



**REPRODUCTIVE HEALTH INFORMATION, NEEDS AND IT'S SOURCES
AMONG FEMALE UNDERGRADUATE STUDENTS IN COLLEGES OF
MEDICINE, NORTH CENTRAL ZONE OF NIGERIA**

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Abstract

The study examined the reproductive health information, needs, and its sources among female undergraduate students in colleges of medicine, North central zone of Nigeria. The study adopted descriptive survey design. The population of this study was 1,339 registered female undergraduate students of colleges of medicine, North Central, Nigeria. The sample size of the study was 549 female undergraduates' students representing 41% of the population. The instruments used for data collection were questionnaire and observation checklist. Data gathered were analyzed using descriptive and inferential statistics. The study found out that, female undergraduate students have health information needs on sexual management, antenatal and postnatal care, stress and emotional well-being which motivates them to source for health information resources from different sources to meet the needs. However, the lack of adequate health information resources in colleges of medicine libraries have exposed female

undergraduate students to source for health information resources from authentic and unauthentic sources which exposes them to health consequences if not. Seminar should be organize for female undergraduates on the information need to manage unplanned pregnancy, the implications of female genital mutilation, and information on safe abortion and post abortion complications. The female undergraduate students should be enlightened on the advantages of sourcing health information from the library databases, institutional repository, textbooks and printed materials.

Keywords: *Reproductive health information, needs, sources, female undergraduate students, college of medicine library*

Introduction

Reproductive Health Information (RHI) for undergraduate is crucial for both social, and economic development. RHI is the knowledge, resources, and services that relate to human reproduction and sexual health. It encompasses differs topics which include family planning, sexual education, infertility services, sexual and reproductive rights, prenatal care, childbirth and postpartum care, STI prevention and treatment. Reproductive health means that young women can experience a satisfying and secure sexual life, give birth, and make choice to determine when and how frequently to reproduce (WHO, 2017). RHI is important for female undergraduate students because it educate the students on safer sex practices, menstrual health hygiene; safe pregnancy and the awareness about available health services. It also gives them knowledge about Rhesus factor incompatibility, genotype incompatibility; causes and prevention of infertility.

Female undergraduate students of college of medicine are viewed as, young women of childbearing age in college of medicine from 100 level to 600 level who register and make use of the college of medicine libraries either married or single. Female undergraduate have specific health needs that require appropriate and accurate information which are menstruation, contraception, pregnancy and childbirth, postpartum care, sexually transmitted infections (STIs), infertility, contraceptives, cancer related issues, unwanted pregnancies, safe abortion and post abortion complications; safe sex practices and menopause. Female student needs to be informed about how possible to have an acceptable, safe, affordable, and effective family planning strategies they want, as well as the choice to proper health-care services which will allow young women to conceive and give birth safely (Noura *et al.*, 2022). Some of the most prevalent sources of health information are college of medicine libraries, health care providers, community health workers, internet, social media, peer groups, community organizations and mass media.

In our world today, everyone has a need for health information for everyday living activities. Health information need is the state of female undergraduate students seeking health information especially from the college of medicine libraries for improved reproductive wellbeing. Health information need is the incentive that makes students to

seek health information, it can also be viewed as a collection of facts that allows students to make informed decisions about health-related issues that arise at any given time. Need is a desire for something that one cannot do without. However, studying the health information needs of female students begins largely with understanding how they obtain such information from the numerous sources of information available to them (Emasealu & Popoola, 2016). Therefore, information need is a state in which health information can contribute to the achievement of a genuine purpose, it is a state of gap between information and available knowledge to solve reproductive problem and the main solution to that problem.

The low level of health information accessibility and utilization for improved reproductive wellbeing of female undergraduate students in Nigeria has been a matter of concern to researchers, information science professionals, health practitioners and Government at all levels (Sadauki, 2022). Female undergraduate students in Nigeria particularly in North central require health information to advance their health for improved reproductive wellbeing. Considering the need for Health information, and quality health-care services in our society, this study aims to investigate the needs of female undergraduate students when it comes to health information, the ways in which the students source for the information, and the impact on their health decisions and outcomes.

