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Contraception use Among Adolescents Aged 15 to 19 Years and Associated Factors in Zambia

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Abstract

Adolescence is a pivotal stage in one's life, defined by substantial physical, emotional, and social changes. In Zambia, Adolescent pregnancy is a concern and the use of contraception among this population has been relatively low. The study explored the factors influencing contraception use among adolescents. The study used the 2018 ZDHS female dataset. The variables were described using descriptive statistics, relationships between variables were tested using the Pearson Chi-square test and logistic regression was used to identify the factors related with contraceptive use among adolescents at 95% confidence level in Stata version 14.2. This study enrolled 1,564 participants and 24.5% reported using contraception. Married adolescents were three times more likely to use contraception (AOR=2.814; CI= (1.926-4.111); p<0.001). Employed adolescents were 71.3% more likely to do so (OR=1.713; CI= (1.162-2.524); p=0.007). Adolescents in primary (AOR=3.895; CI=1.561-9.718; p=0.004) and secondary (AOR=3.202; CI= (1.227-8.354); p=0.017) had over 3 times higher odds of contraception use compared to those without education. The study unveiled low contraception rates among adolescents, influenced by marital and employment status. Education emerged as a key factor, underscoring the importance of sexual education. Therefore, this highlights the need for tailored interventions and comprehensive sexual education to enhance adolescent reproductive health.

Keywords: Female Adolescents, Contraception Use, Reproductive Health, Zambia

Introduction

Adolescence is a pivotal stage in one's life, defined by substantial physical, emotional, and social changes [1]. In many areas of the globe, adolescents confront difficulties in developing their own identities and ambitions, frequently in the midst of shifting cultural norms and expectations [2]. In this regard, sexual and reproductive health becomes an important subject, considering that various studies have indicated that in most people, sexual debut occurs adolescence which is mostly regarded as early sexual debut [3- 6]. Early sexual debut, defined as the beginning of sexual engagement at a young age, can have a variety of repercussions [4]. Due to a lack of information about contraception and safe sex practices, there is an increased risk of unwanted pregnancies and sexually transmitted illnesses [7]. Early sexual debut can cause emotional stress and interpersonal difficulties, especially when persons lack emotional maturity [8]. Furthermore, social shame, scholastic interruption, financial load, and diminished future chances are all frequent consequences [9].

Zambia is a country in sub-Saharan Africa where early and unwanted pregnancies especially among teenagers is a major concern [10]. Adolescents indulging in sexual activities tend to risk unintended pregnancies considering that the overall use of contraception among this population has been relatively low ranging from 7.6% in 1996 to 12.0% in 2018 [11,12]. Adolescents who are sexually active but do not take contraception often may be more likely to become pregnant unintentionally and contract STDs [13]. In most cases this may be as results from barriers in access to information, contraceptives, cultural norms, and a lack of empowerment to make informed sexual and reproductive health decisions [14, 15]. In this regard, understanding factors associated with contraceptive usage in teenagers is critical for public health and well-being. It has greater ramifications for a nation's health and demographic landscape than just an individual's life trajectory.

This study aims to shed light on the complex dynamics of contraception use among adolescents in Zambia It looks at what influences the decisions that adolescents make regarding the use of contraception. By looking at these variables, this study hopes to support the creation of evidence-based policies and programs that encourage safer sexual behavior and better reproductive

health among teenagers in Zambia. The study employs quantitative methods to gain a comprehensive understanding of the various dimensions of contraception use among adolescents. It takes into account the influence of socio-demographic factors, educational status and socio-economic factors of the adolescents. Nevertheless, as we dive into the complex terrain of teenage contraceptive usage in Zambia, we want to find out what factors are associated with contraception use in order to understand the difficulties and also chances for good change. We anticipate that the findings of this study will be useful to policymakers, healthcare practitioners, and organizations concerned with the well-being and development of adolescents in Zambia and abroad. Finally, by identifying the factors linked to contraceptive use among adolescents, interventions may be developed that aim to provide adolescents with the information and resources they need to make educated choices regarding sexual and reproductive health, which will contribute to a healthier, more empowered, and prosperous future for Zambia's adolescents.

Methodology

Data Source

The female dataset extracted from the 2018 Zambia Demographic and Health Survey (ZDHS) was utilized in this study. The DHSs provided a national and subnational representative sample for estimates on demographics and health variables.

Sampling

The 2018 ZDHS used the 2010 Census of Population and Housing (CPH) as its sample frame. Zambia's administrative structure includes provinces, districts, constituencies, and wards. The ZDHS employed a stratified two-stage sampling design. Initially, 545 clusters (enumeration areas - EAs) were selected, and within each cluster, an average of 133 households were listed. Then, 25 households were systematically chosen from each cluster, resulting in a total sample of 13,625 households. This sample is representative at the national, urban, rural, and provincial levels, and all women aged 15 to 49, whether residents or visitors, were eligible for questioning. The Woman's Questionnaire in the 2018 ZDHS collected data from eligible women aged 15-49 on various topics, including background characteristics, contraception, reproduction, healthcare, marriage, HIV/AIDS, and domestic violence. All female participants provided informed consent before the interviews. However, in this study, the researchers were allowed to use the 2018 ZDHS female dataset through the DHS Program.

