Communication Barriers with Parents regarding Reproductive Health Issues from the Adolescents' Perspectives in Alexandria

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Abstract

Background: Communication between parents and adolescents regarding sexual and reproductive health issues is difficult and facing challenges and barriers for both parents and adolescents. **Aim of the study:** was to identify communication barriers with parents regarding reproductive health issues from the adolescents' perspectives in Alexandria. **Subjects and method:Study design:** Descriptive research design was used in this study. **Setting:** This study was conducted in 8 youth centers in Alexandria. **Subjects:** A random sample of 450 adolescents were selected by proportional allocation method. **Tools of data collection:** Three tools were used for data collection. The first tool was used to identify socio-demographic characteristics related to the adolescents and their parents. The second tool was used to assess the adolescents' knowledge regarding reproductive health and puberty changes as well as the importance of communication with parents about reproductive health issues. While, the third tool was used to measure the barriers of adolescent-parent's communication about reproductive health issues and the effects of poor communication. **Results:** The vast majority of the studied adolescents had poor level of knowledge about reproductive health issue and less than two thirds of them did not communicate with their parents about reproductive health issues, while less than quarter of them had many barriers against the communication with their parents about reproductive health and less than one quarter of them had major physical effects of poor communication. **Conclusion:** Poor adolescent- parent communication about reproductive health issues is a major problem among adolescents which may have serious implications on them. **Recommendations :**It is essential to maintain open and comfortable communication with adolescents on regular basis about reproductive health issues.

***Keywords*:** Adolescent -Parent Communication, Reproductive Health, Barriers

Introduction

Adolescents constitute a large sector in the community, as they represent the positive force in society for the future. According to The United Nations Children's Emergency Fund (UNICEF) in the year 2021, adolescents constitute 1.2 billion in the world today, making up to 16 percent of the world's population. In Egypt, adolescents constitute 17 million, representing approximately 19 percent of the total population [(1)].

Adolescents face a great challenge in this period because they do not understand their physical, biological, and psychological changes which occur during their development to begin puberty. Many adolescents are not prepared enough to cope with these changes, which often put them under stress and make them vulnerable to health risk that significantly impact their future life course. Therefore, they should learn about changes during puberty, human reproductive system, reproductive organs, their functions and problems related to adolescence [(2)].

Reproductive health for adolescent is a fundamental feature of healthy human development and of general health. Promoting healthy practice during adolescence protects this age group from risks and ensures longer and productive lives [(3,4)].

Adolescents often lack reproductive and sexual health education because it is not received at school. The school health insurance system does not include reproductive health care for students. Furthermore, they lack basic reproductive and sexual health information, and access to affordable confidential reproductive health services [(5)].

Adolescents have very special needs and problems, which should not be over looked by parents and all related authorities including health care authority. The adolescents' needs could be classified into biological, developmental and sexual and reproductive health needs. These needs

should be met and the persons providing care to adolescents should develop an awareness of the health issues facing them [6].

To meet adolescent's needs for reproductive health in particular, information and services should be available for adolescents to help them understand their sexuality and protect them from unwanted pregnancies, sexually transmitted diseases and subsequent risk of infertility [7].

Among the sources of information about reproductive health is family. Many adolescents feel uncomfortable to discuss reproductive health issues with parents. Conversations between parents and adolescents about reproductive health issues are rarely occurred due to of many barriers including shame, gender difference, religious beliefs, traditional norms, customs, and strong belief of parents that reproductive health discussion with adolescents encourages sexual experimentation. In addition to, lack of knowledge, lake of communication skills, embarrassment of adolescents and parents when discussing about sexual topics, parents and adolescents misperceptions about discussion for sexual activities and reproductive health [8].

Communication between parents and adolescents regarding sexual and reproductive health issues is difficult and facing challenges and barriers for both parents and adolescents. These barriers can prevent communication between parents and their adolescents regarding sexual and reproductive health issues, which leads to exposure of the adolescents to high-risk behaviors such as unwanted pregnancies, early marriage, and sexual transmitted diseases [8, 9].

The community health nurse goes hand in hand to help people prevent communication barriers between parents and adolescents. They play an integral role in providing reproductive health care services, and information. The community health nurse must be prepared to look at the whole picture;

parents and adolescents. The nurse act can contribute in prevention and management of communication barriers between parents and adolescents regarding reproductive health by multifaceted role as a care provider, educator, counselor, manager, collaborator, leader and researcher [10].

Aim of the study

This study aimed to identify communication barriers with parents regarding reproductive health issues from the adolescents' perspectives in Alexandria.

Research question:

What are the communication barriers with parents regarding reproductive health issues from the adolescents' perspectives in Alexandria?

Subjects and Method

Study design:

A descriptive design was adopted to carry out the study.

Setting:

This study was conducted in 8 youth centers in Alexandria. By using the equal allocation method, one youth center from each zone was selected randomly to be included.

Subjects:

450 adolescents attending the previously mentioned youth centers has been selected to participate in the study, with inclusion criteria, age group 10-19 years for both sexes.

Sampling technique:

By using the proportional allocation method, the adolescents were selected randomly from each selected youth center

Zone	The randomly selected youth center	Total number of adolescents attendees	Selected sample of adolescents
East	Smoha	4500	$(4500 \times 450) \div 10301 =$ **197**
El-Montazah	El-Amrawi	200	$(200 \times 450) \div 10301 =$ **9**
Middle	El-shlalat	1611	$(1611 \times 450) \div 10301 =$ **70**
West	El-Qabari	108	$(108 \times 450) \div 10301 =$ **5**
El-Ajmi	El-dkhila	94	$(94 \times 450) \div$ **1**$0301 =$ **4**
EL-Ameriya	EL-Ameriya	210	$(210 \times 450) \div 10301 =$ **9**
Borg El Arab	Borg El Arab	1500	$(1500 \times 450) \div 10301 =$ **66**
Elgomrok	Anfushi	2068	$(2068 \times 450) \div 10301 =$ **90**
Total	**8**	**10301**	**450**

Sample size:

The sample size was estimate using Epi info 7 statistical program using the following parameters; total population (all adolescents attending in the previously mentioned youth centers in the academic year 2020-2021) 10301 adolescents, prevalence of problem 50%, confidence level 97%, and margin of error 5%. The sample size estimated to be 450 adolescents.

