
Central	21.5 (16.4–27.6)	13.6 (4.8–33.1)	22.7 (16.9–29.7)
South	5.8 (3.6–9.2)	2.5 (1.1–6.0)	6.3 (3.9–10.1)

*** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$. [+]All percentages are weighted and are presented in column percentages. [†]These p values are obtained from Fisher's exact test.

This study possesses several notable strengths and a few limitations. Notably, it is the first nationally representative study conducted in Somalia that examines the prevalence of contraception use and identifies its determinants. Advanced statistical techniques were employed to explore the various factors influencing contraception use, encompassing individual, household, and community-level factors. The classification of contraception use, including modern contraception, adhered to the guidelines set forth by the World Health Organization (WHO). As a result, the findings of this study are reliable and should inform policy and program development at the national level. However, a major limitation of the study stems from its reliance on cross-sectional data, meaning that the reported findings establish correlations rather than causal relationships. Additionally, the retrospective data collection method introduces the possibility of recall bias when reporting both the outcome and exposure variables. Nonetheless, any potential bias is likely to be random in nature. Furthermore, despite our efforts to adjust for a broad range of confounding

hsc, 2024, 1, Downloaded from https://onlinelibrary.wiley.com/doi/10.1155/2024/5981247 by Md Badsha Alam - Bangladesh Hinari NPL , Wiley Online Library on [07/11/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Table 4: Association of modern and traditional contraceptive use adjusted with individual, household, and community-level factors.

Characteristics	Any contraception use, aOR (95% CI)	Modern contraception use, aOR (95% CI)	Traditional contraception use, aOR (95% CI)
Individual level			
Women's age (ref: ≤19)			
20–34 years	0.50 (0.32–0.77)***	2.05 (0.47–8.86)	0.41 (0.27–0.64)***
≥35 years	0.14 (0.08–0.23)***	1.47 (0.26–8.25)	0.10 (0.06–0.17)***
Age at first marriage (ref: ≤18)			
18–20 years	0.97 (0.69–1.37)	0.74 (0.30–1.82)	1.00 (0.70–1.44)
>21 years	1.12 (0.85–1.47)	0.40 (0.17–0.93)**	1.31 (0.99–1.72)
Husband's age (ref: ≤24)			
25–54 years	0.79 (0.56–1.11)	0.73 (0.26–2.00)	0.81 (0.56–1.16)
>54 years	0.75 (0.44–1.26)	0.18 (0.03–1.18)*	0.87 (0.51–1.49)
Women's education (ref: no education)			
Primary	1.31 (0.94–1.83)	2.42 (1.21–4.84)**	1.15 (0.80–1.67)
Secondary	1.10 (0.56–2.16)	5.26 (2.21–12.54)***	0.34 (0.16–0.72)***
Higher	2.06 (0.92–4.62)*	3.10 (0.72–13.30)	1.69 (0.69–4.18)
Women's working status (ref: yes)			
No	1.60 (0.89–2.88)	0.67 (0.29–1.55)	2.23 (1.10–4.53)**
Parity (ref: ≤2)			
3-4	2.00 (1.51–2.64)***	1.69 (0.85–3.34)	2.06 (1.52–2.78)***
>4	2.38 (1.74–3.25)***	1.05 (0.48–2.28)	2.70 (1.88–3.86)***
Media exposure of FP (ref: unexposed)			
Exposed	1.48 (1.08–2.03)**	4.79 (2.43–9.45)***	1.08 (0.74–1.59)
Household level			
Wealth quintile (ref: lowest)			
Second	0.85 (0.55–1.32)	1.89 (0.26–13.87)	0.84 (0.54–1.30)
Middle	0.88 (0.53–1.46)	4.04 (0.61–26.68)	0.83 (0.50–1.38)
Fourth	0.85 (0.50–1.43)	3.19 (0.47–21.57)	0.83 (0.48–1.43)
Highest	0.94 (0.52–1.69)	3.05 (0.45–20.80)	0.91 (0.49–1.69)
Community level			
Place of residence (ref: nomadic)			
Urban	1.63 (1.01–2.63)**	2.50 (0.67–9.40)	1.51 (0.92–2.47)
Rural	1.16 (0.78–1.72)	0.98 (0.26–3.70)	1.20 (0.80–1.80)
Region of residence (ref: South)			
Northwest	1.19 (0.77–1.84)	2.87 (1.03–7.98)**	1.06 (0.67–1.68)
Northeast	1.43 (0.91–2.25)	4.34 (1.43–13.21)***	1.22 (0.77–1.95)
Central	0.92 (0.60–1.40)	1.06 (0.27–4.18)	0.94 (0.61–1.45)

