

Examining Contraceptive Ideational Disparities Among Adolescents and Young Women in Nigeria

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Abstract

Nigeria faces a demographic challenge with a growing youth population and increasing fertility rate. However, the use of modern contraceptives among adolescent girls and young women has been declining. The young population emerges as a pivotal group in the country's efforts to achieving the pledge of 27% modern contraceptive rate by the year 2030. This study aims to explore the disparities in contraceptive ideation among adolescents and young women in Nigeria, focusing on the role of ideational factors. The data for this study were collected through a cross-sectional household survey in four Nigerian states, involving 2,857 sexually active women aged 15-24 years. Using an ideational framework of behavior that highlights psychosocial influences, nine distinct ideational variables were examined. Multivariate logistic regression analyses were used to assess associations between ideational factors and contraceptive use among the total sample, adolescents, and youth. Statistical significance was defined as $P < 0.05$. The study's results revealed significant associations between the ideational variables and contraceptive use in all groups, ranging from $p < .05$ to $p < .001$. Cognitive and emotional domains were found to be the strongest predictors of contraceptive use compared to social domains in the general sample and among both groups. This study's findings highlight the complex interplay of social, cognitive, and emotional factors in contraceptive use. Understanding these dynamics is crucial in developing effective strategies to overcome barriers and improve access to contraceptive services among young women in Nigeria.

Keywords: Adolescents, Contraception, Ideation, Youth.

Introduction

The burgeoning youth population in Nigeria presents a looming challenge that promises to shape its socioeconomic landscape for decades. With the country's current estimation of about 200 million as of 2019, projections indicate that this number could soar to a staggering 440 million by 2050 [1]. Notably, Nigeria's total fertility rate, over five children per woman, surpasses that of many other sub-Saharan African nations [2]. This alarming rate,

juxtaposed with the widespread knowledge of family planning, with 93% of reproductive-age women aware of at least one contraceptive method [3], highlights an incongruity. Nigeria has consistently witnessed a marginal increase in contraceptive use within the broader reproductive age spectrum and declines specifically among the youth sub-population.

The concept of ideational disparities in contraceptive usage among adolescents and young women deserves a closer examination. Ideational disparities refer to the differences in

knowledge, perceptions, beliefs, and norms related to contraception. The distinction between collective (social) norms, individual perceptions of these norms, and the emotional and cognitive intricacies in contraceptive acceptance introduces a complex layer to the contraceptive discourse [4].

Psychosocial Predictors and Contraceptive Use in Nigeria

Several pieces of evidence have linked psychosocial correlates with low use of contraceptives in Nigeria [5,6,7,8]. Ideation theory, one of the psychosocial theories, refers to how new ways of thinking (or new behaviors) are diffused through a community employing communication and social interaction among individuals and groups [9]. It can be further highlighted that behavior is influenced by multiple social and psychological factors, as well as skills and environmental conditions that facilitate behavior [10].

Leroy-Beaulieu (1896) linked ideation to fertility and suggested that ideational change or changes in people's thinking are crucial factors in fertility decline [11]. Some dimensions of the ideational constructs, like social interaction, perceived self-efficacy, and contraceptive awareness, highly predict intention to use and contraceptive use among women of reproductive age in Nigeria [6,12,13]. According to Moreira et al. (2019), fear of side effects is the primary reason modern contraceptives are not widely used in Nigeria [14].

However, the experiences of modern contraceptive users show that side effects are not a common issue. This highlights the need for more public education and information to dispel misconceptions and fears about modern contraceptives. In Nigeria, family planning myths are prevalent at individual and community levels, often fueled by rumors or misconceptions that modern contraception can pose immediate or eventual health risks to women and harm the womb. A Study [15,16]

found that, on average, Nigerian women believe in 2.7 out of 8 selected myths, negatively correlating with contraceptive use. Specifically, the more a woman believes in these myths, the less likely she is to use modern contraceptives at the individual level.

Another important interpersonal factor linked to modern contraceptive use among young people is sexual communication between partners. Research suggests improved partner communication correlates with increased contraceptive usage [17-19].

However, one study found that general sexual communication did not significantly predict contraceptive use, but communication specifically pertaining to contraceptives resulted in significantly increased use levels [20]. The relationship context in which sexual communication occurs may be partly responsible for these variations in observed relationships between communication and contraceptive use among young people.

To the best of our knowledge, no existing literature links contraceptive-related ideational constructs with contraceptive use among adolescents and youth in Nigeria, though some studies measured some psychosocial variables differently.

This study seeks to contribute to the existing body of knowledge on factors affecting contraceptive use among the young population in Nigeria by exploring the contraceptive ideational disparities among adolescents and young women in Nigeria, focusing on the role of social, cognitive, and emotional factors. The insights drawn from this study aim to inform policy, foster behavioral change, and contribute to improving SRH outcomes for young people in Nigeria. Most studies in this area have focused on the broader reproductive spectrum, and this study will be the first to utilize ideational factors to examine the multidimensional factors impacting contraceptive use among this growing sub population in Nigeria.

