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RESEARCH ARTICLE

PERCEPTIONS OF USING THE INTERNET BY THE ADOLESCENTS' FEMALES AS A SOURCE OF REPRODUCTIVE HEALTH INFORMATION

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ABSTRACT

The internet is a global system of interconnected computer networks that serve billions of users worldwide. Aim: The study aimed to explore the perception of adolescents' female using the internet as source of reproductive health information. Design: Descriptive design was conducted for this study. Setting: The study was conducted in three female secondary schools at Sheben El kom, El-Menoufiya governorate. Sample: This is a purposive sample, simple random sample of 350 female students from the mentioned above setting. Tools: For data collection an interview questionnaire was used to assess socio demographic data, sources of reproductive health information, duration of daily internet use by them and perception and knowledge of students regarding to reproductive health information. Findings: The results of the study showed the internet access for acquiring information was the main source for girls knowledge related to reproductive health. Also there was positive relation who between adolescents using internet and their parents level of education .Recommendations: According to this study it is recommended that parents and family should be encouraged to discuss or give guidance and approval about reproductive health education, regular workshops and seminars about use of reproductive health information should be organized for parents and teachers also health awareness programs should reach out to adolescents in their own environment.

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INTRODUCTION

According to WHO, adolescents make up one fifth of the world population, and 86% live in developing countries of which 16% live in Africa. In Egypt, adolescents constitute nearly one quarter of the population there are 3.37 million adolescents enrolled in preparatory schools nationwide and 2.52 million students in general and technical secondary schools (1). Adolescence represents a window of opportunity to prepare for a healthy adult life. The world's adolescent population -1200 million persons, 10-19 years of age, or about 19% of the total population-faces a series of serious challenges not only affecting their growth and development but also their livelihood as adults. Yet adolescents remain a largely neglected, difficult-to-measure, and hard-to-reach population, in which the needs of adolescent girls in particular are often ignored (2). Adolescence is a period of increased risk taking and therefore susceptibility to behavioral problems at the time of puberty and new concerns about reproductive health. Majority of adolescents still do not have access to information and education on sexual and reproductive health and rights, nor do they have access to preventive and curative services (3). Sexual and reproductive health remain a contested subject in the Arab region for a number of reasons, including conflict over the appropriate role of religion in social policy, exacerbated by the influence of extreme religious movements in some countries. Indeed, there are few national government programmes addressing young people's sexual and reproductive health. Only recently have a handful of countries and the Arab League initiated collection of population-based data on married and unmarried young people to guide such programmes (4). Adolescence is a critical period of human development often characterized by confusion, mixed interpretation and understanding of adult behavior and environment, exuberance

and a penchant for experimentation, especially with drugs, alcohol and sex (6). Of all challenges, those associated with sexual maturation are the most distinctive as well as the most problematic. This stage of development is accompanied by an upsurge of sex drives, the development of sexual values, and the initiation of sexual behavior (5).

The key concern about the health of young people is the extent to which they have access to resources that promote their development. Access to information and communication services is now seen as a universal right, and the United Nations is advocating for a global initiative for such access within this decade. The resources that adolescents need include: access to education, information and services; resources that reside in a stable and supportive structure such as the family; resources contained within policy-making and decision-making processes, and many young people do not have access to these facilities. To improve young people's access to these resources, new strategies that are attractive to the youth are beginning to emerge, and they make use of the power, creativity and enthusiasm of adolescents. This is where information technology, such as the Internet, is expected to play a critical role as a source of information (6). The Internet is a global system of interconnected computer networks that serve billions of users worldwide. It is a network of networks that consists of millions of private, public, academic, business, and government networks of local to global scope that are linked by a broad array of electronic and optical networking technologies. The Internet carries a vast array of health information resources and services (7). Nurses can educate parents about normal physiological, psychological, cognitive and emotional characteristics of their adolescent and teach them how to use conflicts or mutual understanding and family growth and help them to identify measures to assist adolescents to manage anger (8).

