

Knowledge, Attitude and Barriers to Hormonal Contraceptive Use among Women with Sickle Cell Disease in the Kumasi Metropolis of Ghana

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ABSTRACT

Despite the non-contraceptive benefits hormonal contraceptives offer to women with haemoglobin SS, the utilization of hormonal contraceptives is on the decrease. The study sought to assess the knowledge, attitudes and barriers to the use of hormonal contraceptives among women with SCD in the Kumasi metropolis. The study used questionnaires to collect primary data from 378 women with haemoglobin SS within their reproductive ages. The results of the study showed that knowledge was not significantly associated with the use of contraceptives among women with SCD. Attitude was found to be significantly associated with the use of contraceptives among women with SCD. Principal barriers to contraceptive use were: discussion of contraceptive method with partner, informing partner of use, partner's support for use and wanting to get pregnant. It is recommended that Ghana's Ministry of Health and its agencies, Planned Parenthood Association of Ghana, Marie Stopes International-Ghana should scale up awareness and education among respondents and their partners on both the contraceptive and non-contraceptive benefits of progestin-only contraceptives for women with SCD and how it can improve their quality of life. Partner cooperation and approval should be given priority in all family planning programmes.

Index Terms: Knowledge, Attitude, Barriers to Hormonal, Contraceptive Use, Sickle Cell Disease, Kumasi Metropolis.

I. INTRODUCTION

Globally, 300,000 children are born every year with sickle cell disease (SCD) (Agyun & Odame, 2012; Model & Darlison, 2008; Weatherfall, 2011). It is estimated that 75-80% of children born with SCD are born in Africa (Agyun & Odame, 2012; Makani et al. 2011). Consequently, the birth prevalence of SCD is high in Africa. In Ghana about 2% of neonates are affected by SCD leading to 14,000 new cases annually (Wilson et al. 2012).

Empirically, the use of hormonal contraceptives by women with SCD remains controversial as some researchers have associated the occurrence of strokes and thromboembolism to the long term use of some hormonal contraceptives in women with SCD. Despite the negative publicity hormonal contraceptive use in SCD has received, good evidence exists that the injectables and progestin-only contraceptive methods are safe and effective for women with sickle cell disease. The IUD appears to be safe as are the common barrier methods, while combined oral contraceptive pill is contraindicated for use in women with SCD.

In Ghana, pregnant women with SCD who delivered at Korle-Bu Teaching Hospital in Accra accounted for ~7.2% of all maternal mortality cases in the hospital (Dare et al.1992: Odum et al. 2002). This figure is similar to what has been observed in other studies across Africa (Dare et al. 1992: Odum et al. 2002). This high maternal mortality in pregnancy suggests that in sub-Saharan Africa, the health of women with SCD is severely compromised during pregnancy. Each birth of a child by women with SCD poses significant risk for maternal mortality. It also important to note that Ghana, like other developing countries beset by high maternal and child mortality rates, has the most to gain from family planning's numerous health benefits such as reducing a woman's exposure to unintended pregnancies, reducing the number of abortions and abortion-related complications as well as illnesses related to complications of pregnancy and childbirth. Adherence to contraceptive method and discontinuation of contraception for method-related reasons is common, and accounts for a significant proportion of unintended pregnancies since many women switch to less effective methods or use no method at all.

Problem Statement

Historically, women with sickle cell disease experience difficult pregnancies, characterized by high rates of maternal

mortality and morbidity and poor infant outcomes (Amid & Odame, 2014). Unresolved questions about hormonal contraceptives in women with sickle cell disease include whether using hormonal contraceptives may promote vaso-occlusive crisis. Women with sickle cell disease therefore need adequate family planning advice to prevent unwanted pregnancy. Due to limited data, it is difficult to account for the number of unwanted pregnancies among women with SCD in Ghana. The use of hormonal contraceptives alone by women with sickle cell disease can reduce accidental pregnancies by 73% and associated maternal deaths by 75% (Klufio, 2014).

Interestingly, Depomedroxyprogesterone acetate offers non contraceptive benefits to women with SCD. Women with SCD were less likely to experience vaso occlusive crisis while using the injectable birth control known as Depo (a progestin contraceptive) (Gomez et al. 2012). Gomez et al. (2012) further adds that progestin only contraceptives decreases the intensity and frequency of bone pain associated with vaso-occlusive crisis. Depomedroxyprogesterone acetate (DMPA) is an increasingly popular contraceptive in sub-Saharan Africa (Adetunji, 2006).