Tools of the study: In order to collect the necessary data for the study, three tools were used:

Tool I: Parents and Adolescents' Socio Demographic Characteristics Structured Interview Schedule.

It was developed by the researchers after reviewing the recent literatures to collect the required data. It included the following parts:

PartI: Socio-demographic characteristics of the parents. It contains the following parent's age, the level of parents' education, parents' occupation, marital status of parents and family income sufficiency.

PartII: Socio demographic characteristics of the adolescents. It includes age, sex, birth order, educational level, place of residence, number of rooms, number of family members, and scholastic achievement.

Tool II: Reproductive Health Knowledge of Adolescents and Communication with parents concerning Reproductive Health Issues Structured Interview Schedule.

It was developed by the researchers after reviewing the recent literature[9, 12-15] to collect the required data. It included the following parts:

Part I: This part was used to assess knowledge of adolescents regarding reproductive health. It included 34 questions about, reproductive health (7 questions), sexual transmitted diseases (3 questions), family planning and contraceptive methods (6 questions), violence against women (6 questions), and female genital cutting (4 questions), infertility (4 questions), and early marriage (4 questions).

Part II: This part was used to assess knowledge of adolescents regarding changes during puberty. It included 18 questions about, the anatomical and physiological characteristics of the reproductive system for both male and female (parts and functions of reproductive system), changes during puberty (physical, behavioral and reproductive changes), in addition to menstruation period (age, manifestation, duration and menstrual hygiene practices).

Part III: Communication experience with parents; this part was used to assess importance of communication

between adolescents and their parents. It included 6 questions about importance of communication with parents about reproductive health, adolescents' preference to discuss reproductive health issues, frequency of communication on the major elements of reproductive health issues, topics of communication with parents about reproductive health issues, reaction of parents when communicating about reproductive health issues.

The response for each item in part I and II was either "correct/complete", "correct/incomplete" and "incorrect or no response". A score of (2) was given to the correct/complete answer, a score of (1) was given to correct/incomplete answer and (0) given to incorrect or no response. The responses of the adolescents were scored then summed together and the total score was categorized into three levels. The score was interpreted into percentage as follows, good knowledge (score of ≥75 %), fair knowledge (score of 50 - <75 %) and poor knowledge (score of <50 %).

Tool (III): Communication barriers checklist

This tool was developed by the researchers after reviewing the recent and relevant literatures. It included the following parts:

Part (I): This part included **The Perceived Communication Barriers Checklist** which was developed by the researchers after reviewing the recent literature[18-20] to identify the communication barriers from adolescents' point of view. This part included 54 statements distributed into the following domains; Social barriers (14 items), Culture barriers (7 items), Economic barriers (1 item), Individual barriers (24 items) and Structural /Environmental barriers (8 items). The response for each statement was either disagree given a score of (0) or agree given a score of (1). The total score for each domain was generated by summing up the scores of its items, which converted into % score and was

classified into the following; many barriers (score of ≥75 %), some barriers (score of 50 - <75 %) and few barriers (score of <50 %).

Part (II): This part includes: **The Perceived Effects of Poor Communication Checklist**. It was developed by the researchers after reviewing the recent literature[18-20] to identify the effects of poor communication with parents regarding reproductive health. This part included 23 statements distributed into the following domains; Social effect (7 items), Psychological effect (9 items) and Physical effect (7 items). The response for each statement was either (disagree) or (agree). A score of zero was given to (disagree) or a score of one was given to (agree). The total score for each domain was generated by summing up the scores of its items, which converted into % score and was classified into the following; major effect (score of ≥75 %), moderate (score of 50 - <75 %) and minor effect (score of <50 %).

Methods

- The tool I, II and III were developed by the researchers after thorough reviewing of recent literatures.
- The study tools (Tool I, II and III) were revised by a jury composed of five experts in the field of community health nursing and obstetric and gynecological nursing for content validity. Recommended modifications were done accordingly.
- A pilot study was carried out on a sample of 45 adolescents who were selected from same youth center included in the original study settings namely Smouha youth center, but those adolescents were not included in the study subjects.
- Test the reliability was conducted for tool III parts I and II, Cronbach's alpha test was found as follows; Communication barriers checklist 0.882 and Effects of poor communication checklist 0.923.
- The adolescents were interviewed individually by the researchers in the

youth centers after brief explanation of the purpose of the study using the study tools I, II, and III. The interview took approximately 45-75 minutes for each adolescent.

- Data was collected during the academic year (2018-2019) over a period of 4 months; (September 2019 December 2019).

Statistical analysis:

After data were collected, they were coded and transferred into specially designed formats so as to be suitable for computer feeding. Following data entry, checking and verification processes were carried out to avoid any errors during data entry, frequency analysis, cross tabulation and manual revision were all used to detect any errors. The statistical package for social sciences (SPSS version 25) was utilized for both data presentation and statistical analysis of the results. The following statistical analysis measures were used; descriptive statistical measures,which included numbers, percentages, and averages. Statistical analysis tests,which included**:** Chi square, Fisher Exact Test, and student T test. The level of significance selected for this study was P equal to or less than 0.05.

Ethical considerations:

The adolescents were asked for an oral consent for participating in the study, they were informed that their participation is completely voluntary and assured them that the collected data will be used only for the purpose of the study. Confidentiality of data was maintained; anonymity of individual responses was guaranteed through using code numbers instead of names.

Results

Table (1)portrays the adolescents' socio-demographic data. It was found that the adolescents' age ranged from 10 to 19 years with a mean of 13.80±2.005 years and less than two thirds (61.1%) of them were males.

Furthermore, less than one quarter of them were enrolled in primary and secondary schools (21.1% and 24.9% respectively), while, more than half (54.0%) of them were in preparatory schools. Moreover, 0.7% of them had poor academic achievement and 2.7% of them were experienced previous academic failure.

Additionally, less than three quarters (74.4%) of them were living in urban areas and the majority (85.6%) of them were living with both parents.

Table (2) shows the parents' socio-demographic data. Concerning parents' marital status, the majority (85.6%) of them were married, while one tenth (10.4%) of them were divorced. On the other hand, 3.3% and 0.7% of them had either mother or father died respectively.