Purpose of the Study

The study examined the reproductive health information, needs and its sources among female undergraduate students in college of medicine, North central zone of Nigeria. The specific objectives of the study were to:

1. determine the reproductive health information needs of female undergraduate students of colleges of medicine in North Central Zone of Nigeria,
2. find out the sources of reproductive health information by female undergraduate students in colleges of medicine, North Central Zone of Nigeria,
3. identify health information resources available in colleges of medicine in North Central zone of Nigeria,
- 4.

Hypotheses

The following null hypotheses were formulated and tested at 0.05 level of significance:

1. There is no significant difference in the health information needs of female undergraduate students across the colleges of medicine in North central Zone of Nigeria,
2. There is no significant difference in the health information needs of female undergraduate students across the colleges of medicine in North central Zone of Nigeria based on marital status.

Literature Review

College of medicine libraries needs to be well-equipped to meet the informational needs of its users and to give access to current, pertinent, accurate, and reliable information.

Globally, college of medicine libraries were designed to offer students and staff a place to relax and a place where people could go and find something to read for fun, hence the focus on fiction (Mamman, 2015). These libraries are becoming increasingly important for a country's growth, they are service-oriented organization with predetermined aims and objectives that must be accomplished with the funding provided by the parent organization, which is typically the government or private contributors (Oyovwe-Tinuoye, Omeluzor & Emeka-Ukwu, 2015). A library must fulfil the informational, research, leisure, and educational needs of its users before it can be declared active (Kachota & Kassim, 2021). The informational resources could be used by undergraduate students for self-education, for improved health care as well as for recreational purposes.

Information need is a term often used in Information science discipline to describe the gap between one's current knowledge and the understanding they wish to have. It refers to the desire for health information to satisfy a health needs. An information need arises when someone requires knowledge to resolve a problem, make a decision, or gain new understanding about a particular topic An information need can relate to the need to be stated by the user; the need that a user cannot express; the present or immediate need; or the future, postponed, or projected need, it can be said to be either expressed or unexpressed need of a user to fill in the gap in knowledge (Thammanna, 2017). Undergraduate female students of reproductive age require accurate information on a range of issues including contraception, fertility, pregnancy, childbirth, STIs; and STDs. In a study by Asekun-Olarinmoye *et al.* (2020), it was highlighted that health education was an essential aspect of health information. The study further emphasized the importance of educating female students on family planning methods and preventing STIs. The United Nation Population Fund (UNFPA, 2021) emphasizes the importance of providing young women's with accurate, reliable, and easily accessible health information. They note that access to information can help these women to make informed decisions about their health, improve their overall wellbeing, and reduce maternal and infant mortality rates. Students have specific health needs that require appropriate and accurate information which are menstruation, contraception, pregnancy and childbirth and sexually transmitted infections.

The reproductive health information needs of young women are related to sexuality, information need on contraception, on prevention; and on treatment of vaginal, and STIs. Women's fertility naturally declines as they grow older, which makes it harder for conception. A woman is at risk of complications if she is undernourished during pregnancy period, which can lead to low birth weight babies. Women require energy, whereby there is a need for increase intake of nutrients during pregnancy, the requirement for iron during pregnancy is often substantial, and it is recommended to take iron supplements such as iron/folic acid pills. Women are required to consume a healthy, balanced diet that includes lots of iron-rich meals, clean and safe liquids, and iodized salt, which helps them stay active and creates healthy infants. Lack of iodine during

pregnancy results to risk of having physically or mentally damaged babies. Changes may occur in sexuality during pregnancy, it could be physical or emotional. Pregnancy is a time of change, women bodies changes, relationships with others change within pregnancy period.