Social, economic, and cultural characteristics of patients with sickle cell disease are important in assessing their knowledge, attitudes and barriers that influence their ability to access reproductive health services including contraceptives uptake (Housten et al. 2015). Patients with sickle cell disease are often poorer than the national average and are more often covered by Medicaid (Ashgarian & Anie, 2003). The psychosocial and/or economic impact of SCD on families, religious beliefs, experiences resulting from the presence an affected child for SCD, and future chance of having a healthy child may influence reproductive options (Wonkam et al. 2014). The effective control of conception leads the society to an indisputable advance, as it facilitates the emancipation of women. Additionally, planned pregnancies increases the participation women in the labor market and matches the number of children to the economic conditions of women (Cruz Santos et al. 2014).

According to Rapley and Davidson (2010), hormonal contraceptive decisions among women with SCD are heavily influenced by several external factors. Factors such as health care access, psychosocial needs, and community understanding of the disease mostly affect contraceptive decision among women with SCD (Rapley & Davidson, 2010). Other factors that influence contraceptive decisions include perceptions of miscommunication between patient and their partners.

Hormonal contraceptive offers non-contraceptive benefits for women with sickle cell disease (SCD) and these include reduction in the episodes (frequency) and the severity vaso-occlusive crisis associated with the disease. Current literature on hormonal contraceptives mainly focuses on either experiences of the general population or combines the experiences of women with SCD and those of the general population. Current SCD family planning recommendations

are most often based on lower quality evidence, expert consensus opinion, or adaptation of evidence from other patient populations (Savage et al. 2014). Therefore, every aspect of SCD care warrants additional evidence to guide appropriate reproductive health interventions. Thus, the main objective of the study was to investigate the association between knowledge, attitude, principal barriers and use of contraceptives among women with sickle cell disease.

II. Theoretical Framework

The Health Belief Model (HBM)

A modified model of Rosenstock’s (1974) Health Belief Model (HBM) (Figure 2.1) served as the framework to understand contraceptive behavior of women with sickle cell disease (SCD). The HBM is a cognitive, interpersonal framework that views humans as rational beings who use a multidimensional approach to decision-making regarding whether to perform a health behavior (Rosenstock, 1974). The model is appropriate for complex preventive and sick-role health behaviors such as contraceptive behaviour.

The HBM's adaptability and holistic nature facilitate applications in diverse contexts like family planning and with complex behaviors like hormonal contraceptive behavior (Katatsky, 1977; Nathanson, 1983). Family planning is a dynamic and complex set of services, programs and behaviors towards regulating the number and spacing of children within a family (Janz & Becker, 1984). Contraceptive behavior, one form of family planning which WHO (2011) refers to as activities involved in the process of identifying and using a contraceptive method to prevent pregnancy. These activities can include specific actions such as hormonal contraceptive initiation, continuation or discontinuation, misuse, nonuse, and more broadly compliance and adherence (Hall et al. 2010).

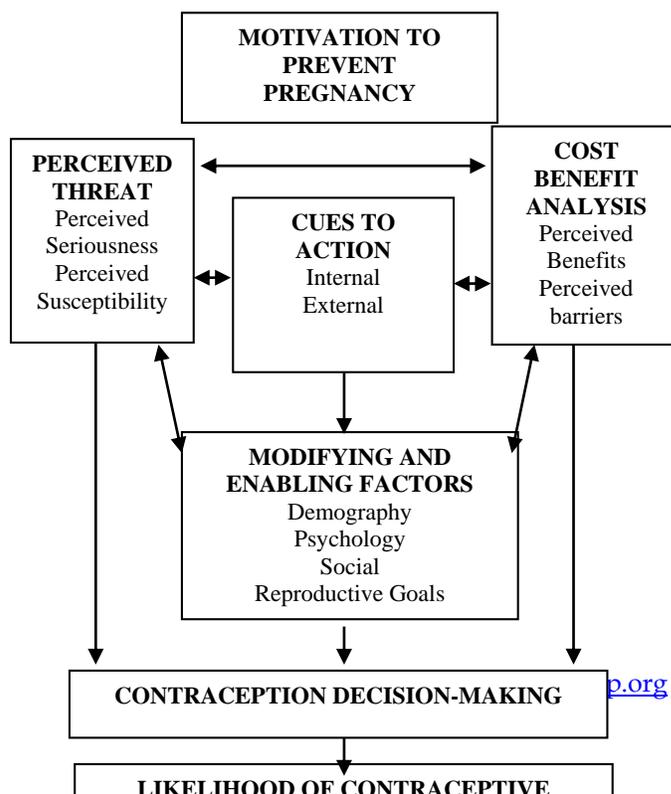


Figure 2.1: Constructs of the Health Belief Model (Source : Rosenstock, 1974)

Modifying or enabling factors in fig 2.1 are factors that interact with an individual's perceptions of pregnancy and decision-making to influence contraceptive use. This dimension includes a broad range of well researched demographic, social, structural, psychological and reproductive factors predictive of hormonal contraceptive behavior (Rosenberg & Waugh, 1998; Lin & Hingson, 1974).