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$.

factors in the model, there are other important factors, including cultural norms at the community level, that should be considered but were unavailable due to the lack of relevant data. Despite these limitations, this study serves as a significant milestone as the first nationally representative investigation in Somalia, and its findings will play a pivotal role in formulating evidence-based policies and programs aimed at increasing contraception uptake.

4.1. Contraception. The prevalence of contraception use among Somalia women is strikingly low, with only 7% of women reporting its use and less than 1% utilizing modern contraception methods. Various factors at the individual, household, and community level were identified as associated with contraception use. These factors include younger age, women with primary and secondary education, higher parity, greater exposure to family planning messages through mass media, urban place of residence, and residing in the northwest and northeast regions. These findings highlight the urgent need for significant governmental efforts to address this critical situation and increase contraception uptake. Strengthening healthcare facilities to provide comprehensive sexual and reproductive healthcare services, including accessible contraception options, is essential. Additionally, raising awareness among the population about the importance of contraception and empowering women to actively participate in reproductive decision-making processes are crucial steps toward improving the situation.

Data Availability

The data utilized in this study were extracted from the Somali Health and Demographic Survey, following the submission of a research proposal. The authors are bound by the regulations of the Somali Health and Demographic Survey, which prohibit them from sharing the data with anyone without prior approval. However, interested individuals can obtain access to these data by submitting their own research proposals to the Somali Health and Demographic Survey.

hsc, 2024, 1, Downloaded from https://onlinelibrary.wiley.com/doi/10.1155/2024/5981247 by Md Badsha Alam - Bangladesh Hinari NPL , Wiley Online Library on [07/11/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

Ethical Approval

This study involved the analysis of secondary data obtained from the 2020 Somali Health and Demographic Survey. The survey authority obtained ethical approval for data collection and implemented stringent measures to ensure the privacy and confidentiality of the respondents. Consequently, no additional ethical approval was necessary to conduct this study.

Disclosure

A preprint version of this submitted manuscript has previously been published in SSRN and now available in the following link: https://papers.ssrn.com/sol3/papers.cfm?abstract_id%3D4460167. A full citation of this manuscript is available in citation number [34].

Conflicts of Interest

The authors declare that they have no conflicts of interest.

Authors' Contributions

MNK, IYK, and MBA developed the study concept. MBA and IYK conducted the formal analysis. MNK wrote the first draft of the manuscript. MNK, SJK, and MMAK critically reviewed the manuscript. All authors approved the final version of this manuscript. IYK and MBA contributed equally to this manuscript. Ibrahim Yasin Khalif and Md Badsha Alam are joint first authors and equally contributed to this manuscript.

Acknowledgments

We would like to express our gratitude to the Somali Health and Demographic Survey for providing us with access to their survey data, which enabled us to conduct this study. Additionally, the authors also acknowledge the support of Department of Population Science, Jatiya Kabi Kazi Nazrul Islam University, where the study was designed and conducted. We also acknowledge to the ICDDR,B, which acknowledges the support of the Governments of Bangladesh and Canada for providing core/unrestricted support for its operations and research.

References

[1] L. R. Moreira, C. Blumenberg, B. E. Caicedo Velasquez et al., "The role of gender inequality and health expenditure on the coverage of demand for family planning satisfied by modern contraceptives: a multilevel analysis of cross-sectional studies in 14 LAC countries," *The Lancet Regional Health–Americas*, vol. 19, Article ID 100435, 2023.

[2] S. L. Kelly, T. Walsh, D. Delport et al., "Health and economic benefits of achieving contraceptive and maternal health targets in Small Island Developing States in the Pacific and Caribbean," *BMJ Global Health*, vol. 8, no. 2, Article ID e010018, 2023.

[3] J. M. Bearak, A. Popinchalk, C. Beavin et al., "Country-specific estimates of unintended pregnancy and abortion incidence: a global comparative analysis of levels in 2015–2019," *BMJ Global Health*, vol. 7, no. 3, Article ID e007151, 2022.

