# Results

The results of this study were presented in (20) tables and (3) figures. They included the following:

**Part (I):** Socio – demographic characteristics of late adolescent girls such as, colleges, educational year, parent education and occupation, number of family members……, etc. Table (1, 2) & Fig. (1, 2)

**Part (II):** Late adolescent girls knowledge regarding reproductive health issues, it included elements of reproductive health, reproductive system anatomy, puberty, menstrual health, female genital mutilation, premarital counseling, pregnancy, labor, breast feeding, family planning, sexually transmitted diseases & ADIS. Table (3-16) & Fig. (3)

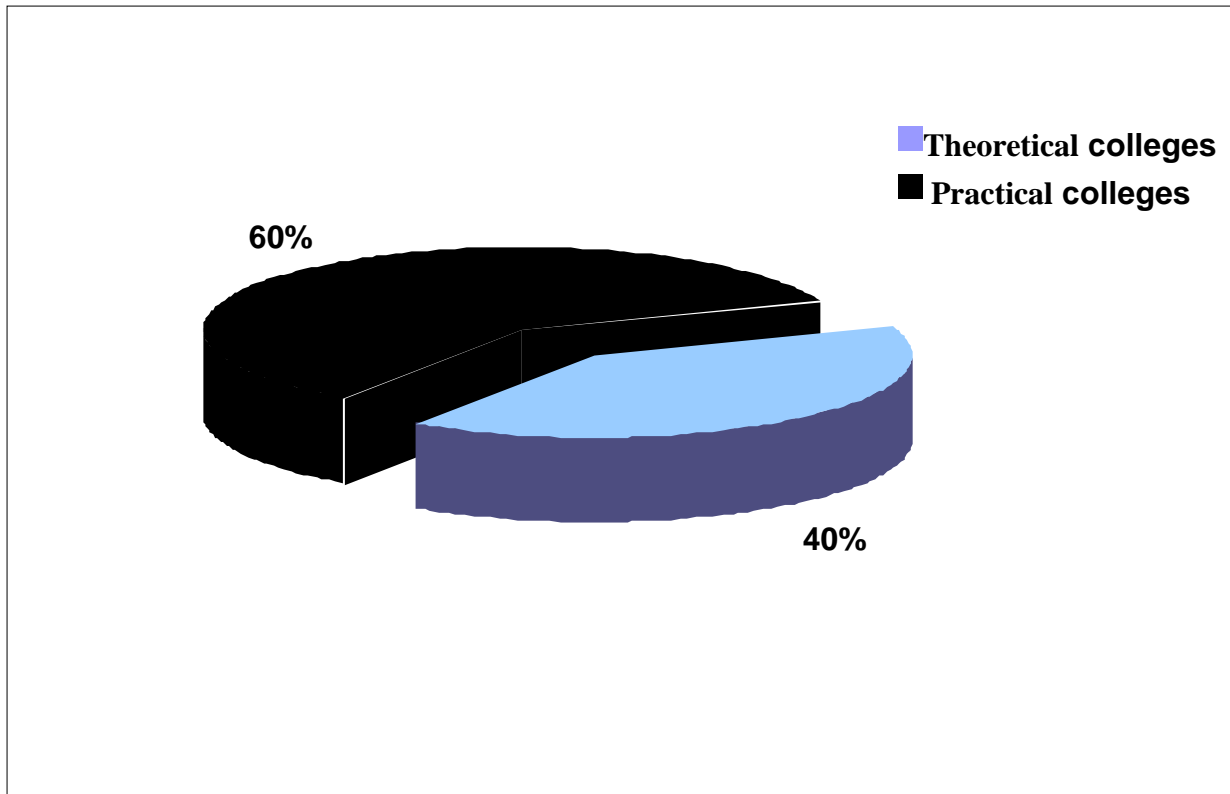**Part (III):** Attitude of the late adolescent girls regarding reproductive health issues. Table (17)