Furthermore, the mean age of the fathers and mothers were (48.78±5.969 years and 42.18±5.638 years respectively). Additionally, more than one quarter (29.2%) of the fathers and mothers had university education (29.2% and 26.4% respectively), while, 3.2% of the fathers compared to 75.8% of the mothers were not working. Moreover, more than one fifth (21.6%) of the adolescents reported income in sufficiency.

Table (3) shows the adolescents' knowledge about reproductive health. It was found that more than one quarter (28.0%) of the adolescents reported having knowledge about reproductive health, and their main source of knowledge were mothers (39.7%), followed by fathers (22.2%), friends (19.8%) and schools (6.3%).While, more than one third (34.1%) of the adolescents stated that internet is the main source of their knowledge about reproductive health .In spite of these different sources of knowledge, more than three quarters (79.4%) of the adolescents reported insufficiency of knowledge about reproductive health.

Table (4) shows the adolescents' level of knowledge about reproductive health. It was noticed

that less than three quarters (72%) of the adolescents had poor level of knowledge regarding the overview of reproductive health, while, more than half of them had poor level of knowledge about family planning and sexually transmitted diseases (59.8% and 56.2% respectively), and less than one third (31.3%) of them had poor level of knowledge about the violence against women. On the other hand, all of the adolescents (100%) had poor level of knowledge about female genital mutilation and infertility compared to 99.8% of the adolescents had poor level of knowledge pertaining to the early marriage.

The same table shows that, more than two thirds (67.1%) of the adolescents had poor level of knowledge concerning female reproduction, while less than two thirds of them had poor knowledge about female anatomy, puberty change and menstruation (64.4%, 56.9% and 63.8% respectively).

Additionally, more than half (56.2%) of the adolescents had poor level of knowledge regarding male reproduction, male anatomy and puberty changes.

Pertaining to the total reproductive knowledge, the vast majority (91.3%) of the adolescents had poor level of knowledge, while only 8.7% of them had fair level of knowledge about reproductive health.

Table (5) illustrates the adolescents' communication experience with their parents about reproductive health. Concerning the importance of communication about reproductive health, more than half (54.2%) of the adolescents stated that they don't know, while around 29.3% of them reported that it provides, adequate knowledge about reproduction, and more than one fifth (24.4%and 23.8%) of them stated that it reduces stress related to reproductive changes and protects against risky behaviors respectively.

Additionally, more than one quarter (29.3%) of the adolescents stated that they prefer to communicate with their mothers, followed by friends (16.4%), fathers (13.6%) and to lesser extent sisters, brothers and teachers (7.1%, 5.8% and 1.6% respectively).

Moreover, two fifths (40%) of the adolescents stated that they had communicated with their parents regarding reproductive health, either once (28.9%), twice (33.9), three times (21.7%) and only 15.6% of them declared that they communicated with their parents four times and more.

Regarding the topics discussed with the parents, more than two fifths (43.3%) of the adolescents reported family planning, followed by menstruation (39.4%), early marriage (35.6%), violence against women (34.4%) and finally sexually transmitted diseases (23.3%).

The same table shows that two fifths (40.0 %) of the adolescents reported parent's shyness, as a reaction to their communication about reproductive health, while 32.2% of the parents gave them limited or insufficient information. Moreover, 18.3% and 8.3% of the parents reacted with verbal or physical aggression respectively. On the other hand, 12.8% of the parents refer their adolescents into another person to communicate with.

Figure (1) reveals the adolescents' level of communication barriers about reproductive health.

Regarding the individual barriers, more than one third (38.9%) of the adolescents had few barriers, while, less than one quarter (23.3%) of them had many of individual barriers of communication about reproductive health.

Concerning the social barriers, less than one third (31.3%) of the adolescents had few and some barriers, while, more than one third (37.6%) of them had many social barriers of communication about reproductive health.

With respect to cultural barriers, more than one third (37.8%) of the

adolescent hadfew barriers and more than two fifths (43.8%) of them had many cultural barriers of communication about reproductive health.

The same figure shows that around two fifths (40.2%) of the adolescents had few economic barriers and the rest (59.8%) of them had many economic barriers.

In relation to environmental barriers, more than one third (37.8%) of the adolescents had few barriers, while, more than quarter (28.4%) of them had many environmental barriers.

Pertaining to the total barriers, more than one third (35.6%) of the adolescents had few barriers, and less than quarter (21.6%) of them had many barriers.

Figure (2) shows the levels of the effects of poor communication about reproductive health. It was found that less than half (45.3%) of them had major social and psychological effects, while 34.7% and 30.9% of them had minor social and psychological effects respectively. On the other hand, less than two thirds (64.2%) of the adolescents had minor physical effect, and 22.0% of them had major level of physical effects.

The same figure shows that more than one third (36.9%) of the adolescents had minor total effect of poor communication compared to 48.2% of them who had moderate effect. On the other hand, more than one tenth (14.9%) of the adolescents had major effects as a result of poor communication about reproductive health.

Table (6) shows the relation between the adolescents' basic characteristics and their knowledge. It was found that all the adolescents (100%) aged from 10 less than 12 years had poor level of knowledge compared to 62.5% adolescents aged from 18 to19 years, with a statistically significant relation between the age of adolescents and their level of knowledge (X^2=37.330, P = 0.000).

Additionally, the table shows that poor level of knowledge was higher among males (95.2%) than females (85, 1%) with a statistically significant relation between the sex of adolescents and their level of knowledge (X^2=13.864, P = 0.000).

It could be observed that all adolescents (100%) in primary education had poor level of knowledge compared to 93.0% of those in preparatory school and 80.4% of those in secondary school, with a statistically significant relation between level of education of adolescents and their level of knowledge (X^2=26.918, P = 0.000).

The table illustrates that there was statistically significant relation between birth order of adolescents and their level of knowledge (X^2=13.672, P = 0.008) as poor level of knowledge was higher among fourth child (90.9%) in comparison to the first child (60.0%).

Furthermore, poor level of knowledge was prevalent among adolescents who are resident in urban area (91.6%) than those from rural area (80.0%) or squatter (90.9%).

