International Journal of Scientific Research and Engineering Development-– Volume 6 Issue 4, July- Aug 2023

Available at www.ijsred.com

RESEARCH ARTICLE OPEN ACCESS

Assessment of Knowledge and Self-efficacy of Adolescentson Implant Contraceptive Use in West Point, Monrovia

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Abstract
This study assessed the extent of adolescents' knowledge and self-efficacy on the use of implant contraceptive (IC) in the slump community of West Point, Monrovia. Using a descriptive design coupled with stratified and simple random sampling techniques, a total of 294 adolescents were surveyed. Overall, respondents showed a *fair* knowledge of implant contraceptive use. Motivation and the willpower to utilize (self-efficacy) implant contraceptives were *low* and the utilization of implant contraceptives was also *low*. These findings indicate gaps in knowledge and self-efficacy levels of adolescents as well as their use of implant contraceptives.There should be specific interventions aimed at improving adolescents' knowledge, self-efficacy and their use of implant contraceptive in the slum community of West Point.

Key Words: Adolescents,assessment, **implant contraceptive,knowledge**, **self-efficacy**

1.0 Introduction

Worldwide, an estimated 85 million unintended pregnancies occur each year, making up 40% of all pregnancies (Sedgh, Singh, &Hussain, 2014). The maternal mortality ratios in adolescents are usually twice as high as those of women in their twenties (Nove, Matthews, Neal & Camacho, 2014). Particularly, adolescents between ages 10-14 face a higher risk of complications and death as a result of pregnancy than other women worldwide(World Health Organization, 2020). The first objective of theSustainable Development Goal 3 is to "reduce the global maternal mortality ratio to less than 70 per 100,000 live births" (United Nations, 2019). To this end, Ahmed, Li, Liu, and Tsui (2012) found that in lower and middle-income countries, maternal mortality can be averted by 20 and 30 percent through the use of contraceptives. However, access to family planning services by adolescents has been underpinned by socio-cultural practices (UNFPA, 2006).

A growing interest in the reproductive health of adolescents has been seen over the years. This is so because adolescents' reproductive health has been beset withserious health implications related to teenage pregnancy, such as miscarriages, stillbirths, unsafe abortions, and other complications that lead to maternal or infant deaths (Solomon-Fears, 2016). Additionally, adolescents who get pregnant tend to be school dropouts as they do not have the social and economic means to raise the children (Whitaker & Gilliam, 2008).

Given the pace of urbanization in most developing countries, in 2019, the United Nations estimated that more than half the world's population (4.2 billion people) now live in urban area and by 2041, this figure will increase to 6 billion people (Desa, 2019). Urbanization brings higher productivity because of its positive externalities and economies growth with technological development as a major advantage of many nations however, urbanization has a huge impact on health and wellbeing of the inhabitant especially the poor people.

For instance, urban slums serve as breeding ground for inequality and poverty, environmental hazards, and communicable diseases (McMichael, 2000). Moreover, urban slums are unregulated, have congested conditions and are overcrowded and are restricted due to dangerous geographical area such as hillsides, river banks, and ocean beaches (water basins) prone to landslides, flooding due to raising of the ocean tides or other industrial hazards. These factors pose challenges to the improved health of residents such that they lead to an increase in the spread of infectious and communicable diseases, pollution, poor nutrition, and among others(Alirol, Getaz, Stoll, Chappuis& Loutan, 2011).

Implant contraceptives are available for free in the public health facilities and selected private clinics in communities including slums in Monrovia for the purpose of controlling and preventing unplanned and unwanted pregnancies. Despite the freely available contraceptives, female adolescent between the ages of 15 to 19 years still conceive unintentionally resulting to nearly 31% of them becoming mothers or pregnant with their first child between the said ages [Liberia Demographic and Health Survey (LDHS), 2021].