Materials and Methods

Description of Study site

The data for this study was obtained through a secondary analysis of a cross-sectional baseline survey that was conducted between October 2019 and January 2020 in four Nigerian States: Ogun, Edo, Niger, and Plateau through the Challenge Initiative (TCI) project. The Challenge Initiative (TCI), a project funded by the Bill and Melinda Gates Foundation and implemented by the Johns Hopkins Center for Communication Programs. TCI aimed to initiate a national Family Planning Movement through a demand-driven model.

The primary objective of the survey was to generate baseline formative data for the Adolescent Youth Sexual and Reproductive Health (AYSRH) program component of TCI. The population-based quantitative survey utilized a cross-sectional, multi-stage sampling

design to examine the predictors of contraceptive use among sexually active young people aged 15-24 in selected States in Nigeria.

Sampling

During the survey, respondents were selected using a three-stage sampling approach stratified within urban and rural areas. First, a total of twenty-four (24) local government areas (LGA) were selected from twelve (12) senatorial districts across the four study sites. Second, a sample of ten enumeration areas (EAs) was drawn from the National Population Commission master (NPC) sampling frame in each LGA with probability proportional to size. Third, in each EA, all households were listed and 20 households with at least one female youth aged 15 – 24 years were randomly selected. Besides, in one-third of the households, one eligible male youth was also selected randomly.

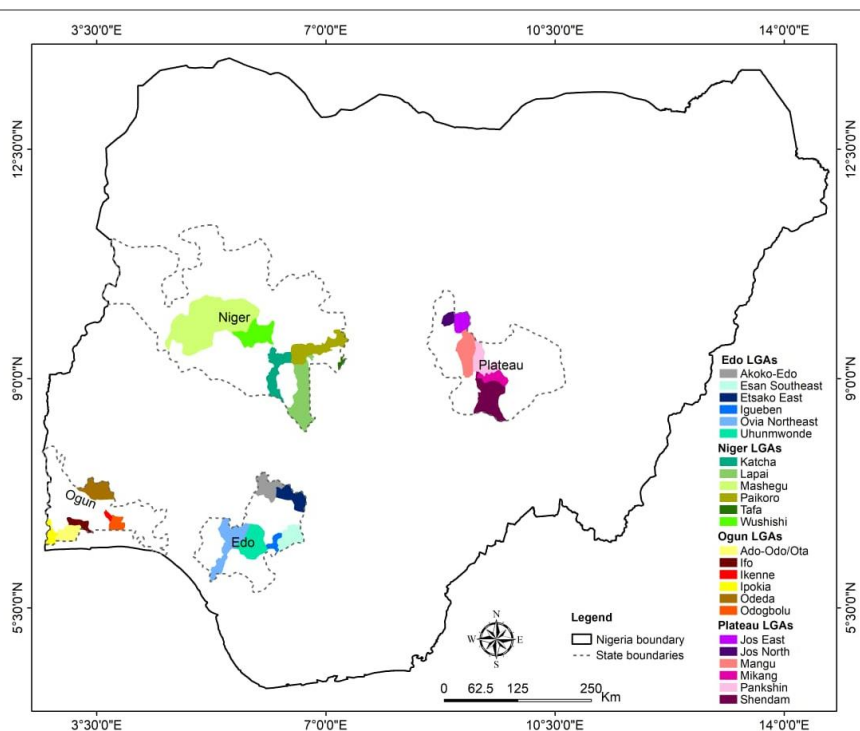


Figure 1. Map Showing the Study States and Selected LGAs

The required sample size for each state is estimated based on prevalence of modern contraceptive use among young women aged 15-24 who are sexually active or in union in

each of the target states using the Nigeria Demographic Health Survey data of 2013 (the most recent when the survey protocol was written). The sample-size and cluster

calculations suggested that data be collected in 240 EAs (60 per study States), covering 5,430 women and 1573 men. For the analyses reported in this manuscript, we limited the sample to 2,857 representing sexually active women (863 adolescents and 1994).

Statistical Measure

The primary outcome variable assessed in this dissertation was the current use of a modern contraceptive method. The variable was generated from responses to two survey questions: “Are you or your partner currently using any form of contraception?” and “Which contraceptive method are you currently using?” Participants who reported using any of the modern contraceptive methods, such as male sterilization, emergency contraceptive pill, daily pills, intrauterine device (IUD), implant, injectable, Sayana press, male or female condom, were considered as modern contraceptive users and assigned a code of 1. Conversely, those who did not use modern contraceptive methods were classified as non-users and assigned a code of 0.

Explanatory Variables

The ideational theory of behavior changes combines elements of several behavior changes theories. It traces the effects of social and behavior change interventions (such as those involving mass media, social media, and interpersonal communication) through identified fundamental psychosocial factors that have an impact on contraceptive behaviors and intentions [6,21]. The ideational theory groups contraceptive related psychosocial factors into three domains: cognitive (knowledge, beliefs, values, perceived risks and norms), emotional (self-efficacy) and social factors. This theory serves as a guidance for choosing variables for our behavioral models (see appendix 1).

