Awareness of Adolescent Student Regarding Prenatal Risk Factors

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Abstract The present study aimed to identify awareness of adolescent student regarding prenatal risk factors. The study was carried out in a randomly selected six governmental secondary schools split into three schools for male students and the other three for female students. A stratified random sampling technique was used in choosing the study subjects; culminating to seven hundred and twenty students from them Six hundred completed the data collection period during the academic year 2013-2014. Two tools were developed and used to collect the necessary data. The Findings of the present study showed that generally students either were uncertain or had poor awareness regarding the different components related to prenatal care. The majority of students (73.5%) had a percent score lower less than 70% of the highest possible mean score concerning prenatal risk factors in relation to: genetic diseases, reproductive health, chronic diseases as well as nutrition /weight control. Moreover, the results reveals a statistically positive correlations between awareness percent score of students for almost all components of prenatal risk factors except for that between nutrition and environmental factors (r=0.061, p=0.135). The researchers recommended establishment of a youth friendly health center within each school.

Keywords: adolescent students, prenatal risk factors


1. Introduction

Prenatal risk factor are aspects of physical and social characteristics of women, problems that have occurred in previous pregnancies, and certain disorders that women already have which is known to be associated with a health –related condition of the mother or pregnancy outcome [1]. To protect the coming mother, save lives and attain great enhancement for youth, focus must be to enhance factors that protect from harm as well as preventing those factors predispose to risk [2].

These factors may be classified into several categories; among those categories this research paper selected some (four) categories to be studied. The first Category is the reproductive history as when women have had a problem in a previous pregnancy; they are more likely to have a problem, often the same one, in subsequent pregnancies. Such problems include having had a premature baby , an underweight baby, a baby that weighed more than 10 pound , a baby with birth defects , a previous miscarriage, recurrent spontaneous abortion, preterm delivery, post date delivery, Rh incompatibility, or a delivery that require a cesarean section [3].

From the other side, medical condition is the second category of risk factors affecting pregnancy outcome. Anywhere before becoming pregnant, women may have a disorder that can increase the risk of problems during pregnancy. After they become pregnant, they may need special care. There are many examples for such situations as heart & kidney disease, high blood pressure, asthma, epilepsy, D.M, and blood disorder [4].

For instance, the abnormal antibodies produced in autoimmune disorders can cross the placenta and cause problems in the fetus. Such as, systematic lupus erythematous is associated with the repeated miscarriages; fetuses’ growth retardation and increase risk of preterm delivery [5].

Genetic blood disorders are the third category to be discussed. Sickle cell anemia, and β- thalassaemia, is considered from most frequently single gene diseases; and women who have these disorders are at risk of developing infections, high blood pressure, heart failure and blockage of arteries of the lungs by blood clots during pregnancy. Furthermore, bleeding during labor or after delivery may be more sever [6]. The picture is so much worse in Arab; as the spread of hereditary diseases in the Arabic world has been tightly linked with consanguine marriages; where this kind of marriage still take place especially in the rural areas because there the feeling that consanguineous marriages will last longer and other social reasons as well as lack of public awareness [7].

Finally the fourth category to be covered in this research is nutrition & weight control. Obese women are more likely to have very large babies, which may be difficult to deliver .Also; obese women are more likely to develop gestational diabetes and preeclampsia [8]. Furthermore, obesity is associated during pregnancy with neural tube defects, preterm delivery, cesarean section,
and thromboembolic disease [9]. An appropriate weight loss before pregnancy reduces these risks. In contrast, underweight women i.e. women who weigh less than 100 pounds before becoming pregnant are more likely to have small, underweight babies with increased risk of miscarriage [10,11].

At each phase of life individual needs change. Yet, there is a cumulative effect across the life. Failure to deal with reproductive health problems at any phase in life sets the scene for later health and developmental problems. Although this fact; in developing countries; primary sexual and reproductive health for adolescents has received little attention. As a result, it is the task of the maternity nurse as a researcher to identify the needs for reproductive health promotion and to plan and implement the necessary educational programmers according to the educational needs of this minority of young people which can not be ignored.

2. Materials and Method

Aim:
This study aimed to determine awareness of adolescent student regarding prenatal risk factors

Design:
Descriptive cross-sectional study was adopted.

Setting:
The study was carried out in six secondary schools splinted into three schools for male students and the other three for female students. The previously mentioned schools were selected randomly from all governmental secondary schools affiliated to the Ministry of Education in Alexandria.

Subjects:
A stratified random sampling technique was used in choosing the study subjects. Students in each school were divided into three strata: first, second and third academic year. Then from each stratum a sample of 40 students were chosen randomly, making a total of 120 students from each school; culminating to 720 students from the six schools.

