

Results

- Part I: Sociodemographic characteristics of the studied sample, (table I).
- Part II: Identification of students' complains at last month, (table II, III)
- Part III: Assessment Students' knowledge about quality of life, (tables IV-XI).
- Part IV: Students practice about quality of life, (tables XII- XVII).
- Part V: Quality of life domains such as physical, emotional health, self esteem, family relationship, school relationship and menstrual condition (table XXII & XXIII).
- Part VI: evaluate the program through
- a- Students' knowledge of immediate post program and after three months, (tables IV-XI).
 - b- Students' practice of study and control group before program and after 3 months, (tables XII- XXI).

Part I: *Sociodemographic Characteristics.***Table I:** Percentage distribution of study sample according to their socio-demographic characteristics

Socioeconomic	Study group (n=90) %	Control group (n=158) %	Total (n=248) %
Age			
<13-	55.6	65.8	62.1
14-	43.3	31.0	35.9
15-	1.1	0.0	0.6
16+	0.0	2.5	1.4
Students order			
Older	37.8	42.4	40.7
Middle	34.4	38.6	37.1
Younger	27.8	19.0	22.2
Socioeconomic status			
High social level	45.6	60.2	54.8
High middle social level	20.0	12.7	15.3
Middle level	30.0	18.9	23.0
Low social level	4.4	8.2	6.9
*Presence of nearest person			
Inside the family	75.6	69.0	71.4
Outside the family	64.4	57.6	60.1
*Presence of role model			
Inside the family	83.4	90.5	87.9
Outside the family	41.1	30.4	34.3

*more than one answer

Table I showed that, less than two thirds (62.1%) of study sample were aged 13 years, and more than two fifth of them (40.7%) were the oldest girl, while more than half (54.8%) live in high social level

The table indicated also less than three quarter (71.4%) of students had a nearest person for them inside the family, and less than two thirds (60.1%) had a nearest person outside the family, while the majority (87.9%) of students had role model inside the family but only more than one third (34.3%) had role model outside the family.

Part II: *Students' health status.***Table II:** Percentage distribution of study group according to their health status through health records in relation to control group.

Health status	Study group (n=90) Mean ± S.D	Control group (n=158) Mean ± S.D	Total (healthy) (n=248)
Weight	53.53 11.74	55.11 10.37	54.54 10.8
Height	154.85 6.60	155.71 6.80	155.40 6.7
Vision status	63.3	64.6	64.1
Teething health	62.2	67.1	65.3
Gums condition	67.8	76.6	73.4
Skin condition	86.7	86.1	86.3
Hair condition	84.4	74.4	78.2
Lips condition	81.1	56.2	70.9
Parasitic	81.1	86.7	84.7

Table II showed that, percentage distribution of students' health status, it was observed that the mean of students weight was (54.54 ± 10.8) while the height (155.40 ± 6.7), less than two thirds had healthy vision (64.1%), and healthy teething (65.3%), the majority of students had healthy skin (86.3%) and free from parasitic infection (84.7%).

Table III: Percentage distribution of study group students' according to their health problems in the last month in relation to control group.

Health problems among students in the last month	Study group (n=90) %	Control group (n=158) %	Total (n=248) %
Headache	71.1	70.9	71.0
Allergy from drug	20.0	31.0	26.6
Allergy from diet	36.7	56.7	49.2
Irritable	61.1	67.1	64.9
difficulty sleeping	35.6	51.3	45.6
Gums bleeding	12.2	19.0	16.5
Toothache	13.3	10.8	11.7
pain in any part of the body	20.0	29.7	26.2
common cold	55.6	60.1	58.5
loss of appetite	74.4	70.9	72.2
constipation	42.2	44.9	43.9
Diarrhea	11.1	13.9	12.9
abdominal pain	14.4	12.0	12.9
Dysurea	42.2	55.1	50.4
iliac pain	15.6	21.5	19.4
sudden loss of weight	38.9	46.2	43.5
sudden increase of weight	26.7	23.6	24.6
Acne	20.0	17.1	18.1
Skin rash	18.9	22.2	20.9
sun sensitivity	5.6	6.3	6.0

Table III showed that, the most frequency distribution of health problems in the last month was loss of appetite where nearly three quarters (74.4 %) of study group students compared by more than two thirds (70.9%) of control group students, this problem followed by headache problem where more than two thirds (71.1%)of study group students compared by also more than two thirds (70.9%)of control group.

The lowest frequency distribution was observed at diarrhea from minority (11.1%) of study group students and toothache of control group students by 10.8%).the most low frequency distribution was observed by minority for both study and control group by (5.6%&6.3%) respectively



Table IV presented the percentage distribution of study and control group regarding adolescence knowledge, it was observed that study group students had improvement in their knowledge regarding physical changes by nearly three quarters (74.4%) after the program, and (71.1%) after three months of program compared by less than half (45.6%) before the program. While the control group students had correct and complete knowledge by less than half (44.3%) after three months regarding physical changes it was approximately the same score before the program.

This table indicated also that study group students was improved in their knowledge regarding adolescence stages by less than two thirds (64.4%) after the program, and nearly half (47.8%) after three months of program compared by less than one fifth (17.8%) before the program. While more than one quarter (25.3%) of control group students had correct knowledge after three months of program compared to more than one fifth (20.9%) before the program.

Moreover the students knowledge regarding adolescence were statistically significant difference regarding all items for study group students, while the control group the results were statistically insignificance regarding all items except for adolescent stages the result were statistically significance $p < 0.05$.





Table V presented the percentage distribution of the sample regarding nutrition between study and control group, it was observed less than three quarters (74.4%) of students had correct and complete answer regarding character of balanced diet, and less than two thirds (62.2%) after three months of implementing the program compared by more than half (57.8%) before the program.

While the control group before the program observed that more than half (57.6%) of students had correct and complete knowledge regarding character of balanced diet compared also by more than half (59.5%) after three months.

The table describe also the study group students hadn't correct and complete knowledge (0.0%) regarding faulty habits affect on adolescence before the program compared by nearly one third (33.3%) after the program and less than one third (28.9%) after three months of implementing the program. While the minority (1.9%) of control group had correct and complete knowledge regarding faulty habits affect adolescence before the program and the same percentage after three months of implementing the program.

Moreover the results were a statistically significance difference before and after three months regarding all items for study group. While among the control group the results were a statistically significance between before and after three months of program regarding all items except for nutritional problems among adolescence, meaning of malnutrition, character of balanced diet, component of nutritional pyramid, especial needs for adolescents, formulate a complete meal $P > 0.05$.



Table VI showed that, the percentage changes of students psychological health knowledge of study and control students, it was observed that the minority (7.8%) had correct and complete knowledge about psychological changes during menstruation in study group before the program compared by more than one third (35.6%) after the program, and one tenth (10.0%) after three months. While after 3 months of implementing the program the control group had the same knowledge regarding psychological changes during adolescence as before the program (5.7%).

The results indicate that there is statistically significance differences for study group before and after three months regarding psychological health knowledge, while the control group the results were statistically insignificance differences except for Psychological changes with menstruation $P < 0.05$.





Table VII showed that, the students' knowledge about personal hygiene was unknown or incorrect for study and control group, it can be observed the majority of students had unknown or incorrect knowledge about importance of personal hygiene during menstruation, digestive disease prevented by personal hygiene, respiratory diseases prevented by personal hygiene (85.6%, 97.8%, 84.4%) & (85.4%, 94.9%, 82.3%) respectively before the program for study and control group.

The improvement of students' knowledge was observed after the program by the majority (87.8%) for meaning of personal hygiene, and more than three quarters for importance of personal hygiene

It is evident also from the table that, after 3 months of the program the study group had correct and complete knowledge for definition of personal hygiene by more than three quarters (76.7%) compared by less than two thirds (63.9%) of control group.

Statistically significant differences were observed within study group before and after 3 months of the program. While the control group the results showed statistically insignificant difference in all items except for meaning of personal hygiene, changing pad during menstruation, digestive diseases prevented by personal hygiene $P < 0.05$.





Table VIII showed the percentage distribution of the sample for reproductive health knowledge. The results revealed that there is improvement of study group students after the program and after 3 months about meaning of puberty by less than three quarters (74.4% & 73.3%) respectively, compared to less than half (44.4%) before the program. While more than half (56.9%) of control group had correct and complete knowledge after three months of implementing the program, and (55.7%) before the program.

The table showed that also, the students knowledge had minimal improvement about problems with menstruation, after the program by one fifth (20.0%) and after three months by minority (3.3%), compared by the minority (0.6%) of control group before the program and (1.9%) after three months.

Moreover the results of reproductive health knowledge were a statistically significance difference for study group and control group except for how the menstrual cycle occur, meaning of puberty, and health problem with menstruation $P>0.05$.

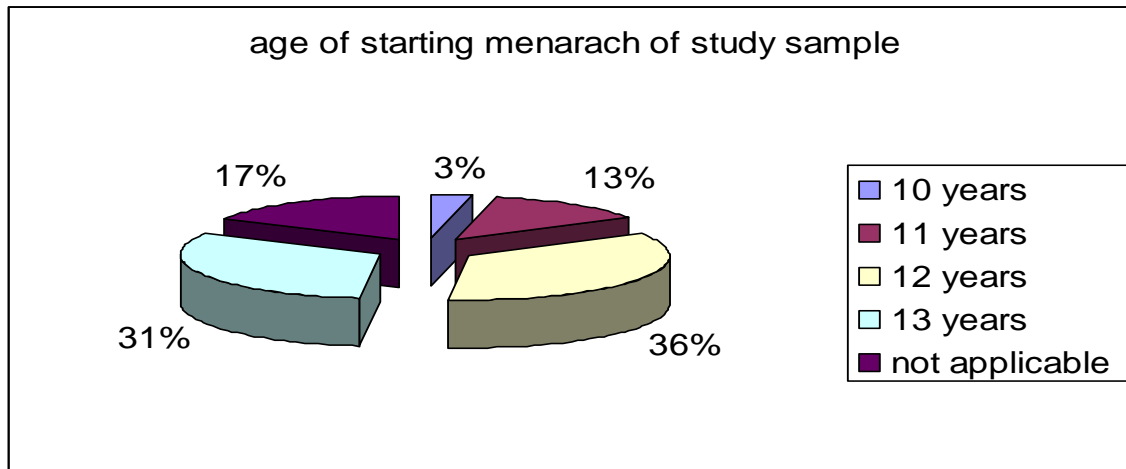


Fig I: Distribution of study sample students in relation to age of starting menarache before the program .

This figure showed that, more than one third (36.0%) of study sample students' menstruate at 12 years, compared by more than one tenth (13.0%) haven't got to menstruate yet.