Contraception myth rejection construct comprised six items (see the appendix for a description) that assessed participants’ acceptance of misconceptions about modern

contraception. Following Babalola et al. 2017, for each item, respondents strongly agreed or agreed were considered to accept the misinformation and coded as 0 while those who strongly disagreed or disagree were treated as rejecting the misinformation and assigned a code of 1. The six items had high reliability ($\alpha = .90$). The six items were summed to create a composite score and split at the median to denote lower versus higher myth rejection. Similarly, perceived self-efficacy measures a person’s level of confidence in their ability to take specific actions. The self-efficacy construct consisted of seven items that measured perceived self-efficacy to take specific actions related to contraceptive use. Those who responded definitely and probably could were coded 1 while those who responded probably and definitely could not were coded 0. The result for perceived self-efficacy in this study had high reliability ($\alpha = .86$) for the seven items. The items were summed to create a composite score and then split at the median to denote lower versus higher levels of perceived self-efficacy.

Statistical Analysis

In this dissertation, descriptive statistics were used to examine sociodemographic characteristics, among respondents. Additionally, a cross tabulation analysis was conducted to assess the relationship between sociodemographic characteristics and contraceptive use. The same was done for ideational variables, and contraceptive use among adolescents and youth. Subsequently, multivariable logistic regression models were used to identify factors associated with current contraceptive use among the total sample, and adolescents and youth separately. The models were developed to incorporate contraceptive use and all explanatory variables, then contraceptive use and cognitive, emotional, and social related variables were analyzed independently to see how they interact when separated, controlling for other model

covariates. The analysis was conducted independently for adolescents aged 15-19 and youth aged 20-24 to allow for comparisons. The statistical analysis was performed using Stata version 15 to answer the research questions.

Ethical Considerations

Ethical approval to conduct the original study was obtained from the Institutional Review Board from the four states and Johns Hopkins Bloomberg School of Public Health, Baltimore, USA (IRB #00009396). Verbal consent was obtained from each participant prior to participation in the study. Participants were informed that their participation is voluntary, and they may withdraw from the study at any time. Additional steps taken to protect participants' confidentiality and minimize risk include conducting the interview in a private location of the participant's choice without the presence of a third party, not collecting personal identifiers during

recruitment and interview, and providing data collectors with training in ethical aspects of human subject research.

Results

Table 1 presents participant demographics, including a sample of 863 adolescents (30.21%) and 1,994 youth (69.8%), with the majority in the 20-24 age group. Educational levels varied, with majority of adolescents (77.4%) and youth (64.4%) having completed secondary education. Religious affiliation among youth included 40.1% Muslim and 48.5% Other Christians, while adolescents comprised 36.5% Muslim and 52.6% Other Christians. Most adolescents (69.5%) are single with less than one third married while more than half of youth (57.6%) are married 40.8% are single. For parity, 75.3% and 44.4% of adolescents and youth respectively are nulliparous. Looking at contraceptive use distribution, 25.5% reported using them, while a majority of 74.5% did not.

Table 1. Background Characteristics of Study Participants

Characteristics	Total n (%)	Adolescents n (%)	Youth n (%)
Age group(years)			
15-19	863(30.21)	-	-
20-24	1994(69.8)	-	-
Education			
Primary	427(17.5)	141(18.5)	286(17.0)
Secondary	1675(68.5)	588(77.4)	1087(64.4)
Tertiary	345(14.1)	31(4.1)	314(18.6)
Religion			
Catholic	315(11.1)	98(11.4)	217(10.9)
Other Christians	1464(51.4)	418(48.5)	1046(52.6)
Muslim	1071(37.6)	345(40.1)	726(36.5)
Marital status			
Single	1413(49.5)	600(69.5)	813(40.8)
Married	1402(49.1)	254(29.4)	1148(57.6)
Others	42(1.4)	9(1.0)	33(1.6)
Parity			
None	1535(53.73)	650(75.3)	885(44.4)
1-2	960(33.6)	192(22.3)	768(38.5)
3+	362(12.67)	21(2.4)	341(17.1)
Contraceptive use			
Yes	729 (25.5)	206(23.9)	523(26.2)
No	2128 (74.5)	657(76.1)	1471(73.8)

Table 2 presents the associations between ideational variables and current contraceptive use among adolescents, youth, and the total sample at bivariate level. The results indicate that higher contraceptive knowledge, perceived peer behavior, misconception rejection, contraceptive autonomy, and perceived self-efficacy are significantly associated with a higher likelihood of current contraceptive use among adolescents, youth, and the total sample

($p < 0.001$). Additionally, discussing contraceptive use, personal advocacy and the potential number of children were positively associated with contraceptive use in all the groups. However, partner approval showed a weaker association in the total sample ($p = 0.037$) and among youth ($p = 0.013$) but did not show a statistically significant association with contraceptive use among adolescents ($p = 0.013$).

