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Knowledge, Attitudes and Practice of Contraception among Refugees in a Refugee Settlement in Yaoundé, Cameroon

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Authors' contributions

This work was carried out in collaboration between all authors. Authors GEHE, JCA and DS designed the study, wrote the protocol and the first draft of the manuscript. Authors TEO, CNT, FNM and RM managed the literature searches, data entry and made important contributions in the first draft of the manuscript. Authors JCA and JBN analyzed the data. All authors read and approved the final manuscript.

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ABSTRACT

Introduction: Despite the benefits of family planning, contraceptive use has been found to be limited among refugees.
Aim: This study aimed at assessing knowledge, attitude and practice of contraception among

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refugees in order to improve their family planning and reproductive health services in Yaoundé, Cameroon where few studies on this issue have been conducted.

Methods: This was a cross-sectional descriptive study carried out at the United Nations High Commission for Refugees (UNHCR) with refugees invited from the refugee self- settlement Camp, Yaoundé, from 1st September, 2012 to 28th February, 2013. A convenient sample of two hundred and sixty four participants was used. Information was obtained on socio-demographic characteristics, knowledge, attitude, practice and contraceptive needs of the refugees using a pre-tested questionnaire by face-to-face interview. Data collected was cleansed and systematically corrected for errors. It was analyzed using Epi info version 3.5.3. Frequencies were generated and Chi-square or T-test were used to explore associations between variables where appropriate with P-value < 0.05 was considered statistically significant.

Results: Two hundred and sixty four refugees participated in the study. The mean age of participants was 29.6 years (SD=10.2 years). The refugees had lived in the settlement for an average of 5.8 years (SD= 4.5 years). Two hundred and thirteen (80.7%) participants had heard of modern contraceptives, 209 (79.2%) had seen modern contraceptive methods and 213 (80.7%) believe that modern contraceptives could prevent pregnancy and sexually transmitted infections. The use of condoms was the most preferred method of contraception by 161 (83.3%) of all the respondents. However, only 96 (36.4%) used condoms during their last intercourse with a male predominance (54.1% vs 23.3%) (P-value < 0.05). The main reasons given for non-condom use were: reduced pleasure and unavailability in male participants and lack of knowledge in the female group. These differences between males and females were statistically significant (All P-values <0.05).

Conclusion: Although the study showed high level of awareness about family planning methods, the use of method contraceptive methods was low. There is need to increase community awareness about family planning through health education, and strengthen family planning services for refugees. The availability of trained personnel in providing family planning services is critical to expanding both awareness of/and access to family planning.

Keywords: Knowledge; attitude; practice; contraception needs; refugees; Cameroon.

1. INTRODUCTION

Contraception or birth control is aimed at spacing out deliveries and preventing unwanted pregnancies. Despite the benefits of family planning to reproductive health, contraceptive use has been found to be limited among many displaced persons around the world, some of whom face difficulties having access to reproductive health care services [1-6]. They are usually not taken into consideration when establishing government policies, and their religious beliefs and cultures are often trampled upon [7].

The health community has acknowledged that living in a country as refugee can increase the vulnerability of young people to unintended pregnancies and other reproductive health risks in a variety of ways [8-11]. Although data on sexual behavior, unintended pregnancies and other reproductive health issues among refugees are limited, a number of studies have shown a high prevalence of risky sexual behavior and low use of contraceptives [12-14].

Cameroon is one of the very few politically-stable countries in the Central African sub region and thus a preferred destination for refugees. This has led to a rapid increase in the refugee population in the country over the years. However, reproductive health needs of refugees and family planning is particularly problematic and undermined. Inequity exists in the use of contraceptive methods, morbidity and mortality that are related to socio-economic classes. However, a difference in fertility between the rich and the poor does not constitute an inequity, with the poor having a higher rate, because the latter want more children. It is only by examining differences in fertility intentions and in the contraceptive use through a contraceptive lens can we determine if the poor are deprived of something they wish they had (that is family planning) to avoid what they do not desire; that is numerous unwanted pregnancies and other pregnancy related complications [3].