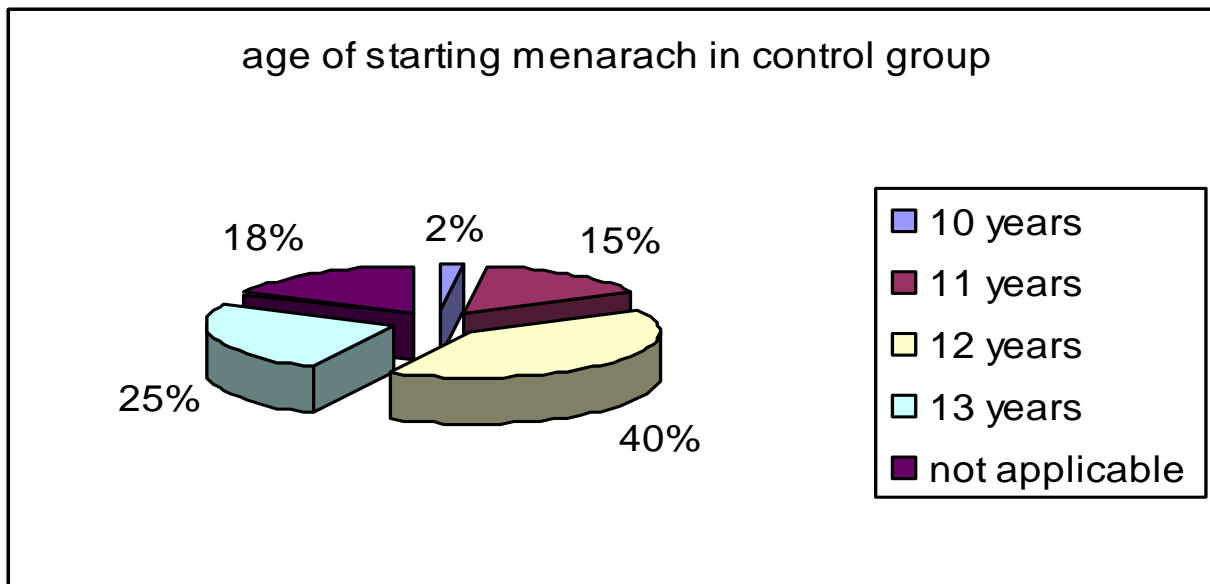


Fig II: Distribution of control group students in relation age of starting menarache before the program.

This figure showed that, more than one third (40.0%) of control group students' menstruate at 12 years, compared by more than one tenth (15.0%) haven't got to menstruate.

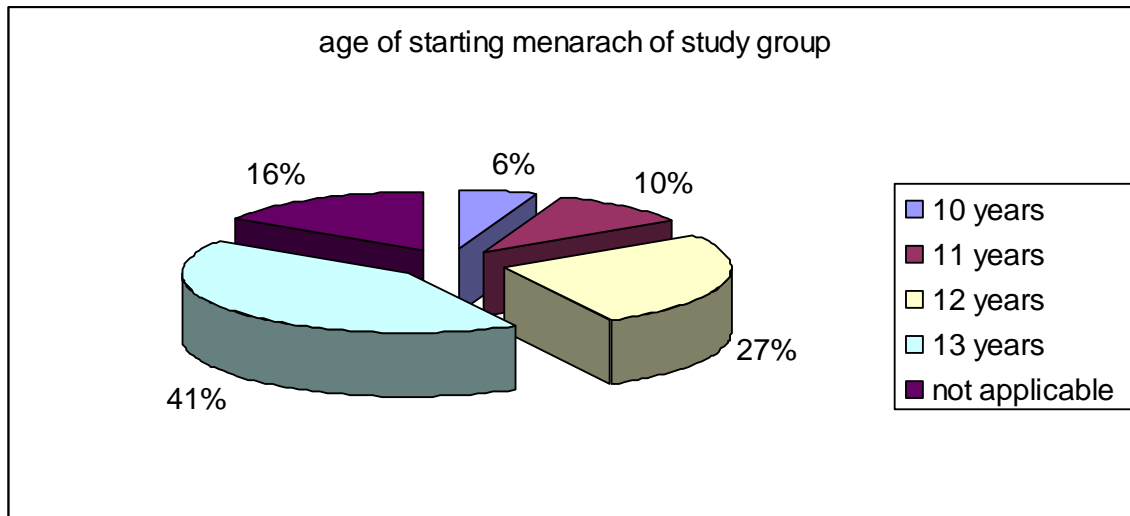


Fig III: Distribution of study group students in relation age of starting menarche before the program.

This figure showed that, more than two fifth (41.0%) of study group students' menstruate at 13 years, compared by one tenth of students' (10.0%) haven't got to menstruate at 11 years.

Table IX showed the percentage distribution of drug abuse knowledge. It was observed that, the minority (1.1%) of study group students had correct and complete knowledge about factors that lead to drug abuse compared by (0.0%) of control group. While study group was improved their knowledge after the program by one fifth (20.0%) and after 3 months by (4.4%), compared by minority (1.9 %) of control group.

Overall the students' knowledge was improved after the program than before and after three months.

Moreover there is a statistically significant difference was observed regarding students knowledge about drug abuse for study and control group before and after three months of program except for factors that lead to drug abuse of control group $P > 0.05$.

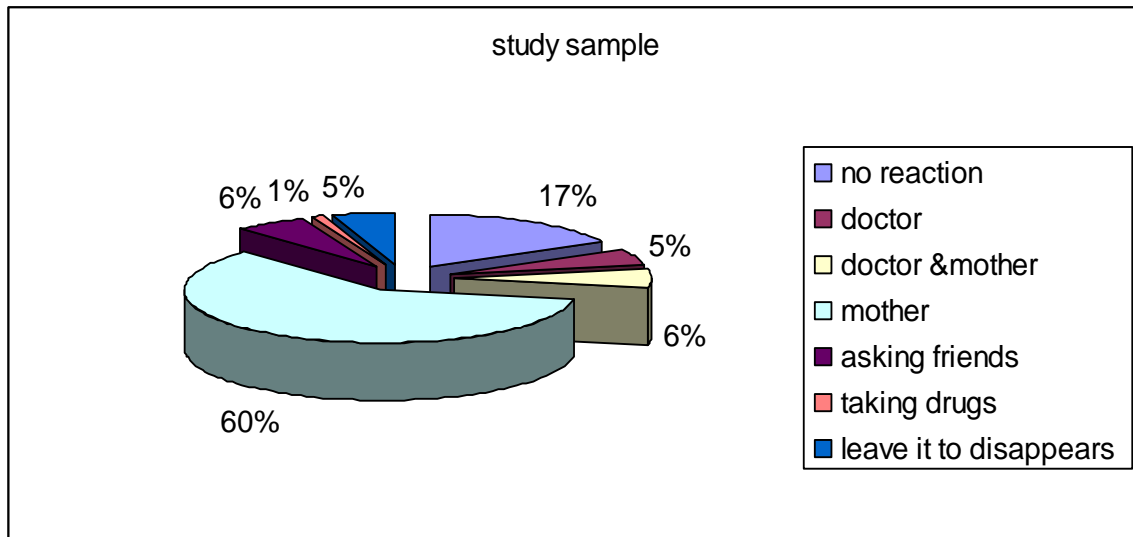


Fig IV: Percentage distribution of study sample students according to their reaction toward reproductive health problems occurs before the program.

This figure showed that, less than two thirds (60.0%) of study sample group students' asking their mother when reproductive health problems occurs while the minority (1.0%) taking drugs by themselves.

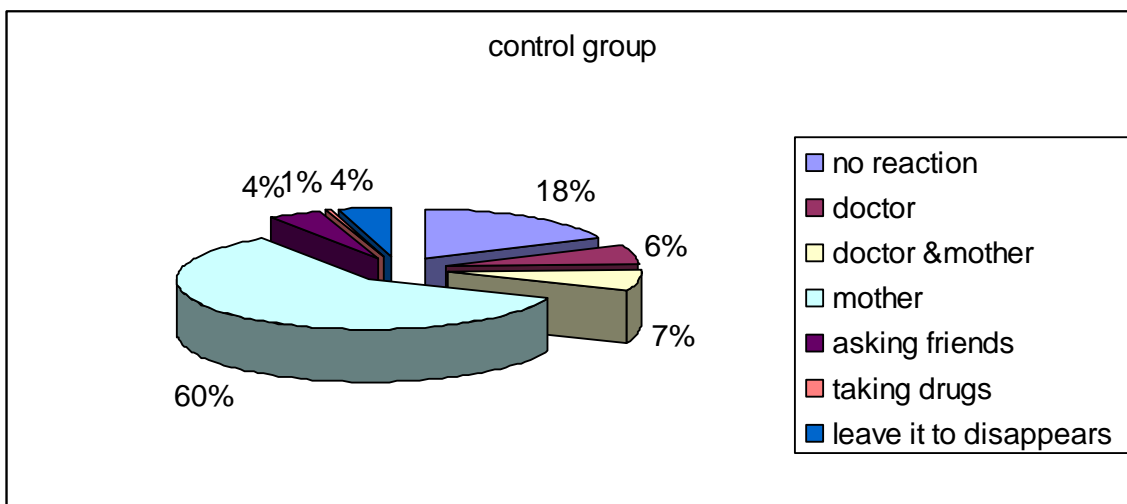


Fig V: Percentage distribution of control group students according to their reaction toward reproductive health problems occurs before the program.

This figure showed that, less than two thirds (60.0%) of control group students' asking their mother when reproductive health problems occurs while the minority (1.0%) taking drugs by themselves.

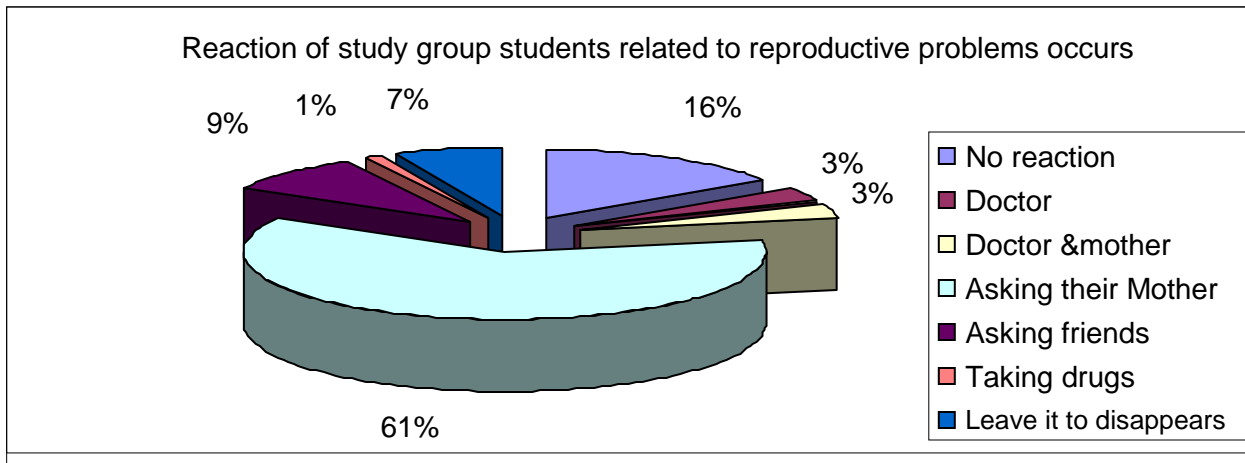


Fig VI: Percentage distribution of study group students according to their reaction toward reproductive health problems occurs before the program.