Target Population and Sample

A sub sample was drawn for this study which included all sexually active adolescents. During the 2018 demographic health survey, a total number of 3,112 adolescents were interviewed on current method of family planning. However, our study excluded the following adolescents, 1,544 who were not sexually active and 4 who were declared infecund giving us a sample of 1,564 participants.

Study Variables

Dependent Variables

The usage of contraception among adolescent females was one of the study's outcome factors. Based on current contraceptive use variable, a dichotomous variable was created with two levels: using any kind of contraceptive and not using any form of contraception.

Independent Variables

The following explanatory factors were considered in this study: The females' ages were numeric and varied from 15 to 19 years. Marital status was classified as married or unmarried. Place of residence was classified as rural or urban, while education level was classified as no education, elementary, secondary, or college/university. Currently employed, which was classified as employed or unemployed. The wealth index was divided into five categories: lowest, poorer, medium, richer, and wealthiest.

Statistical Analysis

Descriptive statistics were used to describe all the variables included in this study (both, explanatory and predictor variables). Considering the complexity of the methods used for sampling, weighting was applied to the data to ensure standardization. The Chi-square test was used to examine the relationships between independent and dependent variables and the characteristics associated with adolescent usage of contraceptives among those between the ages of 15 and 19 were found using logistic regression. Data management and analysis were done in Stata version 14.2 and analyses were done at 95% confidence level.

Results

Frequency Distribution of the Participants' Characteristics

The frequency distribution of the individuals' sociodemographic traits is displayed in Table 1. A total number of 1,564 participants were enrolled in this study and about one in four adolescents (24.5%) were using contraception (modern or traditional). Most of the participants were not married (71.4%). Most of the participants were not working (76.3%). Most of the participants' highest level of education was secondary (48.7%) while the higher education level had the least number of participants (0.3%). Most of the participants resided in rural areas (68.7%). Most of the participants were from the poorer wealth quintile (23.7%) while the minority were from the richest wealth quintile (11.6%).

Table 1: The characteristics of the respondents and their frequency distribution

Variable	Frequency (n)	Proportion (%)
Contraceptive Use		
Not using Contraception	1,181	75.5
Using Contraception	383	24.5
Marital Status		
Not Married	1,116	71.4
Married	448	28.6

Currently working		
No	1193	76.3
Yes	371	23.7
Education Level		
No education	76	4.9
Primary	722	46.2
Secondary	761	48.7
Higher	5	0.3
Urban-Rural Status		
Urban	489	31.3
Rural	1,075	68.7
Wealth Index		
Poorest	367	23.5
Poorer	370	23.7
Middle	363	23.2
Richer	283	18.1
Richest	181	11.6

Frequency Distribution of Respondents' Characteristics by usage of Contraception

Among the adolescents who were not using contraception, 77.0% where not married. Among those who were using contraception, 54.1% were not married. Among the adolescents who were not using contraception, most of them were not working (77.9%). Consequently, among those who were using contraception, most of them were also not working (71.3%). With regards to education level, among the adolescents who were not using contraception, most of them had secondary education (49.3%) as the highest education level while the minority had tertiary education (0.3%). Among those who were not using contraception, majority of them had primary education (49.9%) as their highest level of education while the minority had tertiary education (0.5%). Most of the adolescents who were not using contraception were residing in rural areas (68.7%). Most of the adolescents who were using contraception were also from rural areas (68.9%). Among the participants who were not using contraception were in the middle wealth index (23.5%) while the minority were in the richest wealth quintile (12.5%). Conversely, among those who were using contraception, most of them were in the poorer wealth quintile 25.5%) while the minority were in the richest wealth quintile (8.6%). The results indicated that among adolescents, contraception use was associated with marital status ($p < .001$) and working status ($p = 0.008$). The other factors, education level, urban-rural status and wealth index were not significantly associated with contraception use among adolescents.