**Part (IV):** Relations between girls total knowledge and attitude about reproductive health and their socio-demographic characteristics, which include: residence, colleges, father education, mother education, family members. Table (18-20)

## Part I: Characteristics of the Study Subjects

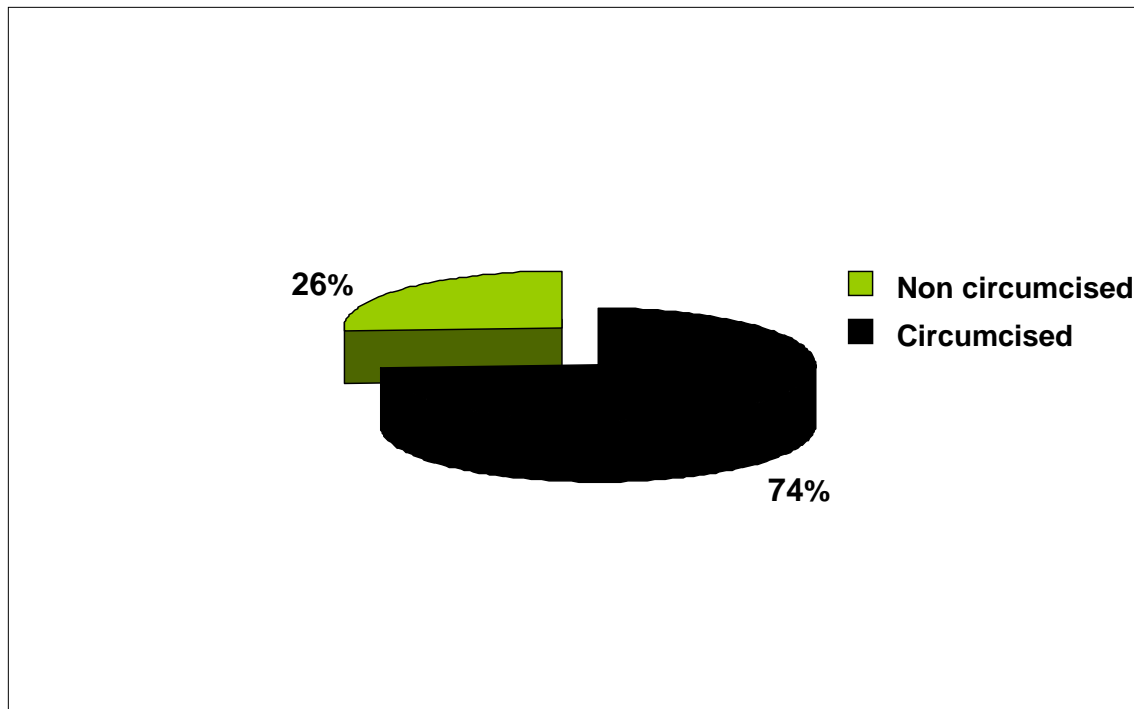**Table (1): Socio-Demographic Characteristics of Late Adolescent Girls.**

| Items | Number | % |
|---|---|---|
| **Age** | | |
|     -17 -18 years | 41 | 13.6 |
|     -18-19 years | 160 | 53.0 |
|     -19->20 years | 101 | 33.4 |
| $\overline{X} \pm SD$ | 18.20 ± 0.65 years | |
| **Religion** | | |
|     -Moslem | 299 | 99.0 |
|     -Christian | 3 | 1.00 |
| **Residence** | | |
|     - Urban | 100 | 33.1 |
|     - Rural | 202 | 66.9 |
| **Secondary Education** | | |
|     - Literatures Specialty | 85 | 28.1 |
|     - Sciences Specialty | 217 | 71.9 |
| **Educational Year** | | |
|     - First Year | 180 | 59.6 |
|     - Second Year | 122 | 40.4 |
| **Engagement** | | |
|     - Engaged | 12 | 4.0 |
|     -Not engaged | 290 | 96.0 |

This table revealed the socio-demographic characteristics of late adolescent girls. The mean age of girls was 18.20 ± 0.65 years, 53% of them were between 18-19 years, 99% of them were Moslems, and 66.9% of them were from rural areas. With regard to educational background of late adolescent girls, 71% of them were science specialty in secondary education, 59.6% enrolled in the first year and 96% of them were not engaged.