This figure showed that, less than two thirds (61.0%) of study sample group students' asking their mother when reproductive health problems occurs while the minority (1.0%) taking drugs by themselves.

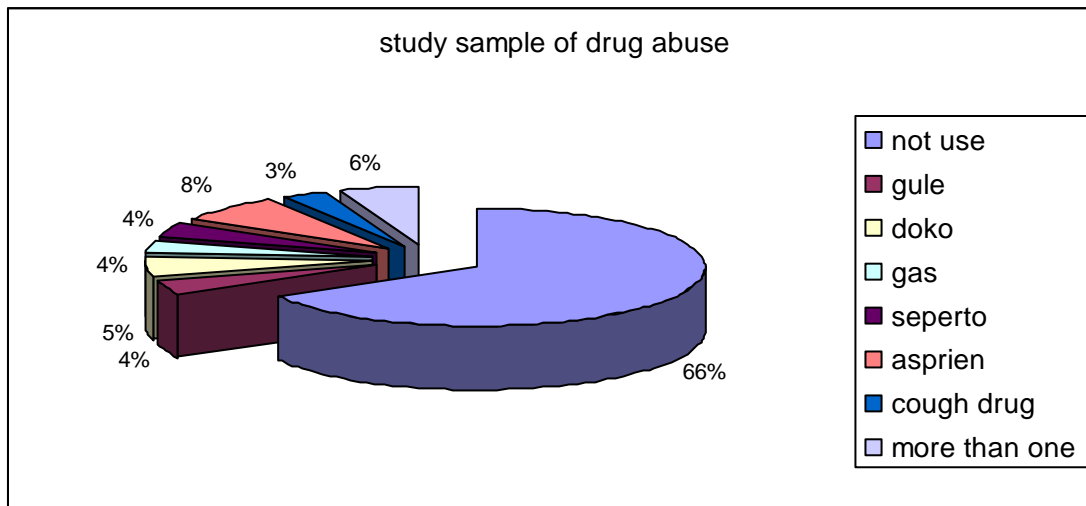


Fig VII: Percentage distribution of study sample students in relation to drug abuse before the program.

This figure showed that, two thirds of study sample students (66.0%) didn't use any drug compared by the minority (3.0%) take cough drugs regularly.

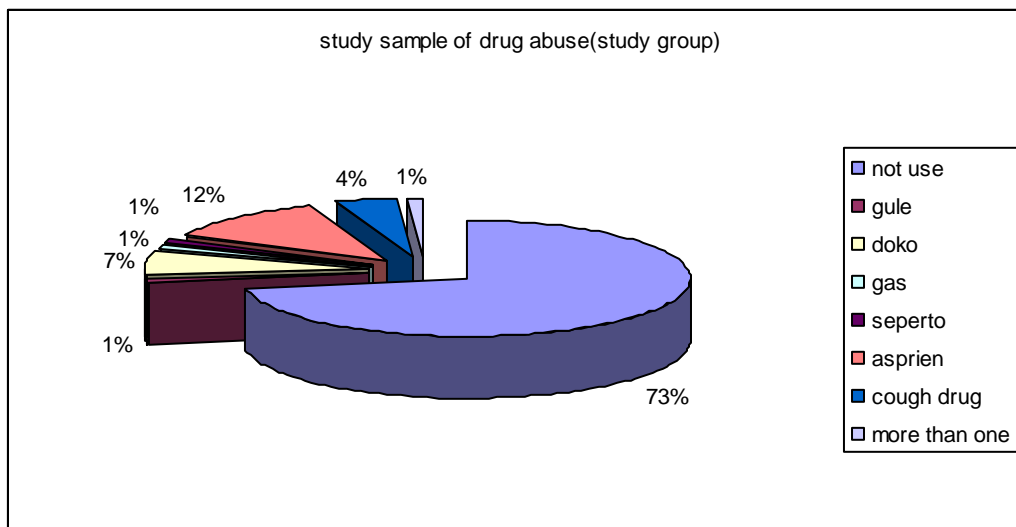


Fig VIII: Percentage distribution of study group students in relation to drug abuse before the program.

This figure showed that, less than three quarters of study group students (73.0%) not use any drug and the minority (1.0%) takes more than one and also (1.0%) taking aspirin.

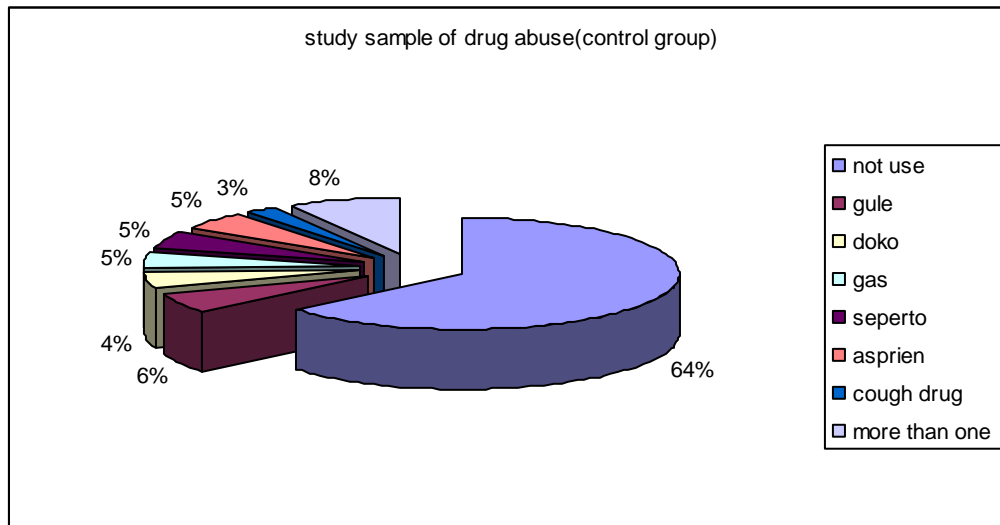


Fig IX: Percentage distribution of control group students in relation to drug abuse before the program.

This figure showed that, less than two thirds of control group students (64.0%) not use any drug compared by the more than one third (36.0%) having drug abuse.



Table X showed that, the study group students had improved their knowledge by less than three quarters (72.2%) after the program, and more than two thirds (67.8%) after three months of program regarding adequate hours for sleep/day compared by more than one third (38.9%) before the program.

While the control group their knowledge was decline to more than one third (38.0%) after three months compared by less than two fifth (39.9%) before the program.

The table indicate also the study group students had minimal improvement in their knowledge regarding problems with increased sleeping hours to less than one quarter (23.3%) and more than one tenth (11.1%) after three months compared by the minority (1.1%) before the program. While the control group had the same percentage (1.9%) before and after three months of the program.

This table showed also that, the students knowledge regarding risk factors after implementing the program was improved by less than one tenth (8.9%) compared to the minority (1.1%, 4.4%) respectively, before and after three months of implementing the program. While the control group had the same percentage before and after three months (1.3%) before and after three months of program.

Moreover there is a statistically significance differences was observed regarding rest and sleep knowledge before and after three months for study and control group, except for adequate hours for sleep/ day of control group $P > 0.05$.

Table XI: Mean and standard division of total knowledge of student about adolescence, nutrition, psychological health, personal hygiene, reproductive health, drug abuse, rest and sleep, and risk factor in relation to before, after program and after 3 months.

Total knowledge About QOL	Before (N=90)		After (N=90)		After 3 months (N=90)		F	p
	Mean	± S.D	Mean	± S.D	Mean	± S.D		
Adolescence	2.05	1.90	4.77	1.88	3.93	1.90	48.50	<0.05
Nutrition	6.84	3.82	14.87	8.12	12.81	6.05	39.94	<0.05
Psychological health	0.57	1.62	4.60	4.50	2.46	2.75	35.77	<0.05
Personal hygiene	2.25	1.77	7.42	4.26	5.27	3.90	49.77	<0.05
Reproductive health	2.70	2.40	11.13	6.44	6.77	6.22	55.77	<0.05
Drug abuse	0.09	0.32	2.70	3.96	1.20	2.55	20.77	<0.05
Rest and sleep	2.16	1.89	4.77	2.97	4.03	2.35	27.19	<0.05
Risk factors	0.09	0.32	0.57	1.11	0.37	0.82	8.04	<0.05

Table XII presented that, the total score of students' knowledge regarding adolescence, nutrition, psychological health, personal hygiene, reproductive health, drug abuse, rest and sleep, and risk factors in relation to before, after program and after 3 months, the results revealed that, the students' total knowledge score was improved overall items after implementing the program and decline after three months of implementing the program.

Although the students score knowledge was decline after three months of program, the improvement was observed than before.

Moreover there is a statistically significant differences was observed regarding total knowledge for study group before, after, and after three months of program $P < 0.05$.

Table XII: Mean and standard division of total knowledge of students about adolescence, nutrition, psychological health, personal hygiene, reproductive health, drug abuse, rest and sleep, and risk factors in relation to study and control group after 3 months.

Total knowledge About QOL	Study group (n=90)		Control group (n=158)		t	p
	Mean	± S.D	Mean	± S.D		
Adolescence	4.26		3.51	2.00	2.697	<0.05
Nutrition	1.85		9.38	4.46	6.853	<0.05
Psychological health	14.22	4.22	0.89	1.55	7.128	<0.05
Personal hygiene	2.98	2.86	2.82	2.10	7.401	<0.05
Reproductive health	5.74	3.84	3.47	3.00	6.818	<0.05
Drug abuse	7.64	6.26	0.24	1.18	4.631	<0.05
Rest and sleep	1.46	2.80	2.64	2.00	5.692	<0.05
Risk factors	4.38	2.40	0.21	0.56	2.699	<0.05
	0.47	0.90				

Table XII illustrated that, the total score of study group students' regarding their knowledge about adolescence, nutrition, psychological health, personal hygiene, reproductive health, drug abuse, rest and sleep, and risk factor in relation to control group after three months, it was observed statistically significance association regarding the mean score of students knowledge related to quality of life

Part IV: *Students practice related to quality of life.***Table XIII:** Percentage distribution of study group according to their practice through asking questions toward nutrition in relation to control group before and after 3 months of program.