Table 2. Bivariate Results of Psychosocial Factors and Current Contraceptive Use Among Women 15-24 Years

Ideational variable	Current contraceptive use					
	Adolescents		Youth		Total Sample	
	n (%)	p-value	n (%)		n (%)	p-value
Contraceptive knowledge						
Low	83(15.5)	0.000	144(16.4)	0.000	227(16.0)	0.000
High	123(37.4)		379(34.1)		502(34.8)	
Perceived peer behavior						
Yes	163(37.0)	0.000	391(36.0)	0.000	554(36.3)	0.000
No	15(8.4)		57(15.0)		72(12.9)	
Misconception rejection						
Do not reject.	85(17.2)	0.000	147(16.8)	0.000	259(16.9)	0.000
Reject	121(32.7)		349(36.5)		4(35.5)	
Contraceptive autonomy						
Yes	123(34.0)	0.000	286(36.1)	0.000	409(35.4)	0.000
No	79(18.2)		233(21.0)		312(20.2)	
Perceived self-efficacy						
High	172(40.1)	0.000	438(37.9)	0.000	610(38.5)	0.000
Low	34(7.8)		85(10.1)		119(9.4)	
Discuss contraceptive use						
Yes	89(75.4)	0.000	216(60.9)	0.000	305(64.5)	0.000
No	117(15.7)		307(18.7)		424(17.8)	
Discuss potential number of children						
Yes	13(26.0)	0.000	97(30.1)	0.000	110(29.6)	0.000
No	6(3.5)		69(10.9)		75(9.3)	
Partner approval						
Yes	75(19.5)	0.037	226(21.3)	0.193	301(20.9)	0.013
No	4(7.7)		7(13.7)		11(10.7)	
Personal advocacy						
Yes	25(32.2)	0.000	85(47.8)	0.000	110(49.1)	0.000
No	43(26.1)		121(24.9)		164(25.2)	

Table 3 is divided into four different models, each including different sets of variables (individual, cognitive, social, and emotional) with their respective control variables. The table shows the result of the logistic regression

analysis showing outcomes of the ideational factors of the total sample concerning contraceptive use among the total sample of young women 15-24 years.

Table 3. Ideational Constructs of Total Sample and Current Contraceptive Use

Variables	Model A: Individual variables with control variables		Model B: Cognitive variables with control variables		Model C: Social variables with control variables		Model D: Emotional construct with control variables	
	aOR	95%CI	aOR	95%CI	aOR	95%CI	aOR	95%CI
High knowledge of contraceptive methods	2.59***	2.12-3.16	2.11***	1.67-2.66	-	-	-	-
Perceived peer behavior	3.04***	2.28-4.04	2.33***	1.73-3.14	-	-	-	-
Contraception myths rejection (beliefs)	2.37***	1.96-2.86	1.85***	1.48-2.30	-	-	-	-
Contraceptive autonomy (attitude)	1.56***	1.29-1.90	1.55***	1.23-1.94	-	-	-	-
Perceived self-efficacy	4.70***	3.74-5.92	-	-	-	-	4.70***	3.74-5.92
Contraceptive discussion with partner	8.36***	6.59-10.60	-	-	9.93***	4.79-20.56	-	-
Discussion on the number of children to have with a partner	2.80***	1.92-4.08	-	-	1.26	0.60-2.65	-	-
Partner approval	3.18**	1.65-6.14	-	-	0.61	0.06-6.33	-	-
Personal advocacy	2.87***	2.02-4.08	-	-	2.73*	1.20-6.20	-	-

*p < .05 **p < .01 ***p < .001

In Model 3A (Table 3) (which includes all constructs), all the ideational variables are significantly associated with contraceptive use. Specifically, high knowledge of contraceptive methods (aOR=2.59), perceived peer behavior (aOR=3.04), contraception myths rejection (aOR= 2.37), perceived self-efficacy (aOR=4.70), contraceptive discussion with partner (aOR=8.36), discussion on the number of children to have with a partner (aOR=2.80), and personal advocacy (aOR=2.87) were all significantly associated with the use of contraceptive methods. Partner approval appears not to predict contraceptive use among young adults 20-24 years. In Model 3B (cognitive variables), all the variables- high knowledge of contraceptive methods, perceived peer behavior, contraception myths rejection, and contraceptive autonomy were significantly associated with the use of contraceptive methods. In contrast, two out of four variables in Model 3C (social model), namely contraceptive discussion with partner (aOR= 9.93) and personal advocacy (aOR=2.73- strength of association is weak) were significantly associated with the use of contraceptive methods. Discussion on the number of children to have with a partner and partner approval were not significant. In Model 3D (emotional construct), perceived self-efficacy (aOR=4.70) was significantly associated with the use of contraceptive methods among young women 15-24 years.

Table 4 presents the result of the four different binary logistic regression analysis showing outcomes of the ideational factors and contraceptive use among adolescent girls. Similar to table 3, model 4A with all the individual variables, all the ideational factors significantly predict contraceptive use. High knowledge of contraceptive methods had 3.05 times higher odds of using contraceptives compared to those with low knowledge (95% CI: 2.13-4.35). Perceived peer behavior related to contraceptive use also showed a strong association, with adolescents who perceived

their peers using contraceptives having 4.84 times higher odds of using contraceptives themselves (95% CI: 2.66-8.81). Adolescents who rejected misconceptions about contraceptives had 1.84 times higher odds of using contraceptives (95% CI: 1.31-2.60), while contraceptive autonomy had a significant association with contraceptive use (aOR: 1.63, 95% CI: 1.14-2.33). Contraceptive discussion with partner (a OR-16.61, 95% CI: 9.87-27.94), perceived self-efficacy (a OR-5.68, 95% CI: 3.75-8.61) and partner approval (a OR-5.22, 95% CI: 1.77-15.42) were found to be strongly associated with contraceptive use. However, discussing the number of children to have with a partner shows a weaker significant association with contraceptive use (aOR: 3.72, 95% CI: 1.07-12.9). Similarly, personal advocacy was positively associated with contraceptive use, with adolescents having 2.85 times higher odds of using contraceptives (95% CI: 1.28-6.30).