**Fig. (1): Type of colleges**

As shown in the above figure, regarding the type of colleges, it was found that, 60.0% of the girls were involved in the practical colleges, while 40.0% of them were involved in the theoretical colleges

**Fig. (2): Prevalence of Female Genital Mutilation   among Late adolescent Girls**

It was observed from the above figure that, 74% of late adolescent girls were circumcised.

**Table (2): Families Characteristics of Late Adolescent Girls.**

| Items | Number | % |
|---|---|---|
| **Father Education** | | |
|    -Illiterate | 74 | 24.5 |
|    -Middle education | 129 | 42.7 |
|    -High education | 99 | 32.8 |
| **Father Employment** | | |
|    - Not working | 1 | 0.3 |
|    - Governmental working | 179 | 59.3 |
|    - Non governmental working | 122 | 40.4 |
| **Mother Education** | | |
|    - Illiterate | 115 | 38.1 |
|    - Middle education | 124 | 41.1 |
|    - High education | 63 | 20.9 |
| **Mother Employment** | | |
|    - Housewife | 198 | 65.6 |
|    - Governmental working | 96 | 31.8 |
|    - Non governmental working | 8 | 2.6 |
| **No. of Family Members** | | |
|    1-4 | 72 | 23.8 |
|    5 - 7 | 199 | 65.9 |
|    8 - 10 | 31 | 10.3 |
| $\bar{X} \pm \textbf{SD}$      $6.12 \pm 1.46$ | | |
| **Arrangement among Sisters** | | |
|    -Youngest | 61 | 20.2 |
|    -Middle | 121 | 40.1 |
|    -Eldest | 120 | 39.7 |

As shown in this table, regarding to father's level of education, it was found that, 42.7% of them had middle education. Regarding to father employment, 59.3% of them worked in governmental working. On the other hand regarding mother's level of education, 41.1% of them had middle education and 65.6% of them were housewives. Also this table showed that the mean number of family members was (6.12 ± 1.46), and 65.9% between 5-7 members.

## Part II Adolescents Knowledge about Reproductive Health Issues.

Table (3): Late Adolescent Girls Knowledge Regarding Reproductive Health issues.

| Items | Total score | $\bar{x} \pm SD$ |
|---|---|---|
| - Elements of reproductive health | 8 | 1.81±1.85 |
| - Reproductive system | 4 | 2.74±1.51 |
| - Puberty | 6 | 4.31±1.56 |
| - Menstrual health | 6 | 4.41±1.37 |
| - Female genital mutilation | 6 | 2.52±1.07 |
| - Premarital counseling | 9 | 3.91±1.40 |
| - Pregnancy | 11 | 7.10±2.72 |
| - Labor & breast feeding | 6 | 2.18±1.10 |
| - Family planning | 7 | 3.60±1.71 |
| - Sexually transmitted diseases & ADIS | 12 | 4.95±3.16 |
| - Knowledge total mean score | 75 | 35.74±10.42 |

This table denoted that, the highest mean score of late adolescent girls (4.41±1.37) was about menstrual health. While the lowest mean score (1.81±1.85) was about elements of reproductive health, the knowledge total mean score = (35.74±10.42).