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## Significance of the Study

Access to appropriate reproductive health information by adolescent girls is crucial to the achievement of the Millennium Development Goals of reducing maternal and child mortality by 2015. Literature has shown that adolescent girls have inadequate access to reproductive health information due to socio-cultural values, religious beliefs, economic factors, inadequate information resources and facilities. Perhaps the adolescent girls' inadequate access to reproductive health information could have promoted ignorance of basic reproductive health practices and may be responsible for the commonly reported reproductive health problems. In other words, can inadequate access to reproductive health information among teenage girls which promoted gaps in knowledge be linked to unhealthy reproductive health perceptions and practices exhibited by them? In Egypt, adolescents don't have enough and/or correct knowledge regarding reproductive health. Nurse has a pivotal role in improving adolescent knowledge through designing and implementing reproductive health educational programmes; this was recommended by Family Health International FHI which added that reproductive health programs should provide young people with accurate information, to enable them to make responsible decisions (9).

## Aim of this study

The study aimed to explore the perception of adolescents' female using the internet as a source of reproductive health information.

## Research questions:

- 1- What is the perception of adolescent female about using internet to find the reproductive health information?
- 2- Is a relation between the adolescent female as regard using internet and their parents education level?

## Subjects and methods

Research design: A descriptive study was conducted.

## Setting

The study was conducted in three secondary schools where the researchers trained the undergraduate nursing schools namely Sheben Elkom, the new and old secondary female's schools at Sheben Elkom (El-Menoufya Governorate) is one of the governorates of Egypt. It is located in the northern part of the country in the Nile Delta, to the south of Gharbia governorate and to the north of Cairo. Three classes from each school at different educational level first, second and third secondary grades.

## Sample

A purposive sample was used in this study, a simple random sample of 350 female students were chosen from the above setting. The random sampling procedure was based on a list of students in the respective age groups which was provided by the principals of the school, students were selected randomly every third student included in the list.

## Tools of data collection

An interviewing questionnaire developed by the researchers to collect data, it included the following:

- a. Socio-demographic data for adolescent's female students as regard their age, school degree, social living: mother only, father only, grandmother or grandfather, educational level of father and educational level of mother.
- b. Sources of reproductive health information (e.g., T.V, internet, friends, teachers, school, book, mother and health care provider).
- c. Duration of daily internet use by adolescent girls.

d. Perception of students regarding reproductive health information such as useful, easy to read, ensure privacy and confidentiality, visually appealing, accurate, source is evident and trustworthy. It consists of 7 items; each item was rated on 3 points, 3, 2, 1 means agree, disagree and don't know respectively.

e. Student's knowledge about the reproductive health (e.g., topics of reproductive health as anatomy of reproductive, puberty, menstruation, breast self-examination, pregnancy, sexual relations and Issues of reproductive health.).

## Validity and Reliability

The questionnaire was developed by the researchers and reviewed for content validity by the five specialized persons in the field of pediatric nursing. This questionnaire has excellent reliability of (0.84) using Cronbakh Alpha test.

## Pilot study

A Pilot study was conducted to test the clarity, applicability and time needed to fill sheets it was conducted on 30 students. These numbers of students for pilot study were excluded from the total number of study sample. Necessary modifications were carried out based on finding of pilot study.

## Ethical Consideration

- Official permissions were obtained from the dean of the Faculty, Educational officer and administrators of the schools involved in the study. Personal communication was done with female students to explain the purpose of the study and assure their best possible cooperation.
- The researchers emphasized to students that the study was voluntary & anonymous. Students had the full right to refuse to participate in the study at any time. Confidentiality of the responses was emphasized and that data were used for research purposes.
- An oral consent was taken from the students to gain their cooperation in this study, once permission was granted to proceed with the study, the investigator initiated data collection. The purpose and the nature of the study were clearly and simply explained to interviewed students were explained in order to gain the students cooperation. The investigators visited students in the free classes and time break.