In model 4B, two of four cognitive variables are significantly associated with contraceptive use among adolescents. Adolescents with high knowledge of contraceptive methods had 2.46 times higher odds of using contraceptives compared to those with low knowledge (95% CI: 1.63-3.70), with adolescents being 4.12 times more likely to use contraceptives themselves (95% CI: 2.22-7.62) if they perceived their peers doing the same. Rejection of contraception misconception and contraceptive autonomy (attitude) was not statistically significant. In Model 4C, none of the social variables are significantly associated with contraceptive use. Three variables were removed due to collinearity issue and discussion on number of children decreased the odds of contraceptive use among adolescent girls.

In Model 4D, perceived self-efficacy showed a substantial positive association with contraceptive use, as adolescents with higher self-efficacy had 5.68 times higher odds of using contraceptives (95% CI: 3.75-8.61).

Table 4. Ideational constructs of Adolescents and Current Contraceptive Use

Variables for adolescents	Model A: Individual factors with control variables		Model B: Cognitive factors with control variables		Model C: Social factors with control variables		Model D: Emotional construct with control variables	
	aOR	95% CI	aOR	95% CI	aOR	95% CI	aOR	95% CI
High knowledge of contraceptive methods	3.05***	2.13-4.35	2.46***	1.63-3.70	-	-	-	-
Perceived peer behavior	4.84***	2.66-8.81	4.12***	2.22-7.62	-	-	-	-
Contraception myths rejection (beliefs)	1.84***	1.31-2.60	1.33	0.88-1.99	-	-	-	-
Contraceptive autonomy (attitude)	1.63**	1.14-2.33	1.30	0.84-2.00	-	-	-	-
Perceived self-efficacy	5.68***	3.75-8.61	-	-	-	-	5.68***	3.75-8.61
Contraceptive discussion with partner	16.61***	9.87-27.94	-	-	-	-	-	-
Discussion on the number of children to have with a partner	3.72*	1.07-12.9	-	-	0.44	0.01-24.49	-	-
Partner approval	5.22**	1.77-15.42	-	-	-	-	-	-
Personal advocacy	2.85**	1.28-6.30	-	-	-	-	-	-

*p < .05 **p < .01 ***p < .001

Table 5 presents the result of the four different logistic regression model showing outcomes of the ideational factors and contraceptive use among women 20-24 years.

In Model 5A containing Individual factors, youth with high knowledge of contraceptive methods have an odds ratio of 2.37 (aOR = 2.37) while youth who perceive positive peer behavior towards contraceptive methods have an odds ratio of 2.53 (aOR = 2.53). Rejection of misconceptions about contraception and contraceptive autonomy increased the odds of contraceptive use with aOR = 2.62 and

aOR=1.54 respectively. In Model 5B, all the four cognitive ideational variables predict contraceptive use. Specifically, youth who reject contraceptive related misconception had more than twice higher odds of using contraception (aOR=2.17) compared to those who do not while youth with high knowledge of contraceptive methods have an odds ratio of 1.96 (95%CI: 1.47-2.61). Only one out of the four social variables are significantly associated with contraceptive use among young women 20-24 in Model 5C. Youth who engage in contraceptive discussions with their partners

have an odds ratio of 6.72 (aOR = 6.72) of showing the outcome of interest compared to those who do not have such discussions. For model 5D, perceived self-efficacy (aOR=4.29)

was significantly associated with the use of contraceptive methods among young women 20-24 years

Table 5. Ideational Constructs of Youth and Current Contraceptive Use

Variables youth	Model A: Individual factors with control variables		Model B: Cognitive factors with control variables		Model C: Social factors with control variables		Model D: Emotional construct with control variables	
	aOR	95% CI	aOR	95% CI	aOR	95% CI	aOR	95% CI
High knowledge of contraceptive methods	2.37***	1.86-3.01	1.96***	1.47-2.61	-	-	-	-
Perceived peer behavior	2.53***	1.82-3.51	1.87***	1.32-2.63	-	-	-	-
Contraception myths rejection (beliefs)	2.62***	2.08-3.29	2.17***	1.66-2.82	-	-	-	-
Contraceptive autonomy (attitude)	1.54***	1.22-1.93	1.64***	1.25-2.14	-	-	-	-
Perceived self-efficacy	4.29***	3.25-5.65	-	-	-	-	4.29***	3.25-5.65
Contraceptive discussion with partner	6.72***	5.13-8.83	-	-	9.10***	4.29-19.31	-	-
Discussion on the number of children to have with a partner	2.74***	1.85-4.06	-	-	1.31	0.61-2.82	-	-
Partner approval	2.35*	1.02-5.40	-	-	0.51	0.05-5.66	-	-
Personal advocacy	2.83***	1.91-4.20	-	-	2.13	0.90-5.05	-	-