The general argument focused on the role of motivation. That is the motivation to prevent an unwanted pregnancy would predict hormonal contraceptive compliance just as the motivation to prevent a disease would predict medication therapy compliance.

Cues to Action

Cues to action in fig. 2.1 above are internal and external stimuli that trigger a consciousness of the perceived pregnancy threat and facilitate consideration of using hormonal contraception to remedy the threat. This may include symptoms like missed menses after intercourse (internal stimuli) or contraceptive communication from the media, and worry from a sexual partner or counseling by a health care provider (external stimuli) (Egarter et al. (1997); Kaunitz, 1999).

Perceived Threat

Perceived threat (susceptibility and seriousness) may refer to an unwanted pregnancy and its sequelae (i.e. birth, abortion, parenthood) provides the incentive to use hormonal contraception. This construct considers personal feelings of the seriousness of becoming pregnant, based upon subjective assessment of medical and social consequences of pregnancy and childbearing.

Socio-demographic variables as predictors of use of contraceptive methods

In developing countries, use of modern contraceptives including use of hormonal contraceptive methods can be influenced by the socio-demographic characteristics of women. Indian studies have shown that woman's education emerges as the strongest predictor of use of contraceptive methods (Das et al. 2011). In one Yemen study, parity, age, marital status, religion, husband's education, husband's occupation, monthly family income, and woman's occupation were found to be associated with use of contraceptive methods (Almuallm, 2014).

The principal predisposing and enabling factors affecting use of hormonal contraceptive methods by women with sickle cell disease were socioeconomic status, level of knowledge, communication between spouses and education (Almuallm, 2014; Kessy & Rwabudongo, 2016). This leads to the conclusion that the main limiting factors to the use of contraceptive methods in the state are poverty, ignorance, and illiteracy.

Studies in Sudan, an Islamic country in the developing world, very few women reported that the use of contraceptive methods was against religion or cultural beliefs, knowledge of use was therefore far from being universal (Ibnouf et al. 2013). Religions vary widely in their views of the ethics of birth control. The Roman Catholic Church accepts only Natural Family Planning and only for serious reasons, while Protestants maintain a wide range of views from allowing none to very lenient (Nakiboneka & Maniple, 2008; Hirsch, 2008).

III. METHODOLOGY

Study Design and Study Setting

The study employed a cross sectional descriptive design aimed at assessing factors that influence hormonal contraceptive use by clients with sickle cell disease in the Kumasi Metropolis. Cross-sectional design was the appropriate choice of design because, the investigator was interested in assessing the characteristics of women with SCD and the influence of the level of knowledge, attitudes and barriers on the use of hormonal contraceptives among women with SCD attending health facilities.

Study Population

The study population was women with SCD aged between 15-49 years who were returning on an out-patient basis after expiration of previous contraceptive and for resupply of hormonal contraceptives, routine follow-up or those with problems associated with the use of a specific hormonal contraceptive method. The women were selected from five hospitals in the Kumasi Metropolis.

Sample and Sampling Procedure

According to the Ghana Health Service District Health Information system (2017), the total attendance of women with SCD aged 15-49 years for 3 months at the hospitals was 507. The sample size was determined using the Kish (1965) formula $n(\text{minimum sample size}) = Z^2 pq/d^2$
 $Z = \text{Area under the normal curve corresponding to 95\% confidence interval (CI)} = 1.96$. $P = \text{Expected prevalence of hormonal contraceptive use among women with SCD}$ was estimated using a case control study by Samuel-Reid et al (1984). $P = 33\% = 0.33$. $q = 1 - p = 1 - 0.33 = 0.67$; $d = \text{level of statistical significance/maximum tolerable error} = 0.05$. Assuming non-response rate is 10 per cent. Therefore, adjustment for non-response = $339.75/0.9$. Therefore, the estimated total sample size (n) for the study was 378.

Two stage sampling technique was used to select the hospitals and the women with sickle cell disease. At stage one, the hospitals in the metropolis were divided among the five sub metros in the Metropolis. The number of respondents to be recruited from each facility was determined using proportionate sampling. A facility was randomly selected from each sub-metro using balloting. At stage two, all women who attended the clinics during the three months' period of the study and consented to participate in the study were enrolled. This was repeated until the required sample size was attained for each facility in each sub-metro.

Data Collection

A semi-structured questionnaire was designed as the data collection instrument. The questionnaire was written in English and translated to Twi which was the local language spoken in Kumasi, by a language expert and transcribed back to English to check for consistency and correctness of the translation. Validity and reliability of the instrument was done through relevant literature search. The minimum Cronbach's coefficient alpha of 0.7 was used to measure the internal consistency and determined the reliability of the questionnaire used for the study. The questionnaire was administered in all the selected facilities by the principal investigator with the help of two supervisors and ten data field assistants who were trained intensively for four were prior to data collection.