Tools:
Two tools were developed for data collection

Tool 1: questionnaire – it included collecting data on Socio demographic characteristics of the sample namely: age, gender, mother and father education, mother and father occupation, family health history, student health status.

Tool 2: Students’ risk factor awareness rating scale:
It compromised 78 statements to represent 10 categories of prenatal risk factors. It was developed on 5-points Likert scale to obtain students’ agreement or disagreement with respect to whether they consider these statements represent prenatal risk factors or not. Four risk factors categories were included in this research paper; they are Reproductive Health risks, Genetic conditions and familial risks, Chronic diseases and Nutrition as well as weight risks.

Development of student risk factors awareness rating scale:
In order to measure students’ awareness a list of statements were developed representing all risk factors reviewed in the literature and approved by experts in the field. The statements were worded either in the positive or negative context taking into consideration that they will be equally represented. The scale was tested for validity and reliability. The tool was validated by 5 juries’ expert in the related fields such as Community Health, Obstetric and Gynecologic Nursing and Obstetric Medicine. The required corrections and modifications were carried out accordingly. While reliability was done using split half reliability. The reliability coefficient was calculated (α =0.95). Students’ responded to each statement in one of the following modes: strongly agree, agree, uncertain, disagree, and strongly disagree. For the positive statements students received a score of 5 for strongly agree, score of 4 for agree, score of 3 for undecided, score of 2 for disagree and score of 1 for strongly disagree.

The maximum possible total score was: 43 ×5= 215
The minimum possible total score was: 43 ×1=43

Method:
1. Before the conduction of the pilot as well as the actual study an official permission was obtained from the responsible authorities of the study settings to take their permission to conduct the study.
2. The interview schedule was developed by the researchers after extensive reviewing the relevant and current literature, and then was validated by a jury of five experts in the related fields to reach consensus on the best form to be implemented.
3. A pilot study was carried out on 10% of the study subjects. It served to ensure clarity, readability, time of administration for the tools of data collection. Also, it helped in determining the obstacles and problems that may be arising during the actual collection of data. Based on the pilot's results; there was no need for amendment in the tools. The subjects of the pilot were excluded from the main study sample.
4. Subjects were individually interviewed by the researcher; the purpose of the study was explained.
5. Ethical consideration was adhered to all stages of the study as each adolescent was interviewed individually and privately. Also a simple explanation for the purpose of the study was done by the researchers for the study subjects to obtain their cooperation & participation and to clarify the items of the scales used in data collection. The participated adolescents were assured anonymity of their answers and that the information will be used for scientific research only and will be strictly confidential. In addition, they were reassured that their participation in the study is voluntary also they were informed that they can withdraw from the study at any time if they don’t wish to participate.
6. The seven hundred and twenty students were all interviewed while thirty female students as well as ninety male students withdrawn from the study. Six hundred completed the data collection period.
7. Data was collected through interviewing technique. Where each subject was interviewed individually in the classroom or school library. The interview was conducted four days a week during the period of October 2013 to April 2014.

Data analysis:
SPSS software version 20 was used to analyze the data. The maximum possible total score for Risk factors
Awareness scale was calculated to be 215. The percent score was calculated for each student using the following formula:

Total score ÷ maximum possible total score × 100.

The awareness level was graded as follow:
- Negative awareness: awareness score of less than 70%.
- Positive awareness: awareness score of ≥ 70%.

The 0.05 level was used as the cut off value for statistical significance. Chi square ($X^2$) was used to test the association between two qualitative variables or to detect the difference between two or more proportions.

3. Results

The seven hundred and twenty students were all interviewed while thirty female students as well as ninety male students withdrawn from the study. Six hundred completed the data collection period divided into three hundred and thirty female as well as two hundred and seventy male. Regarding socio-economic characteristic the results revealed that the study subjects aged from 16 to 20 years old. In relation to their socio-economic status, it was nearly. This may be attributed to that all of them were enrolled at "governmental, free schools"

Table 1 shows the family medical history of adolescent students. Majority of students' families (96.0%) had no genetic diseases; minorities only had blood diseases (1.8%), birth defects (1.3%) and mental retardation (0.3%). On the other hand about half of the families (49.5%) had genetic diseases; minorities only had blood diseases while only few (0.8%) said that they have genetic diseases (blood and birth defects) and 1.2 % communicable diseases (STDs, hepatitis and TB) with respect to diseases that students are suffering from. This table also shows that about one quarter of students (24.8 %) mentioned that they have chronic diseases (anemia, hypertension) while only few (0.8%) said that they have genetic diseases (blood and birth defects) and 1.2 % communicable diseases (STDs, hepatitis and tuberculosis).