*p < .05 **p < .01 ***p < .001

Discussion

This study explored the contraceptive ideational disparities among adolescents and young women in Nigeria, focusing on the role of social, cognitive, and emotional factors using the ideational theory. The results from the analysis of both groups provide valuable insights into the factors that influence contraceptive use in this population. All the ideational variables that were treated

independently in the total sample and among both groups revealed a strong significant association with contraceptive use. However, when each construct was assessed, the results revealed that while other constructs largely remained unchanged in their significance regarding contraceptive use, the influence of social predictors became less significant in both groups.

Specifically, the result showed that two out of the four cognitive variables (contraceptive knowledge and perceived peer behavior) predict contraceptive use among adolescents. In contrast, all the cognitive factors significantly predict contraceptive use among the youth group. The result revealed that contraceptive knowledge and perceived peer behavior are important cognitive factors adolescents consider in using contraceptives, while misconception and autonomy decreased contraceptive odds among the group. This implies that despite having access to information about modern contraception, adolescents may face cognitive barriers to contraceptive use related to knowledge about myths and misconceptions surrounding contraceptives. Arisukwu et al (2021) also support this notion, highlighting the importance of addressing persistent contraceptive knowledge gaps among adolescents to improve contraceptive uptake [22]. Adolescents are highly influenced by their peers; this was confirmed by the significant association with contraceptive use in our result. Utilizing peer-led educational interventions has shown efficacy in enhancing the sexual health knowledge of adolescents and promoting increased use of contraceptives. When peers provide information and support related to contraception, it can positively influence decision-making [23].

The youth population, an older group of young people, consider misconceptions about contraception and autonomy important factors alongside other cognitive variables. Ochako et al. (2015) revealed that misconceptions and myths about modern contraceptives, such as their link to promiscuity and infertility and fear of side effects, are the main hindrances to young unmarried women's use of these methods [24]. In Ghana, Agyemang et al. (2019) found that perception of health risks and adverse effects are the main reasons young people do not use modern contraceptives [25]. Moreover, young people in Nepal face

contraceptive barriers as a result of a lack of autonomy [26]. This outcome further corroborates the study's argument that contraceptive use should be addressed from a multidimensional approach.

Perceived self-efficacy, the only construct in the emotional factor domain, showed a strong significant association with contraceptive use among both groups. Evidence has also corroborated the important role self-efficacy plays in shaping contraception decisions among young people, and indeed the reproductive age population in Nigeria, as young people with higher self-efficacy are more likely to take charge of their sexual health by actively seeking and using contraception [27,28]. Studies from neighboring countries like Ghana also confirmed the association [29]. The confidence in their ability to use contraceptives effectively empowers them to make informed decisions about their reproductive choices, contributing to reduced unintended pregnancies and improved family planning outcomes. Enhancing self-efficacy through education and awareness campaigns can contribute significantly to improving contraception decisions and promoting responsible sexual behavior among Nigeria's young population.

Conversely, most variables, when combined in the social factor domain, decreased the odds of contraceptive use, but they were significant when measured independently among adolescent and youth groups. In the analysis of social variables within the adolescent group, evidence of collinearity was identified among three out of the four independent variables. At the same time, the other one did not predict contraceptive use. For the youth group, one (contraceptive discussion with a sexual partner) out of the four independent variables showed a strong significant association with contraceptive use. Many studies have shown the relevance of social factors in predicting contraceptive use in Nigeria [8,30,31]. However, it is essential to mention that social factors are defined or measured differently

across these studies. In concordance with our findings, A study [32] revealed that positive spousal communication about contraception among adolescent wives and their husbands was associated with a higher likelihood of using modern contraception. Interestingly, the study found that although this association was not observed for husbands, wives who reported spousal communication regarding contraception had a slightly higher likelihood of engaging in clandestine contraceptive use compared to those who did not report such communication. The effectiveness of SBC programs for young people could be enhanced by directly involving spouses or sexual partners in activities promoting contraception.

Findings from this study highlight the complex interplay of social, cognitive, and emotional factors in contraceptive use among young individuals. While social domain may have a diminished significance across the three groups when the variables were combined in a model, contraceptive discussion with a partner plays a critical role for young women 20-24 years. Understanding these dynamics is crucial in developing effective strategies to overcome barriers and improve access to contraceptive services among young women in Nigeria.

This study points out associations and, as a result, could not establish cause and effect. This challenge is common in cross-sectional studies, where information is collected retrospectively, making it hard to determine the exact sequence of influencers and actions. Due to the cross-sectional nature of the study, we recommend that future research explore those future studies

References

- [1] United Nations. (2022). World Population Prospects 2022. Retrieved from UN: <https://population.un.org/wpp/Graphs/DemographicProfiles/Pyramid/566>.
- [2] Olowolafe, T. A., Adebowale, A. S., Fagbamigbe, A. F., Bolarinwa, O. A., & Akinyemi, J. O. (2023). Shifts in age pattern, timing of

delve into experimental methodologies that account for unseen variables, which might influence ideational factors and their theorized effects simultaneously.