**Table (4): Late Adolescent Girls Knowledge Regarding Elements of Reproductive Health.**

| Items | Good | | Fair | | Poor | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| - Definition of  reproductive health | 1 | 0.3 | 107 | 35.4 | 194 | 64.3 |
| - Importance of  reproductive health | 10 | 3.3 | 134 | 44.4 | 158 | 52.3 |
| - Elements of reproductive health | 9 | 3.0 | 132 | 43.7 | 161 | 53.3 |
| - Services of reproductive health | 4 | 1.3 | 136 | 45.0 | 162 | 53.7 |

This table illustrated girls' knowledge about definition, importance, elements and services of reproductive health. The poor knowledge ranged from (52.3% - 64.3%) and fair knowledge ranged from (35.4% - 45.0%) while good knowledge ranged from (0.3% - 3.3%).

**Table (5): Late Adolescent Girls Knowledge Regarding Anatomy of Reproductive System.**

| Items | Good | | Fair | | Poor | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| - Female reproductive system | 221 | 73.2 | 28 | 9.3 | 53 | 17.5 |
| - Male reproductive system | 148 | 49.0 | 63 | 20.9 | 91 | 30.1 |

This table denoted that, 73.2% of the girls had good knowledge about female reproductive system and 49% of them had good knowledge about male reproductive system.

**Table (6): Late Adolescent Girls Knowledge regarding puberty.**

| Items | Good | | Fair | | Poor | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| - Age of puberty in females | 218 | 72.2 | - | - | 84 | 27.8 |
| - Age of puberty in males | 174 | 57.6 | - | - | 128 | 42.4 |
| - Physical changes in females | 231 | 76.5 | 49 | 16.2 | 22 | 7.3 |
| - Physical changes in males | 131 | 43.4 | 138 | 45.7 | 33 | 10.9 |

This table denoted that, the girls had good knowledge about age of puberty and physical changes in females, represented 72.2% and 76.5% respectively. While 45.7% of them had fair knowledge about physical changes in males.

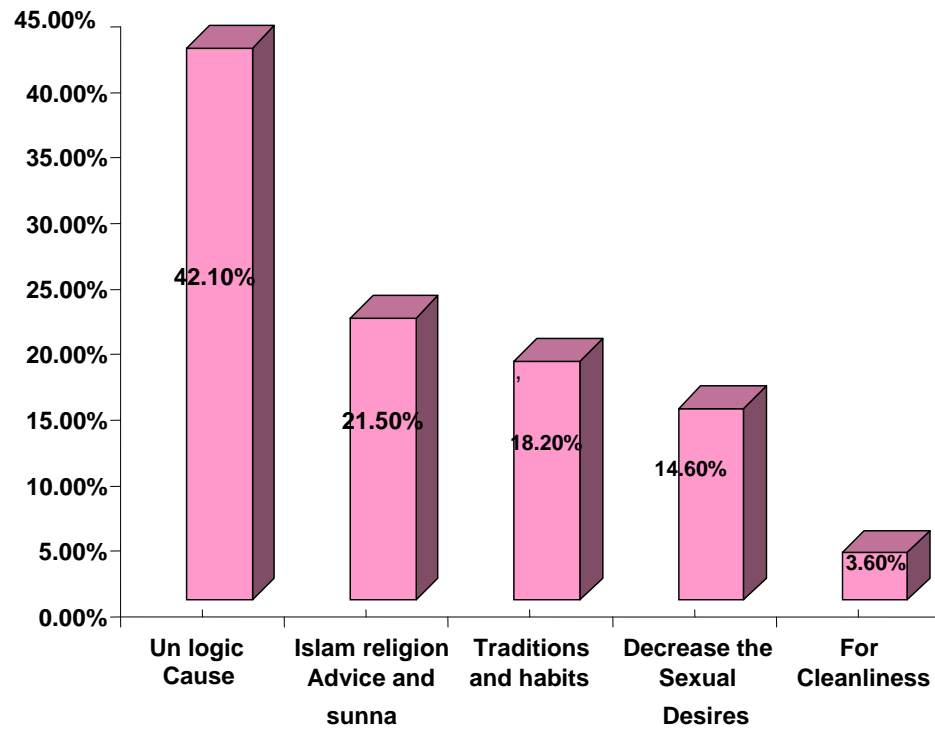**Table (7): Late Adolescent Girls Knowledge Regarding Menstrual Health.**