Variables

Dependent variables were knowledge, attitude and barriers of women with SCD regarding hormonal contraceptive use. Independent variables were educational qualification, age of women of reproductive age group, parity and religion.

The level of knowledge was assessed using a Likert scales for various items on the questionnaire compared with the proportion of use of hormonal contraceptive use, same was done for attitudes as well as barriers. The research results were then presented in the form of frequency tables showing the frequency of responses to the research questions. Logistic regression was used to determine the associations between each of the independent variables and the dependent variables. All statistical tests were considered statistically significant at $p < 0.05$.

A reliability test (Chronbach's alpha) was conducted on the "knowledge subscale" for the survey. Table 3.1 shows that, "knowledge subscale" had an alpha level of 0.865 which indicated that the subscale had a very high and adequate level of inter-item reliability.

Table 3.1: Validity Test of Subscale

| Parameter (Subscale) | Cronbach's Alpha | No. of Items |
|----------------------|------------------|--------------|
| Knowledge | 0.865 | 16 |

Source: Field Survey, 2020

The attitudes of sexually active respondents towards hormonal contraceptives were computed into cumulative percentages and graded into three classification levels according to Rubaish, (2010) namely: Poor/Improvement required (<60%), Acceptable/good (60-80%), Excellent/High (81-100%). The nine barriers posed to respondents were analyzed using Principal Component Analysis (PCA) to identify the principal barriers to contraceptive use among the study participants. Data adequacy and suitability for PCA was validated using the Kaiser-Meyer-Oklun (KMO) test with data coefficient of 0.637 and the Bartlett's Test of sphericity at 99% confidence interval shown to be significant ($p < 0.0001$). The investigator used Chi-square values to determine whether the differences between the theoretical and observed measures could be reasonably regarded as chance variation.

Results and Discussion

The study population involved women with SCD aged between 15-49 years who were returning after expiration of previous contraceptives for routine follow up as well as those returning with problems associated with the use of a specific hormonal contraceptive method.

Relationship between Socio-Demographic Characteristics and the Attitude of Respondents towards Contraceptive Use

Table 4.3 shows the relationship between socio-demographic characteristics and the attitude of respondents towards contraceptive use. Age of the study participants was found to be significantly associated with attitude towards contraceptive use, $\chi^2=24.892$, $p=0.023$. Among participants aged 15-19 years who were sexually active, a higher proportion (4.8%) had an excellent attitude towards contraceptive use. This pattern was similar among ages 35-39years, 40-45 years and 46-49 years. For those aged 20-24 years their highest proportion 19 (19.4%) had poor attitude towards contraceptives use. A similar outcome was observed among ages 30-34 years.

Table 4.3: Relationship between socio-demographic characteristics and attitude of sickle cell disease women towards contraceptive use

| Parameter | | Attitude towards contraceptive | | | | | | d(f) | X2 | p value |
|----------------|---------------------|--------------------------------|-------|------------|-------|-----------|-------|------|--------|---------|
| | | Poor | | Acceptable | | Excellent | | | | |
| | | N | % | N | % | N | % | | | |
| Age (yrs) | 15-19* | 4 | 4.1% | 1 | 2.0% | 4 | 4.8% | 12 | 24.892 | 0.023 |
| | 20-24* | 19 | 19.4% | 3 | 6.0% | 5 | 14.3% | | | |
| | 25-29 | 23 | 23.5% | 24 | 48.0% | 11 | 30.7% | | | |
| | 30-34 years | 47 | 48.0% | 20 | 40.0% | 14 | 42.9% | | | |
| | 35-39 years | 4 | 4.1% | 2 | 4.0% | 4 | 5.3% | | | |
| | 40-45 years | 1 | 1.0% | 0 | 0.0% | 2 | 1.6% | | | |
| | 46-49 years | 0 | 0.0% | 0 | 0.0% | 1 | 1.0% | | | |
| Qualification | No formal education | 45 | 45.9% | 21 | 42.0% | 22 | 53.7% | 8 | 14.665 | 0.067 |
| | SSSCE | 13 | 13.3% | 7 | 14.0% | 9 | 22.0% | | | |
| | Diploma/HND | 2 | 2.0% | 6 | 12.0% | 0 | 0.0% | | | |
| | 1st Degree | 1 | 1.0% | 0 | 0.0% | 0 | 0.0% | | | |
| | Masters Degree | 37 | 37.8% | 16 | 32.0% | 10 | 24.4% | | | |
| Marital Status | Single | 33 | 33.7% | 12 | 24.0% | 10 | 24.4% | 4 | 5.572 | 0.092 |
| | Married | 65 | 66.3% | 38 | 76.0% | 30 | 73.2% | | | |
| | Separated | 0 | 0.0% | 0 | 0.0% | 1 | 2.4% | | | |
| Parity | Nulliparous | 34 | 28.0% | 14 | 28.0% | 4 | 9.8% | 8 | 22.978 | 0.003 |
| | Primiparous | 16 | 16.3% | 9 | 18.0% | 6 | 14.6% | | | |
| | Para 2 | 23 | 23.5% | 13 | 26.0% | 8 | 19.5% | | | |
| | Para 3 | 9 | 9.2% | 10 | 20.0% | 16 | 39.0% | | | |
| | Para 4 and Above | 16 | 16.3% | 4 | 8.0% | 7 | 17.1% | | | |
| Occupation | Unemployed | 25 | 25.5% | 9 | 18.0% | 2 | 4.9% | 6 | 24.877 | 0.0001 |
| | self Employed | 44 | 44.9% | 13 | 26.0% | 19 | 46.3% | | | |
| | Student | 11 | 11.2% | 3 | 6.0% | 8 | 19.5% | | | |
| | Employed | 18 | 18.4% | 25 | 50.0% | 12 | 29.3% | | | |
| Religion | Christian | 51 | 52.0% | 40 | 80.0% | 12 | 29.3% | 4 | 32.316 | 0.0001 |
| | Islamic | 47 | 48.0% | 9 | 18.0% | 25 | 61.0% | | | |
| | Traditional | 0 | 0.0% | 1 | 2.0% | 4 | 9.8% | | | |