Table 1: The characteristics of the respondents and their frequency distribution

Variable	Not using Contraception	Using Contraception	p- value
Marital Status			
Not Married	909 (77.0%)	207 (54.1%)	<0.001
Married	272 (23.0%)	176 (45.9%)	
Currently working			
No	920 (77.9%)	273 (71.3%)	0.008
Yes	261 (22.1%)	110 (28.7%)	
Education Level			
No education	65 (5.5%)	11 (2.9%)	
Primary	531 (44.9)	191 (49.9%)	0.083
Secondary	582 (49.3)	179 (46.7%)	
Higher	3 (0.3%)	2 (0.5%)	
Urban-Rural Status			
Urban	370 (31.3%)	119 (31.1%)	0.924
Rural	811 (68.7%)	264 (68.9%	

Wealth Index			
Poorest	274 (23.2%)	93 (24.3%)	0.271
Poorer	272 (23.0%)	98 (25.5%)	
Middle	277 (23.5%)	86 (22.5%)	
Richer	210 (17.8%)	73 (19.1%)	
Richest	148 (12.5)	33 (8.6%)	
Married	448	28.6	

Factors Related to Adolescents' usage of Contraception in Zambia

The odds ratios and adjusted odds ratios between teenage usage of contraception and a number of explanatory factors are displayed in Table 3. The adolescents who were married were 2.6 times more likely to use contraception (OR = 2.585; 95% CI = (1.802–3.708); p <.001). Adjusting for other variables showed a higher likelihood of 2.8 folds of contraception use among adolescents who were married (AOR = 2.814; 95% CI = (1.926–4.111); p <.001). Compared to adolescents who were not working, those who were employed had a 71.3% higher likelihood of using contraception (OR = 1.713; 95% CI = (1.162–2.524); p =.007). Adolescents with only a primary education were 3.2 times more likely to utilize contraception than adolescents with no formal education (OR = 3.227; 95% CI = (1.453–7.167); p =.004). Adjusting for other variables indicated that adolescents whose highest education level was primary were 3.9 times more likely to use contraception compared to those who had no education (AOR = 3.895; 95% CI = (1.561–9.718); p =.004). Adolescents whose highest education level was secondary were 2.4 times more likely to use contraception (OR = 2.376; 95% CI = (1.058–5.336); p =.036). After controlling for other factors, there was a greater likelihood that adolescents with secondary education as their greatest level of education would take contraception 3.2 times more frequently than teenagers with no education.

Table 3: Factors linked to adolescent usage of contraception in Zambia

Variable	OR (95% CI)	p-value	OR (95% CI)	p-value
Marital Status				
Not Married	Ref			
Married	2.585 (1.802, 3.708)	<0.001	2.814 (1.926, 4.111)	<0.001
Currently working				
No	Ref			
Yes	1.713 (1.162, 2.524)	0.007	1.428 (0.948, 2.150)	0.088
Education Level				
No education	Ref		Ref	
Primary	3.227 (1.453, 7.167)	0.004	3.895 (1.561, 9.718)	0.004
Secondary	2.376 (1.058, 5.336)	0.036	3.202 (1.227, 8.354)	0.017
Higher	2.519 (0.291, 21.777)	0.401	3.356 (0.384, 29.321)	0.273
Urban-Rural Status				
Urban	Ref			
Rural	0.899 (0.619, 1.309)	0.581	0.729 (0.459, 1.158)	0.181
Wealth Index				
Poorest	Ref			
Poorer	1.003 (0.641, 1.571)	0.988	1.001 (0.626, 1.597)	1.000
Middle	0.810 (0.505, 1.297)	0.380	0.935 (0.549, 1.592)	0.803
Richer	1.228 (0.735, 2.048)	0.432	1.387 (0.747, 2.574)	0.300
Richest	0.716 (0.368, 1.396)	0.327	0.939 (0.414, 2.132)	0.880

Discussion

The purpose of this study was to investigate the variables related to adolescent contraception use in Zambia. The study enrolled 1,564 participants and about one in four adolescents who were sexually active (24.5%) were using contraception (modern or traditional). This finding showed that contraceptive use among sexually active adolescents is relatively low in Zambia. A similar study in Ethiopia also showed slightly higher compared to Zambia, but relatively low usage of contraception among adolescents [16].

Married adolescents were 2.6 times more likely to use contraception. Adjusting for other variables showed a higher likelihood of 2.8 folds of contraception use among adolescents who were married, reinforces the significant role that marital status plays in

influencing contraceptive practices among this population. This finding may suggest that adolescents who are married may be preview to more information on contraception. This was heighted in a study done in Bangladesh where it was stated that family planning was almost universal among both married adults and adolescents [17]. In contrary to our findings, a study done in 73 low-and middle-income countries found that female adolescents who were married with no children had the lowest median prevalence of contraceptive use [18]. Comparably, a different study discovered that young women and teenagers who had ever been married had a lower likelihood of using contraception than those who had never been married [19]. Considering the contrasts between studies, this may suggest that contraceptive use varies from context to context among adolescents. Therefore, having a more tailored understanding of the behavior of adolescents towards the use of contraception is pivotal to in this matter and may contribute largely to healthier decisions among adolescents during sexual intercourse.