Nutritional practice	Study group (n=90)		Control group (n=158)	
	before %	After 3 m %	before %	After 3 months %
Eating vegetables				
Regular	34.4	50.5	44.4	45.6
Sometimes	35.6	37.8	41.2	41.1
Never	30.0	12.2	14.4	13.3
	T= 6.67 P<0.05		T= 2.01 P<0.05	
Drinking milk				
Regular	31.1	38.9	28.1	20.9
Sometimes	41.1	38.9	48.7	51.9
Never	27.8	22.2	27.2	27.2
	T= 3.70 P<0.05		T= 2.26 P<0.05	
Eating breakfast				
Regular	12.2	15.6	18.4	14.2
Sometimes	33.3	28.8	36.0	47.1
Never	54.5	55.6	45.6	38.7
	T= 1.00 P>0.05		T= 0.72 P>0.05	
Taking snacks				
Regular	45.6	55.6	40.5	41.3
Sometimes	42.2	30.0	44.9	43.9
Never	12.2	14.4	12.6	14.8

	T= 2.15 P<0.05	T= 1.74 P>0.05
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Nutritional practice	Study group (n=90)		Control group (n=158)	
	before %	After 3 m %	before %	After 3 months %
Eating sweets				
Regular	57.8	44.4	55.1	54.2
Sometimes	27.8	50.0	35.4	37.4
Never	14.4	5.6	9.5	8.4
	T= 0.89 P>0.05		T= 0.57 P>0.05	
Eating chips frequently				
Regular	34.4	20.0	42.5	42.5
Sometimes	37.8	33.3	25.9	25.9
Never	27.8	46.7	31.6	31.6
	T= 6.67 P<0.05		T= P<0.05	
Drinking cola				
Regular	34.4	25.6	27.8	25.3
Sometimes	28.9	48.9	41.8	58.4
Never	36.7	25.6	30.4	27.8
	T= 0.46 P>0.05		T= 3.66 P<0.05	
Taking vitamins				
Regular	43.3	45.6	29.7	21.4
Sometimes	21.1	27.8	40.6	53.9
Never	35.6	26.7	29.7	24.7
	T= 3.33 P<0.05		T= 2.29 P<0.05	
Taking proteins daily				
Regular	46.7	46.7	34.2	34.1
Sometimes	32.2	46.7	46.2	48.7
Never	21.1	6.7	19.6	18.3
	T= 3.87 P<0.05		T= 1.41 P<0.05	

** T= paired T test between before and after three months of each group

P Significant at <0.05

Table XIII showed that, the percentage distribution of study and control group students' regarding nutritional practice, it was observed minimal improving of students practice after three months of implementing the program ,it was observed at eating vegetables improved by more than half (50.5 %) compared by more than one third (34.3 %) before the program

While the control group hasn't improved in their practice before and after three months where the same percent more than half (51.3%) was observed.

The table also indicated the minority (12.2 %) of study group students was eaten the breakfast before the program compared by less than one fifth (15.6 %) after three months of implementing the program.

While the control group was observed less than one fifth (18.4 %) was eaten the breakfast before the program compared by more than one tenth (14.2 %) after three months of the program.

The results were a statistically significance difference regarding nutritional practice except for eating breakfast, eating sweets, and drinking cola, before and after three months of program for study group students $P > 0.05$. And for eating breakfast, taking snacks, and eating sweets for control group before and after three months of program.

Table XIV: Percentage distribution of study group according to their practice through asking questions toward personal hygiene in relation to control group before after 3 months of program.

Personal hygiene practice	Control group (n=158)		Study group (n=90)	
	before %	After 3 m %	before %	After 3 m %
Bathing daily in summer				
Regular	72.2	73.4	73.3	83.3
Sometimes	20.3	24.7	23.3	15.6
Never	7.6	1.9	3.3	1.1
	T= 3.41 P<0.05		T= 3.52 P<0.05	
Bathing one or more in winter				
Regular	50.6	50.6	46.7	56.7
Sometimes	31.0	28.4	22.2	42.2
Never	18.3	20.8	31.1	1.1
	T= 2.01 P<0.05		T= 7.70 P<0.05	
Brushing my teeth daily				
Regular	41.1	38.0	40.0	40.0
Sometimes	40.5	44.9	41.1	45.5
Never	18.4	17.1	18.9	14.4
	T= 1.64 P>0.05		T= 2.03 P<0.05	
Checkup on my teeth every 6 months				
Regular	16.5	17.1	16.7	24.4
Sometimes	37.3	32.9	41.1	33.3
Never	46.2	50.0	42.2	42.3
	T= 1.64 P>0.05		T= 2.74 P<0.05	
Clean my hair daily				
Regular	40.5	40.5	44.4	45.6
Sometimes	44.3	49.4	41.2	41.1
Never	15.2	10.1	14.4	13.3
	T= 2.89 P<0.05		T= 1.42 P>0.05	
Clean my hands before eating				
Regular	63.3	64.6	74.4	76.7
Sometimes	33.5	30.4	23.3	22.2
Never	3.2	5.0	2.2	1.1
	T= 0.44 P>0.05		T= 1.75 P>0.05	

Personal hygiene practice	Control group (n=158)		Study group (n=90)	
	before %	After 3 m %	before %	After 3 m %
Cutting my nails regularly				
Regular	56.3	56.9	62.2	83.3
Sometimes	37.3	34.3	27.8	14.4
Never	6.3	8.8	10.0	2.2
	T= 1.34 P>0.05		T= 6.01 P<0.05	
Wash my hands after urination and defecation				
Regular	74.7	70.8	65.6	75.6
Sometimes	23.4	23.4	25.6	21.1
Never	1.9	5.7	8.9	3.3
	T= 3.59 P<0.05		T= 4.04 P<0.05	
Wash my hair during menstruation				
Regular	41.8	44.3	44.4	58.9
Sometimes	29.1	38.6	25.6	23.3
Never	11.4	10.1	14.4	7.8
Not applicable	17.7	7.0	15.6	10.0
	T= 2.70 P<0.05		T= 0.39 P>0.05	
Bathing during menstruation				
Regular	39.2	39.2	41.1	41.1
Sometimes	24.7	24.6	28.9	42.2
Never	18.4	29.1	14.4	6.7
Not applicable	17.7	7.0	15.6	10.0
	T= 4.35 P<0.05		T= 0.83 P>0.05	
Remove extra hair from my body				
Regular	14.6	23.4	13.3	26.7
Sometimes	24.1	24.7	21.1	21.1
Never	43.7	44.9	50.0	42.2
Not applicable	17.7	7.0	15.6	10.0
	T= 2.27 P<0.05		T= 0.39 P>0.05	

** T= paired T test between before and after three months of each group

P Significant at <0.05

Table XIV illustrated the percentage distribution of the sample regarding personal hygiene practice between study and control group, it was observed that, less than three quarters (74.4%) had correct and complete practice regarding clean my hands before eating, before the program compared by more than three quarters (76.7%) after three months of implementing the program.

While the control group observed that less than two thirds (63.3% & 64.6%) respectively before and after three months regarding clean my hands before eating.

The table showed also less than one fifth (16.7%) of study group students were checkup my teeth every six months before the program compared by less than one quarter (24.4%) after three months of implementing the program.

While less than one fifth (16.5% & 16.7%) respectively before and after three months of implementing the program of control group students had correct and complete practice regarding checkup my teeth every six months.

Moreover the results were a statistically significance difference regarding personal hygiene practice before and after three months of program for study group about brushing my teeth daily, checkup on my teeth every 6 months, clean hands before eating, and cutting my nails regularly. For control group the results were statistically insignificance for clean my hair daily, clean my hands before eating, washing my hair during menstruation, bathing during menstruation, and remove extra hair from my body $P > 0.05$.

Table XV: Percentage distribution of study group according to their practice through asking questions toward reproductive health in relation to control group before and after 3 months of program.

Reproductive health practice	Control group (n=158)		Study group (n=90)	
	Before %	After 3m %	Before %	After 3m %
Record the day of each menstruation				
Regular				
Sometimes	24.7	29.1	37.8	37.8
Never	21.5	29.7	23.3	36.7
Not applicable	36.1	34.2	23.3	15.5
	17.7	7.0	15.6	10.0
	T= 2.40 P<0.05		T= 0.83 P>0.05	
Increased bathing during menstruation				
Regular	34.8	39.9	38.9	38.9
Sometimes	23.4	29.7	32.2	40.0
Never	24.1	23.4	13.3	11.1
Not applicable	17.7	7.0	15.6	10.0
	T= 2.34 P<0.05		T= 0.72 P>0.05	
Afraid if the menstrual delayed				
Regular	39.2	36.1	35.6	40.0
Sometimes	34.8	19.6	30.0	38.9
Never	19.0	26.6	18.9	11.1
Not applicable	7.0	17.7	15.6	10.0
	T= 2.02 P<0.05		T= 0.40 P>0.05	
Changing pad during menstruation 4 times daily				
Regular	23.4	29.7	20.0	36.7
Sometimes	33.5	48.1	45.5	34.4
Never	23.4	15.2	18.9	18.9
Not applicable	17.7	7.0	15.6	10.0
	T= 1.59 P>0.05		T= 0.00 P>0.05	
Afraid if I sow vaginal discharge				
Regular	36.7	29.7	37.8	37.8
Sometimes	36.7	29.7	26.7	38.9
Never	19.6	22.9	20.0	13.3
Not applicable	7.0	17.7	15.6	10.0
	T= 2.02 P<0.05		T= 2.15 P<0.05	
Reading about adolescence and reproductive health				
Regular	18.4	18.9	28.9	40.0
Sometimes	25.9	36.2	36.7	34.4
Never	38.0	37.9	18.9	15.6
Not applicable	17.7	7.0	15.6	10.0
	T= 3.01 P<0.05		T= 0.20 P>0.05	

** T= paired T test between before and after three months of each group

P Significant at <0.05

Table XV illustrated that, the students practice regarding reproductive health for study and control group, it was observed more than one third (36.1%), 35.6%) in study and control group respectively, were afraid if menstrual cycle delayed.

While the less frequency distribution of regular practice was observed at changing pad four times daily during menstruation by less than one quarters (23.4%) for study group compared by one fifth (20.0%) for control group.

The results were a statistically significance differences regarding reproductive health practice for study group except for changing pad during menstruation 4 times daily, before and after three months. While statistically insignificance for control group except for afraid if I sow vaginal discharge except for record the day of each menstruation of study group $P < 0.05$.