Additionally, all (100%) the adolescents who live with their fathers only had poor level of knowledge compared to the majority of those who live with their mothers only or with both parents (91.9% and 91.2% respectively)

It is evident from the table that all (100%) the adolescents who have poor academic achievement had poor level of knowledge compared to 91.7% of those with excellent academic performance.

Table (7) reveals relation between the adolescents' knowledge level and their families' characteristics. The table shows that all (100%) adolescents whose mothers were died and 75% of those whose fathers were died had poor knowledge level compared to 92.5% of adolescents whose parents were married.

Furthermore, poor knowledge level was more prevalent among adolescents

whose fathers aged less than 40 years (100%) compared to 92.9% of adolescents whose fathers aged 60 to 70 years old. Additionally, poor level of knowledge was more common among those adolescents whose fathers' education is university education (92.2%) compared to 75% of those adolescents with illiterate fathers.

Moreover, the father's occupation had significant impact on level of knowledge of adolescents (X^2=13.606, P= 0.000), as poor level of knowledge was higher among adolescents with working fathers (92.2%) than those with not working fathers (64.3%).

It was found that poor level of knowledge was less encountered among adolescents whose mothers aged 50 to 60 years compared to those adolescents whose mothers aged 30 to less than 40 years old. Furthermore, poor level of knowledge was lesser among adolescent whose mothers were illiterates (83.3%) compared to 91.5% of adolescents whose mother had university education. Moreover, poor level of knowledge was higher among adolescents whose mothers were house wives (92%).

The same table reveals that poor knowledge level was less encountered among those adolescents who declared having enough income (91.0%) with a statistically significant relation between sufficiency of income and their level knowledge of (X^2=4.136, P= 0.042).

Table (8) portrays relation between the adolescents' knowledge level and their perceived barriers to communication about reproductive health and effect of poor communication. There is a statistically significant relation between actual communication with parents about reproductive health and the adolescents' level of knowledge (X^2=31.462 P= 0.000) as poor level of knowledge was higher among adolescents who reported no actual communication with parents (97.4%)

than those who had communication with their parents (82.2%).

The table also shows that poor knowledge level was more encountered among adolescents with many perceived barriers (93.8%) compared to 88.1% of those who perceived few barriers.

Lastly, poor knowledge level was less present among adolescents who perceived minor effects of poor communication (88.6%) in comparison to the vast majority (97.0%) of those adolescents who perceived major effects.

Table (1): Distribution of the adolescents according to their socio demographic characteristics

Adolescents' characteristics	Total (n=450)	
	No.	%
Age (years)		
- 10-	64	14.2
- 12-	138	30.7
- 14-	158	35.1
- 16-	82	18.2
- 18-19	8	1.8
Min – Max 10- 19 Mean ± SD 13.80 ±2.005		
Sex		
- Males	275	61.1
- Females	175	38.9
Level of education		
- Primary	95	21.1
- Preparatory	243	54.0
- Secondary	112	24.9
Birth order		
- First	10	2.2
- Second	89	19.8
- Third	176	39.1
- Fourth and more	175	38.9
Place of residence		
- Urban	335	74.4
- Rural	5	1.1
- Squatter	110	24.4
With whom the student live		
- Both parents	385	85.6
- Mother only	62	13.8
- Father only	3	0.7
Academic achievement		
- Poor	3	0.7
- Fair	23	5.1
- Good	37	8.2
- Very good	109	24.2
- Excellent	278	61.8
- **Previous academic failure**		
- No	438	97.3
- Yes	12	2.7

Table (2): Distribution of the adolescents' according to their parents 'characteristics

Parents' characteristics	Total n=450	
	No.	%
Parents' marital status		
- Married (living together)	385	85.6
- Divorced	47	10.4
- Father died	15	3.3
- Mother died	3	0.7
Fathers' age (years)	**N= 435**	
- 30-	7	1.6
- 40-	189	43.4
- 50-	225	51.7
- 60-70	14	3.2
Min – Max 30-68 Mean ± SD 48.78 ±5.969		
Fathers' education	**N= 435**	
- Illiterate	15	3.4
- Read and write	37	8.5
- Basic education	51	11.7
- Secondary / technical education	205	47.1
- University education	127	29.2
Fathers' occupation	**N= 435**	
- Working	421	96.8
- Not working / on retirement	14	3.2
Mothers' age (years)	**N=447**	
- 30-	149	33.3
- 40-	271	60.6
- 50-60	27	6.0
Min – Max 30-60 Mean ± SD 42.18 ±5.638		
Mothers' education	**N=447**	
- Illiterate	30	6.7
- Read and write	57	12.8
- Basic education	53	11.9
- Secondary / technical education	189	42.3
- University education	118	26.4
Mothers' occupation		
- Working	108	24.2
- Housewife / on retirement	339	75.8
Sufficiency of income		
- Not enough	97	21.6
- Enough	345	76.7
- Don't know	8	1.8

Table (3): Distribution of the adolescents according to their knowledge about reproductive health

Items	Total (n=450)	
	No.	%
Have knowledge about reproductive health		
- No	324	72.0
- Yes	126	28.0
Source of knowledge about reproductive health#	**N= 126**	
- Mother	50	39.7
- Internet	43	34.1
- Father	28	22.2
- Friends	25	19.8
- Sisters/brothers	17	13.5
- Schools	8	6.3
- Relatives	5	4.0
- Neighbors	3	2.4
Sufficiency of knowledge about reproductive health	**N= 126**	
- No	100	79.4
- Yes	26	20.6

Multiple answers were allowed

Table (4): Distribution of the studied adolescents according to their levels of knowledge about reproductive health

Items	Levels of Reproductive Knowledge					
	Poor		Fair		Good	
	No.	%	No.	%	No.	%
▪ Overview about reproductive health	324	72.0	111	24.7	15	3.3
▪ Family planning	269	59.8	158	35.1	23	5.1
▪ Violence against women	141	31.3	207	46.0	102	22.7
▪ Sexually transmitted diseases	253	56.2	0	0.0	197	43.8
▪ Female genital mutilation	450	100.0	0	0.0	0	0.0
▪ Infertility	450	100.0	0	0.0	0	0.0
▪ Early marriage	449	99.8	1	0.2	0	0.0
▪ Female reproduction	302	67.1	99	22.0	49	10.9
▪ Female anatomy	290	64.4	141	31.3	19	4.2
▪ Female puberty changes	256	56.9	7	1.6	187	41.6
▪ Female menstruation	287	63.8	6	1.3	157	34.9
▪ Male reproduction	253	56.2	134	29.8	63	14.0
▪ Male anatomy	253	56.2	155	34.4	42	9.3
▪ Male puberty changes	253	56.2	1	0.2	196	43.6
▪ **Total Reproductive Knowledge**	411	91.3	39	8.7	0	0.0