Understanding health information needs of female undergraduate students is crucial for promoting their well-being and addressing specific concerns related to sexual health, contraception, and reproductive choices. Female undergraduates' students seek comprehensive, and accurate information about sexual health, which include reproductive anatomy, menstrual health hygiene, contraceptive, STIs, and pregnancy prevention (Adams & Brown, 2020). Understanding sexual consent, navigating healthy relationships, and recognizing signs of sexual violence are important areas of information need for female undergraduates. These students often have questions about various contraceptive methods, their effectiveness, side effects, and access to contraceptive services both on and off campus (Miller & Johnson, 2019). They seek information about preventing and testing for STIs, including understanding symptoms, risks, and available testing services within their university health services; they require information on menstrual health, managing menstrual symptoms, and accessing menstrual products on campus, they also seek information on reproductive rights, pregnancy options, abortion services, and resources for pregnancy counselling and support (Taylor & Garcia, 2022).

Methodology

The study used descriptive survey design. The research covers Nigeria's North Central geographical zone. The population of the study is 1,339 registered female undergraduate students of College of medicine, North Central, Nigeria. The sampling size of this study is 549 female undergraduates' College of medicine students, in Northern Nigeria, representing 41% of population. The instruments for collecting data are two, namely: questionnaire; and observation checklist. Closed-ended structured questionnaire, was designed by the researcher to gather data. Descriptive and inferential statistics were used to analyze the collected data. The replies to the research questions were analyzed using descriptive statistics, including means, frequencies, percentages, and standard deviations. While mean and standard deviation were used to analyze data from the questionnaire, frequencies and percentages were utilized to analyze data from the observation checklist.

Findings

1: The reproductive health information needs of female undergraduate students of colleges of medicine in North central Zone of Nigeria

Table 1: Mean and Standard deviation of the reproductive health information needs of female undergraduate students of colleges of medicine in North central Zone of Nigeria

S/N	Item statement	VHN	HN	LN	NN	Mean	St.D	Remark	Rank
I need RHI on:									
1	sexual management	359	172	0	0	3.68	.47	VHN	1 st
2	antenatal and postnatal care	390	108	33	0	3.67	.59	VHN	2 nd
3	stress and emotional well-being	376	139	16	0	3.65	.640	VHN	3 rd
4	health management	363	153	15	0	3.63	.636	VHN	4 th
5	cancer related issues	349	150	32	0	3.54	.782	VHN	5 th
6	screening for HIV/AIDS	344	125	62	0	3.53	.695	VHN	6 th
7	prevention and control of STIs/STD	330	120	81	0	3.47	.75	HN	7 th
8	managing rape-related challenges	377	56	66	32	3.47	.93	HN	7 th
9	use of contraceptives, family planning	383	23	77	48	3.40	1.04	HN	9 th
10	prevention and treatment of infertility	238	220	24	49	3.22	.90	HN	10 th
11	causes of infertility	259	134	73	65	3.11	1.05	HN	11 th
12	prevention and control of PID	224	164	72	71	3.02	1.05	HN	12 th
13	managing unplanned pregnancy	173	164	75	119	2.74	1.14	HN	13 th
14	female genital mutilation	161	145	104	121	2.65	1.14	HN	13 th
15	safe abortion and post abortion complications	66	128	153	184	2.14	1.03	LN	15 th
Grand Mean						3.26	0.86	HN	

Keys: VHN=Very Highly Needed, HN= Highly Needed, LN=Lowly Needed, NN=Never Needed

Results from Table 1 shows the responses on the reproductive health information needs of female undergraduate students of colleges of medicine in North central Zone of Nigeria. From the results health information on sexual management, with 3.68 mean score; antenatal and postnatal care, with 3.67 mean score; stress and emotional well-being, with 3.65 mean score; health management, with 3.63 mean score; cancer related issues, with 3.54 mean score; and screening for HIV/AIDS, with 3.53 mean score are very highly needed. On the other hand, the least health information needs of female undergraduate students are information on female genital mutilation, with 2.56 mean score. The female undergraduate students responded that information on safe abortion and post abortion complications, with 2.14 is less needed. The grand mean of 3.26 implies that, majority of the female undergraduate students highly need health information needs listed.