χ- Square analysis: Data= frequencies (N) & Percentages (%), d (f) = degree of freedom, χ- Square analysis: Data= frequencies (N) & Percentages (%), d (f) = degree of freedom, significance (2-sided) was achieved at p<0.05.

The educational qualification of the study participants was not found to be significantly related to their attitude towards contraceptive use, $\chi^2=14.665$, $p=0.067$. Also, marital status was not significantly associated with attitude towards contraceptive use, $\chi^2=5.572$, $p=0.092$.

Parity was found to be significantly associated with the attitude of respondents towards the contraceptive use, $\chi^2=22.978$, $p=0.003$. Nulliparous women generally had a poor attitude towards contraceptive use, primiparous and para 2 women had a moderate attitude towards contraceptive use while para 3 and para 4 had an excellent attitude towards contraceptive use.

Occupation was found to be significantly associated with the attitude of respondents towards the contraceptive use $\chi^2=24.877$, $p<0.0001$. Unemployed participants generally had poor attitude towards contraceptive use. For self-employed participants, students and the employed, highest proportions had excellent attitude towards contraceptive use.

Religion was significantly associated with attitude towards contraceptive use, $\chi^2=32.316$, $p<0.0001$. Proportionally, a majority of Christians had acceptable attitude towards contraception, while a majority of Islamic religion and traditional religion practitioners had excellent attitude towards contraceptive use.

From this study, there was a significant association between the knowledge on progestin-only contraceptives and respondent's educational qualification, marital status and parity. Women with higher educational qualifications may have been introduced to various forms of contraceptives including progestin-only contraceptives. Education has been shown to be greatly associated with knowledge in many correlation studies (Patton et al. 2015). The results from this study support previous studies that showed that increased education was associated with knowledge in contraception (Ochako et al. 2015).

Marital status was also significantly associated with knowledge on hormonal contraceptives. In typical African societies, contraceptive use is only permissible for married couples. Due to the judgemental attitudes of the society, single women who openly talked about contraceptives may be tagged with promiscuity (Johnson et al. 2013). It was therefore not surprising that, women who were married were better placed in providing correct responses to the questions on progestin-only contraceptives. In addition, married women engage more in sexual activities more than the unmarried partners do.

Additionally, results from this research showed that parity was also significantly associated with knowledge on progestin-only contraceptives. The results obtained indicated that the higher the parity of the woman, the better the knowledge on contraceptives including progestin-only contraceptives. This could be attributed to the increase in antenatal clinic sessions that pregnant women usually attend. Current research in Ghana shows that there has been an increase in the access,

availability and usage of antenatal visits (Baffour-Awuah et al. 2015).

Association between Knowledge, Attitude, Principal Barriers and Use of Contraceptives

Table 4.4 (in Appendix) describes the association between knowledge, attitude, principal barriers and use of contraceptives. It was observed that, knowledge was not significantly associated with the use of contraceptives among respondents, $\chi^2=0.136$, $p=0.672$. However, the risk that one with poor knowledge on progestin-only contraceptives would not use contraceptives was 1.04 times higher than among those with good knowledge.