| Items | Good | | Fair | | Poor | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| - Age of menarche | 245 | 81.1 | - | - | 57 | 18.9 |
| - Age of menopause | 254 | 84.1 | - | - | 48 | 15.9 |
| - Normal duration between menstrual cycle | 254 | 84.1 | - | - | 48 | 15.9 |
| - Normal duration of each cycle | 233 | 77.2 | - | - | 69 | 22.8 |
| - Menstrual hygiene. | 97 | 32.1 | 152 | 50.3 | 53 | 17.6 |

It was found from this table that, the girls had good knowledge about age of menarche and menopause, normal duration between menstrual cycle and normal duration of each cycle. This good knowledge ranged between (77.2% - 84.1%). Mean while (50.3%) of them had fair knowledge about menstrual hygiene.

**Table (8): Late Adolescent Girls Knowledge Regarding Female Genital Mutilation.**

| Items | Good | | Fair | | Poor | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| - Definition of female genital Mutilation | 40 | 13.2 | 225 | 74.5 | 37 | 12.3 |
| - Parts to be cut | 53 | 17.6 | 207 | 68.5 | 42 | 13.9 |
| - The complication of female genital mutilation | 18 | 6.0 | 107 | 35.4 | 177 | 58.6 |

As shown in this table, the girls had fair knowledge about definition of female genital mutilation and parts to be cut in this practice represented 74.5% and 68.5% respectively. While 58.6% of them had poor knowledge about the complication of the practice.

**Fig. (3): Late Adolescents Girls Interpretation to Causes of Female Genital Mutilation**

It was noticed from this figure that, 42.1% of girls didn't find logic cause for such practice and 21.5% of them interpreted its performance to Islam religion. While 3.6% of them mentioned it is form of cleanliness.

**Table (9): Late Adolescent Girls Knowledge Regarding Premarital Examination and Counseling.**

| Items | Good | | Fair | | Poor | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| - Premarital services offered | 13 | 4.3 | 132 | 43.7 | 157 | 52.0 |
| - Importance of premarital examination | 33 | 10.9 | 206 | 68.2 | 63 | 20.9 |
| - Places that provide premarital services | 81 | 26.8 | 172 | 57.0 | 49 | 16.2 |
| - Ideal age for females marriage | 174 | 57.6 | - | - | 128 | 42.4 |
| - Heredity diseases | 8 | 2.6 | 227 | 75.2 | 67 | 22.2 |

It was found from this table that, 52.0% of girls had poor knowledge about premarital services offered, 68.2% of them had fair knowledge about importance of premarital examination. While 2.6% only of them had good knowledge about heredity diseases.

**Table (10): Late Adolescent Girls Knowledge Regarding Pregnancy.**

| Items | Good | | Fair | | Poor | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| - Ideal pregnancy age | 171 | 56.6 | - | - | 131 | 43.4 |
| - Responsible person about baby gender | 284 | 94.0 | - | - | 18 | 6.0 |
| - Ideal time for fertilization of the ovum | 109 | 36.1 | - | - | 193 | 63.9 |
| - Effect of teenage Pregnancy on health | 48 | 15.9 | 206 | 68.2 | 48 | 15.9 |
| - Precaution that must be followed during pregnancy | 91 | 30.3 | 166 | 55.0 | 45 | 14.9 |
| - Warning signs during pregnancy | 14 | 4.6 | 148 | 49.0 | 140 | 46.4 |
| - Health problems due to frequent unplanned pregnancy | 23 | 7.6 | 198 | 65.6 | 81 | 26.8 |

It was found that, 43.4% of girls didn't know the ideal pregnancy age, also 63.9% of them didn't know the ideal fertilization time as well as 64.4% of them didn't know the warning signs during pregnancy.