[4] J. Bearak, A. Popinchalk, B. Ganatra et al., "Unintended pregnancy and abortion by income, region, and the legal status of abortion: estimates from a comprehensive model for 1990–2019," *Lancet Global Health*, vol. 8, no. 9, pp. e1152–e1161, 2020.

[5] J. Sherwood, E. Lankiewicz, B. Roose-Snyder, B. Cooper, A. Jones, and B. Honermann, "The role of contraception in preventing HIV-positive births: global estimates and projections," *BMC Public Health*, vol. 21, no. 1, pp. 536–610, 2021.

[6] S. Y. Some, C. Pu, and S.-L. Huang, "Empowerment and use of modern contraceptive methods among married women in Burkina Faso: a multilevel analysis," *BMC Public Health*, vol. 21, no. 1, pp. 1498–1513, 2021.

[7] S. Singh, J. E. Darroch, L. S. Ashford, and M. Vlassoff, *Adding it up: The Costs and Benefits of Investing in Family Planning and Maternal and New Born Health*, Guttmacher Institute, New York, NY, USA, 2009.

[8] Directorate of National Statistics FGOS, "The Somali health and demographic survey 2020," 2020, https://somalia.unfpa.org/sites/default/files/pub-pdf/FINALSHDSReport2020_V7_0.pdf.

[9] A. Kulane, J. O. Owuor, D. Sematimba, S. A. Abdulahi, H. M. Yusuf, and L. M. Mohamed, "Access to HIV care and resilience in a long-term conflict setting: a qualitative assessment of the experiences of living with diagnosed HIV in Mogadishu, Somali," *International Journal of Environmental Research and Public Health*, vol. 14, no. 7, p. 721, 2017.

[10] M. Abdulahi, O. Kakaire, and F. Namusoke, "Determinants of modern contraceptive use among married Somali women living in Kampala; a cross sectional survey," *Reproductive Health*, vol. 17, no. 1, pp. 72–79, 2020.

[11] A. A. Gele, M. Shrestha, N. S. Sheikh, and S. A. Qureshi, "Pregnant and powerless: exploring barriers to contraceptive use among women in mogadishu, Somalia," *Health Services Research and Managerial Epidemiology*, vol. 9, Article ID 23333928221117057, 2022.

[12] "Contraception methods [database on the internet]," 2020, https://www.who.int/health-topics/contraception.

[13] D. Hubacher and J. Trussell, "A definition of modern contraceptive methods," *Contraception*, vol. 92, no. 5, pp. 420-421, 2015.

[14] J. Merlo, B. Chaix, H. Ohlsson, A. Beckman, K. Johnell, P. Hjerpe et al.,, "A brief conceptual tutorial of multilevel analysis in social epidemiology: using measures of clustering in multilevel logistic regression to investigate contextual phenomena," *Journal of Epidemiology and Community Health*, vol. 60, no. 4, pp. 290–297, 2006.

[15] Y. Qu, G. W. Williams, G. J. Beck, and S. V. Medendorp, "Latent variable models for clustered dichotomous data with multiple subclusters," *Biometrics*, vol. 48, no. 4, pp. 1095–1102, 1992.

[16] M. M. Ali, J. G. Cleland, I. H. Shah, and W. H. Organization, *Causes and Consequences of Contraceptive Discontinuation: Evidence from 60 Demographic and Health Surveys*, World Health Organization, Geneva, Switzerland, 2012.

[17] N. Belete, A. Zemene, H. Hagos, and A. Yekoye, "Prevalence and factors associated with modern contraceptive discontinuation among reproductive age group women, a community based cross-sectional study in Humera town, northern Ethiopia," *BMC Women's Health*, vol. 18, pp. 190–198, 2018.

[18] E. J. Modey, R. Aryeetey, and R. Adanu, "Contraceptive discontinuation and switching among Ghanaian women:

hsc, 2024, 1, Downloaded from https://onlinelibrary.wiley.com/doi/10.1155/2024/5981247 by Md Badsha Alam - Bangladesh Hinari NPL , Wiley Online Library on [07/11/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License

evidence from the Ghana Demographic and Health Survey, 2008," *African Journal of Reproductive Health*, vol. 18, no. 1, pp. 84–92, 2014.