Table (5): Distribution of the adolescents according to their communication experiences with their parents about reproductive health

Items	Total n=450	
	No.	%
Importance of communication about reproductive health#		
- Don't know	224	54.2
- Provide adequate knowledge about reproduction	132	29.3
- Reduce stress related to reproductive changes	110	24.4
- Protect against risky behaviors	107	23.8
With whom do you prefer to communicate#		
- Don't know	227	50.4
- Mother	132	29.3
- Friend	74	16.4
- Father	61	13.6
- Sister	32	7.1
- Brother	26	5.8
- Teacher	7	1.6
Have you ever communicated with your parents regarding reproductive health		
- No	270	60.0
- Yes	180	40.0
Numbers of communication session with parents	**N= 180**	
- Once	52	28.9
- Twice	61	33.9
- Three times	39	21.7
- Four times and more	28	15.6
Topics discussed with the parents#		
- Family planning	78	43.3
- Menstruation	71	39.4
- Early marriage	64	35.6
- Violence against women	62	34.4
- Sexually transmitted diseases	43	23.3
Parents' reaction to communication about reproductive health#		
- Shyness	72	40.0
- Give limited /insufficient information	58	32.2
- Aggressive (verbal)	33	18.3
- Refer me to another person	23	12.8
- Aggressive (physically)	15	8.3

Multiple answers were allowed

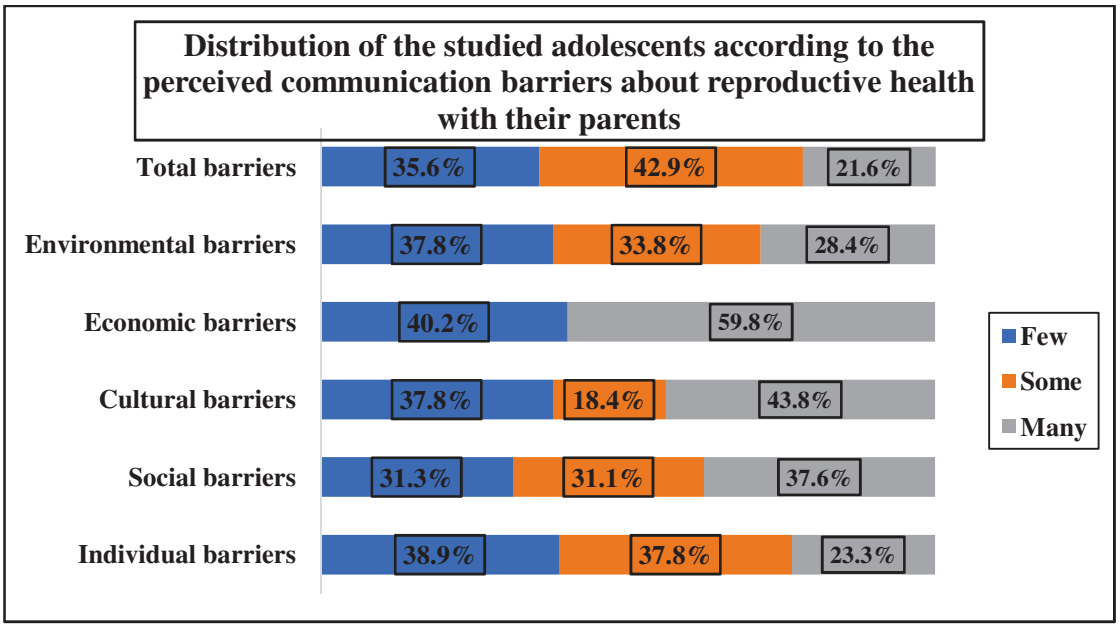

Figure (1): Distribution of the studied adolescents according to the perceived communication barriers about reproductive health with their parents

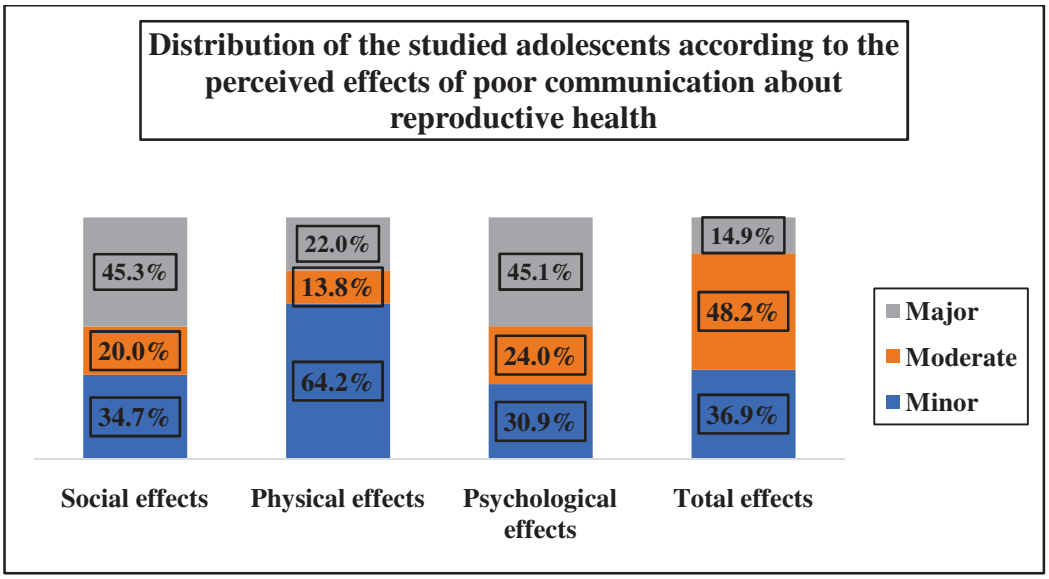

Figure (2): Distribution of the studied adolescents according to the perceived effects of poor communication about reproductive health