**Table (11): Late Adolescent Girls Knowledge Regarding Labor and Breast Feeding.**

| Items | Good | | Fair | | Poor | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| - Definition of normal labor | 1 | 0.3 | 185 | 61.3 | 116 | 38.4 |
| - Contraindication of normal labor | 9 | 3.0 | 116 | 38.4 | 183 | 58.6 |
| - Benefits of breast feeding | 67 | 22.2 | 206 | 68.2 | 29 | 9.6 |

It was noticed from this table that, the girls had poor knowledge about definition and contraindication of normal labor represented 38.4% and 58.6% respectively. Also 68.2% of them had fair knowledge about benefits of breast feeding.

**Table (12): Late Adolescent Girls Knowledge Regarding Family Planning**

| Items | Good | | Fair | | Poor | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| - Concept of family planning | 9 | 3.0 | 192 | 63.5 | 101 | 33.5 |
| - Family planning methods | 31 | 10.3 | 184 | 60.9 | 87 | 28.8 |
| - Importance of family planning | 148 | 49.0 | 86 | 28.5 | 68 | 22.5 |
| - Ideal spacing period | 248 | 82.1 | - | - | 54 | 17.9 |

It was found in this table that, 82.1% of girls had good knowledge about ideal spacing period. While 10.3% of them only had good knowledge about family planning methods. Also 33.5% of them didn't even know the concept of family planning.

**Table (13): Late Adolescent Girls Knowledge Regarding Sexually transmitted Diseases and ADIS.**

| Items | Good | | Fair | | Poor | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| - Definition of STDs | 76 | 25.2 | 139 | 46.0 | 87 | 28.8 |
| - Types of sexually transmitted diseases | 81 | 26.8 | 185 | 61.3 | 36 | 11.9 |
| - Definition of AIDS | 65 | 21.5 | 125 | 41.4 | 112 | 37.1 |
| - Route of ADIS transmission | 63 | 20.9 | 137 | 45.4 | 102 | 33.7 |
| - Clinical Picture of ADIS | 26 | 8.6 | 83 | 27.5 | 193 | 63.9 |
| - Protective measures from STDs | 40 | 13.2 | 124 | 41.1 | 138 | 45.7 |

It was noticed from this table that, the girls had poor knowledge about definition of STDs, protective measures from STDs, clinical picture of ADIS and route of ADIS transmission, 28.8%, 45.7%, 63.9% and 33.7% respectively.

**Table (14): Sources of Late Adolescent Girls Information about Reproductive Health.**

| Sources of information | Number | % |
|---|---|---|
| - Mass Media | 133 | 44.0 |
| - School | 80 | 26.5 |
| - Colleagues | 28 | 9.3 |
| - Mother | 18 | 6.0 |
| - Sister | 7 | 2.3 |
| - Neighbors | 1 | 0.3 |
| - All of the Above | 35 | 11.6 |

Regarding to the source of girls' information about reproductive health, this table illustrated that, 44% of them obtained their information from mass media, 26% of them depended on the school to obtain their information. This table also illustrated that neighbors (0.3%) had little role for giving information about reproductive health.

**Table (15): The Requested Knowledge by Late Adolescent Girls as regard Reproductive Health Issues.**

| Needed information | Number | % |
|---|---|---|
| - All reproductive health issues | 76 | 25.2 |
| - Family planning | 56 | 18.5 |
| - Pregnancy and labor | 41 | 13.6 |
| - Premarital counseling & examination | 36 | 12.0 |
| - Menstruation | 26 | 8.5 |
| - Female genital mutilation | 18 | 6.0 |
| - Nothing | 49 | 16.2 |

This table illustrated the requested knowledge by late adolescent girls about reproductive health issues. It can be observed that, 25.2% of girls requested knowledge about all reproductive health issues and 18.5% of them requested knowledge about family planning. While 6.0% only of them requested knowledge about female genital mutilation.