[19] S. Ontiri, V. Were, M. Kabue, R. Biesma-Blanco, and J. Stekelenburg, "Patterns and determinants of modern contraceptive discontinuation among women of reproductive age: analysis of Kenya Demographic Health Surveys, 2003–2014," *PLoS One*, vol. 15, no. 11, Article ID e0241605, 2020.

[20] A. Haakenstad, O. Angelino, C. M. Irvine et al., "Measuring contraceptive method mix, prevalence, and demand satisfied by age and marital status in 204 countries and territories, 1970–2019: a systematic analysis for the Global Burden of Disease Study 2019," *The Lancet*, vol. 400, no. 10348, pp. 295–327, 2022.

[21] A. A. Gele, F. K. Musse, and S. Qureshi, "Unmet needs for contraception: a comparative study among Somali immigrant women in Oslo and their original population in Mogadishu, Somalia," *PloS one.*, vol. 14, no. 8, Article ID e0220783, 2019.

[22] A. A. Gele, F. K. Musse, M. Shrestha, and S. Qureshi, "Barriers and facilitators to contraceptive use among Somali immigrant women in Oslo: A qualitative study," *PLoS One*, vol. 15, no. 3, Article ID e0229916, 2020.

[23] "Polygamy destroys the Somali family," 2019, https://medium.com/@gulwade206/polygamy-destroys-the-somali-family-e98c27322426#:%7E:text=AmongSomalis%3D2Citistypical,cycleofabandonmentrepeatsitself.

[24] F. Gure, M. Yusuf, and A. M. Foster, "Exploring Somali women's reproductive health knowledge and experiences: results from focus group discussions in Mogadishu," *Reproductive Health Matters*, vol. 23, no. 46, pp. 136–144, 2015.

[25] C. M. Cox, F. Ahmed, A. Mitchell, A. Ganey, A. Kahin, and A. Kahin, "Decision making and communication about child spacing among Somali couples in Minnesota," *Perspectives on Sexual and Reproductive Health*, vol. 51, no. 2, pp. 63–69, 2019.

[26] A.-A. Egeh, O. Dugsieh, K. Erlandsson, and F. Osman, "The views of Somali religious leaders on birth spacing–a qualitative study," *Sexual & Reproductive Healthcare*, vol. 20, pp. 27–31, 2019.

[27] J. I. Fedha, *Influence of Cultural Traditions on the Reproductive Health of Somali Women Refugees in Nairobi County*, University of Nairobi, Nairobi, Kenya, 2013.

[28] A. Warsame, J. Handuleh, and P. Patel, "Prioritization in Somali health system strengthening: a qualitative study," *International health*, vol. 8, no. 3, pp. 204–210, 2016.

[29] A. A. Dalmar, A. S. Hussein, S. A. Walhad et al., "Rebuilding research capacity in fragile states: the case of a Somali-Swedish global health initiative," *Global Health Action*, vol. 10, no. 1, Article ID 1348693, 2017.

[30] M. N. Khan, I. Yasin Khalif, M. S. Rana, M. M. Ali Khan, S. Jahan Khanam, and M. B. Alam, "Improving the uptake of contraception, Somalia," *Bulletin of the World Health Organization*, vol. 102, no. 1, pp. 75-76, 2024.

[31] "Study: Somali people "highly traumatized" after years of conflict," 2023, https://www.voanews.com/a/somali-people-highly-traumatized-after-years-of-conflict/6923368.html.

[32] A. A. Warsame, *Somalia's Healthcare System: A Baseline Study and Human Capital Development Strategy*, Heritage Institute and City University of Mogadishu, Mogadishu, Somalia, 2020.

[33] H. Schwandt, A. Boulware, J. Corey et al., "She is courageous because she does not care what people think about her. . .: attitudes toward adolescent contraception use among Rwandan family planning providers and adult female modern contraceptive users," *Reproductive Health*, vol. 19, no. 1, p. 204, 2022.

[34] I. Yasin, *Contraception Crisis in Somalia: Unveiling the Shocking Reality of a Nation Left behind*, SSRN, Charlottesville, VA, USA, 2023.

hsc, 2024, 1, Downloaded from https://onlinelibrary.wiley.com/doi/10.1155/2024/5981247 by Md Badsha Alam - Bangladesh Hinari NPL , Wiley Online Library on [07/11/2026]. See the Terms and Conditions (https://onlinelibrary.wiley.com/terms-and-conditions) on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License