Research on the reproductive health of refugees has received very little attention from the academic community in Cameroon because of the difficulties in obtaining access to refugee

camps. It is also an area which has not been of public health concern because displaced persons cannot be considered a priority group since the country's target population for contraceptive needs now, is Cameroonians in the reproductive age group since the use of contraceptive methods is low [15]. No published studies have been conducted among refugees in Cameroon, and specifically in Yaoundé to determine their knowledge, attitude, practice and modern methods of contraceptive needs. A critical assessment of these factors will be useful in putting in place reproductive health programs with regards to contraception in this marginalized group.

2. METHODS

This was a cross-sectional descriptive study carried out from 1st September, 2012 to 28th February, 2013 at the United Nations High Commission for Refugees (UNHCR) with refugees invited from the refugee self- settlement Camp, Yaoundé. Ethical clearance and administrative approval for the study were obtained from the Institutional Ethics Review Committee of the Biotechnology Center, University of Yaoundé I, and the Country Representative of the UNHCR respectively.

2.1Study Setting and study Population

The UNHCR, Yaoundé, Cameroon was opened in 1990. Since then, the refugee population, majority of who were Chadians, has risen steadily. Cameroon today hosts refugees from 28 countries, majority of who are from Republic of Central Africa.

As of 2012, the UNHCR was managing two groups of refugees: urban refugees of multiple nationalities living in Douala and Yaoundé, and Prima Facie refugees who are usually of the same nationality and live in camps. The refugees living in the self-settlement camp, Yaoundé, on whom our study was carried out, falls in the latter category. The self-settlement camp has a population of about 9800 refugees. These refugees were from the Democratic Republic of Congo, Central African Republic, Chad, Rwanda, and other countries of the Central African sub region [16]. There were no health care services in this settlement. Participants between 15-49 years, who gave an assent or written consent in the refugee self-settlement, Yaoundé, were enrolled for the study.

The UNHCR is headed by a Country Representative, assisted by a Deputy Representative in Charge of Protection, an Assistant Representative in Charge of Operations and a Senior Administrative Officer. Under the Deputy Representative, there is a Senior Protection Officer and the Senior Community Services Officer. The medical services of the refugee high commission are run by a Medical Officer alongside the Assistant Community Services Officer both of whom report directly to the Senior Community Services Officer.

Refugees enjoy full welfare coverage, including lodging, feeding, clothing and health care, while urban refugees take care of their accommodation, feeding and to a lesser extent, health. The UNHCR offers them only primary health care. All other health problems are handled by accredited hospitals which have memoranda of understanding with the UNHCR. There is no formal health structure in charge of refugees' reproductive health or their contraceptive needs.

2.2 Data Collection and Management

Owing to difficulties in directly contacting the selected prospective participants individually because of their extreme mobility within the settlement, community leaders of participants were requested to mobilize all members of their different communities for the study at the UNHCR in Yaoundé. A convenient sample was obtained by recruiting refugees as they arrived at the refugee community house at the High Commission for Refugees reserved for such gatherings. These visits were programmed and coordinated by a team of medical and social workers from the UNHCR. The objectives of the study were clearly explained to all those who met the inclusion criteria in small groups as they arrived with a firm commitment to respect confidentiality of the information they gave.

The sample size was calculated using a single proportion formula [17]. For a confidence level of 95%, Z_{crit} (standard value of 1.96), a margin of error at 5% (standard value of 0.05) and the prevalence of contraception use based on the Demographic Health Survey in Cameroon of 23%=0.023 in 2011 [18]. A minimum sample size of 272 was required for the study. However, owing to some difficulties like communicating with some refugees (lack of appropriate translators) and non-respect of appointments

encountered on the field, only two hundred and sixty four were enrolled. Those who consented or gave assent (signed on participant's behalf by a representative of the UN High Commissioner for Refugees) to participate in the study were oriented to various enumerators who helped them to complete the pretested questionnaire by face-to-face interview.