Table 2, Table 3, Table 4 & Table 5 shows students’ awareness concerning reproductive risk factors, chronic diseases, genetic diseases, nutrition & weight control.
Table 2 depicts the following in relation to reproductive risk factors:

Statements where about half or the majority of students had poor awareness included those in relation to: the probability of delivering a baby with birth defects in subsequent pregnancies, the recurrence of 3rd trimester hemorrhage in subsequent pregnancies, considering the occurrence of IUFD as a risk factor in subsequent pregnancies, possibility of recurrence of abortion, possibility of recurrence of low birth weight and prematurity delivery in subsequent pregnancies, the risks of late marriage on mother’s health, the impact of multiple deliveries on subsequent pregnancies, the relationship between menstrual disorders and the occurrence of pregnancy problems and the probability of occurrence of problems after treatment of infertility.

Statements where about one third of students had negative awareness included: the impact of early marriages on mother and baby’s health, the importance of carrying laboratory examinations as needed not only in pregnancy and the impact of congenital anomalies of reproductive system on pregnancy & delivery.

Yet statements where students had good awareness were in relation to the following: the importance of receiving medical care during pregnancy when health problems occur, the importance of blood analysis during premarital examination and health risks associated with hypertension during pregnancy.

Table 3. Awareness of Adolescent Students Regarding Chronic Diseases (n=600) as prenatal risk factor

<table>
<thead>
<tr>
<th>Chronic Diseases Statements</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Not sure</th>
<th>Disagree</th>
<th>Strongly disagree</th>
<th>Mean awareness score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart diseases and hypertension do not necessarily affect pregnancy, or its outcome and delivery.</td>
<td>8.5</td>
<td>9.0</td>
<td>18.3</td>
<td>37.8*</td>
<td>26.3*</td>
<td>3.65±1.20</td>
</tr>
<tr>
<td>Diabetes Mellitus may have health impact on the pregnant woman and her baby.</td>
<td>29.5*</td>
<td>38.0*</td>
<td>26.0</td>
<td>4.8</td>
<td>1.7</td>
<td>3.89±0.94</td>
</tr>
<tr>
<td>Renal troubles during pregnancy may have an adverse negative effect on the baby.</td>
<td>17.3*</td>
<td>26.8*</td>
<td>48.2</td>
<td>4.8</td>
<td>2.8</td>
<td>3.51±0.93</td>
</tr>
<tr>
<td>An epileptic woman could become pregnant without causing almost any health risks to her baby.</td>
<td>3.8</td>
<td>8.8</td>
<td>46.0</td>
<td>21.5*</td>
<td>19.8*</td>
<td>3.45±1.03</td>
</tr>
<tr>
<td>There is no relation between thyroid gland dysfunction and complications occurring with pregnancy, delivery or the baby.</td>
<td>9.3</td>
<td>19.2</td>
<td>60.7</td>
<td>7.5*</td>
<td>3.3*</td>
<td>2.76±0.85</td>
</tr>
<tr>
<td>Auto-immune diseases (like rheumatoid arthritis) in pregnant woman may cause adverse health effects for mother and baby.</td>
<td>13.5*</td>
<td>30.2*</td>
<td>41.5</td>
<td>13.0</td>
<td>1.8</td>
<td>3.40±0.94</td>
</tr>
<tr>
<td>A woman with Systemic lupus Erythematosus (SLE) could become pregnant without any fears.</td>
<td>3.2</td>
<td>5.7</td>
<td>73.5</td>
<td>9.8*</td>
<td>7.8*</td>
<td>3.14±0.76</td>
</tr>
<tr>
<td>There are no risks for complications occurrence for pregnant woman with cancer.</td>
<td>4.0</td>
<td>6.0</td>
<td>38.7</td>
<td>25.3*</td>
<td>26.0*</td>
<td>3.63±1.06</td>
</tr>
<tr>
<td>Deep Vein Thrombosis could occur in all stages of pregnancy causing adverse effects for the woman.</td>
<td>14.5*</td>
<td>21.8*</td>
<td>54.0</td>
<td>5.2</td>
<td>4.5</td>
<td>3.37±0.95</td>
</tr>
<tr>
<td>There are no health contraindications for anaemic woman to become pregnant.</td>
<td>11.0</td>
<td>27.0</td>
<td>32.2</td>
<td>16.7*</td>
<td>13.2*</td>
<td>2.94±1.18</td>
</tr>
</tbody>
</table>