Attitude was found to be significantly associated with the use of contraceptives among respondents, $\chi^2=205.726$, $p<0.001$. Among the four identified as principal barriers to contraceptive use namely: discussion of contraceptive method with partner, informed partner of use, partner's support for use, wanting to get pregnant, the latter two were shown to be associated with contraceptive use ($\chi^2=9.203$, $p=0.006$ and $\chi^2=13.354$, $p=0.001$).

The results from this study thus support previous studies that showed that increased education was associated with knowledge in contraception (Ochako et al. 2015). Furthermore, there was a significant association between the knowledge on progestin-only contraceptives and respondent's educational qualification, marital status and parity. Women with higher educational qualification may have been introduced to various forms of contraceptives including progestin-only contraceptives. Education has been shown to be greatly associated with knowledge in many correlation studies (Patton et al., 2015).

It was observed that, knowledge was not significantly associated with the use of contraceptives among respondents, $\chi^2=0.136$, $p=0.672$. However, the risk that those with poor knowledge of contraceptives would not use them was 1.04 times higher than in those with good knowledge. Attitude was found to be significantly associated with the use of contraceptives among respondents, $\chi^2=205.726$, $p<0.001$

Out of the nine barriers identified, four components which had eigen value >1 , and could contribute more half of the total variance were extracted as the principal barriers to contraceptive use. Partners support for contraceptive use and women wanting to get pregnant were the only two factors among the principal barriers that hindered respondents from using hormonal contraceptives.

IV. SUMMARY AND RECOMMENDATIONS

Based on the results, respondents had poor knowledge on progestin-only contraceptives, poor attitudes towards hormonal contraceptives and two principal barriers: partners support for contraceptive use and women wanting to get

pregnant hindered respondents from using hormonal contraceptives.

It is recommended that Ghana's Ministry of Health and its agencies, the Planned Parenthood Association of Ghana, Marie Stopes International-Ghana should scale up awareness and education among respondents and their partners on both the contraceptive and non-contraceptive benefits of progestin-only contraceptives for women with SCD and how it can improve their quality of life. Communication through mass media (radio, television, or print) may help to improve the knowledge of respondents, and thereby increase the use of progestin-only contraceptives and dispel the myth and misconceptions about their use.

Partner support for use was still a barrier to hormonal contraceptive utilization despite the volumes of education. Women seeking partners consent prior to use implied women rights for self-determination were being infringed upon by their partners. It is therefore recommended that family planning educational programmes targets women empowerment activities as well as strategies to whip up partner support for contraceptive use. Partner support could be enhanced through the concept of male involvement at child welfare clinics, antenatal clinics, men's golf clubs, seminars and workshop for women with SCD and their partners, and also health professionals visiting communities to educate partners within the community. Health care providers using these educational avenues must carefully broach the concept of contraceptive use in sickle cell disease to partners of these respondents. Group therapy sessions involving partners of respondents should be incorporated into the educational sessions at these centres to educate partners that allowing women with SCD to use progestin-only contraceptives prevents the risk of poorly timed pregnancies that jeopardize their health, prevents unwanted pregnancies with its associated ramifications such as criminal abortions, child abandonment and students dropping out of school.

Patients with sickle cell disease are often poorer than the national average. It appeared respondents were therefore unable to afford the cost of long-term efficacious contraceptive methods. To reduce the unmet contraceptive needs of women with SCD, it is recommended that the Ministry of Health adds contraception to services covered by the National Health Insurance Scheme (NHIS) so that women with SCD who are subscribers of the NHIS in the Kumasi Metropolis could access service without having to pay out of pocket.

Suggestions for Future Research

Firstly, since the study focused on assessing the knowledge, attitude and barriers to hormonal contraceptive use among women with sickle cell disease in the Kumasi metropolis of Ghana, it is suggested that future studies should cover all the districts and municipalities in Ashanti Region, of which Kumasi is the capital in order to strengthen generalization of the findings.

Furthermore, it is suggested that future studies must examine the knowledge, attitude and barriers to hormonal contraceptive use among partners of women with sickle cell disease, since the study found that partners disapproved the use of hormonal contraceptives for their female partners. Additionally, questionnaires were the only instrument used to gather data; it is therefore recommended that future studies include in-depth interviews and focus group discussions to obtain the diverse views of respondents.

Lastly, it is recommended that future studies focus on level of knowledge and awareness of health workers on the safety of use and non-contraceptive benefits of hormonal contraceptives in women with SCD. Education on hormonal use is a vertical process i.e. from the health workers to the clients. The lack of awareness and safety of use of progestin-only contraceptives in women with SCD may be an indication that gaps exist in education and awareness among health workers as well.