Pretesting of the semi-structured questionnaire was done during the first visit to the UNHCR with fifteen refugees who met the enrollment criteria after obtaining authorization from the High commissioner. The information obtained was used to modify the questionnaire. The group of refugees who participated in the pilot study was excluded as study participants. Data was obtained on the socio-demographic characteristics, sexual behavior, knowledge, attitudes and practice, and the contraceptive needs of the refugees.

The data collected was cleansed, systematically checked for errors, stored in a pass word protected computer to ensure confidentiality and analyzed using Epi Info version 3.5.3. Univariate analysis was done to obtain frequencies and proportions of the socio-demographic characteristics of the refugees. Furthermore, Chi-Square or T-test were used were appropriate to compare proportions between male and female refugees on socio-demographic characteristics, sexual behavior, knowledge, attitude and practice of contraceptive methods. A P-value < 0.05 was considered statistically significant.

3. RESULTS

3.1 Socio-Demographic Characteristics

Two hundred and sixty-four refugees, (111 males and 153 females) participated in the study with a dropout rate of 0%. The mean age of participants was 29.6 years (SD 10.2 years). The refugees had lived in the settlement for an average of 5.8 years (SD 4. 5 years).

Most of the refugees (78.4%) were Central Africans. One hundred and forty one (58.4%) had spent between 1-5 years in Cameroon with a mean duration of 5.8 years (SD 4.2 years). Over half 145 (54.8%) of the refugees were unemployed. Female refugees formed the majority in this group with 153 (58.0%). They worked mostly as domestic servants with very low monthly incomes. Other socio-demographic characteristics are shown in Table 1.

3.2 Sexual behavior of Participants

As shown in Table 2 eleven (4.2%) respondents (10 males and a female) were not sexually active. Most respondents 171 (67.6%) had their first coitus between 14-19 years, with the mean age of first sexual intercourse at 16 years (SD=3.1 years).One hundred and eight (40.9%) of them had more than two sexual partners with a higher proportion in the male population with 69 (62.2%). The difference was statistically significant between both sexes (P < 0.05). About 2 in every 10 respondents had a past history of sexually transmitted infections (STI). The ratio was equally distributed between both sexes. About 85% of all female respondents had been pregnant at least once and 71 (46.4%) had been pregnant 2-4 times.

3.3 Knowledge, Attitude and Contraceptive Practice among Participants

Two hundred and thirteen (80.7%) participants had heard of modern contraceptive methods, 209 (79.2%) had seen modern contraceptives and 213 (80.7%) believed that modern contraceptives could prevent pregnancy and STIs. These methods seemed to have an impact on their sexual behaviors because 96 (36.4%) used condoms at last intercourse. Males used condoms more than females (54.1% vs23.3%) (P < 0.05) Table 3. For the participants who did not use condoms, 63 (37.5%) thought it had no role in reproductive health. Forty-seven (28.0%), mostly female refugees failed to use condoms because they were ignorant of its existence. The main reasons given for non-condom use were: reduced pleasure, unavailability of male condoms and lack of awareness of its existence in the female group. These differences were statistically significant when the males and females were compared (All P-values < 0.05) (Table 3).

The majority (73.9%) of the respondents, agreed to use modern contraceptives if they were provided. A large proportion of them (73.1%) also expressed the need for modern contraceptive methods. The most preferred modern contraceptive method was condoms with 161 (83.3%), while the need for implants and combined pills were 6.1% and 4.5% respectively. Nine out of every ten respondents were willing to recommend modern contraceptives to a friend. Furthermore, 234 (88.6%) believed that modern contraceptives were useful in the family for child

spacing and prevention of unplanned pregnancies (Table 4).

4. DISCUSSION

This study was carried out to assess the knowledge, attitude, practice and contraceptive needs in a refugee community in Yaoundé, Cameroon. Access to family planning services is a human right and neglecting their provision can have serious health consequences [19]. It also provides autonomy for women to determine the number and spacing of their children. Furthermore, it leads to better nutrition for children, improves access to educational and livelihood opportunities for women and girls, and increases the possibilities for families to manage scarce resources more effectively [20].