With regards to employment status, compared to adolescents who were not employed, those who were employed had a higher likelihood of using contraception. This finding was consistent with findings from other studies. A study conducted in the south Asian countries found that employment was positively associated with contraceptive use among adolescents [20]. Similarly, a study done in Indonesia found that employment status was a confounding variable that influenced the use of contraception among adolescents [21]. We also see it in a study that was conducted in 29 sub-Saharan countries found that the adolescents who were working were less likely to use modern contraception [22]. This discrepancy underscores the importance of considering regional and contextual variations when developing reproductive health policies and programs targeting adolescents, as the influence of employment on contraceptive practices may differ significantly across different geographic and cultural settings.

Adolescents whose highest education level was primary were 3.2 times more likely to use contraception compared to those who had no education. Adjusting for other variables indicated that adolescents whose highest education level was primary were 3.9 times more likely to use contraception compared to those who had no education. Adolescents whose highest education level was secondary were 2.4 times more likely to use contraception. Adjusting for other variables showed higher odds that adolescents whose highest education level was secondary were 3.2 times more likely more likely to use contraception compared to those who had no education. This result suggested that teenagers' usage of contraception is highly dependent on their level of education. In line with our findings, A study done in Zambia found that adolescent girls with higher levels of education were more likely to use contraception [4]. Another study done among Korean high school adolescents found that higher risks of not using contraception during sexual intercourse were found among the adolescents who did not receive sexual education in school [23]. These findings highlight the importance of education and key role in play in adolescent health, particularly sexual reproductive health as various studies have indicated this [24, 25]. The findings also suggest the lack of sexually education among adolescents who are not in schools. This may indicate that the adolescents out of school may be highly exposed to risks of unwanted pregnancies and diseases as they may not practice safe sex [26].

In this study, it is noteworthy that no significant associations were identified between contraceptive use, urban-rural status, and wealth index. This finding suggests that factors influencing contraceptive utilization may be more nuanced and multifaceted, transcending mere geographic location or economic status. The absence of such associations underscores the need to explore additional variables, such as cultural factors, access to healthcare services, and awareness of contraceptive methods, which could play a more substantial role in determining contraceptive usage. This result highlights the complexity of reproductive health dynamics and emphasizes the importance of tailoring family planning interventions to address the specific needs and contexts of the population under study. Further investigation into the underlying factors contributing to contraceptive use in this particular context may provide valuable insights for designing more effective and targeted reproductive health programs [27].

Study limitations

The study has various limitations that should be considered when drawing conclusions. The data is cross-sectional, which means it may estimate connections but not demonstrate causality. The study's capacity to properly comprehend the intricacies of teenagers' experiences and life cycle preferences is hampered as a result. Second, the study does not take into consideration community-level characteristics that are important in understanding teenage fertility behavior. More research, particularly mixed methods and longitudinal studies, is essential to understand the complex interplay of individual and community factors influencing adolescents' reproductive behavior and preferences, tracking how these dynamics evolve over time.

Conclusion

In conclusion, this study delved into the factors influencing contraceptive use among adolescents in Zambia and unveiled several critical insights. Notably, it revealed that contraceptive use among sexually active adolescents in Zambia is relatively low, with only about one in four utilizing modern or traditional contraception methods. This low prevalence mirrors similar findings from other studies, indicating a broader trend of limited contraceptive uptake among adolescents in the region. Marital status emerged as a significant factor associated with contraception use among adolescents with married adolescents showing a notably higher likelihood of contraceptive use, potentially linked to increased exposure to contraceptive information. Employment status was another influential factor, with working adolescents being more likely to use contraception. Education was also a significant factor as the critical role of education in contraceptive use was highlighted, emphasizing the significance of sexual education in schools. However, the variations in findings among studies suggest that the importance of regional and contextual variations. Finally, the absence of significant associations between contraceptive use and urban-rural status or wealth index underscores the complexity of reproductive health dynamics and necessitates a more nuanced approach that considers cultural factors, healthcare access, and awareness of contraception. These findings collectively stress the need for tailored and context-specific interventions to promote adolescent sexual and reproductive health, emphasizing the importance of comprehensive sexual education, especially for those out of school, in order to reduce the risks of unwanted pregnancies and diseases.

Ethical Approval

The data generated and examined for this study is freely accessible at https://dhsprogram.com/. The DHS IPUMS Program allowed us to utilize the 2018 female ZDHS dataset. The DHS Program anonymized the data submitted; thus, it contains no potentially identifiable information. The data was used in line with all of the standards that govern its use. Permission to publish was obtained from the Zambia National Health Research Authority (NHRA).

Availability of Data

Data used in our study is available and accessible to the public from the DHS IPUMS program upon request using the link https://dhsprogram.com/.

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Contributions

Consent for Publication: This article contains no photographs, specific information, or videos pertaining to the participants data.

Competing Interests: The authors declare that they have no competing interests.

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