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REFERENCES

- [1] Adetunji, J.A. 2006. Rising popularity of injectable contraceptives in sub-Saharan Africa. Proceedings of the Annual Meeting of the Population Association of America; 2006 Mar 30 - Apr 1; Los Angeles (CA)
- [2] Akinyanju, O. O. (1989). A profile of sickle cell disease in Nigeria. *Annals of the New York Academy of Sciences*, 565, 126-136.
- [3] Almualm, Y.K.A. (2104). Knowledge, Attitude and Practice of Husbands towards Modern Family Planning in Mukalla Yemen, University Sains Malaysia 2014
- [4] Baffour-Awuah, P.P., Mwini-Nyaledzigbor, S., Richter, S. (2015). *Enhancing focused antenatal care in Ghana: An exploration into perceptions of practicing midwives*. International Journal of Africa Nursing Sciences, Volume 2, 2015, Pages 59-64.
- [5] Da Cruz Santos, A. C., Cândida Cordeiro, R., Silva Gomes Xavier, A., & Lúcia Ferreira, S. (2012). Feelings of Women with Sickle Cell Anemia with Regard to Reproductive EXPERIENCES. *Journal of Nursing UFPE/Revista de Enfermagem UFPE*, 6(12).

- [6] Das, N.P., Mishra, V.K., and Saha, P.K. (2001). *Does Community Access Affect The Use Of Health And Family Welfare Services In Rural India?* National Family Health Survey Subject Reports Number 18, May 2001.
- [7] Demographic, G. (2009). Health Survey 2008 URL: <https://www.dhsprogram.com/pubs/pdf/FR221.FR221%5B13Aug2012%5D.pdf> [accessed 2018-09-03][WebCite Cache ID 72A4u6Pff].
- [8] Egarter C, Strohmer H, Lehner R, Foldy M, Leitich H, Berghammer P.1997. *Contraceptive knowledge and attitudes of Austrian adolescents after mass media reports linking third-generation oral contraceptives with an increased risk of venous thromboembolism. Contraception.* 1997; 56:147–152. [PubMed: 9347204]
- [9] Gomez, A.M., Grimes, D.A., Lopez, L.M., Schulz, K.F. 2007. *Steroid Hormones for Contraception in Women with Sickle Cell Disease. Cochrane Database of Systematic Reviews 2007, Issue 2.* Art. No.: CD006261. DOI: 10.1002/14651858.CD006261
- [10] Hall, K.S, White, K.O, Reame, N., Westhoff, C. (2010). *Studying Use of Oral Contraception: A Systematic Review of Measurement Approaches.* J Women's Health. 2010; 19(12):2203–2210.
- [11] Hirsch, J. S. (2008). Catholics using contraceptives: Religion, family planning, and interpretive agency in rural Mexico. *Studies in family planning*, 39(2), 93-104.
- [12] Ibnouf, H.W and Maars, J.A.M. (2013). *Utilization of Family Planning services by married Sudanese Women of Reproductive Age.* Eastern Mediterranean Health. Journal Vol. 13, No.6, p1376 – 80 2013.
- [13] Johnson, S., Pion, C., & Jennings, V. (2013). Current methods and attitudes of women towards contraception in Europe and America. *Reproductive health*, 10(1), 1-9.
- [14] Katatsky, M.E.1977. *The Health Belief Model as a conceptual framework for explaining contraceptive compliance.* Health Ed Mono. 1977; 5(3):233–243.
- [15] Kaunitz, A.M. (1999). *Oral Contraceptive Health Benefits: Perceptions versus Reality.* Contraception. 1999; 59:29S–33S. [PubMed: 10342094]
- [16] Kessy, T.A., and Rwabudongo, N. (2016). *Utilization of Modern Family Planning Methods among Women of Reproductive Age in a Rural Setting: The Case of Shinyanga Rural District, Tanzania.* East African Journal of Public Health 2016.
- [17] Lin, N., Hingson, R. (1974). *Diffusion of Family Planning Innovations: Theoretical and practical issues.* Stud Fam Plann. 1974; 5(6):189–194. [PubMed: 4841669]
- [18] Makani, J., Ofori-Acquah, S.F., O.Nnodu, O., Wonkam, A and K.Ohene-Frempong, K. 2013. *Sickle Cell Disease: New Opportunities and Challenges in Africa.* The Scientific World Journal. Volume 193 (252), P.16
- [19] Modell, B., Darlison, M. 2008. *Global epidemiology of haemoglobin disorders and derived service indicators.* Bulletin of the World Health Organization. 2008;86(6):480-487.
- [20] Nakiboneka, C., & Maniple, E. (2008). Factors related to the uptake of natural family planning by clients of catholic health units in Masaka Diocese, Uganda.
- [21] Ochako, R., Mbondo, M., Aloo, S., Kaimenyi, S., Thompson, R., Temmerman, M et al. (2015). *Barriers to modern contraceptive methods uptake among young women in Kenya: a qualitative study.* BMC public health. 2015;15(1):118. doi: 10.1186/s12889-015-1483-1.
- [22] Okunlola, A., Olutayo, M.A., Okonkwo, S., Akingbola, T. 2010. *Pattern of Contraceptive Use among Women with Sickle Cell Disease in Ibadan, South-West Nigeria.* Journal of obstetrics and gynaecology: the journal of the Institute of Obstetrics and Gynaecology. 30. 171-4
- [23] Patton, E. W., Hall, K. S., & Dalton, V. K. (2015). How does religious affiliation affect women's attitudes toward reproductive health policy? Implications for the Affordable Care Act. *Contraception*, 91(6), 513-519.
- [24] Rapley, P. & Davidson, P. (2010). *Enough of the Problem: A Review of Time for Health Care Transition Solutions for Young Adults with A Chronic Illness.* Journal of Clinical Nursing, 19: 313-323. doi:10.1111/j.1365-2702.2009.03027.x
- [25] Rosenberg, M.J., Waugh, M.S. (1998). *Oral Contraceptive Discontinuation: A Prospective Evaluation of Frequency and Reasons.* America Journal of Obstetric Gynecology. 1998; 179:577–82. Pub Med: 9757954
- [26] Savage, W. J., Buchanan, G. R., Yawn, B. P., Afenyi-Annan, A. N., Ballas, S. K., Goldsmith, J. C., Hassell, K. L., James, A. H., John-Sowah, J., Jordan, L.L., Ottenberg, R., Murad, M. H., Ortiz, E., Tanabe, P. J., Ware, R. E. and Lanzkron, S. M. 2015. *Evidence Gaps in the Management of Sickle Cell Disease: A Summary of Needed Research.* Am. J. Hematol., 90: 273-275. Doi:10.1002/Ajh.23945
- [27] Wilson, N.O., Ceesay, F.K., Hibbert, J.M., Driss, A., Obed, S.A., Adjei, A.A., Gyasi, R.K., Anderson, W.A., Stiles, J.K. 2012. *Pregnancy Outcomes among Patients with Sickle Cell Disease at Korle-Bu Teaching Hospital, Accra, Ghana: Retrospective Cohort Study.* Am J Trop Med Hyg. 2012 Jun;86 (6):936-42. doi: 10.4269/ajtmh.2012.11-0625.
- [28] World Health Organisation, WHO (2011). *Maternal Mortality, Media Center Fact Sheet No 348 Updated 2016.* WHO Media Centre. World Bank collection of development indicators