## Field work

- The questionnaires were distributed and collected over four months as period from first February to the end of May 2013. The time required for data collection from each student ranged from 20 to 30 minute including the primary explanation of the purpose of the study. According to the educational plan of each school, data collection was established to avoid any negative interference with the educational process.
- The researchers visited the previously mentioned setting 3 days/week, the first day from 10 am to 1 pm, these times were chosen according to the timetable of each school and the researcher individually interviewed 5-9 students/day during the time of break or any activities till the end of the predetermined number was completed. Each student interviewed by the researcher in the class room during the break time.

## Statistical Analysis

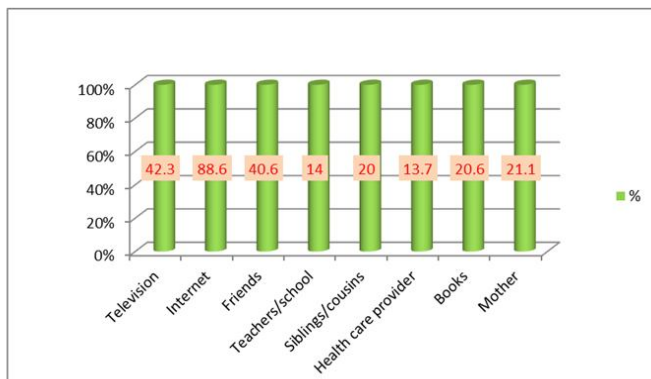
After completing the data collection, data were coded and transferred into a specific designed format to be suitable for computer feeding. All data were verified for any error. The Statistical Package for Social Science (SPSS) version 20 was utilized for statistical analysis and tabulation. The following statistical measures were used; Descriptive measures include number, percentage, arithmetic mean, standard deviation and Pearson correlation was utilized in this study.

**RESULTS**

**Tables (1). Socio-demographic characteristics of adolescent girls (n=350).**

Characteristics	No.	%
Age		
Less than 15	72	20.6
15-	83	23.7
16-	105	30
17 or greater than	90	25.7
School degree		
First Secondary	110	31.4
Second Secondary	98	28
Third Secondary	142	40.6
Social Living:		
Both Parents	230	65.7
Mother only	52	14.9
Father only	47	13.4
Other relatives	21	6
Education level of father		
Illiterate	71	20.2
Primary	49	14
Secondary	157	44.9
High education	73	20.9
Education level of mother		
Illiterate	72	20.6
Primary	44	12.6
Secondary	159	45.4
High education	75	21.4

Table (1) shows that the students aged 16 years were 30% while 40.6% of them were in third secondary degree. About 65.7% of them were living with their parents. Only 20.9% of girls' fathers had university level of education, while 21.4% of girls' mothers.



More than one source is possible

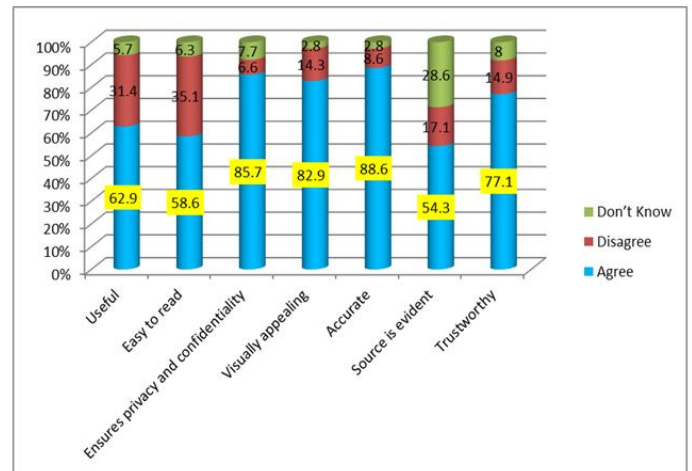
**Figure (1). Distribution of the main sources for students' knowledge related to reproductive health (n=350).**

Figure (1) shows that the Internet access for acquiring information was the main source for girls' knowledge related to reproductive health 88.6% .while watching television were main source for 42.3%. Mothers were the main source for 21.1%, while friends and health care provider constituted the main source for of adolescent girls 40.6% and 13.7% respectively.