Conclusion

Understanding the multi-faceted factors that affect young people's perceptions of contraceptives can enhance the provision of contraceptive care. Given that knowledge about contraceptive use influences decisions, a comprehensive approach, merging education, counseling, and media messaging, can foster positive attitudes towards contraception among youth. Utilizing media's expansive reach can equip young people with the resources and knowledge about reproductive health, thus improving contraceptive use and overall reproductive results. Blending family planning services into existing healthcare frameworks can make contraceptives more accessible and mainstream. This approach will overcome access barriers and empower adolescents to make informed contraceptive decisions.

Conflict of Interest

The authors declare that there is no conflict of interest.

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childbearing and trend in fertility level across six regions of Nigeria: Nigeria Demographic and Health Surveys from 2003-2018. *PLoS one*, 18(1), e0279365.

<https://doi.org/10.1371/journal.pone.0279365>.

- [3] National Population Commission (NPC) [Nigeria] and ICF. 2019. Nigeria Demographic and

- Health Survey 2018. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF.
- [4] Mandal, M., Calhoun, L., McGuire, C., & Speizer, I. (2022). Using structural equation modeling to examine the influence of family planning social norms on modern contraceptive use in Nigeria. *Front. Social*, 7. <https://doi.org/10.3389/fsoc.2022.866254>.
- [5] OlaOlorun, F. M., Hindin, M. J., & Akinlo, A. D. (2014). Intention to use contraceptives and subsequent contraceptive behavior in Nigeria: does facility-level access matter?. *Open Access Journal of Contraception*, 5, 1-8.
- [6] Babalola, S., John, N., Ajao, B., & Speizer, I. (2015). Ideation and intention to use contraceptives in Kenya and Nigeria. *Demographic research*, 33, 211-242. doi: 10.4054/DemRes.2015.33.8.
- [7] Babalola S. (2017). Changes in Ideational Profiles of Women of Reproductive Age in Urban Nigeria: The Role of Health Communication. *Health education & behavior : the official publication of the Society for Public Health Education*, 44(6), 907–917. <https://doi.org/10.1177/1090198117699510>.
- [8] Ezenwaka, U., Ibekwe, P. C., & Anozie, C. (2020). A qualitative study of ecological factors constraining adolescent's access to contraception in southeast Nigeria. *BMC public health*, 20(1), 1-14. doi: 10.1186/s12889-020-09533-5.
- [9] Health Communication Capacity Collaborative (HC3). (2014). Ideation: An HCS Research Primer. Baltimore, MD: HC3, Johns Hopkins Center for Communication Programs. <https://healthcommcapacity.org/hc3resources/ideation-hc3-research-primer/>.
- [10] Sobotka, T., Zeman, K., & Kantorová, V. (2003). Demographic shifts in the Czech Republic after 1989: A second demographic transition view. *European Journal of Population/Revue européenne de démographie*, 19(3), 249–277. <https://doi.org/10.1023/A:1024913321935>.
- [11] Leroy-Beaulieu. (1896). *Traité Théorique et Pratique d' Économie Politique*. Paris: Librairie Guillaumin et Cie.
- [12] Okigbo CC, Speizer IS, Domino ME, Curtis SL, Halpern CT, Fotso JC. (2018) Gender norms and modern contraceptive use in urban Nigeria: A multilevel longitudinal study. *BMC Womens Health*. Oct 29;18(1).
- [13] Adedini SA, Babalola S, Ibeawuchi C, Omotoso O, Akiode A, Odeku M.(2018). Role of religious leaders in promoting contraceptive use in Nigeria: Evidence from the Nigerian Urban reproductive health initiative. *Glob Heal Sci Pract*. Oct 1;6(3):500–14.
- [14] Moreira L.R, Ewerling F, Barros A.J.D, Silveira M.F. (2019). Reasons for nonuse of contraceptive methods by women with demand for contraception not satisfied: An assessment of low and middle-income countries using demographic and health surveys. *Reprod Health* [Internet]. Available from: <https://reproductive-healthjournal.biomedcentral.com/articles/10.1186/s12978-019-0805-7>.
- [15] Fayehun F. (2017). Contraceptive use in Nigeria is incredibly low. A lack of knowledge may be why [Internet]. The conversation. Available from: <https://theconversation.com/contraceptive-use-in-nigeria-is-incredibly-low-a-lack-of-knowledge-may-be-why-81453>.
- [16] Gueye A, Speizer IS, Corroon M, Okigbo CC. (2015). Belief in family planning myths at the individual and community levels and modern contraceptive use in Urban Africa. *Int Perspect Sex Reprod Health* [Internet].
- [17] Zavala, A. R., Palma, S. M., & Kollath-Cattano, C. L. (2020). The role of communication in contraceptive use among Hispanic young adults: A mixed-methods study. *BMC Public Health*, 20(1), 1-12. <https://doi.org/10.1186/s12889-020-09312-5>.
- [18] Khadduri, R., Reece, M., Barakat, S., & Berenson, A. (2019). Examining the relationship between sexual communication and contraceptive use in young women. *Journal of Women's Health*, 28(7), 940-947. <https://doi.org/10.1089/jwh.2018.7139>.
- [19] Boyle, C., & Conrad, M. (2020). Communication about contraception and sexual risk behaviors among college students. *Journal of American College Health*, 68(7), 700-708. <https://doi.org/10.1080/07448481.2019.1664399>.
- [20] Tschann, J. M., & Adler, N. E. (1997). Sexual self-acceptance, communication with partner, and