A most severe consequence that Liberia faces currently is teenage pregnancy and its related complications including dropout rates and unsafe abortions. Accordingly, teenage pregnancy contributes significantly to dropout rates among school going adolescent girls and approximately 67% of adolescent girls with no education are mothers(UNFPA Liberia, 2020). Literature reports that maternal mortality is more likely to occur with pregnant adolescents as compared women in other age group (Nove, Matthews, Neal & Camacho, 2014; WHO, 2019). In Liberia, roughly about 26% of females' adolescent pregnancies are unintended and 30% end in unsafe abortion(UNFPA Liberia, 2020). Yet, it is evidently that implant contraceptive prevents pregnancy and is among the list of modern contraceptive services that are provided free of charge at all health care facilities including both public and private. However, there are still unmet needs for contraceptives for both married and un-married women with the highest among married women age 15-19 (LDHS, 2021).

Moreover, implants account for only 2% of the 19% of modern methods use among women of reproductive and childbearing age (LDHS, 2021).This indicates that even amongst contraceptives user there is a low uptake of implant contraceptives which presents the need for investigation. Against this background, the researcher seeks to assess knowledge, self-efficacy andthe utilization of implant contraceptive amongst adolescents in the West Point Community, Liberia.

Research Methodology

This section presents the methods used in data collection and analysis. They methods include study design, population ad sampling technique, data collection instrument, data collection procedures, ethical considerations and statistical treatment of data.

Research Design

The study employed a descriptive design. This design enabled the researcher to determine the extent of knowledge and self-efficacy of adolescents on contraceptive use.Descriptive survey describes a single variable but when multiple variables are involved, it describes the variables separately (Gravette, Wallnau&Forzano, 2022).

Population and sampling

This study recruited 1,112 adolescents (15-19years) obtained from household listing conducted by the researcher in Zone 401 of West Point Community. The female adolescents were between the ages of 10 and

19 years and were residents of Zone 401 in West Point. West Point Community is divided into seven zones, with each of the zone having five blocks.

The sample size was determined using the Taro Yamane formula as shown below:

$$n = \frac{N}{1 + N * (e)^2}$$

where:
n= sample size
N = population
e = acceptable sampling error of 0.05

n= 1112/1+ 1112(0.05)^2
= 1112/1+ 1112(0.0025)
= 1112/1+2.78
n = 294.1 = **294**

Since Zone 401 in West Point is divided into five blocks, the study utilized stratified sampling (each block a stratum) and ratio and proportion to obtain a representative sample from each block. The blocks are labelled A, B, C, D and E. Block A has a population of 210, Block B218, Block 234, Block D 106 and Block E 353. Simple random sampling was used to survey the representative sample from each block.Below is the demonstration of stratified sampling with ratio and proportion:

Block A: 294÷1112 x201 =53
Block B: 294÷1112x218 = 58
Block C: 294÷1112x234 = 62
Block D: 294÷1112x106 = 28
Block E: 294÷1112x353 = 93
Total: 294

Instrumentation
The research utilized survey questionnaire to acquire quantifiable data from the respondents. The questionnaire consisted of four components. The first section dealt with the demographic profile of adolescents; the second section dealt with assessing knowledge of respondents; the third section dealt with assessing self-efficacy of respondents; and the last section assessed the extent of implant contraceptive use by adolescents.

Ethical Considerations
Ethical clearance was obtained from the Ethics and Review Board of the Cuttington University Schools of Graduate and Professional Studies to conduct the study and publish its findings. Informed consent (written) was secured from the respondents before participating in the study. The research adhered to strict anonymity and confidentiality standards as respondents' identities were concealed.

Statistical Treatment of Data

The data were analyzed using the Statistical Package for Social Science (SPSS) software. Descriptive statistics was employed as percentages were used to describe the demographic profile of the respondents, while means and standard deviations were used to determine the extent of adolescents' knowledge and self-efficacy on the use of implant contraceptive.

Results and Discussion

This section presents the study's findings based on analysis of data and review of related literature.

Socio-demographic profile of respondents

As shown in table 1, this section presents the demographic profile of respondents in terms of age, educational level, employment status and marital status. Of the 294 adolescents surveyed, 131 (44.6%) fall in the age range 13-15 years, followed by 112(38%) who fall in the age range 16-19 years. Respondents who fall in the age bracket 10-12 years account for the least (17.3%). Regarding educational level, 119 adolescents (40.5%) had junior high education, followed by about one-third (100; 34%) who had senior high education. Respondents with a university degree account for the least (4.1%).