**Table (2). Average duration of daily internet use by adolescent girls (n=350)**

Average duration of use	No	%	X2	P-value
Not regular daily users	120	34.3	70.7	.013
Regular daily users	230	65.7	65.9	.004
<One hour	90	25.7	68.1	.010
1-2 hours	30	8.6	55.3	.083
>2 hours	302	65.7	98.5	.032

Table (2) illustrates that almost 65.7% of adolescent girls are regular daily users of the internet. Among those regular daily users, similar of them spend more than two hours connected to the internet.



**Figure (2). Perception of adolescent girls about health information which they retrieve from the internet (n=350).**

Figure (2) indicates that the most adolescent girls find health information retrieved from the internet accurate 88.6%, ensures privacy and confidentiality and visually appealing 85.7% & 82.9% respectively. Figure 2 answered the research question number one.

**Table (3). Distribution of adolescent girls' about their correct knowledge of different items of reproductive health (n=350).**

Issues of reproductive health	No	%
Anatomy of reproductive system		
-External reproductive system	240	68.6
-Internal reproductive system	110	31.4
Puberty		
-Increase height	89	25.4
-Breast development	75	21.4
- growth of hair in private parts	100	28.6
Menstruation		
-Regular	270	77.1
-Irregular	67	19.1
-Pain during menstruation	169	48.3
Breast self-examination		
-Importance	78	22.3
-Times	94	26.9
Pregnancy		
-Time of ovulation	305	87.1
-Precaution followed by pregnant women	124	35.4
-Risk signs during pregnancy	80	22.9
Sexual relations.		
-Suitable time	59	16.9
-Positions	87	24.9
Issues of reproductive health		
-Personal hygiene during menstruation	237	67.7
Prevent female infertility		
-Genital hygiene	197	56.3
-premarital counseling	92	26.3
-Practicing premarital counseling	123	35.1
-Exercises	86	24.6
-Rest and sleep	69	19.7
-Balanced diet	184	52.6

Table (3) shows that the adolescence girls more knowledgeable in reproductive health as regard external reproductive system, growth of hair in private parts during puberty, regular menstruation, time of breast self-examination, time of ovulation to pregnancy 68.6%, 28.6%, 77.1%, 26.9% and 87.1% respectively. Also, in other items of information related to issues of reproductive health as personal hygiene during menstruation to prevent female infertility, genital hygiene and Balanced diet were 67.7%, 56.3%, 52.6% respectively.

**Table (4). Relations between studied girls demographic data and the internet using regarding health reproductive information(n=350).**

Students Anxiety (No=150)		
Parents Education Level	%	Internet using Mean ( $\pm$ SD)
Education level of father		
Illiterate	20.2	3.13 $\pm$ 1.90
Primary	14	2.43 $\pm$ 1.52
Secondary	44.9	5.03 $\pm$ 1.26
High education	20.9	4.63 $\pm$ 1.73
ANOVA	F=0.699	
P- value	.004	
Education level of mother		
Illiterate	20.6	3.63 $\pm$ 1.08
Primary	12.6	2.63 $\pm$ 1.53
Secondary	45.4	4.13 $\pm$ 1.34
High education	21.4	3.64 $\pm$ 1.03
ANOVA	F=0.652	
P- value	.006	

Table (4) it showed that there were positive relations between adolescent using internet and parents' education level is significantly associated with prevalence of internet use among adolescent girls. Table 4 answered the research question number two.