Table (6): Relation between the adolescents' basic characteristics and their knowledge level:

Characteristics	Knowledge level				Total n=450		Test of significance
	Poor (n=411)		Fair (n=39)				
	No.	%	No.	%	No.	%	
Students' age							
- 10-	64	100.0	0	0.0	64	14.2	X^2= 37.330
- 12-	135	97.8	3	2.2	138	30.7	P=0.000*
- 14-	142	89.9	16	10.1	158	35.1	
- 16-	65	79.3	17	20.7	82	18.2	
- 18-19	5	62.5	3	37.5	8	1.8	
Students' sex							
- Male	262	95.2	13	4.7	275	61.1	X^2= 13.864
- Female	149	85.1	26	14.9	175	38.9	P=0.000*
Level of education							
- Primary	95	100.0	0	0.0	95	21.1	X^2= 26.918
- Preparatory	226	93.0	17	7.0	243	54.0	P=0.000*
- Secondary	90	80.4	22	19.6	112	24.9	
Birth order							
- First	6	60.0	4	40.0	10	2.2	X^2= 13.672
- Second	82	92.1	7	7.9	89	19.8	P=0.008*
- Third	164	93.2	12	6.8	176	39.1	
- Fourth and more	159	90.9	16	9.1	175	38.9	
Place of residence							
- Urban	307	91.6	28	8.4	335	74.4	X^2= 0.877
- Rural	4	80.0	1	20.0	5	1.1	P=0.645
- Squatter	100	90.9	10	9.1	110	24.4	
With whom the student live							
- Both parents	351	91.2	34	8.8	385	85.6	X^2= 0.326
- Mother only	57	91.9	5	8.1	62	13.8	P=0.849
- Father only	3	100.0	0	0.0	3	0.7	
Academic achievement							
- Poor	3	100.0	0	0.0	3	0.7	X^2= 4.947
- Fair	22	95.7	1	4.3	23	5.1	P=0.293
- Good	36	97.3	1	2.7	37	8.2	
- Very good	95	87.2	14	12.8	109	24.2	
- Excellent	255	91.7	23	8.3	278	61.8	

X^2 Chi Square Test *Statistically significant at $p \leq 0.05$

Table (7): Relation between the adolescents' knowledge level and their families' characteristics:

Characteristics	Knowledge level				Total n=450		Test of significance
	Poor (n=411)		Fair (n=39)				
	No.	%	No.	%	No.	%	
Parents' marital status							
- Married	356	92.5	29	7.5	385	85.6	X^2= 5.647
- Divorced	40	85.1	7	14.9	47	10.4	P=0.130
- Father died	12	75.0	3	25.0	15	3.3	
- Mother died	3	100.0	0	0.0	3	0.7	
Fathers' age	**n= 397**		**n= 38**		**n= 435**		
- 30-	7	100.0	0	0.0	7	1.6	X^2= 0.833
- 40-	173	91.5	16	8.5	189	43.4	P=0.842
- 50-	204	90.7	21	9.3	225	51.7	
- 60-70	13	92.9	1	7.1	14	3.2	
Fathers' education							
- Illiterate	12	75.0	3	25.0	15	3.4	X^2= 2.575
- Read and write	34	91.9	3	8.1	37	8.5	P=0.631
- Basic education	47	92.2	4	7.8	51	11.7	
- Secondary education	187	91.2	18	8.8	205	47.1	
- University education	117	92.2	10	7.9	127	29.2	
Fathers' occupation							
- Working	388	92.2	33	7.8	421	96.8	X^2= 13.206
- Not working	9	64.3	5	35.7	14	3.2	P=0.000*
Mothers' age	**n= 408**		**n=39**		**n= 447**		
- 30-	136	91.3	13	8.7	149	33.3	X^2= 1.383
- 40-	249	91.9	22	8.1	271	60.6	P=0.501
- 50- 60	23	85.2	4	14.8	27	6.0	
Mothers' education							
- Illiterate	25	83.3	5	16.7	30	6.7	X^2= 4.741
- Read and write	53	93.0	4	7.0	57	12.8	P=0.315
- Basic education	46	86.8	7	13.2	53	11.9	
- Secondary education	176	93.1	13	6.9	189	42.3	
- University education	108	91.5	10	8.5	118	26.4	
Mothers' occupation							
- Working	96	88.9	12	11.1	108	24.2	X^2= 1.018
- Not working	312	92.0	27	8.0	339	75.8	P=0.313
Sufficiency of income	**n= 411**		**n=39**		**n= 450**		
- Not enough	89	91.8	8	8.2	97	21.6	X^2= 4.136
- Enough	314	91.0	31	9.0	345	76.7	P=0.042*
- Don't know	8	100.0	0	0.0	8	1.8	

X^2 Chi Square Test *Statistically significant at $p \leq 0.05$

Table (8): Relation between the adolescents' knowledge level and their perceived barriers to communication about reproductive health and effect of poor communication

Characteristics	Knowledge level				Total n=450		Test of significance
	Poor (n=411)		Fair (n=39)				
	No.	%	No.	%	No.	%	
Actual communication with parents about reproductive health							
- No	263	97.4	7	2.6	270	60.0	X^2= 31.462
- Yes	148	82.2	32	17.8	180	40.0	P=0.000*
Perceived barriers to communication with parents							
- Few	141	88.1	19	11.9	160	35.6	X^2= 3.322
- Some	179	92.7	14	7.3	193	42.9	P=0.190
- Many	91	93.8	6	6.2	97	21.6	
Perceived effects of poor communication with parents							
- Minor	147	88.6	19	11.4	166	36.9	X^2= 4.389
- Moderate	199	91.7	18	8.3	217	48.2	P=0.111
- Major	65	97.0	2	3.0	67	14.9	

X^2 Chi Square Test *Statistically significant at $p \leq 0.05$

Discussion

The adolescence is a period of preparation for adulthood. During this time several key developmental tasks are undertaken including physical, psychological and sexual maturation. Behavior patterns established during this process, including practicing risky behaviors especially those related to reproductive health and sexuality; that can have a long-lasting negative impact on future health and wellbeing. As a result, it is a must to help adolescents to establish healthy behaviors [(11)].