Respondents were grouped according to employment status. As indicated in table 1, more than half (165; 56.1%) of the adolescents were employed, followed by (104; 35.4%) who were self-employed. Respondents who were fully employed (working with different employers) constitute the least (8.5%). In terms of marital status, more than half (157; 53.4%) of the respondents were single, followed by (107; 36.4%) who were married and 30 (10.2%) who were co-habiting.

Table 1: Socio-demographic profile of respondents

Category	Number	Percent
AGE OF RESPONDENTS		
10-12	51	17.3
13-15	131	44.6
16-19	112	38.1
TOTAL	**294**	**100**
EDUCATIONAL LEVEL		
Elementary63	21.4	
Junior High	119	40.5
Senior High	100	34.0
University Graduate	12	4.1
TOTAL	**294**	**100**
EMPLOYMENT STATUS		
Full-time employment	25	8.5
Self-employed	104	35.4
Unemployed	165	56.1
TOTAL	**294**	**100**

MARITAL STATUS			
Single	157		53.4
Married	107		36.4
Co-habiting	30	10.2	
TOTAL	**294**		**100**

Extent of knowledge of adolescents on implant contraceptive use

This section gives the extent of adolescents' knowledge on the use of implant contraceptive. As indicated in table 2, a little over half (52.2%) of the respondents demonstrated *fair* knowledge on the use of implant contraceptives.In response to the question "Women can have small rods placed in their upper arm by a doctor or nurse", 63.3% of the respondents agreed with the statement which is translated as respondents having *fair* knowledge on implant contraceptive use. Majority(56.1%) of the respondents have attended a class/ forum on implant contraceptive use. Similarly, 56.1 % of the respondents are aware of the side effects of implantcontraceptives which is interpreted as having *fair* knowledge of implant contraceptives.Forty-one percent (41%) of respondents stated that implant contraceptive causes an infection which is interpreted as having *poor* knowledge of implant contraceptive.

Table 2: Extent of adolescents' knowledge

Questionnaire	Mean	Scale Response
Attended class/forum on IC	.5613.36	
Aware of the side effects of IC	.561	3.36
Women can have small rods placed in their upper arm by a doctor or nurse	.633	3.79
IC can prevent pregnancy for up to 10 years	.469	2.81
IC causes infertility	.493	2.95
IC causes infections	.418	2.50
Total	**.5223.12**	

Legend: 1:2=Poor, 3:4=Fair, 5:6=Good

Majority of the respondents in the current study demonstrated fair knowledge on the use of implant contraceptive. This finding parallels an American study by Guzzo and Hayford (2018) on adolescent reproductive and contraceptive knowledge and attitudes and adult contraceptive behavior. They reported adolescents having fair knowledge of modern contraceptive methods including implants. Additionally, a Thai study found adolescents to have high knowledge of implant contraceptives and modern contraceptive use (Chaiboonruang, 2018). However, a recent qualitative study reported low knowledge levels of implant contraceptive use among Ugandan adolescents. Misinformation on implant contraceptives was a major contributing factor to the low knowledge level reported in the study (Mulubwa *et al*., 2021).

Extent of Self-efficacy of Adolescents

This section gives the extent of adolescents' self-efficacy on the use of implant contraceptive.

Table 3 illustratesthe extent of adolescents' self-efficacy on the use of implant contraceptivesas *low*with an overall mean of 2.29. Particularly in response to the question,"I feel embarrassed to go to the clinic and ask for implant contraceptive insertion", 37.4% of respondents agreed with this statement. Hence, it shows the extent of adolescents' self-efficacy as*low (mean=2.45)* for the use of implant contraceptives. Notably, respondents demonstrated having*low* self-efficacy inthe preference for implant contraceptives over pills with a mean of 2.38. Also, as seen in table 3,the mean (2.18) can be interpreted as having*low* self-efficiency regarding the question of feeling comfortable with having implant contraceptives and having concerns or caring about the side effects of implant contraceptives.