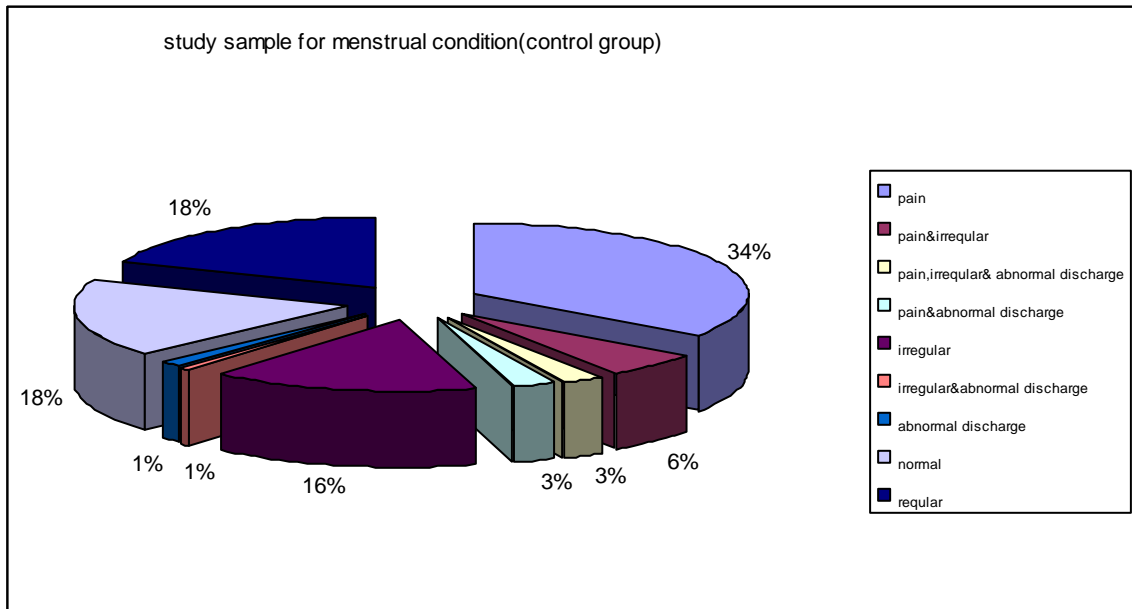


Fig X: Percentage distribution of control group students in relation to menstrual condition before the program.

This figure showed that, more than one third of control group students (34.0%) have pain during menstruation compared by the minority (1.0%) had irregular menstruating and abnormal discharge.

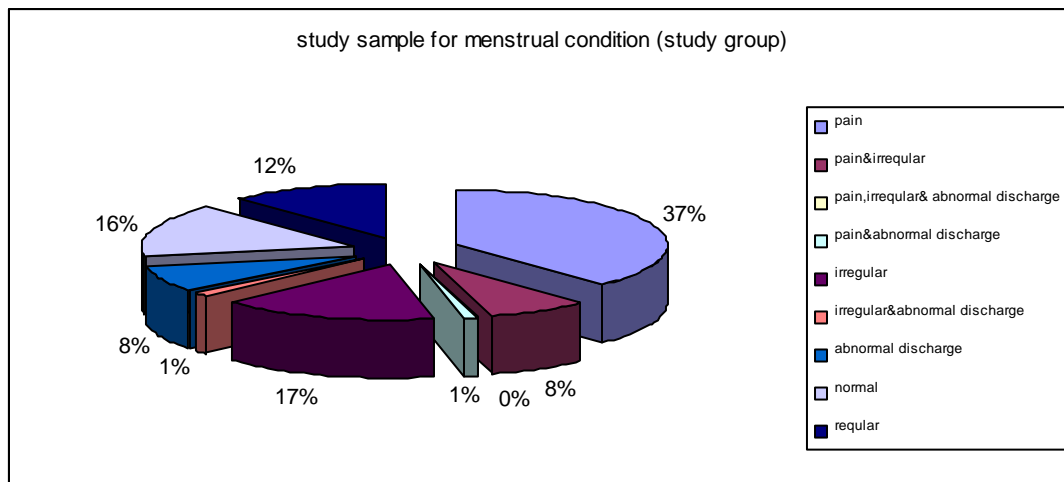


Fig XI: Percentage distribution of study group students in relation to menstrual condition before the program.

This figure showed that, more than one third of study group students (37.0%) have pain during menstruation compared by the minority (1.0%) had irregular menstruating and abnormal discharge.

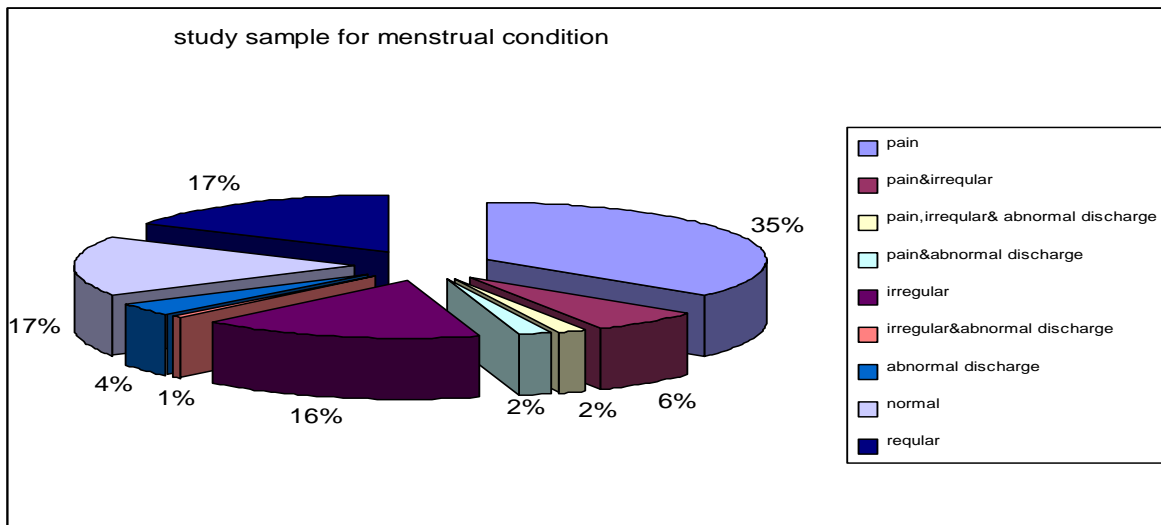


Fig XII: Percentage distribution of study sample students in relation to menstrual condition before the program.

This figure showed that, more than one third of study sample students (35.0%) have pain during menstruation compared by the minority (1.0%) had irregular menstruating and abnormal discharge.

Table XVI: Percentage distribution of study group according to their practice toward drugs in relation to control group before and after 3 months of program.

Drug practice	Study group (n=90)		Control group (n=158)	
	before %	After 3 months %	before %	After 3 months %
Take drugs				
Regular	13.3	7.8	18.4	14.4
Sometimes	21.1	18.9	19.6	25.5
Never	65.6	73.3	62.0	60.1
	T= 3.70 P<0.05		T= 1.67 P>0.05	
Repeated taking the drug				
Regular	11.1	4.4	12.7	13.1
Sometimes	17.8	17.8	19.6	27.5
Never	71.1	77.8	67.7	59.5
	T= 3.70 P<0.05		T= 3.59 P<0.05	
Felling comfort after taking drug				
Regular	21.1	6.7	16.5	18.3
Sometimes	20.0	20.0	19.0	26.8
Never	58.9	73.3	64.6	54.9
	T= 6.01 P<0.05		T= 4.49 P<0.05	
Trying to take drug from my friends				
Regular	15.6	4.4	6.3	13.1
Sometimes	14.4	22.2	24.1	22.2
Never	70.0	73.3	69.6	64.7
	T= 3.87 P<0.05		T= 4.63 P<0.05	
Read about side effect of any drug				
Regular	33.3	42.2	43.6	42.5
Sometimes	34.4	24.4	28.5	30.0
Never	32.2	33.3	27.8	27.5
	T= 2.39 P<0.05		T= 1.41 P>0.05	
Asking doctor when taking drugs				
Regular	58.9	66.6	64.6	65.4
Sometimes	25.6	16.7	19.0	22.2
Never	15.6	16.7	16.5	12.4
	T= 2.16 P<0.05		T= 2.69 P<0.05	

** T= paired T test between before and after three months of each group P Significant at <0.05

Table XVI showed that, the students' practice regarding drug abuse, it was observed less than two thirds (65.6%) before the program of study group students' never use any drug compared by less than three quarters (73.3%) after three months of implementing the program. While less than two thirds (62.1%) of control group students' never use any drugs before the program and after three months the same percentage.

The table indicated also more than half (58.9%) of study group students' before the program was asking doctor before taking any drug compared by more than two thirds (66.6 %) after three months of implementing the program.

While less than two thirds (64.6%) of control group students was asked doctor before the program, compared by less than two thirds (65.4%) after three months of implementing the program.

Moreover the results were a statistically significance difference regarding drug abuse except for take drugs and reading about side effect of any drug for control group students $P > 0.05$.

Table XVII: Percentage distribution of study group according to their practice toward rest and sleep in relation to control group before and after 3 months of program

Rest and sleep practice	Study group (n=90)		Control group (n=158)	
	Before %	After3 m %	Before %	After3 m %
Sleep 6-8 hour daily				
Regular	45.6	60.0	50.6	52.9
Sometimes	35.6	35.0	32.3	37.3
Never	18.8	4.4	17.1	9.8
	T= 6.01 P<0.05		T= 2.89 P<0.05	
My sleep is continuous				
Regular	42.2	48.9	34.2	37.9
Sometimes	30.0	42.2	44.9	43.8
Never	27.8	8.9	20.9	16.4
	T= 5.52 P<0.05		T= 3.07 P<0.05	
Sleep when worries				
Regular	44.4	11.1	33.5	33.5
Sometimes	25.6	62.2	33.0	39.2
Never	30.0	26.7	33.5	28.4
	T= 5.77 P<0.05		T= 2.89 P<0.05	
Weak up fresh				
Regular	41.1	44.4	49.4	37.3
Sometimes	33.3	44.4	33.5	49.0
Never	25.6	11.2	17.1	13.7
	T= 4.38 P<0.05		T= 4.51 P<0.05	
Take enough time of sleep				
Regular	43.3	50.0	43.7	36.6
Sometimes	37.8	37.8	37.3	47.7
Never	18.9	12.2	19.0	15.7
	T= 4.04 P<0.05		T= 3.30 P<0.05	
Take relaxation time during day				
Regular	27.8	38.9	24.7	20.9
Sometimes	51.1	40.0	22.2	32.7
Never	21.1	21.1	53.2	46.4
	T= 3.33 P<0.05		T= 1.00 P>0.05	

Rest and sleep practice	Study group (n=90)		Control group (n=158)	
	Before %	After3 m %	Before %	After3 m %
Take bills to sleep				
Regular	8.9	4.4	14.6	9.8
Sometimes	12.2	15.6	19.6	24.2
Never	78.9	80.0	65.8	66.0
	T= 2.28 P<0.05		T= 3.25 P<0.05	
Make my regular sport				
Regular	20.0	35.6	28.5	30.1
Sometimes	22.2	41.1	33.6	34.6
Never	68.8	23.3	34.9	35.3
	T= 9.43 P<0.05		T= 1.41 P<0.05	

** T= paired T test between before and after three months of each group

P Significant at <0.05

Table XVII illustrated that, the students practice regarding rest and sleep, it was observed less than half (45.6%) of study group students were sleeping 6-8 hours daily compared by less than two thirds (60.0%) was observed after three months of implementing the program. While more than half (50.6%) the control group students were sleeping 6-8 hours daily before the program compared by more than half (52.9%) after three months of implementing the program.

The table illustrated also one fifth (20.0%) of study group students before the program making regular sports compared by more than one third (35.6%) after three months of implementing the program while the regular sports made by less than one third (28.5%) of control group students before the program compared by less than one third (30.1%) after three months of implementing the program

Moreover the results were a statistically significance differences regarding rest and sleep for study and control group before and after three months of program except for take relaxation time during a day for control group $P > 0.05$.