4.1 Socio-Demographic Characteristics and Sexual behavior

People living in refugee settlements may have a serious need for family planning services, yet may face obstacles (economic, cultural and logistical) to practicing contraception as depicted in this study. The majority of participants 53 (47%) males and 88 (57.5%) females had spent 1-5 years in the settlement suggesting that there was hardly any remarkable change in their economic status.

Table 1. Distribution of socio- demographic characteristics of refugees

Characteristics	Male	Female	Total	P - value
	n=111(%)	n=153(%)	N=264(%)	
Nationality				
Democratic Republic of Congo	08 (7.2)	11 (7.2)	19 (7.2)	0.65
Central African Republic	90 (81.1)	117 (76.5)	207 (78.4)	0.51
Chad	11 (9.9)	21 (13.7)	32 (12.1)	0.32
Rwanda	01 (0.9)	02 (1.3)	03 (1.1)	0.75
Others	01 (0.9)	02 (1.3)	03 (1.1)	0.75
Duration of stay in the camps [years]				
<1	05 (4.5)	08 (5.2)	13 (4.9)	0.78
1-5	53 (47.7)	88 (57.5)	141 (58.4)	0.09
6-10	41 (36.9)	48 (31.4)	89 (33.7)	0.39
11-26	12 (10.8)	09 (5.9)	21 (8.0)	0.15
Marital status				
Single	40 (36.0)	55 (35.9)	95 (36.0)	0.86
Married	65 (58.6)	84 (54.9)	149 (56.4)	0.29
Others	06 (5.4)	14 (9.2)	20 (7.6)	0.24
Age of respondent (years)				
15-19	14 (12.6)	37 (24.2)	51 (19.3)	0.04
20-29	35 (31.5)	64 (41.8)	99 (37.5)	0.07
30-39	29 (26.1)	25 (16.3)	54 (20.5)	0.06
40-49	33 (29.7)	27 (17.6)	60 (22.7)	0.02
Religion				
Christian	105 (94.6)	151 (98.7)	256 (97.0)	0.06
Muslim	06 (5.4)	01 (0.7)	07 (2.7)	0.02
Others	0 (0.0)	01 (0.7)	01 (0.4)	0.40
Highest level of education				
None	18 (16.2)	73 (47.7)	91 (34.5)	0.001
Primary	43 (38.7)	45 (29.4)	88 (33.3)	0.13
Secondary	43 (38.7)	30 (19.6)	73 (27.7)	0.001
University	07 (6.3)	05 (3.3)	12 (4.5)	0.25
Profession				
Employed	17 (15.3)	09 (5.9)	26 (9.8)	0.003
Trader	09 (8.1)	38 (24.8)	47 (18.0)	0.001
Farmer	05 (4.5)	08 (5.3)	13 (4.9)	0.60
Unemployed	56 (50.5)	89 (58.1)	145 (54.8)	0.20
Others	24 (21.6)	09 (5.9)	33 (12.5)	0.001

Others= hair dressers, students, and laborers

Table 2. Distribution of refugees according to sexual behavior

Characteristics	Male	Female	Total	P - value
	N=101 (%)	N=152 (%)	N=253 (%)	
Age at first coitus (years)				
8-13	15 (14.9)	27 (17.8)	42 (16.6)	0.70
14-19	65 (64.4)	106 (69.7)	171 (67.6)	0.20
20-29	21 (20.8)	19 (12.5)	40 (15.8)	0.05
Number of sexual partners (Last year)				
None	10 (9.0)	01 (0.7)	11 (4.2)	0.001
One	19 (17.1)	88 (57.5)	107 (40.5)	0.001
Two	13 (11.7)	25 (16.3)	38 (14.4)	0.300
More than two	69 (62.2)	39 (25.5)	108 (40.9)	0.001
Previous STI				
Yes	20 (18.0)	27 (17.7)	47 (17.8)	0.72
No	91 (82.0)	126 (82.3)	217 (82.2)	
Desire to conceive				
	85 (76.5)	-	85 (76.5)	-
No	26 (23.5)	-	26 (23.5)	-
Number of previous pregnancies				
0	0	16 (10.4)	16 (10.4)	-
1	0	23 (15.0)	23 (15.0)	-
2-4	0	71 (46.4)	71 (46.4)	-
>=5	0	43 (16.2)	43 (16.2)	-