Table 3: Extent of adolescents' self-efficacy

Questionnaire	N	Mean	Std. Deviation
Feel comfortable with IC	294	2.1871	.84399
Feel embarrassed to go to the clinic and ask for IC insertion	294	2.4524	.92155
Would recommend IC to my friends	294	2.2789	.82852
Care about the side effects of IC	294	2.1871	.91389
Prefer IC to pills	294	2.3878	.90843
Total		**2.2986**	

Legend: 1.0-1.75=very, 1.76-2.51=low, 2.52-3.27= high 3.28-4.00=very high

The current study indicated the extent of adolescents' self-efficacy on implant contraceptive use where the overall self-efficacy was low (Table 3). This finding coincides with results from a qualitative study on adolescents in Ghana where most respondents expressed a lack of self-efficacy to use implant contraceptives (Boamah-Kaali*et al.*, 2021). However, in a Nepali study by Angdembe and colleagues, they reported contrary findings. They indicated a high self-efficacy level (61.6%) for modern contraceptives including implant contraceptives among adolescents (Angdembe*et al*., 2019).

Extent of Utilization of Implant Contraceptive

This section presents the extent of implant contraceptive use by respondents. As seen in table 4,the use of implant contraceptives among adolescents is *low* with the overall mean of 2.51. Even though respondents exhibit an overall low self-efficacy toward IC use, they showed a high self-efficacy level in some respects. Regarding the question, "There are times I'd easily have sexual intercourse even if I was not protected, respondents agreed with amean of 2.73 and a standard deviation (SD) of 1.98 which is interpreted as *high* use of contraceptives. With the question "I would discontinue using five years (implant contraceptive) method if my parents get to know" respondents responded affirmatively with a of mean of 2.67 (SD= .88) which is translated as *high* use of implant contraceptives. Respondents that have usedimplantcontraceptivesrecord the least mean (2.38) which is interpreted as *low* for implant contraceptives. Similarly, in response to the question "I sometimes go to the clinic/hospital to take out the IC when I feel much side effects", respondents agree with the lowest mean of 2.38. This is interpreted as *low*.

Table 4: Extent of utilization of implant contraceptive

Questionnaire	N	Mean	Std. Deviation
There are times I would easily have sexual intercourse even if I was on a birth control pills	294	2.73	131.98267
Would discontinue using five years IC if my parents get to know	294	2.6701	.87630
Have used IC before	294	2.3844	.85376
Currently using IC	294	2.5136	.87328
IC has caused a lot of side effects for me	294	2.4014	.89106
I sometimes go to the clinic/hospital to take out the IC when I feel much side effects	294	2.3844	.86960
Health care providers promote the use of IC in my Community	294	2.4898	.87332
Total		**2.51069**	

Legend: 1.0-1.75= Very Low, 1.76-2.51=Low, 2.52-3.27= high 3.28-4.00= Very high

Findings from the current study reveal adolescents' use of implant contraceptives to be low (Table 4). This finding aligns with a study conducted by the American College of Obstetricians and Gynecologists (2012) that found only 5.8% of adolescents and women aged 15–19 years to have ever used an implant contraceptive. Another study conducted in Ghana reported negative attitudes towards adolescent hormonal (implant) contraceptive use (Boamah-Kaali*et al*., 2021). However, a previous study found implants use to constitute one-fourth to one-half of all modern method used in Burkina Faso, Ethiopia, Democratic Republic of Congo, Ghana, Kenya and Senegal (Jacobstein, 2018).

Conclusions

This study found that respondents had a fair knowledge of implant contraceptive use. Motivation and the willpower to utilize (self-efficacy) implant contraceptiveswere low and the utilization of implant contraceptives was also low. These findings indicatea huge gap in knowledge and self-efficacy levels of adolescents as well as their use of implant contraceptives. Specificinterventions (sexual reproductive health education) should be designed to improve and enhance respondents' knowledge, self-efficacy and use of implant contraceptives.

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