## DISCUSSION

The internet is one of a range of health information sources available to adolescents. It is recognized that young people have difficulties accessing traditional health services; in theory, the internet offers them confidential and convenient access to an unprecedented level of information about a diverse range of subjects. This could redress adolescents' state of relative health 'information poverty', compared to adults (10). Regarding to Socio-demographic Characteristics of the Studied adolescence girls The findings of the current study revealed that (Table 1); one third of students were 16 years old age, about less than fifty of them their grade in third secondary degree, while two thirds of them were living with their parents and Only one fifth of girls' fathers and their mothers had university level of education. This finding was supported with the National Survey in Nigeria 2009 on use of media resources by people found that one third of young children (12 to 17 years old) and two thirds of older children and adolescents (18 to 28 years old) have a television in their own Bedroom. Many of those televisions also are hooked up to cable and a Videocassette Recorder. Also the internet access is available 24 hours which makes search easy on the internet (11). A parent controls a child's computer use and PC access, can parents protect against the dangers that might be lurking. So take control.

Concerning the main sources for students' knowledge related to reproductive health, Findings of the present study in (Figure 1) showed that in more than two thirds of them consider the Internet access for acquiring information was the main source of knowledge related to reproductive health followed by watching television, friends, mothers and siblings or cousins. Most adolescent girls considered the reproductive health related information which they retrieve from the internet useful, easy to read and ensures privacy and confidentiality. These findings were agreement with Nicola *et al.* who stated that the Internet has increased dramatically the availability of sexually explicit content. Computer and Internet use is diffusing more rapidly than any previous technology; as of the end of 2009, more than half (56%) of all in the United States were online. It is expected that by 2012 most homes with children will have access to the Internet (10). While Francis *et al.* study of 716 school girls in Delhi observed that most frequent source of information on reproductive facts was books (53.8%) followed by friends (47.3%) in contrast to our study where television was the most common source of information followed by books and teachers (12). Also Nicola *et al.* who stated that In contrast, adolescents are known to have difficulty forming therapeutic relationships with professional health care

providers, and accessing health services. Doctors and nurses, however, are often cited as information sources about a range of conditions. A study of young people with long-term conditions indicated that they might choose different sources for different types of information. Thus, they might seek medical facts from health professionals, but psycho-social information from friends or someone else with the same condition (10). Borzekowski *et al.* stated that the main perception of adolescent girls about the quality of health information found in the internet are useful and relevant. Although the adolescent girls actually reported awareness that other sources of information exist, the adolescent girls use the internet mainly because of its privacy (13). Regarding Average duration of daily internet use by adolescent girls The current study results revealed that (table 2); there were almost two thirds of adolescent girls are regular daily users of the internet and spend more than two hours connected to the internet. Consequently the internet has become a popular source of health advice and information for adolescents, with the electronic gateway offering confidential advice and information that might be otherwise hard or compromising to obtain. These finding was agreement by Kotwal *et al.* who stated that In Nigeria, young people spend 6 to 7 hours each day on average with some form of media to get information (14). Harvey *et al.* who reported that the internet is transforming the social world of the adolescents by influencing how they communicate, establish and maintain relationship and find social support. There for it is essential to gain awareness both the potential benefits and risks of teen internet use and provide strategies to guide safe and positive practice (15).

Also, explained by Gray and Klein who stated that adolescents are using the internet in order to find health information on a range of subjects. The quality of the online experience is often limited by health/online literacy skills (7). Nwagwu added that the internet, especially when located at home, could create a new role for care providers, parents and teachers in informing and counseling as well as guiding young people's information choices. But the low outcome of internet for information acquisition might mean that parents and adults have not incorporated the internet as a strategy for adolescent health education. Adequate enlightenment is required to break information and communication gaps that exist regarding using the internet for reproductive health issues (16). Regarding perception of adolescent girls about health information which they retrieve from the internet The findings of the current study indicates that (Figure 2); the most adolescent girls find health information retrieved from the internet accurate, ensures privacy and confidentiality and visually appealing this result was agreement with Meshra and Levet who stated that frequently parents are virtually silent regarding sex instructions to their daughters. Also, teachers may face difficulty in discussing this subject openly with girls because of cultural considerations. Young people have a lack basic knowledge of reproductive this may be a result of parents may feel ill-prepared, uncomfortable or embarrassed to talk about sex with their children (17). Also, well-meaning parents and other adults, eager to protect their children may believe that education about sexuality and reproductive health will encourage young people to become sexually active (18).