2: The available sources of reproductive health information for female undergraduate students of colleges of medicine in North central, Nigeria

Table 2: Mean response on the available sources of reproductive health information for female undergraduate students of colleges of medicine in North central Zone of Nigeria

S/N	Item statement	SA	A	D	SD	Mean	St.D	Remark	Rank
I get RHI through;									
1	Google	364	135	32	0	3.57	.780	Accepted	1 st
2	hospitals/health centres/ school clinic	340	159	32	0	3.52	.783	Accepted	2 nd
3	advance Google	316	159	24	32	3.43	.836	Accepted	3 rd
4	mobile phones/apps	305	177	17	32	3.42	.819	Accepted	4 th
5	friends/family	246	240	45	0	3.38	.638	Accepted	5 th
6	health care professionals (doctors, nurses)	305	147	47	32	3.37	.879	Accepted	6 th
7	google scholar	280	192	27	32	3.36	.833	Accepted	7 th
8	internet and digitized resources	270	213	16	32	3.36	.808	Accepted	7 th
9	newspapers, news magazines	278	152	69	32	3.27	.906	Accepted	9 th
10	institutional publicity services	312	69	118	32	3.24	.996	Accepted	10 th
11	educational websites (CDC, WHO)	264	159	76	32	3.23	.910	Accepted	11 th
12	workshops/seminars	241	197	61	32	3.22	.874	Accepted	12 th
13	radio and television programs	237	194	68	32	3.20	.882	Accepted	13 th
14	social media (facebook, Instagram, twitter)	215	228	56	32	3.18	.849	Accepted	14 th
15	posters/handbills	261	136	102	32	3.18	.946	Accepted	15 th
16	church/ mosque	258	168	49	56	3.18	.984	Accepted	15 th
17	bibliographic content instruction	254	155	76	46	3.16	.971	Accepted	17 th
18	Databases	243	165	61	62	3.11	1.015	Accepted	18 th
19	institutional repository	215	208	46	62	3.08	.976	Accepted	19 th
20	textbooks and printed materials	176	253	40	62	3.02	.935	Accepted	20 th
Grand Mean						3.27	0.88	Accepted	

Keys: SA=Strongly Agree, A=Agree, D=Disagree, SD=Strongly Disagree

Data in Table 2 shows the responses of female undergraduate students on the available sources of reproductive health information in colleges of medicine in North central Zone

of Nigeria. The major sources of health information for female undergraduate students of colleges of medicine are google, with 3.57 mean score; hospitals/health centres/school clinic, with 3.52 mean score; advance google, with 3.43 mean score; mobile phones/apps, with 3.42 mean score; friends/family, with 3.38 mean score; health care professionals (doctors, nurses), with 3.37 mean score; google scholar and internet and digitized resources, with 3.36 mean score; newspapers, news magazines, with 3.27 mean score; institutional publicity services, with 3.24 mean score; and ranked 1st to 10th respectively. The least source of health information for female undergraduate students is textbooks and printed materials, with 3.02 mean score and ranked 20th; while 3.27 is the grand mean.

3. Health information resources available in colleges of medicine libraries in North central Zone of Nigeria.

Table 3: Checklist results of the health information resources available in colleges of medicine libraries in North central Zone of Nigeria

S/N	Item statement	FUL	FUL	UNIA	UNIJ	UNIL	T	Pe	Re
		OKO	AFIA	BUJA	OS	ORIN			
		JA	JA	JA	JA	JA	otal	rcen	ma
		A N	A N	A N	A N	A N			
		A	A	A	A	A			
1	E-Books	√	√	X	√	√	4	80	A
2	Text-books	√	√	√	√	√	5	10	A
3	Audio-visual	X	X	X	X	X	0	0	NA
4	E-Journals	√	√	X	√	√	4	80	A
5	Journals	√	√	√	√	√	5	10	A
6	Online databases	X	√	√	√	√	4	80	A
7	Internet	X	√	√	√	√	4	80	A
8	Computers	√	√	√	√	√	5	10	A
9	Theses and dissertations	√	X	√	X	X	2	40	NA
10	Conference proceedings	√	√	√	√	√	5	10	A
11	Newspapers and magazines	√	√	√	√	√	5	10	A
12	Encyclopaedia	√	√	√	X	√	4	80	A
13	Workshop reports	X	X	X	X	X	0	0	NA
14	Abstracts and indexes	√	X	X	√	√	3	60	A
15	CD-ROM database	X	√	X	X	X	1	20	NA
16	Reference materials specifically related to reproductive health	X	X	√	√	√	3	60	A