STI: Sexually transmitted infections

Table 3. Knowledge, attitude and contraceptive practice among participants

Characteristics	Male	Female	Total	P - value
	N (%)	N (%)	N (%)	
Information on modern contraceptives use				
Yes	90 (81.1)	123 (80.4)	213 (80.7)	0.8
No	21 (18.9)	30 (19.6)	51 (19.3)	
Seen a contraceptive method.				
Yes	84 (75.7)	125 (81.7)	209 (79.2)	0.3
No	27 (24.3)	28 (18.3)	55 (20.8)	
Contraception and prevention of pregnancy				
Yes	89 (80.2)	124 (81.0)	213 (80.7)	0.3
No	18 (16.2)	18 (11.8)	36 (13.6)	
I don't know	04 (3.6)	11 (7.2)	15 (5.7)	
Use of condoms (Most recent intercourse)				
Yes	60 (54.1)	36 (23.5)	96 (36.4)	0.001
No	51 (45.9)	117 (76.5)	168 (63.6)	
Reason for non- use of condoms				
Reduces pleasure	06 (18.1)	02 (1.5)	08 (4.7)	0.001
Partner's refusal.	0 (0.0)	27 (20)	27 (16.1)	
Religious reasons	02 (6.1)	04 (3.0)	06 (3.5)	0.4
Unavailability	07 (21.2)	08 (6.0)	15 (9.0)	0.007
Use of other contraceptive method	0 (0.0)	02 (1.5)	02 (1.2)	-
Unnecessary	15 (45.5)	48 (35.5)	63 (37.5)	0.4
Lack of Knowledge	03 (9.1)	44 (32.5)	47 (28.0)	0.005

Furthermore, the low level of education of most of the participants probably adversely affected the quest for knowledge and use for modern contraceptive methods. These findings were documented in Nigeria [15,21] and Ethiopia [22] in similar studies. Though more than ninety percent of the participants were Christians, a factor which is known to influence the attitude of people towards the use of contraceptive methods, their preponderance in the study

population is because Christianity is the predominant religion in Yaoundé. The high rate of unemployment in this study population probably had a mitigating effect on the use of contraceptives. There were no health facilities in the settlement and even at the UNHCR, Yaoundé that offered reproductive health care services, implying that refugees had to pay for the contraceptive they preferred. This explains why the most commonly used method of contraception were male condoms, which compared to other contraceptives are readily accessible and do not need any medical prescription. Understanding the reproductive health needs of women in these difficult circumstances is critical to devising comprehensive programs [23]. Critical reproductive health services during emergency phase include clean and safe delivery, prevention and treatment of STIs, emergency contraception and life-saving treatment for complications of miscarriage and contraception [24].

Many factors are contributing to the rising incidence of sexually-transmitted infections worldwide, amongst these are socio-economic, cultural factors etc. Moving away from the familiar environment breaks established links, by splitting fixed sexual partnerships and removing many social taboos which strongly affect human sexual habits. Settling in a new environment may expose them to adverse conditions of cultural isolation which facilitate the establishment of casual sexual relationships. The motivation to travel, the length of stay outside the native environment, and the type of hosting environment strongly affect the risk of STI acquisition and transmission [25]. Eighteen percent of the study population reported previous STIs. This probably highlights the prevalence of unprotected sexual exposure in this study population. This study confirmed the high prevalence of unprotected sex, early onset sexual intercourse, commercial sex and other forms of sexual risk-taking among refugees in Yaoundé as reported by previous studies [7,12-14].