Table XVIII: Percentage distribution of study group according to their practice toward risk factors in relation to control group before and after 3 months of program.

Risk factors practice	Study group (n=90)		Control group (n=158)	
	Before %	After 3 months %	Before %	After 3 months %
Exposed to smoke daily				
Regular	13.3	6.7	19.0	18.3
Sometimes	16.7	21.1	15.8	27.5
Never	70.0	72.2	65.2	54.2
	T= 2.94	P<0.05	T= 3.24	P<0.05
Take a meal outside the home				
Regular	18.9	14.4	19.6	17.0
Sometimes	35.6	36.7	31.0	49.7
Never	45.6	48.9	49.4	33.3
	T= 2.74	P<0.05	T= 3.37	P<0.05
Relationship with peers(other sex)				
Regular	32.2	34.4	15.2	32.0
Sometimes	21.1	46.7	29.7	41.2
Never	46.7	18.9	55.1	26.8
	T= 6.17	P<0.05	T= 6.80	P<0.05
Autonomy with parent relationship				
Regular	17.8	13.3	24.7	20.9
Sometimes	16.7	32.2	22.2	32.7
Never	65.5	54.4	53.2	46.4
	T= 5.20	P<0.05	T= 0.25	P>0.05
Have spare time /day				
Regular	33.3	15.6	32.9	22.9
Sometimes	31.1	51.1	34.9	48.4
Never	35.6	33.3	32.3	28.8
	T= 3.50	P<0.05	T= 3.56	P<0.05
Warmth family relationship				
Regular	25.6	26.7	38.0	37.8
Sometimes	31.1	45.6	36.1	36.7
Never	43.3	27.8	25.9	26.5
	T= 1.00	P>0.05	T= 5.68	P<0.05

Table XVIII illustrated that, the students practice regarding risk factors affecting students, it was observed less than one fifth (13.3%) of study group students exposed to smoke daily before the program compared by less than one tenth (6.7%) after three months of implementing the program.

While the control group was observed less than one fifth (19.0%) exposed to smoke before the program compared by less than one fifth (18.3%) also exposed to smoke after three months.

The table presented also more than one fourth (25.6%, 26.7%) of study group students had warmth relationship within family, before and after three months respectively. While the control group, more than one third (38.0%, 37.8%) had warmth relationship within family, before and after three months respectively.

Moreover the results were a statistically significance differences regarding risk factors practice of study and control group before and after three months of program, except for warmth family relationship for study group and Autonomy with parent relationship for control group $P > 0.05$.

Table XIX: Mean and standard division of practice of students about nutrition, personal hygiene, reproductive health, drug abuse, rest and sleep, and risk factors in relation to before, after program and after 3 months.

Total practice	Before (n=90)		After (n=90)		After3 mon (n=90)		F	P
	Mean ± S.D		Mea ± S.D		Mean ± S.D			
Nutrition	18.72	2.76	18.44	2.42	18.37	2.99	0.40	>0.05
Personal hygiene	22.83	3.68	26.62	3.35	26.42	3.24	33.90	<0.05
	11.93	2.16	12.06	1.88	12.00	1.94	0.09	>0.05
	14.48	2.83	15.33	2.83	14.58	2.33	2.67	>0.05
Reproductive health	16.01	2.75	17.91	2.33	17.24	2.51	12.96	<0.05
	12.00	2.15	13.87	2.50	13.36	2.53	14.62	<0.05
Drug abuse								
Rest and sleep								
Risk factors								

Table XIX showed that, minimal improvement of total practice after implementing the program than before, this improvement was decline after three months of implementing the program.

Although there was no statistically significance difference within study group before, after program, and after three months, for nutrition, reproductive health, and drug abuse, the improvement was observed.

Moreover the results were statistically significance difference for personal hygiene, rest and sleep, and risk factors $P < 0.05$.

Table XX: Mean and standard division of total practice of students about nutrition, personal hygiene, reproductive health, drug abuse, rest and sleep, and risk factors in relation to study and control group after 3 months.

Total practice About QOL	Study group (n=90)		Control group (n=158)		t	P
	Mean	± S.D	Mean	± S.D		
Nutrition	18.74	2.84	17.86	3.42	1.902	>0.05
Personal hygiene	26.34	3.16	25.71	5.60	0.857	>0.05
Reproductive health	11.98	1.90	11.68	2.76	0.797	>0.05
Drug abuse	15.19	2.44	14.02	3.59	2.500	>0.05
Rest and sleep	15.90	2.55	15.46	4.37	0.787	>0.05
Risk factors	13.73	2.43	12.43	3.30	2.961	<0.05

Table XX illustrated that, the total score of study group students' regarding their practice about nutrition, personal hygiene, reproductive health, drug abuse, rest and sleep, and risk factors in relation to control group after three months, it was observed no statistically significance association regarding the mean score of students practice related to quality of life.

Although that is no statistically association were observed the practice of study group after three months was better than control group after three months of implementing the program.

Table XXI: Correlation between students' total knowledge and total practice.

Knowledge and practice	r	P
Nutritional	0.099	<0.05
personal hygiene	0.202	>0.05
reproductive health	0.082	<0.05
Rest and sleep	0.237	>0.05
Drug abuse	0.080	<0.05
Risk factors	0.263	>0.05

Table XXI showed that the relation between students total knowledge and total practice. The results were statistically significance ($P < 0.05$) between total knowledge and practice for (nutrition, reproductive health, and drug abuse). And not significance ($P > 0.05$) in (personal hygiene, rest and sleep, and risk factors).

Part V: KIDSCREEN questionnaire analysis.**Table XXII:** Mean and standard division of study group according to their physical health, emotional health, and self esteem feeling in relation to control group before the program.

KIDSCREEN questionnaire	Study group Mean ± S.D	Control group Mean ± S.D	t	P
<i>Physical health</i>				
I felt ill	3.10 1.14	3.34 1.07	26.825	<0.05
I was in pain	2.86 1.18	3.06 1.18	0.197	>0.05
I was tired and worn-out	2.73 1.40	2.64 1.26	1.353	>0.05
I felt strong and full of energy	3.12 1.28	3.31 1.21	3.439	<0.05
<i>Emotional health</i>				
I had fun and laughed a lot	3.87 1.20	3.81 1.15	4.318	<0.05
I was pored	2.75 1.38	3.09 1.19	4.947	<0.05
I felt alone	3.01 1.53	3.31 1.38	3.078	<0.05
I felt scared or unsure of my self	3.08 1.48	3.41 1.35	2.161	<0.05
<i>Self esteem feeling</i>				
I was pored with my self	2.92 1.65	2.62 1.56	2.279	<0.05
I felt on top of the world	2.47 1.58	2.28 1.27	3.383	<0.05
I felt pleased with my self	3.58 1.28	3.41 1.39	4.839	<0.05
I had lots of correct and complete ideas	3.84 1.34	3.72 1.26	0.788	>0.05

Table XXII demonstrated that, the mean score of study group student regarding physical health, emotional health, and self esteem feeling in relation to control group before the program, it was observed the mean score ranged from 3.12 ± 1.28 to 2.73 ± 1.40 of study group compared by 3.34 ± 1.07 to 2.64 ± 1.26 for control group student regarding physical health. While regarding emotional health the mean score ranged from 3.87 ± 1.20 to 2.75 ± 1.38 for study group compared by 3.81 ± 1.15 to 3.09 ± 1.19 for control group.

The table indicated also the mean score regarding self esteem feeling it was observed 3.84 ± 1.34 to 2.47 ± 1.58 for study group and 3.72 ± 1.26 to 2.28 ± 1.27 for control group

The results were statistically significance ($P < 0.05$) in all items except, (I was in pain, I was tired and worn-out, and I have lots of correct and complete ideas) the results were statistically not significance $P > 0.05$.

Table XXIII: Mean and standard division of study group according to their feeling with the family, friends' relationship, school relationship, and menstrual condition in relation to control group before the program.

KIDSCREAN questionnaire	Study group Mean ± S.D	Control group Mean ± S.D	t	P
<i>Feeling with the family</i>				
I got on well with my parents	4.25 1.27	4.00 1.27	0.906	>0.05
I felt fine at home	3.82 1.39	3.72 1.35	3.007	<0.05
We quarreled at home	3.26 1.51	3.08 1.37	4.058	<0.05
I felt restricted by my parents	2.94 1.73	3.46 1.51	1.006	>0.05
<i>Friends relationship</i>				
I did things together with my friends	3.67 1.47	3.59 1.39	3.228	<0.05
I was a "success" with my friends	4.12 1.25	3.85 1.24	0.997	>0.05
I got along well with my friends	3.78 1.34	3.86 1.27	1.531	>0.05
<i>School relationship</i>				
Doing the school work was easy	3.97 1.11	4.15 1.14	2.258	<0.05
I found school interesting	3.55 1.43	3.73 1.31	1.483	>0.05
I worried about my future	2.56 1.39	2.41 1.29	6.431	<0.05
I worried about getting bad marks or grades	2.24 1.43	4.64 2.43	0.271	>0.05
<i>Menstrual conditions</i>				
Felling to unclean	3.63 1.47	3.54 1.47	6.515	<0.05
Feeling tiredness	2.57 1.42	2.45 1.30	6.062	<0.05
Feeling nauseated	3.47 1.44	3.50 1.34	4.769	<0.05
Incomplete my school duties effectively	3.36 1.61	3.33 1.41	0.714	>0.05

Table XXIII showed that, the mean score of study group students regarding their feeling with the family, friends' relationship, school relationship, and menstrual condition before the program; it was observed the mean score of study group students ranged from 4.25 ± 1.27 to 2.94 ± 1.73 compared by 4.00 ± 1.27 to 3.08 ± 1.37 for control group regarding feeling with the family. While regarding friends' relationship it was observed the mean score ranged from 4.12 ± 1.25 to 3.67 ± 1.47 for study group compared by 3.86 ± 1.27 to 3.59 ± 1.39 for control group.

The table indicated also the mean score of study group regarding school relationship ranged from 3.97 ± 1.11 to 2.24 ± 1.43 and 4.64 ± 2.43 to 2.41 ± 1.29 for control group. While regarding menstrual condition it was observed the mean score was ranged from 3.63 ± 1.47 to 2.57 ± 1.42 for study group and 3.54 ± 1.47 to 2.45 ± 1.30 for control group.

Moreover the results were statistically significance ($P < 0.05$) in all items except, (I got on well with my parents, I felt restricted by my parents, I was a "success" with my friends, I got along well with my friends, I found school interesting, I worried about getting bad marks or grades, and incomplete my school duties effectively) the results were statistically not significance $P > 0.05$.