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17	Educational posters and charts on reproductive health topics	X	X	X	X	√	4	80	A
18	Audiovisual materials (e.g., DVDs, videos) related to reproductive health education.	X	X	X	X	X	0	0	NA
19	Clear signage and labelling of reproductive health materials to facilitate navigation and retrieval.	X	√	X	X	X	1	20	NA
20	Evidence of promotional materials or displays highlighting reproductive health resources and services	√	X	X	√	√	3	60	A
Total		11	12	10	12	14			
Percentage		55%	60%	50%	60%	70%			

Keys: A=Available, NA=Not Available

Results from Table 3 shows the health information resources available in colleges of medicine libraries in North central Zone of Nigeria. The health information resources available in all the colleges of medicine are textbooks, journals, computers, conference proceedings, newspapers and magazines. On the other hand, the health information resources not available in all the colleges of medicine are audio-visual, workshop reports, and Audio-visual materials (e.g., DVDs, videos) related to reproductive health education. The checklist shows that, University of Ilorin have 14 (70%) out of 20 health information resources on the checklist; followed by Federal university Lafia and University of Jos with 12(60%) out of 20 health information resources on the checklist; then Federal University Lokoja, with 11(55%) out of 20 resources on the checklist; while the least is University of Abuja with 10(50%) out of 20 health information resources on the checklist.

4: Significant difference in the health information needs of female undergraduate students across the colleges of medicine in North central Zone of Nigeria.

Table 4: Summary of ANOVA on mean ratings on the health information needs of female undergraduate students across the colleges of medicine in North central zone of Nigeria

S/N	Sum of Squares	Df	Mean Square	F	Sig.	Decision
Between Groups	9.337	4	2.334	0.047	0.996	Not Significant
Within Groups	25865.503	526	49.174			
Total	25874.840	530				

P<0.05; D: Decision; **S:** Significant; **NS:** Not Significant

Table 4, reveals that the F value 0.047 is significant at 0.996. Since this significant level 0. 996 is greater than 0.05 level of significance at which the null hypothesis was tested, the null hypothesis is therefore upheld. Hence, there was no significant difference in the health information needs of female undergraduate students across the colleges of medicine in North central, Nigeria.

5: Significant difference in the health information needs of female undergraduate students across the colleges of medicine in North central Zone of Nigeria based on marital status.

Table 5: Summary of ANOVA on mean ratings on the health information needs of female undergraduate students across the colleges of medicine in North central Zone of Nigeria based on marital status.

S/N	Sum of Squares	Df	Mean Square	F	Sig.	Decision
Between Groups	140.654	4	35.163	0.719	0.579	Not Significant
Within Groups	25734.186	526	48.924			
Total	25874.840	530				

P<0.05; D: Decision; **S:** Significant; **NS:** Not Significant

Table 5, reveals that the F value 0.719 is significant at 0.579. Since this significant level 0.579 is greater than 0.05 level of significance at which the null hypothesis was tested, the null hypothesis is therefore upheld. Hence, there was no significant difference in the health information needs of female undergraduate students across the colleges of medicine in North central Zone of Nigeria based on marital status.