**Table (16): Late Adolescent Girls Knowledge Total Score about Reproductive Health.**

| Items | | Number | % |
|---|---|---|---|
| - **Poor** | $< 50\%$ | 155 | 51.3 |
| - **Fair** | $\geq 50\%$ $<75\%$ | 121 | 40.1 |
| - **Good** | $\geq 75\%$ | 26 | 8.6 |

It was noticed from this table that, 51.3% of the girls had poor knowledge in total score about reproductive health. While only 8.6% of them had good knowledge about it.

## Part III Adolescents Attitude about Reproductive Health Issues

**Table (17): Late Adolescent Girls Attitude Total Score about Reproductive Health.**

| Items | Number | % |
|---|---|---|
| - **Positive Attitude** $> 50\%$ | 96 | 31.8 |
| - **Uncertain Attitude** $= 50\%$ | 22 | 7.3 |
| - **Negative Attitude** $< 50\%$ | 184 | 60.9 |

It was noticed from this table that, 60.9% of girls were negative attitude about reproductive health. Only 31.8% of them were positive attitude about it.

## Part IV Relation between Adolescent Total Knowledge, Attitude and socio demographic factors

**Table (18): Relation between Late Adolescent Girls Total Knowledge Score about Reproductive Health and Their Attitude.**

| Total Knowledge | Total Attitude | | | | | | Total | $X^2$ | P |
|---|---|---|---|---|---|---|---|---|---|
| | Negative | | Indifferent | | Positive | | | | |
| | N | % | N | % | N | % | | | |
| - Good | 9 | 4.9 | 1 | 4.5 | 16 | 16.7 | 26 | 26.82 | <0.001 |
| - Fair | 64 | 34.8 | 7 | 31.9 | 50 | 52.0 | 121 | | |
| - Poor | 111 | 60.3 | 14 | 63.6 | 30 | 31.3 | 155 | | |
| - Total | 184 | 100.0 | 22 | 100.0 | 96 | 100.0 | 302 | | |

**NB:** **- High significant relation at a level of ≤0.001**
**- Significant relation at a level of ≤0.005**

It was noticed from this table that, there was highly significant relation ($X^2$ =26.82, P <0.001) between girls' total knowledge and total attitude.

**Table (19): Relation between Late Adolescent Girls Total Knowledge about Reproductive Health and Their Socio-demographic Factors.**

| Socio-Demographic Factors | total knowledge | | | | | | Total | $X^2$ | P |
|---|---|---|---|---|---|---|---|---|---|
| | Poor | | Fair | | Good | | | | |
| | N | % | N | % | N | % | | | |
| **Residence** | | | | | | | | | |
| - Urban | 50 | 32.3 | 42 | 34.7 | 8 | 30.8 | 100 | 0.255 | >0.005 |
| - Rural | 105 | 67.7 | 79 | 65.3 | 18 | 69.2 | 202 | | |
| **Colleges** | | | | | | | | | |
| -Theoretical colleges | 100 | 64.5 | 20 | 16.5 | 1 | 3.8 | 121 | 80.70 | <0.001 |
| - practical colleges | 55 | 35.5 | 101 | 83.5 | 25 | 96.2 | 181 | | |
| **Father education** | | | | | | | | | |
| - High education | 46 | 29.7 | 41 | 33.9 | 12 | 46.2 | 99 | 10.76 | <0.005 |
| - Middle education | 61 | 39.3 | 55 | 45.4 | 13 | 50.0 | 129 | | |
| - Illiterate | 48 | 31.0 | 25 | 20.7 | 1 | 3.8 | 74 | | |
| **Mother education** | | | | | | | | | |
| - High education | 24 | 15.5 | 29 | 24.0 | 10 | 38.5 | 63 | 27.72 | <0.001 |
| - Middle education | 51 | 32.9 | 61 | 50.4 | 12 | 46.2 | 124 | | |
| - Illiterate | 80 | 51.6 | 31 | 25.6 | 4 | 15.3 | 115 | | |
| **Family members** | | | | | | | | | |
| 1-4 | 28 | 18.0 | 34 | 28.1 | 10 | 38.4 | 72 | 7.25 | >0.005 |
| 5 - 7 | 110 | 71.0 | 74 | 61.2 | 14 | 53.9 | 198 | | |
| 8 - 10 | 17 | 11.0 | 13 | 10.7 | 2 | 7.7 | 32 | | |
| **Total** | **155** | **100.0** | **121** | **100.0** | **26** | **100.0** | **302** | | |