According to their knowledge related to different items of reproductive health results were illustrated that in (Table 3); the adolescence girls more knowledgeable in reproductive health and issues this finding was supported by Nwagwu who stated that the internet, especially when located at home, could create a new role for care providers, parents and teachers in informing and counseling as well as guiding young people's information choices. But the low outcome of internet for information acquisition might mean that parents and adults have not incorporated the internet as a strategy for adolescent health education. Adequate enlightenment is required to break information and communication gaps that exist regarding using the internet for reproductive health issues (16). Kotecha *et al.* added that about one third of online teens use the internet to look for health, dieting or physical fitness information, a finding that has remained

relatively stable (19). Also, Malleshappa *et al.* added that it is clear that girls are aware of the external, more visible pubertal changes in themselves as well as in the opposite sex. A large proportion of girls mentioned changes in the opposite sex like increase in height, change in voice, breast development, and growth of facial hair, growth of hair in private parts, onset of menstruation, etc. Few of them mentioned changes that cannot be seen easily in the opposite sex like erection or ejaculation, increase in hip and waist size, muscular growth, etc (20). Wolf and Baker not support this finding when stated that the median age for attaining menarche for girls was 14 years. Most of them had been informed about it, mostly by their mothers, before they had their first period. A large majority did not know the biomedical reason for menstruation. (21). Concerning relations between studied girl's demographic data and the internet using regarding health reproductive information. The findings of the current study indicated that (Table 4); there were positive relation between adolescent using internet and their parents' education level is significantly associated with prevalence of internet use among adolescent girls. Furuholt and Kristiansen noted that access to and use of the internet in the developing world depend on a number of factors, including physical access to technology; socioeconomic factors, like education; demographic characteristics, such as age, gender, and geographic location; and culture. As a source for acquisition of information related to reproductive health (22). The present study indicates that the adolescent girls in rural areas are still ignorant about many aspects of reproductive health especially puberty, onset of menarche and many issues regarding reproductive health.

### Conclusions

Based on results of the present study and research questions, it concluded that:

One third of students aged 16 years of age, about less than fifty of them their grade in third secondary degree, while two thirds of them were living with their parents and only one fifth of girls' fathers and their mothers had university level of education. According to internet as a source of reproductive health information most of girls had knowledge related to reproductive health. While more than two thirds of them consider the Internet access for acquiring information was the main source of knowledge related to reproductive health followed by watching television, friends, mothers, siblings or cousins and health care providers. Almost two thirds of them were regular daily users of the internet and spend more than two hours connected to the internet. The most adolescent girls find health information retrieved from the internet accurate, ensures privacy and confidentiality and visually appealing. Almost of them more knowledgeable in time of ovulation to pregnancy, regular menstruation and external reproductive system. There were positive relation between adolescent who using internet and their parents' education level is significantly associated with prevalence of internet use among adolescent girls.

### Recommendations

Based on the findings of this study, the following recommendations are suggested, use of reproductive health information among school female adolescents in their own environment through regular workshops, seminars, symposia, lectures and talks information should be organized for parents, teachers, health care workers and students.

- Reproductive and sexual health information should be provided in a respectful and non-threatening environment, where the confidentiality and autonomy of the adolescent seeking information is respected.
- More researches to be conducted on attitudes of parents regarding sex education.

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