Adolescents are inherently different from adults and therefore have different needs especially those related to their growth and development, which requires counseling and teaching approaches and takes more time; they tend to be less well informed and therefore require more information. Conflicts between culture, parental or care providers expectations and the adolescents' emerging values

present serious challenges for them; and they are in a transitional state and are not sure where they fit in [11]. These could explain the results of the present study, where the vast majority of the studied adolescents had poor level of knowledge regarding reproductive health. In the same line the findings reported by Kyilleh et al. (2018) [7] in the study about reproductive health knowledge among adolescents.

Debates are still going on about who should and to what extent educates adolescents about sexual and reproductive matters. In the current study, it was found that parents, internet, friends and school personnel including teachers and school health nurses are the main sources of knowledge about reproductive health. Similar findings were reported by Othman et al. (2020) [12] and Deshmukh et al. (2020) [13] who found that teachers, mass media, and friends were found to be the most common sources of information regarding these matters, in addition to parents and siblings. This finding highlights the important role played by parents, teachers, mass media, friends and all related parties in imparting information regarding reproductive health matters.

Parents often have the power to inform, teach, educate, orient, and guide their children towards health and healthy behaviors. In the same context, the current study found that less than half of the studied adolescents declared the importance of communication with their parents about reproductive health as it helps to reduce stress associated with reproductive changes and reduce engagement in risk taking behaviors. These results are consistent with the findings of Bhatta et al. (2021) [14], in a study of the parents and adolescents' communication about sexual and reproductive health, who found that around two thirds of adolescents perceived the importance of parents-adolescents communication on sexual and reproductive issues and viewed it as a mean by which parents teach and

transfer their personal values, belief and expectation to their children.

Despite the importance of parents – adolescents communication about reproductive health stated by the studied adolescents in the current study, it was found that only two fifths of them have already communicated with their parents about reproductive health issues and this communication was once or twice. Similar findings were reported by Febriana et al. (2020) [15] who conducted a study about the parents- adolescents communication about sexual and reproductive health and the study showed that more than half of the adolescents were exposed to sex education from parents. These findings could be explained as many of the typical changes that occur during adolescence tend to interfere with the effectiveness and amount of interaction between parents and adolescents. Although adults have much more experience in life than the adolescent, the adolescents are usually not aware of this fact or do not believe it; therefore, the advice, wisdom, and directions of parents are often not valued.

In reproductive education, it is now more crucial for parents to open the door for discussion of all aspects of human sexuality and reproductive health issues as well as to have complete and accurate information for their children and adolescents. The current study indicated that family planning, menstruation, early marriage, violence against women and sexually transmitted diseases were the topics that discussed with parents. This data is quite similar to the findings of Manu et al. (2015) [16] which depicted that sexual abstinence, changes during puberty and HIV/AIDS were the most commonly discussed sexual topics between parents and adolescents. The inadequate topics and low frequency of parents- adolescents communication about reproductive health in the current study could attributed to communication discomfort and feeling of shyness experienced by parents in

talking about reproductive health that can prevent effective communication from occurring, which was mentioned by less than half of the studied adolescents in the current study. This finding is in the same line with a study done by Ayalew et al. (2014) [17] about parents - adolescents communication about sexual and reproductive health issues among high school students, who stated that the reason for not discussing sexual and reproductive health with parent was shyness and embarrassment of parents besides limited information of them.

Adolescence is a critical stage for risk-taking behaviors because they are moving toward independence and tend to experiment and test limits, including practicing risky behaviors. They are easily influenced by others especially if they do not have answers of their inquiries about different health issues Habte et al.(2019) [3]. Parents and other family members usually play a central role in shaping youth's knowledge, values and attitudes, including those related to sexual and reproductive health. The current study found that more than one tenth of the studied adolescents viewed that poor communication with parents regarding reproductive health had major effects whether social, psychological or physical effects and around half of them found it had moderate effects. This is true as humans rely heavily on learning for development. Because humans are not born knowing how to think and behave, they have to learn from the environment they are growing up; this learning starts with the family at home. In the same line, the results of Kusheta et al. (2019) [4] in a study of the parents and adolescents' communication about sexual and reproductive health, who found that around one quarter of adolescents declared the importance of parents-adolescents communication on sexual and reproductive issues and mentioned that it is paramount to reduce sexual health problems and other risky behaviors.

Parents-adolescents communication is an appealing source for influencing adolescents' knowledge, attitudes and behavior, because parents are an accessible and often willing source of information for them. Conversations between parents and adolescents about their sexuality in particular are often difficult for both parents and adolescents Yohannes (2015) [18].

In the current study, more than half of the adolescents mentioned that the economic barriers prevent communication between parents and adolescents about reproductive health. The possible explanation is that the parents are involved at work; this makes them fail or sometimes have less time to communicate with their adolescents as they are too busy with their daily activities. It is important that parents accept the responsibility to guide their adolescents as they confront the challenges of growing up, and to find ways of doing so, including providing reading material they approve, and checking with them to make sure they understand what they read. This finding is similar to a study conducted by Abdalah et al. (2017) [19] about barriers to parents-adolescents communication on sexual and reproductive health issues who found that among the main barriers of parents-adolescents communication is that the parents of the studied subjects were employed and busy with tight working schedule and had a little time to communicate with their adolescents.

It is worth noting the role of traditional norms, customs and beliefs in shaping the behaviors, attitude of the people. In this study, more than two fifths of adolescents mentioned that cultural barriers prevent communication between adolescents and their parents about reproductive health. This finding could be attributed to the traditional norms and cultural taboos that prevent talking about sexuality and reproductive health with children and adolescents, it is viewed inappropriate for their age, which depends on parental perceptions of their child's

readiness or maturity. The assumption that their adolescents would have heard about these issues elsewhere, that discussions of reproductive health should be restricted to married people. Moreover, it is not only prohibited by the parents' culture taboos, society also finds it to be an abomination for parents to talk about these issues with their adolescents as the discussion will be about sexuality. In the same line, the results of Mullis et al. (2020) [20] in a study about barriers to parents-adolescents communication on sexual and reproductive health issues. The results revealed that traditional norms prohibit parents and other health professionals to talk about the issues of sexuality to youths.