**NB:** **- High significant relation at a level of ≤0.001**
**- Significant relation at a level of ≤0.005**

This table denoted that, there was a highly significant relation ($X^2$ = 80.70, P < 0.001) between type of colleges and girls' total knowledge, as 96.2% of good knowledge was from practical colleges' students. While only 3.8% of good knowledge was from theoretical colleges' students. Also a highly significant relation ($X^2$ =27.72, P 0.001) was between girls' total knowledge and their mothers' level of education. This table also revealed that, there was statistical significant relation ($X^2$ = 10.76, p< 0.005) between fathers' level of education and girls' total knowledge.

**Table (20): Relation between Late Adolescent Girls Total Attitude about Reproductive Health and Their Socio-demographic Factors.**

| Socio-Demographic Factors | total Attitude | | | | | | Total | $X^2$ | P |
|---|---|---|---|---|---|---|---|---|---|
| | Negative | | indifferent | | Positive | | | | |
| | N | % | N | % | N | % | | | |
| **Residence** | | | | | | | | | |
| - Urban | 48 | 26.1 | 7 | 31.8 | 45 | 46.9 | 100 | 12.32 | <0.001 |
| - Rural | 136 | 73.9 | 15 | 68.2 | 51 | 53.1 | 202 | | |
| **Colleges** | | | | | | | | | |
| -Theoretical colleges | 90 | 48.9 | 13 | 59.1 | 18 | 18.7 | 121 | 27.47 | <0.001 |
| - practical colleges | 94 | 51.1 | 9 | 40.9 | 78 | 81.3 | 181 | | |
| **Father education** | | | | | | | | | |
| - High education | 50 | 27.2 | 5 | 22.7 | 44 | 45.8 | 99 | 13.21 | <0.005 |
| - Middle education | 83 | 45.1 | 9 | 40.9 | 37 | 38.6 | 129 | | |
| - Illiterate | 51 | 27.7 | 8 | 36.4 | 15 | 15.6 | 74 | | |
| **Mother Education** | | | | | | | | | |
| - High education | 31 | 16.9 | 2 | 9.1 | 30 | 31.3 | 63 | 17.73 | <0.001 |
| - Middle education | 72 | 39.1 | 8 | 36.4 | 44 | 45.8 | 124 | | |
| - Illiterate | 81 | 44.0 | 12 | 54.5 | 22 | 22.9 | 115 | | |
| **Family members** | | | | | | | | | |
| 1-4 | 37 | 20.1 | 3 | 13.6 | 32 | 33.3 | 72 | 13.01 | <0.005 |
| 5 - 7 | 122 | 66.3 | 16 | 72.8 | 60 | 62.5 | 198 | | |
| 8 - 10 | 25 | 13.6 | 3 | 13.6 | 4 | 4.2 | 32 | | |
| **Total** | **184** | **100.0** | **22** | **100.0** | **96** | **100.0** | **302** | | |

**NB:** - **High significant relation at a level of ≤0.001**
  - **Significant relation at a level of ≤0.005**

This table showed that, there was highly statistical significant relation (P < 0.001) between girls' total attitude and socio-demographic characteristics such as residence, colleges, and mothers' education. This table also revealed that there was statistical significant relation (P <0.005) between girls' total attitude and fathers' education, and number of family members