Table XXIV: Frequency Distribution of Female Adolescents
Questions Regarding Quality of Life

Items	No	%
Reproductive health	44	37.8
Personal hygiene	3	2.5
Psychological health	21	17.8
School & friends	12	10.2
Rest and sleep	1	0.1
Nutrition	3	2.5
Adolescence	10	8.5
Drug abuse	1	0.1
Parent relationship	8	6.8
Sports	2	0.2
Emotional health	8	6.8
General questions	8	6.8

Table XXIII showed that, the most frequency of female adolescents questions about quality of life was observed about reproductive health by more than one third (37.8%) followed by asking about psychological health by less than one fifth (17.8%), and the minority asking questions regarding rest and sleep, and drug abuse by (0.1%).

The research question answered by the results as follow:

- The research question, what's the weak point of students' knowledge and practice about quality of life was answered by tables II-XVII. It was observed that students had lack of their knowledge related to adolescence changes, healthy nutritional habits, basics of personal hygiene, factors affecting drug abuse, and risk factors affecting adolescents.
- The research question what the students' attitude toward their health and quality of life was answered by tables XXI & XXII. It was observed that there is positive attitude toward their quality of life. And there is a statistically significance association in most items.
- The research question to what extend the health education program up grade the students' knowledge, overcome their problems and met their needs was answered by tables II - XVII. The program succeed in improving the adolescent students knowledge regarding reproductive health knowledge, personal hygiene, some areas the students needs more improvement as psychological health knowledge, drug abuse, risk factors affecting adolescents. After three months of implementing the program the students knowledge was decline but still higher than before the program.

Part II: *Students' knowledge about quality of life.***Table IV:** Percentage distribution of study group according to their knowledge about adolescence in relation to control group.

Adolescence knowledge	Study group (n=90)			Control group (n=158)	
	Before %	After %	After 3 months %	Before %	After 3 months %
Meaning of adolescence	35.6	74.4	66.7	34.8	36.7
	T= 6.34 P<0.05			T= 1.74 P>0.05	
Adolescence stages	17.8	64.4	47.8	20.9	25.3
	T=6.01 P<0.05			T= 2.48 P<0.05	
Physical changes	45.6	74.4	71.1	43.3	44.3
	T= 5.52 P<0.05			T=1.41 P>0.05	
psychological changes	41.1	78.9	70.0	31.6	32.3
	T= 6.01 P<0.05			T=1.00 P>0.05	
Emotional changes	22.2	65.6	58.9	29.1	30.3
	T= 7.17 P<0.05			T= 1.41 P>0.05	
Social changes	23.3	55.6	43.3	24.0	25.3
	T= 4.71 P<0.05			T= 1.41 P>0.05	
Age of starting puberty	20.0.	57.8	35.6	12.7	13.3
	T= 4.04 P<0.05			T= 1.00 P>0.05	

** T= paired T test between before and after three months of each group

P Significant at <0.05

TableV: Percentage distribution of study group according to their knowledge about nutrition in relation to control group.

Nutritional knowledge	Study group (n=90)			Control group (n=158)	
	Before %	After %	After 3 months %	Before %	After 3 months %
Essential food group					
Correct and complete	36.7	73.3	47.8	44.3	36.7
Correct and incomplete	26.6	11.1	24.4	19.0	25.3
Unknown or incorrect	36.7	15.6	27.8	36.7	38.0
	T= 4.71 P<0.05			T= 4.05 P<0.05	
Nutritional problems among adolescence					
Correct and complete	7.7	42.2	23.4		
Correct and incomplete	62.2	42.2	65.5	20.9	21.5
Unknown or incorrect	30.0	15.6	11.1	44.3	43.7
				34.8	34.8
	T= 6.83 P<0.05			T=0.57 P>0.05	
*Meaning of malnutrition					
Correct and complete	30.0	55.5	53.3	37.9	37.3
Unknown or incorrect	70.0	44.5	46.7	62.1	62.7
	T= 5.52 P<0.05			T= 1.00 P>0.05	
Causes of malnutrition					
Correct and complete	20.0	53.3	32.2	23.4	21.5
Correct and incomplete	30.0	15.6	36.7	25.3	24.0
Unknown or incorrect	50.0	31.1	31.1	51.3	54.5
	T= 6.34 P<0.05			T= 6.19 P<0.05	
*Character of balanced diet					
Correct and complete	57.8	74.4	62.2	59.5	57.6
Unknown or incorrect	42.2	25.6	37.8	40.5	42.4
	T= 2.03 P<0.05			T= 1.74 P>0.05	

Component of nutritional pyramid					
Correct and complete	4.4	60.0	26.7	8.9	7.0
Correct and incomplete	4.4	13.3	26.7	11.4	13.9
Unknown or incorrect	91.2	26.7	46.6	79.7	79.1
	T= 8.27 P<0.05			T= 1.00 P>0.05	
Affects harmful diet on adolescents					
Correct and complete	13.3	40.0	26.7	6.3	3.8
Correct and incomplete	17.8	23.4	28.9	36.7	37.3
Unknown or incorrect	68.9	36.7	44.4	56.9	58.9
	T= 7.35 P<0.05			T= 2.69 P<0.05	
Faulty habits affect on adolescence					
Correct and complete	0.0	33.3	28.9	1.9	1.9
Correct and incomplete	3.3	18.9	12.2	14.6	12.0
Unknown or incorrect	96.7	47.8	68.9	83.5	86.1
	T= 5.88 P<0.05			T= 2.01 P<0.05	
*Especial needs for adolescents					
Correct and complete	10.0	40.0	38.9	19.0	18.3
Unknown or incorrect	90.0	60.0	61.1	81.0	81.7
	T= 6.17 P<0.05			T= 1.00 P>0.05	
Describing diet according to food group					
Correct and complete	13.3	24.4	20.0	9.5	8.9
Correct and incomplete	28.9	30.0	33.3	24.0	37.3
Unknown or incorrect	57.8	45.6	46.7	66.5	53.8
	T= 4.38 P<0.05			T= 4.37 P<0.05	
Formulate a complete meal					
Correct and complete	13.3	20.0	17.8	5.1	5.1
Correct and incomplete	35.6	35.6	61.1	23.4	24.1
Unknown or incorrect	51.1	44.4	21.1	71.5	70.8
	T= 4.55 P<0.05			T= 1.00 P>0.05	

*Questions for choose the best answer.

** T= paired T test between before and after three months of each group

P Significant at <0.05

Table VI: Percentage distribution of study group according to their knowledge about psychological health in relation to control group.

Psychological health knowledge	Study group (n=90)			Control group (n=158)	
	Before %	After %	After 3 months %	Before %	After 3 months %
Psychological changes with adolescence					
Correct and complete	3.3	43.3	16.7	5.7	5.7
Correct and incomplete	6.6	16.7	33.3	18.4	16.4
Unknown or incorrect	90.1	40.6	50.0	75.9	77.8
	T=1.74 P>0.05			T= 8.13 P<0.05	
Psychological changes with menstruation					
Correct and complete	7.8	35.6	10.0	1.9	1.3
Correct and incomplete	3.3	21.1	33.3	14.6	12.7
Unknown or incorrect	88.9	43.3	56.7	83.5	86.1
	T=2.26 P<0.05			T= 6.83 P<0.05	
Dealing with psychological changes					
Correct and complete	4.4	21.1	4.4	0.6	0.0
Correct and incomplete	2.2	13.3	18.9	15.9	16.5
Unknown or incorrect	93.4	65.6	76.7	83.5	83.5
	T= 1.00 P>0.05			T= 4.12 P<0.05	

** T= paired T test between before and after three months of each group P Significant at <0.05

Table VII: Percentage distribution of study group according to their knowledge about personal hygiene in relation to control group

Personal hygiene knowledge	Study group (n=90)			Control group (n=158)	
	Before %	After %	After 3 months %	Before %	After 3 months %
*Meaning of personal hygiene					
Correct and complete	72.2	87.8	76.7	63.9	63.2
Unknown or incorrect	27.8	12.2	23.3	36.1	36.8
	T= 1.00 P>0.05			T= 2.03 P<0.05	
*Importance of personal hygiene					
Correct and complete	54.4	76.7	76.7	66.5	66.5
Unknown or incorrect	45.6	23.3	23.3	33.5	33.5
	T= P<0.05			T= 5.04 P<0.05	
Importance of personal hygiene during menstruation					
Correct and complete	4.4	13.4	11.1	3.1	1.3
Correct and incomplete	10.0	18.8	18.9	21.0	13.3
Unknown or incorrect	85.6	67.7	70.0	75.9	85.4
	T= 4.49 P<0.05			T= 5.04 P<0.05	
*Changing pad during menstruation					
Correct and complete	24.4	72.2	61.1	24.7	22.8
Unknown or incorrect	75.6	27.8	38.9	75.3	77.2
	T= 1.74 P>0.05			T= 7.17 P<0.05	
Digestive diseases prevented by personal hygiene					
Correct and complete	0.0	41.1	15.6	1.9	0.0
Correct and incomplete	2.2	15.5	16.7	2.5	5.1
Unknown or incorrect	97.8	34.3	76.7	95.6	94.9
	T= 1.00 P>0.05			T= 7.17 P<0.05	

Respiratory diseases prevented by personal hygiene					
Correct and complete	3.3	28.9	12.2	1.2	0.6
Correct and incomplete	12.2	28.9	32.3	10.7	17.1
Unknown or incorrect	84.4	36.7	55.5	88.0	82.3
	T= 2.57 P<0.05			T= 7.35 P<0.05	
Skin diseases prevented by personal hygiene					
Correct and complete	7.8	44.4	11.1	1.8	0.6
Correct and incomplete	17.8	27.8	48.9	28.4	24.0
Unknown or incorrect	74.4	27.8	40.0	69.6	75.3
	T= 3.95 P<0.05			T= 7.35 P<0.05	

*Questions for chose the best answer.