Social barriers are among the greatest barriers to parents- adolescents communication regarding reproductive health. The current study found that more than half of the adolescents stated that social barriers prevent communication between them and their parents about reproductive health. Moreover, when communication takes place, it tends to be gender based as parents prefer to talk or discuss with children of the same gender as themselves. Mothers prefer to talk with daughters and fathers prefer to talk with their sons. This result was agreed with the study conducted by Masood et al. (2017) [11] about young adult knowledge about sexual and reproductive health which found that adolescent girls found it difficult to talk with their fathers about reproductive health and they feel ashamed during communication with their fathers.

With respect to the individual barriers of parents-adolescents communication regarding reproductive health, the current study found that two fifths of the studied adolescents mentioned that feeling embarrassed of parents during actual discussion of reproductive health issues with them. In the Arabic countries, where cultural taboos are covering any conversation concerning sexuality or reproductive issues, makes

adolescents embarrassed to ask or to discuss such topics. In addition to, lack of communication skills of adolescents makes them not able to discuss openly with their parent about sexual and reproductive health issues. Another explanation may be the fear of adolescents to engage in such communication with their parents which may bring them in troubles, blame and punishment which was portrayed in the current study findings where more than one quarter of the parents reacted in an aggressive way either physical or verbally against their adolescents upon starting a conversation regarding reproductive health. These results are consistent with those of Othman et al. (2020)[12]who conducted a study about parents-adolescent communication on sexuality and reproductive health and showed that the majority of adolescents were shy, embarrassed and lacked confidence during communication with parents about reproductive health issue.

Environmental barriers have a great impact on the communication between parents and their adolescents about reproductive health issues. Among them, the home environment including the physical and social environment. In this study, more than half of the adolescents mentioned that environmental barriers prevent communication between them and their parents. The influence of the family environment on adolescent's health is acknowledged. It has been documented the influential role of home environment, family stability, love, security and support given to the adolescents and their health status Bhatta et al. (2021) [14]. For instance, closer parent-adolescent relationships and greater parental support and monitoring have been shown across multiple contexts to reduce adolescents' engagement in risk behaviors. In the same context, the current study found that all adolescents with dead mothers had poor knowledge, moreover, the majority of

adolescents with divorced parents had poor knowledge regarding different reproductive health issues. This finding comes in line with those of Mmari et al. (2016)[21] in a study done on adolescents' sexual experiences within families who found that the major factor identified by participants was environmental factor including overcrowded families and unstable family lead to difficulty in talking freely about sexuality issues.

Over the years, researchers have identified several factors that affect the children and adolescents' knowledge regarding reproductive health. Results of the present study shed light on set of factors including adolescents' age, sex, level of education, birth order, and income sufficiency. In addition to the communication with their parents regarding reproductive health issues and perceived barriers towards it.

Regarding the adolescents' age, the current study found that poor knowledge level was more encountered among those aged from ten to less than twelve years old. This could be explained as those younger adolescents may have less access to information, feel shy to ask about such sensitive topic. In addition, the school curriculum provides some basic information about the anatomy of the reproductive system which is not enough for them. This explanation was approved in the current study findings where poor knowledge level was more encountered among adolescents in the primary level in comparison to those in preparatory and secondary schools. These results are consistent with Yohannes(2015) [18] who found that adolescents who enrolled in primary schools had poor level of knowledge because schools did not orient them about reproductive health issues.

In the current study, it was found that the adolescents' sex has a great effect on their knowledge level about reproductive health, where females had better knowledge level than males regarding reproductive health issues. This could be attributed to the nature

of the girls as they stay more times at home with their mothers who are the primary educators for them regarding reproductive health issues preparing them for their future motherhood roles. Furthermore, the male adolescents spend more times outdoor with their peers and on internet which may expose them to wrong and distorted information. This finding is supported by the results of Kyilleh et al. (2018) [7] in their study about adolescents' reproductive health knowledge, choices and factors affecting reproductive health choices. They found that males had poorer knowledge about reproductive health as their main source of information was peer groups that provide them with inaccurate information.

Concerning the adolescents' birth order, the results of the current study showed that the first-born child had better knowledge regarding reproductive health. This could be attributed to those parents may give greater attention, care and time to the first-born child than the later born child. The parents try their best to equip him/her with the needed knowledge and skills in order to be good man/woman in the future including reproductive health issues. Another explanation is that with the growing number of children within the family, the parents may work extra time in order to fulfill the needs of their children, give them extra money and little time, which may be portrayed in poor communication pattern with them regarding sensitive topic like reproductive health. This later explanation was proved in the current study findings, where poor knowledge level was more encountered among adolescents with working fathers, those who reported income insufficiency and those who declared that they did not communicate with their parents about reproductive health. These findings are consistent by the results of a study conducted by Habte et al. (2019) [3] about parents-adolescents communication on sexual

and reproductive health matters and associated factors among secondary and preparatory school students, which found that the first child had good knowledge about certain topics related to reproductive health than other children.

Conclusion

Based on the results of the current study, it can be concluded that the vast majority of the studied adolescents had poor level of knowledge about reproductive health issue. In addition, less than two thirds of the studied adolescents did not communicate with their parents about reproductive health issues.Moreover, more than two fifths of them had perceived some barriers, and less than quarter of them had perceived many barriers with the communication with their parents about reproductive and sexual health. It is apparent from the study that, less than half of the studied adolescents had major social and psychological effects and less than one quarter of them had major physical effects of poor communication.

Recommendations

In the light of the findings of the present study, the following recommendations are proposed:

- Incorporate reproductive health and sexuality education into school curriculums, to in order to provide reliable, valid information matched with the students' age and grade level.
- Strengthen the role of the school health nurses with respect to teaching and counseling the students regarding reproductive health issues.
- Develop awareness raising campaigns through primary health care services targeting adolescents and their parents to enhance their knowledge about different reproductive health and sexuality issues.
- Promote the services provided to adolescents through youth friendly clinics to address the

adolescents' reproductive needs.

- Reach out to a larger number of adolescents particularly in places which young people used to attend frequently such as youth centers, sporting clubs, churches and mosques.
- Maintain positive parenting controlling practices, responsive parenting style and mutual communication between parents and their adolescents.

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