Table 3 depicts the following in relation to chronic diseases:

In general all students had negative awareness regarding chronic diseases in relation to pregnancy delivery and its outcome. About one half of students had negative awareness concerning the impact of renal diseases, epilepsy in woman, autoimmune diseases like rheumatoid arthritis, pregnant woman with cancer and Deep Vein Thrombosis in pregnancy. The majority of students had negative awareness concerning the following: the relationship between thyroid gland dysfunction and complications occurring during pregnancy, delivery or the baby, Systematic Lupus Erythematus, and anemia in pregnancy. Yet about one third of students had negative awareness concerning the impact of heart diseases on pregnancy and delivery, as well as the impact of diabetes mellitus on pregnant woman and her baby.

Table 4. Awareness of Adolescent Students Concerning Genetic Diseases and Couples Family History as prenatal risk factor

<table>
<thead>
<tr>
<th>Genetic Diseases and Family History Statements</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Not sure</th>
<th>Disagree</th>
<th>Strongly disagree</th>
<th>Mean awareness score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consanguinity has a negative health impact on the future of off springs.</td>
<td>38.8*</td>
<td>34.7*</td>
<td>13.2</td>
<td>10.2</td>
<td>3.2</td>
<td>3.96±1.10</td>
</tr>
<tr>
<td>Hemophilia is a serious blood disease that isn’t hereditary transmitted.</td>
<td>3.5</td>
<td>5.3</td>
<td>81.3</td>
<td>7.0*</td>
<td>2.8*</td>
<td>3.00±0.61</td>
</tr>
<tr>
<td>Thalassaemia and Sickle cell anemia are from blood diseases that can be hereditary transmitted and could have an adverse effect on the baby.</td>
<td>11.0*</td>
<td>21.0*</td>
<td>60.2</td>
<td>6.7</td>
<td>1.2</td>
<td>3.34±0.81</td>
</tr>
<tr>
<td>Presence of a mental retardation in a family increases the likelihood of its happening again.</td>
<td>18.0*</td>
<td>40.7*</td>
<td>27.7</td>
<td>10.3</td>
<td>3.3</td>
<td>3.60±1.00</td>
</tr>
<tr>
<td>Presence of birth defects in the couple’s family does not increase the possibility of appearance of these defects among their children.</td>
<td>7.0</td>
<td>17.0</td>
<td>29.3</td>
<td>33.3*</td>
<td>13.3*</td>
<td>3.29±1.11</td>
</tr>
<tr>
<td>A pregnant woman with phenyl ketonuria can get a normal healthy baby only with prenatal counseling.</td>
<td>5.7*</td>
<td>11.2*</td>
<td>76.3</td>
<td>4.0</td>
<td>2.8</td>
<td>3.13±0.69</td>
</tr>
</tbody>
</table>

Table 4 depicts the following in relation to Genetic conditions and familial risks

In general students had negative awareness concerning most of the statements in relation to genetic diseases in relation to pregnancy delivery and its outcome.

About half of students had negative awareness regarding the existence of birth defects in couple’s family may increase the probability of its existence among their children. On the other hand the majority of them had negative awareness with respect to the following
statements: Hemophilia, Thalassaemia anemia and Sickle Cell anemia as they could be hereditary transmitted diseases and Phenylketonuria and its impact on the baby. On the other had majority of st udents had positive awareness with respect to the fact that consanguinity has a negative impact on the future of offspring and that the presence of mental retardation in a family increases the likelihood of its happening again.

Table 5. Awareness of Adolescent Students Concerning Nutrition and Weight Control (n=600)