** T= paired T test between before and after three months of each group P Significant at <0.05

Table VIII: Percentage distribution of study group according to their knowledge about reproductive health in relation to control group

Reproductive health knowledge	Study group (n=90)			Control group (n=158)	
	Before %	After %	After 3 months %	Before %	After 3 months %
Changes in female body					
Correct and complete	3.3	7.8	3.3	0.6	1.3
correct and incomplete	23.3	27.8	31.1	1.9	5.6
Unknown or incorrect	73.4	64.4	65.6	97.5	93.7
	T= 2.74 P<0.05			T= 2.89 P<0.05	
Anatomy of reproductive system					
Correct and complete	2.2	52.2	27.7	1.9	1.9
Correct and incomplete	1.1	8.9	6.7	13.3	11.4
Unknown or incorrect	96.7	38.9	65.6	84.8	86.7
	T= 6.23 P<0.05			T= 1.74 P<0.05	
Parts of reproductive system					
Correct and complete	0.0	52.2	17.8	0.6	3.2
Correct and incomplete	1.1	14.5	8.9	8.2	6.4
Unknown or incorrect	98.9	33.3	73.3	91.1	90.5
	T= 5.37 P<0.05			T= 2.26 P<0.05	
*How the menstrual occur					
Correct and complete	24.4	63.3	56.7	29.7	31.6
Unknown or incorrect	75.6	36.7	43.3	70.3	68.4
	T= 7.52 P<0.05			T= 1.74 P>0.05	
*Days between menstruations					
Correct and complete	12.2	40.0	25.6	28.5	25.3
Unknown or incorrect	87.8	60.0	74.4	71.5	74.7

	T= 5.85 P<0.05			T= 2026 P<0.05	
*Meaning of puberty					
Correct and complete	44.4	74.4	73.3	55.7	56.9
Unknown or incorrect	55.6	25.6	26.7	44.3	43.1
	T= 4.05 P<0.05			T= 1.41 P>0.05	
*Age of starting puberty					
Correct and complete	27.8	48.9	22.2	25.9	25.9
Unknown or incorrect	72.2	51.1	77.8	74.1	74.1
	T= 2.28 P<0.05			T= P<0.05	
*Age of menopause					
Correct and complete	56.7	61.1	55.6	47.5	39.9
Unknown or incorrect	43.3	38.9	44.4	52.5	60.1
	T= 3.14 P<0.05			T= 3.59 P<0.05	
Health problems with menstruation					
Correct and complete	1.1	20.0	3.3	0.6	1.9
Correct and incomplete	24.5	33.3	42.2	24.7	18.4
Unknown or incorrect	47.4	46.7	54.4	74.7	79.7
	T= 5.04 P<0.05			T= 1.91 P>0.05	
Risk symptoms with reproductive health					
Correct and complete	0.0	18.8	4.4	0.6	0.6
Correct and incomplete	11.1	25.6	14.5	5.3	4.5
Unknown or incorrect	88.9	55.6	81.1	93.0	94.9
	T= 3.52 P<0.05			T= 1.74 P>0.05	

*Questions for chose the best answer.

** T= paired T test between before and after three months of each group P Significant at <0.05

Table IX: Percentage distribution of study group according to their knowledge about drug abuse in relation to control group

Drug abuse knowledge	Study group (n=90)			Control group (n=158)	
	Before %	After %	After 3 months %	Before %	After 3 months %
Factors leads to drug abuse					
Correct and complete	1.1	20.0	4.4	0.0	1.9
correct and incomplete	3.3	14.5	16.7	4.4	2.5
Unknown or incorrect	95.6	65.6	78.9	95.6	95.6
	T= 4.71 P<0.05			T= 1.74 P>0.05	
Effect of drug abuse on adolescents					
Correct and complete	0.0	18.9	10.0	0.0	1.9
Correct and incomplete	2.2	21.1	13.3	4.4	4.4
Unknown or incorrect	97.8	60.0	76.7	95.6	93.7
	T= 4.82 P<0.05			T= 2.48 P<0.05	
Ways to prevent drug abuse					
Correct and complete	0.0	16.7	3.3	0.6	1.3
Correct and incomplete	1.1	15.5	13.3	1.9	5.0
Unknown or incorrect	98.9	67.8	83.4	97.5	93.7
	T= 4.00 P<0.05			T= 2.69 P<0.05	

*Questions for chose the best answer.

** T= paired T test between before and after three months of each group P Significant at <0.05

Table X: Percentage distribution of study group according to their knowledge about rest and sleep and risk factors in relation to control group

	Study group (n=90)			Control group (n=158)	
	Before %	After %	After 3 months %	Before %	After 3 months %
Rest and sleep knowledge					
Importance of sleep for human					
Correct and complete	1.1	18.9	4.4	1.3	2.6
correct and incomplete	56.6	56.7	58.9	48.7	48.7
Unknown or incorrect	42.3	24.4	36.7	50.0	48.7
	T= 2.94 P<0.05			T= 2.01 P<0.05	
*Adequate hour for sleep/day					
Correct and complete	38.9	72.2	67.8	39.9	38.0
Unknown or incorrect	61.1	27.8	32.2	60.1	62.0
	T= 6.67 P<0.05			T= 1.75 P>0.05	
Problems with decreased sleeping hours					
Correct and complete	5.5	38.9	31.1	7.6	15.8
Correct and incomplete	38.9	33.3	38.9	46.9	48.1
Unknown or incorrect	55.6	27.8	30.0	45.6	36.1
	T= 9.64 P<0.05			T= 5.81 P<0.05	
Problems with increase sleeping hours					
Correct and complete	1.1	23.3	11.1	1.8	1.9
Correct and incomplete	25.6	34.4	37.8	43.6	33.6
Unknown or incorrect	73.3	42.2	51.1	55.7	64.6
	T= 6.50 P<0.05			T= 4.20 P<0.05	
Risk factors affecting adolescents					
Correct and complete	1.1	8.9	4.4	1.3	1.3
correct and incomplete	6.6	20.0	17.8	19.0	14.5
Unknown or incorrect	92.3	71.1	77.8	79.7	84.2
	T= 4.71 P<0.05			T= 2.69 P<0.05	

*Questions for chose the best answer.

** T= paired T test between before and after three months of each group P Significant at <0.05



Health Education Program to Improve Quality of Life Among Female Adolescent Students at Benha City

The program was designed for adolescent students in all preparatory schools at Benha city. the participants were 248 adolescent female students as 25% of preparatory school students they were selected randomly, the age ranged from 13-16 years, they divided into two groups; one was a study group (90 students) and the other was (158 students) as a control group. The students free from any medical problems.

The program take about ninety six days to be completed, six days for each group (Twice weekly according to students schedule), sometimes more than one item was discussed in a day, the students takes break in-betweens. It contains 8 sessions each session was taken from 30-60 minutes according the following schedules.

The program aimed to improve quality of life for students through Identify nutritional needs and problems among adolescents, Determine psychological needs and problems among adolescents; determine the basics personal hygiene for adolescents, illustrate reproductive health concept for adolescents, determine drugs abused among adolescents, Identify needs and problems with rest and sleep among adolescents, and identify risk factors facing adolescents

Table (I): General objectives of session: Identify normal changes with adolescence

Item	General objectives	Specific objectives	Content	Method of teaching	Time required	Media used	Method of evaluation
Introduction	Identify the objectives of the program		purpose of the program objectives of the program schedule of the program		15 min		
Adolescence	Identifying the adolescence characteristics	At the end of this session the students will be able to Identify meaning of adolescence Enumerate adolescence stages identify the changes during adolescence Identify the time of puberty beginning and ending	Meaning of adolescence Stages of adolescence Changes during adolescence (physical, social, emotional, and psychological) Puberty starting and ending	Lecture / discussion Lecture Lecture Lecture / discussion	10 min 5 min 20 min 10 min	PowerPoint presentations Handout booklet	Questions Post test

Table II- General objectives of session: Identify nutritional needs and problems among adolescents

Item	General objectives	Specific objectives	Content	Method of teaching	Time required	Media used	Method of evaluation
Nutrition	Determining the healthful diet	At the end of this session the students will be able to:					
		Identify the essential elements of diet.	Essential element of nutrition	Lecture / discussion	10 min	PowerPoint presentations	Questions
		Determine the faulty habits affecting adolescents.	Character of balanced diet	Lecture	5 min		
		Describe signs & symptoms of malnutrition	Malnutrition and its effect	Lecture/ discussion	15 min	Handout booklet	Post test
		Select healthy meals through group activity.	Nutritional pyramid and perform healthy meals	Group activity	30 min		

Table III- General objectives of session: Determine psychological needs and problems among adolescents.

Item	General objectives	Specific objectives	Content	Method of teaching	Time required	Media used	Method of evaluation
Psychological health	Recognize the psychological needs	At the end of this session the students will be able to:					
		List the psychological changes with adolescence.	Psychological changes with adolescence.	Lecture	10 min	PowerPoint presentations	Questions
		Identify psychological changes with menstruation.	Psychological changes with menstruation.	Lecture / discussion	20 min	Handout booklet	Post test Oral questions
		Solve situation regarding psychological status.	Dealing with menstrual problems (situation analysis)	Situation analysais	15 min		

Table IV- General objectives of session: Determine the basics personal hygiene for adolescents

Item	General objectives	Specific objectives	Content	Method of teaching	Time required	Media used	Method of evaluation
Personal hygiene	Demonstrate personal hygiene	At the end of this session the students will be able to:					
		Identify importance of personal hygiene	Meaning of personal hygiene	Lecture	10 min	PowerPoint presentations	Questions
		Determine diseases prevented by personal hygiene.	Importance of personal hygiene	Lecture / discussion	10 min	Handout booklet	Post test
		Apply presentation according to personal hygiene	Diseases prevented by personal hygiene. Personal hygiene presentation	Lecture / discussion presentation	10 min 30 min	presentation	Oral questions

Table V- General objectives of session: Illustrate reproductive health concept for adolescents

Item	General objectives	Specific objectives	Content	Method of teaching	Time required	Media used	Method of evaluation
Reproductive health	Identifying reproductive health issue	At the end of this session the students will be able to:					
		Identify anatomy of reproductive system.	Anatomy of reproductive system.	Lecture / discussion	10 min	PowerPoint presentations	Questions
		State menstrual cycle.	Menstrual cycle	Lecture	5 min	Handout booklet	Post test
		Identify meaning of puberty.	Meaning of puberty	Lecture	5 min		
		List dangerous signs of genital system.	Dangerous signs of genital system.	Lecture / discussion	10 min		
		Describe reproductive health concept.	Reproductive health concept.	Group activity	30min		

Table VI- General objectives of session: Determine drugs abused among adolescents.

Item	General objectives	Specific objectives	Content	Method of teaching	Time required	Media used	Method of evaluation
Drug abuse	Determining the drug abuse approach	<p>At the end of this session the students will be able to:</p> <p>List factors lead to drug abuse</p> <p>Discuss the effect of drug abuse on adolescence.</p> <p>Enumerate the ways to prevent drug abuse</p>	<p>Factors lead to drug abuse.</p> <p>Effect of drug abuse on adolescence.</p> <p>Ways to prevent drug abuse.</p>	<p>Lecture / discussion</p> <p>Lecture</p> <p>Lecture / discussion</p>	<p>10 min</p> <p>10 min</p> <p>10 min</p>	<p>PowerPoint presentations</p> <p>Handout booklet</p>	<p>Questions</p> <p>Post test</p>

Table VII- General objectives of session: Identify needs and problems with rest , sleep and risk factors among adolescents.

Item	General objectives	Specific objectives	Content	Method of teaching	Time required	Media used	Method of evaluation
Rest, sleep, and risk factors	Using rest, sleep with healthful manner, and avoiding risk factors	At the end of this session the students will be able to:					
		State importance of sleep for human.	Importance of sleep for human.	Lecture	10 min	PowerPoint presentations	Questions
		Identify adequate hours for sleeping	adequate hours for sleeping	Lecture / discussion	5 min		
		Discuss the problems with increase or decrease sleeping hours.	problems with increase sleeping hours	Lecture / discussion	5 min	Handout booklet	Post test
		Provide presentation for rest and sleep	problems with decrease sleeping hours	Lecture / discussion	10 min		
		Discuss dangerous factors affecting adolescence.	rest and sleep presentation	Presentation	15 min		
		Brain storming activities	dangerous factors affecting adolescence	Lecture / discussion	30 min		