Discussion of the Findings

Health information needs of female undergraduate students of colleges of medicine in North central Zone of Nigeria

The study found out that, major health information needs of female undergraduate students of colleges of medicine in North central Zone of Nigeria are sexual management, antenatal and postnatal care, stress and emotional well-being, health management, cancer related issues, screening for human immunodeficiency virus/acquired immunodeficiency syndromes (HIV/AIDs), prevention and control of sexually transmitted infections/sexually transmitted diseases (STIs/STDs) and managing rape-related challenges, use of contraceptives, family planning, prevention and treatment of infertility, causes of infertility, prevention and control of pelvic inflammatory disease (PID), and managing unplanned pregnancy. This implies that female undergraduate students have lots of health information needs for improved reproductive health.

On the contrary, majority of the female undergraduate students of colleges of medicine in North central, Nigeria responded that information on safe abortion and post abortion complications are less needed. This is not surprising considering the fact that abortion is illegal in Nigeria and the prevalence of modern contraceptive use have reduced incident of unplanned pregnancies among the female undergraduate students. The findings of the study is also in accordance with the findings of Taylor and Garcia (2022) who reported from an empirical study that, female students seek information about preventing and testing for STIs, including understanding symptoms, risks, and available testing resources within the university health services; they require information on menstrual health, managing menstrual symptoms, and accessing menstrual products on campus; female students also seek information on reproductive rights, pregnancy options, abortion services, and resources for pregnancy counselling and support. Similarly, Oladele et al. (2019) reported the need for health information on topics including immunization, family planning, prenatal care, personal cleanliness, malaria, clean water supply, and postpartum care

The findings of the study also found out that, there was no significant difference in the health information needs of female undergraduate students across the colleges of medicine in North central Zone of Nigeria. This implies that regardless of their institution, majority of the female undergraduate students' needs health information very well. The findings of the study correspond with the findings of Noura et al. (2022) who reported that the specific health needs that require appropriate and accurate information which are menstruation, contraception, pregnancy and childbirth, post-partum care, sexually transmitted infections, infertility, contraceptives, cancer related issues, unplanned pregnancies, safe abortion and post abortion complications; safe sex practices and menopause. There was no significant difference in the health information needs of female undergraduate students across the colleges of medicine in North central, Nigeria based on marital status. This implies that regardless of marital status, majority of the female undergraduate students requires lots of health information needs for their reproductive health. The findings of the study correspond with that of Ezema (2016) who discovered that women's main information needs were related to infertility, contraception use, abortion, prevention of STDs, prenatal care, and postpartum care.

Sources of health information by female undergraduate students of colleges of medicine in North central zone of Nigeria

The study found out that, the major sources of health information for female undergraduate students of colleges of medicine are google, hospitals/health centres/school clinic, advance Google, mobile phones/apps, friends/family, health care professionals (doctors, nurses), google scholar, internet and digitized resources, newspapers, news magazines, institutional publicity services, health educational websites such as center for disease control, world health organization (CDC, WHO 2021), workshops/seminars, radio and television programs, and social media (Facebook, Instagram, twitter), posters/handbills, and church/ mosque. This implies that the female

undergraduate students have many sources of health information on their reproductive health. The findings of the study is in accordance with the findings of Noura et al., (2022) who found out that, the most prevalent sources of health information are college of medicine libraries, health care providers, community health workers, internet and social media, peer groups and community organizations and mass media. the findings of the study is also related to the findings of Ilozumba, Cadmus and Owoaje (2020) who reported in their empirical study that, the major sources of health information for undergraduate students ranges from college of medicine library, internet, health care providers, peer groups, social media, to mass media, which play a crucial role in increasing access to information on various health topics, enabling students to make informed decisions about their health and well-being.

The findings of the study further validate the findings of Odini (2016) that the primary means of accessing information were face-to-face interactions, cell phones, radio, and television and the available information sources, include friends, family, health centres, and neighbours. Similarly, the findings of the study correspond with the findings of Fagbamigbe, Hamzah and Ahmad (2019), who reported that, social media was the important source of health information for students of Nigeria. Social media were more likely to have knowledge of modern contraceptive methods. Moreover, social media and the internet offer a platform for female students to access health information. For instance, some health care providers have established social media accounts as a means of providing health information to students. The internet provides a wealth of resources through websites, blogs, online groups, and chat rooms. The sources of health information resources on reproductive health reported in this study is in accordance with that of Mole (2019) who found out that, the main channels/sources used to disseminate information to rural residents were printed materials, posters, pamphlets, and other audio/visual resources. Similarly, the findings is in accordance with that of Ezema (2016) in which friends and family, hospitals and health facilities, churches, women's organizations, radio, and television were determined to be the main sources of information about health.