contraceptive use among adolescent females: a longitudinal study. *Journal of research on adolescence: the official journal of the Society for Research on Adolescence*, 7(4), 413-430.

[21] Kincaid, D. L. (2000). Mass Media, Ideation, and Behavior: A Longitudinal Analysis of Contraceptive Change in the Philippines. *Communication Research*, 27(6), 723-763. <https://doi.org/10.1177/009365000027006003>.

[22] Arisukwu, O., Igbolekwu, C.O., Efulgha, I., Nwogu, J., Osueke, N., & Eytayo, O. (2021). Knowledge and Perception of Emergency Contraceptives Among Adolescent Girls in Imo State, Nigeria. *Sexuality & Culture* 24, 273-290. <https://doi.org/10.1007/s12119-019-09639-x>.

[23] Calhoun, L. M., Mirzoyants, A., Thuku, S., Benova, L., Delvaux, T., van den Akker, T., McGuire, C., Onyango, B., & Speizer, I. S. (2022). Perceptions of peer contraceptive use and its influence on contraceptive method use and choice among young women and men in Kenya: a quantitative cross-sectional study. *Reproductive health*, 19(1), 16. <https://doi.org/10.1186/s12978-022-01331-y>.

[24] Ochako, R., Mbondo, M., Aloo, S., Kaimenyi, S., Thompson, R., Temmerman, M., & Kays, M. (2015). Barriers to modern contraceptive methods uptake among young women in Kenya: a qualitative study. *BMC public health*, 15, 118. <https://doi.org/10.1186/s12889-015-1483-1>.

[25] Agyemang, J., Newton, S., & Danso, K. A. (2019). Determinants of modern contraceptive use among teenagers in Ghana: Analysis of the 2014 Ghana Demographic and Health Survey. *Journal of Public Health in Africa*, 10(2), 949. doi: 10.4081/jphia.2019.949.

[26] Shahabuddin, A. S., Nöstlinger, C., Delvaux, T., Sarker, M., Bardají, A., Brouwere, V. D., & Broerse, J. E. (2016). What Influences Adolescent Girls' Decision-Making Regarding Contraceptive Methods Use and Childbearing? A Qualitative Exploratory Study in Rangpur District, Bangladesh. *PloS one*, 11(6), e0157664. <https://doi.org/10.1371/journal.pone.0157664>.

[27] Crawford, E. E., Atchison, C. J., Ajayi, Y. P., & Doyle, A. M. (2021). Modern contraceptive use among unmarried girls aged 15-19 years in South Western Nigeria: results from a cross-sectional baseline survey for the Adolescent 360 (A360) impact evaluation. *Reproductive health*, 18(1), 6. <https://doi.org/10.1186/s12978-020-01056-w>.

[28] Fehintola, F., Okoro, N., Adedibu, D., Adeniyi, K.D., Adeniyi, C., & Folorunso, O. (2022). Predictors of Willingness to Use Modern Contraceptives among female undergraduate students in a tertiary institution in Nigeria: The Health Belief Approach. *Journal of Community Medicine and Primary Health Care*, 34(3). DOI: 10.4314/jcmphc.v34i3.12.

[29] Boamah-Kaali, E. A., Ruiter, R. A. C., Owusu-Agyei, S., Asante, K. P., & Mevissen, F. E. F. (2023). Social-psychological determinants of hormonal contraceptive use intentions among adolescent girls in the Bono East Region of Ghana. *Frontiers in public health*, 11, 1110112. <https://doi.org/10.3389/fpubh.2023.1110112>.

[30] Agha, S., Morgan, B., Archer, H., Paul, S., Babigumira, J. B., & Guthrie, B. L. (2021). Understanding how social norms affect modern contraceptive use. *BMC public health*, 21(1), 1061. <https://doi.org/10.1186/s12889-021-11110-2>.

[31] Sanchez, E. K., Speizer, I. S., Tolley, E., Calhoun, L. M., Barrington, C., & Olumide, A. O. (2020). Influences on seeking a contraceptive method among adolescent women in three cities in Nigeria. *Reproductive health*, 17(1), 167. <https://doi.org/10.1186/s12978-020-01019-1>.

[32] Challa, S., Shakya, H. B., Carter, N., Boyce, S. C., Brooks, M. I., Aliou, S., & Silverman, J. G. (2020). Associations of spousal communication with contraceptive method use among adolescent wives and their husbands in Niger. *PloS one*, 15(8), e0237512.

<https://doi.org/10.1371/journal.pone.0237512>.