APPENDIX

Table 4.6: Association between knowledge, attitude, principal barriers and use of contraceptives

| Parameter | | Use of Contraceptives | | | | χ^2 | p value (2-sided) | RR (95% CI) |
|---|-------------------|-----------------------|-------|-----|-------|----------|-------------------|------------------|
| | | Yes | | No | | | | |
| | | N | % | N | % | | | |
| Knowledge | Poor | 61 | 25.1% | 182 | 74.9% | 0.136 | 0.672 | 1.04(0.83-1.31) |
| | Good/Acceptable | 9 | 28.1% | 23 | 71.9% | | | |
| Attitude | Poor | 1 | 0.7% | 141 | 99.3% | 205.726 | <0.001 | Nil |
| | Good/Acceptable | 15 | 19.0% | 64 | 81.0% | | | |
| | Excellent | 54 | 100% | 0 | 0.0% | | | |
| Discussion of contraceptive method with partner | Yes | 42 | 25.3% | 124 | 74.7 | 1.675 | 0.238 | Nil |
| | No | 31 | 24.8% | 94 | 75.2% | | | |
| | No partner as yet | 0 | 0.0% | 5 | 100% | | | |
| Informed partner of use | Yes | 36 | 22.4% | 125 | 77.6% | 1.618 | 0.222 | 1.09 (0.95-1.25) |
| | No | 37 | 28.9% | 91 | 71.1% | | | |
| Partner's support for use | Yes | 33 | 27.5% | 87 | 72.5% | 9.203 | 0.006 | Nil |
| | No | 10 | 23.3% | 33 | 76.7% | | | |
| | I don't know | 0 | 0.00% | 26 | 100% | | | |
| Wanting to get pregnant. | Yes | 10 | 10.5% | 85 | 89.5% | 13.354 | 0.001 | Nil |
| | No | 49 | 29.7% | 116 | 70.3% | | | |
| | No partner as yet | 11 | 30.6% | 25 | 69.4% | | | |

χ - Square analysis: Data= frequencies (N) & Percentages (%), significance (2-sided) was achieved at $p < 0.05$, RR (95% CI) for non-use of hormonal contraceptives.