Health information resources available in colleges of medicine in North central zone of Nigeria

The study found out that, the health information resources available in all the colleges of medicine are textbooks, journals, computers, conference proceedings, newspapers and magazines. On the other hand, the health information resources not available in all the colleges of medicine are audio-visual, workshop reports, and audio-visual materials (e.g., DVDs, videos) related to reproductive health education. The findings of the study showed that, University of Ilorin had the highest health information resources, followed by Federal University Lafia and University of Jos, then Federal University Lokoja, while the least availability of health information resources was found in University of Abuja. None of the colleges of medicine library had up to two-third of the health information

resources on the checklist. This implies that there are some health information resources available in colleges of medicine in North central, Nigeria.

This finding is in accordance with that of Ogbe et al. (2019) who found out that college of medicine libraries have long been recognized as repositories of knowledge; they house an extensive collection of books, journals, magazines, and digital resources spanning various domains, including healthcare. The findings of the study also correspond with that of Abubakar, Daniel and Idris (2020), who revealed that most of the information resources are available in University of Jos libraries for Pharmaceutical science students use while some of them are moderately accessible. Similarly, Grades (2022) found out that, information can be packaged in different forms and shared through different channels such as books, journals, newspapers, magazines, emails, radio broadcast, instant messages, television broadcast, tweets, face book updates, blog posts, flyers, WhatsApp chats, and phone calls.

Summary of major findings

The major findings were summarized as follows:

1. The major reproductive health information needs of female undergraduate students of colleges of medicine in North central Zone of Nigeria are sexual management, antenatal and postnatal care, stress and emotional well-being while managing unplanned pregnancy, female genital mutilation and information on safe abortion and post abortion complications are less needed.
2. The top sources of health information for female undergraduate students of colleges of medicine are google, hospitals/health centres/ school clinic, advanced google, and mobile phones/apps; while the low rank sources of health information for female undergraduate students are databases, institutional repository, textbooks and printed materials
3. The health information resources available in all the colleges of medicine are textbooks, journals, computers, conference proceedings, newspapers and magazines. On the other hand, the health information resources not available in all the colleges of medicine are audio-visual, workshop reports, and audio-visual materials (e.g., DVDs, videos) related to reproductive health education.
4. There was no significant difference in the health information needs of female undergraduate students across the colleges of medicine in North central, Nigeria.
5. There was no significant difference in the health information needs of female undergraduate students across the colleges of medicine in North central, Nigeria based on marital status.

Conclusion

The study investigated reproductive health information, needs and its sources among female undergraduate students in college of medicine, North central zone of Nigeria. The study concluded that, female undergraduate students have lots of health information needs which motivates them to source for health information resources from different sources to meet their needs. However, the lack of adequate health information resources

in colleges of medicine libraries have exposed female undergraduate students to source for health information resources from authentic and unauthentic sources which exposes the female undergraduate students to health consequences if not stopped.

Recommendations

Based on the findings of this study, the following recommendations were made:

1. Seminar should be organised for female undergraduates on the information need to manage unplanned pregnancy, the implications of female genital mutilation and information on safe abortion and post abortion complications
2. The female undergraduate students need to be enlightened on the advantages of sourcing health information from the library databases, institutional repository, textbooks and printed materials.
3. The management of the colleges of medicine should allocate more funds to the colleges of medicine libraries to acquire resources on audio-visual materials (e.g., DVDs, videos) related to reproductive health education, and there should be a clear signage and labelling of reproductive health materials to facilitate navigation and retrieval.

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