4.2 Contraceptive Needs

The use of contraceptives during the last sexual intercourse by many refugees despite a reported high prevalence of sexual practices in the camp was low (36.4%).

Table 4. Contraceptive needs among participants

Characteristics	Male	Female	Total	P - Value
	N=111 (%)	N=153 (%)	N=264 (%)	
Efficacy of modern contraceptives				
Yes	91 (82)	123 (80.4)	244 (81.1)	0.70
No	20 (18)	30 (19.6)	50 (18.9)	
Intention to use a modern contraceptive method if accessible				
Yes	87 (78.4)	108 (70.6)	195 (73.9)	0.10
No	24 (21.6)	45 (29.5)	69 (26.1)	
Intention to use a method of contraception				
Yes	84 (75.7)	109 (71.2)	193 (73.1)	0.40
No	27 (24.3)	44 (28.8)	71 (26.9)	
Preference for method of contraception				
Condoms	82 (97,7)	79 (72.4)	161 (83.3)	0.001
Pills	0	09 (8.,2)	09 (4.5)	
IUCD	0	02 (1.8)	02 (1.0)	
Implant	0	12 (11)	12 (6.1)	
Injectables	0	04 (3.6)	04 (2.0)	
Others	02 (2,3)	03 (2.7)	06 (3.1)	0.70
Recommending a modern contraceptive to friends				
Yes	105 (94.6)	137 (89.5)	242 (91.7)	0.13
No	06 (5.4)	16 (10.5)	22 (8.3)	
Utility of modern contraceptives as good for the family				0.90
Yes	99 (89.2)	135 (88.2)	234 (88.6)	
No	09 (8.1)	13 (8.5)	22 (8.3)	
I don't know	03 (2.7)	05 (3.3)	08 (3.1)	

The low use of contraceptives among these refugees provides an explanation for the high prevalence of pregnancies (76.5%) and STIs (17.8%) as was earlier reported by the UNHCR [26]. It also raises concerns on the number of pregnancies: 85 out of 153 (76.5%) participating women, 40.9% of respondents had more than 2 sexual partners each and the prevalence of unprotected sex was 163 (63.6%) in last sexual intercourse. This high prevalence of pregnancies and multiple sexual partners was also documented by Creanga et al. [3].

The great unmet need for the use of modern contraception was highlighted among our study population. About three quarters of refugees were willing to use modern contraceptive methods if provided, while 9 out of 10 thought they would recommend a modern contraceptive method to their friends and recognized that these contraceptives could be beneficial to their families. These results are similar to those of Kehinde et al. [7] among young refugee women in a refugee camp in Oru, Nigeria and from part of a world refugee survey conducted in Nigeria [27]. While some earlier studies among refugees and Internally Displaced Persons (IDPs) identified little or lack of knowledge and awareness of contraceptive methods as barriers to the use of contraception [28,29], our results showed the contrary. Over 80% of respondents were aware of the existence of modern contraceptive methods and had seen at least one. Almost all respondents were aware that engaging in unprotected sex constituted a risk for unplanned pregnancy. Yet, there was a low rate of contraceptive use among them as demonstrated in this study despite the good knowledge about contraceptive methods. Similar results were documented in studies carried out in Australia [1] and Jordan [30]. Another major barrier to the use of contraception among refugee youths was difficulty in having access to family planning services in the settlement as a result of economic obstacles. Although most refugees (83.3%) preferred using condoms to other modern contraceptive methods such as pills or injectable forms of contraception because they believed they were safer and more convenient, they cited certain barriers preventing them from using condoms at their last sexual encounter namely, unavailability, partner's refusal, reduced sexual pleasure and religious reasons (Table 3).

Our findings revealed a high level of misinformation about contraceptive use and benefits. These findings will help in emphasizing the need for the provision of education on contraception for these war-affected immigrants in order to offer them accurate information about contraceptive safety, effectiveness and side effects. Such instructions can go a long way towards increasing their awareness on family planning and reproductive health issues and fostering sexual behavioral change.

5. LIMITATIONS OF THE STUDY

This study had some limitations. The sample size was not large enough to generalize the results to the whole refugee community. Secondly, it was difficult to have a sample size that was representative of the refugees from different countries because attempts at using stratified sampling initially was unsuccessful because of non-respect of appointment linked to their instability and mobility. Furthermore, there were difficulties in having reliable information from this marginalized group since most of the information could not be objectively assessed. The generalizeability of the results to other refugee settlements in other parts of the sub region and the world is limited because of specific socio-cultural norms in the neighboring countries. Despite these limitations, this study highlights the complexity of carrying research in reproductive health among refugees.

6. CONCLUSION

Although our study showed a high level of awareness about family planning methods, use of artificial methods of contraception was low in this setting. Male condoms were the main method of contraception used. Therefore, there is need to increase community awareness about family planning through health education, and to strengthen family planning services for refugees in Yaoundé, Cameroon. Furthermore, appeals should be made to non-governmental organizations like the Association for the Fight against Female Violence to train and financially empower more refugee women in income-generating activities.

ETHICAL ISSUES

Ethical clearance and administrative approval for the study were obtained from the Institutional Ethics Review Committee of the Biotechnology Center, University of Yaoundé I, and the Country Representative of the UNHCR respectively. The

participants gave a written consent or thumb printed a consent form after the objectives and study procedure had been explained to them in French, English or in a language they understood by an interpreter.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Ngum MC, Watts C, Liamputtong P, Carolan M. Contraception knowledge and attitudes: truths and myths among African Australian teenage mothers in Greater Melbourne, Australia. Journal of Clinical Nursing. 2014;23(15-16):2131–141.
2. Morrisson V. Contraceptive need among cambodian refugees in KhoaPhlu camp. International Family Planning Perspectives. 2000;26(4):188-92.
3. Creangea AA, Gillespie D, Karklins S, Tsui AO. Low use of contraception among poor women in Africa: An equity issue. Bulletin of the World Health Organization. 2011; 89:258-66.
4. Ahmed S, Creangea AA, Gillespie DG, Tsui AO. Economic status, education and empowerment: Implications for the maternal health service utilization in developing countries. Plos ONE. 2010; e11190. DOI:10.1371/journal.pone.0011190pmid:20585646
5. Barnett B. Family planning rarely available for refugees. Network. 1995;3(15):4-8.
6. Arredendo P. Counselling individuals from marginalized and undeserved groups. Available:www.worldcat.org/title/readings-in-multicultura. (Accessed. 24/04/2013)
7. Kehinde O, Mantue R, Opeyemi F, Agbaje FO. Contraceptive use: Knowledge, perceptions and attitudes of refugee youths in Oru Refugee Camp, Nigeria Afr. J Reprod. Health. 2010;14(4):17-26.
8. Matthew J, Ritsema S. Addressing the reproductive health needs of conflict affected young people. Forced Migration Review. 2004;19:6-8.
9. Women's Commission for Refugee Women and Children, Minimum Initial Service Package (MISP) for Reproductive Health in Crisis Situations: A Distance Learning Module. 2006;29. Available:www.iawg.net/resources/MISP2011.pdf (Accessed 25/04/ 2013)
10. Gardner R, Blackburn R. People who move. New reproductive health focus. Population Reports, Series J. 1996;45:1-27.
11. McGinn T, Casey S, Purdin S, Marsh M. Reproductive health for conflict affected people: Policies, research and programs. Humanitarian Practice Network (HPN) Network Paper. 2004;30.
12. Tadiesse EN, Orago A, Karega R, Vivarie R. Socio–cultural determinants of pregnancy and the spread of sexually transmitted infections among adolescent residents of Kakuma refugee camp, Northern Kenya. Presented at the Conference 2003: Reproductive Health from Disaster to Development, Brussels, Belgium, Tutorial Fellowship Centre for Complementary Medicine and Biotechnology, Kenyatta University, UNHCR, Kenya. Available:www.ku.ac.ke/.../2002/nkhamtadiesseedmond html (Accessed: 23/04/2013)
13. United Nations Commissioner for Refugees (UNHCR). Reproductive health services for refugees and internally displaced persons (IDPs): Report of an inter–agency global evaluation. Available:springer.com/chapter/10.1007/978-1-4020-5789-2_4 (Accessed: 26/04/2013).
14. Agbaje FO. Sexual behavior and HIV / AIDS prevention among adolescent refugees in Oru refugee camp, Nigeria. Presented at the International Conference on AIDS. Available:www.womensrefugeecommission.org/resources/download/378 (Accessed: 26/04/2013)
15. Nwoke AC. HIV/AIDS: Prevention and care activities for refugees in Nigeria. Presented at the International Conference on AIDS. Available:www.quod.lib.umich.edu/c/cohenaids/5571095.0180.017 (Accessed: 26/04/2013).
16. UNHCR - UNHCR Global Report 2011 - Cameroon.

Available:http://www.unhcr.org/4fc8809eb.htm. (Accessed: 26 /04 /2013)
17. Kirkwood BR. Essentials of medical statistics 2nd ed. Maldden, Mass: Blackwell Science. 2003;420.
18. Cameroon Demographic and Health survey. Studies in family planning; 2011. Available:www:en.wikipedia.org/wiki/Demographic_and_Health_Surveys (Accessed: 26/04/2013)
19. UNHCR, the UN Refugee agency, Women`s refugee Commission, 2011. Refocusing Family Planning in Refugee Settings: Findings and Recommendations from a Multi-Country Baseline Study. Available:www.iawg.net/resources/unhcr_fp_baseline_studies_policy (Accessed 24/04/2013)
20. Campbell OM, Graham WJ. Strategies for reducing maternal mortality: Getting on with what works. Lancet. 2006;368:1284–99.
21. Monjok E, Andrea S, John E, Essien J. Contraceptive practices in Nigeria: Literature review and recommendation for future policy decisions. Open Access Journal of Contraception. 2010;1:9-22.
22. Gebremariam A, Addissie A. Modern contraceptive method mix and factors affecting utilization of modern contraceptives among married women in Adigrat Town, Tigray, Northern Ethiopia. Fam Med Med Sci Res. 2014;3(4):139-43.
23. Guttmacher Institute, Facts on Investing in Family Planning and Maternal and Newborn Health: Updated November 2010 using new maternal and neonatal mortality data, November 2010. Available:www.womancareglobal.org/wp-content/uploads/2012/08/ (Accessed 27/04/2013)
24. Otsea K. Prioritizing reproductive health for refugees. Initiat Reprod Health Policy. 1999;3(1):1-3.
25. International Family Planning Perspectives © 2000 Guttmacher Institute. Available:www:internationalfamilyplanningperspectives.org/about/index.html (Accessed: 26/04/2013)
26. Gerbase AC, Rowley JT, Mertens TE. Global epidemiology of sexually transmitted diseases. Lancet. 1998; 351(suppl. 3): 2-4.
27. United States Committee for Refugees and Immigrants (USCRI), Refugees in Nigeria. World Refugee Survey. Country Report; 2004. Available:www.refworld.org/publisher/USCRI.html (Accessed 26/04/2013)
28. Okanlawon K, Titilayo A, Agbaje FO, Reeves M. Letter from the field. The Experience of Refugees in Nigeria. Forced Migration Review. 2009;32.
29. Overseas Development Administration (ODA). South East Asia Development Division. MCH reproductive health project for displaced persons in Sri Lanka. Project memorandum and project framework, London, ODA. Available:www.popline.org/node/311039 (Accessed: 26/04/2013)
30. Madi H. Contraceptive practices among Palestinian refugee women using the UNRWA MCH centre at Nuzha, Jordan. Eastern Med. Health Journal. 1998;4(1): 27-35.

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