<table>
<thead>
<tr>
<th>Nutrition and Weight Control Statements</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Not sure</th>
<th>Disagree</th>
<th>Strongly disagree</th>
<th>Mean awareness score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme underweight in a pregnant woman may adversely affect her and her baby.</td>
<td>32.2*</td>
<td>40.3*</td>
<td>16.3</td>
<td>8.0</td>
<td>3.2</td>
<td>3.90±1.04</td>
</tr>
<tr>
<td>There is no causal relationship between nutrition in general and the health of the mother and/or her foetus.</td>
<td>4.0</td>
<td>4.8</td>
<td>18.0</td>
<td>36.5*</td>
<td>36.7*</td>
<td>3.97±1.05</td>
</tr>
<tr>
<td>Folic acid plays an important role for the health of pregnant woman and her baby.</td>
<td>15.0*</td>
<td>17.3*</td>
<td>65.5</td>
<td>1.3</td>
<td>0.8</td>
<td>3.44±0.79</td>
</tr>
<tr>
<td>Protein is considered an important nutrient that should be taken in large quantities in order to meet the nutritional requirements during pregnancy.</td>
<td>30.8*</td>
<td>36.5*</td>
<td>27.0</td>
<td>4.7</td>
<td>1.0</td>
<td>3.91±0.92</td>
</tr>
<tr>
<td>The more vitamins the pregnant woman consumes during pregnancy the better it is for her and for her baby.</td>
<td>33.3</td>
<td>31.5</td>
<td>21.7</td>
<td>9.5*</td>
<td>4.0*</td>
<td>2.19±1.12</td>
</tr>
<tr>
<td>Calcium is necessary both before and during pregnancy in the same equal manner.</td>
<td>29.5</td>
<td>31.2</td>
<td>24.3</td>
<td>11.5*</td>
<td>3.5*</td>
<td>2.28±1.11</td>
</tr>
<tr>
<td>Drinking milk is natural matter for the pregnant woman as much as in other regular times as before pregnancy.</td>
<td>36.7</td>
<td>28.8</td>
<td>17.0</td>
<td>13.0*</td>
<td>4.5*</td>
<td>2.20±1.19</td>
</tr>
<tr>
<td>The more weight the pregnant woman will have the better it is for her and her baby in order to avoid delivering low birth weight baby.</td>
<td>4.7</td>
<td>9.2</td>
<td>30.8</td>
<td>35.3*</td>
<td>20.0*</td>
<td>3.57±1.05</td>
</tr>
<tr>
<td>The importance of protein is mainly in its role in building the skeletal system of the baby.</td>
<td>23.3</td>
<td>28.0</td>
<td>33.3</td>
<td>8.8*</td>
<td>6.5*</td>
<td>2.47±1.13</td>
</tr>
<tr>
<td>Iron is considered as one of the essential elements necessary before and during pregnancy in the same equal manner.</td>
<td>23.5</td>
<td>29.0</td>
<td>31.5</td>
<td>12.5*</td>
<td>3.5*</td>
<td>2.44±1.09</td>
</tr>
<tr>
<td>Vitamin C plays important role for healthy pregnancy.</td>
<td>29.5*</td>
<td>31.8*</td>
<td>32.8</td>
<td>3.2</td>
<td>2.7</td>
<td>3.82±0.98</td>
</tr>
</tbody>
</table>

Table 5 depicts the following in relation to Nutrition and weight risks

In general students had negative awareness concerning most of the statements in relation to nutrition and body weight in relation to pregnancy delivery and its outcome. The majority of students had negative awareness concerning the following: the role of folic acid for the health of pregnant woman and her baby, the misconception of taking more vitamins for the sake of woman and baby’s health, the extra requirement for calcium during pregnancy, drinking milk as an extra requirement during pregnancy, the role of protein and iron during pregnancy, On the other hand about one third of students had negative awareness on the importance of protein during pregnancy, excess weight during pregnancy, and the role of vitamin C for healthy pregnancy.

Yet the majority of students had good awareness concerning the impact of extreme underweight on pregnancy women and baby’s health, the causal relationship between nutrition and health of mother and her fetus.

Table 6. Percent Distribution of Adolescent Students (N=600) According to their Awareness on Prenatal Risk Factors Based on Percent Score

<table>
<thead>
<tr>
<th>Components of prenatal risk factors</th>
<th>Negative awareness (&lt;70% percent score)</th>
<th>Positive awareness (&gt;70% percent score)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Genetic diseases</td>
<td>548</td>
<td>91.3%</td>
</tr>
<tr>
<td>Reproductive health</td>
<td>536</td>
<td>89.3%</td>
</tr>
<tr>
<td>Chronic diseases</td>
<td>520</td>
<td>86.7%</td>
</tr>
<tr>
<td>Nutrition and weight control</td>
<td>508</td>
<td>84.7%</td>
</tr>
<tr>
<td>Family planning</td>
<td>488</td>
<td>81.3%</td>
</tr>
<tr>
<td>overall prenatal risk factors</td>
<td>441</td>
<td>73.5%</td>
</tr>
</tbody>
</table>

Table 6 reveals the percent distribution of adolescent students (n=600) according to their awareness on prenatal risk factors based on percent score, where the majority of students (73.5%) had poor awareness regarding genetic diseases, reproductive health, chronic diseases, infectious diseases and vaccination, nutrition and weight control and family planning. While only 26.5% of them had good awareness regarding psychosocial and mental health concerns, lifestyle and habits, environmental factors and medications.

4. Discussion

This research shed light on an important matter related to future youth health. Findings showed that, in general students either were uncertain or had poor awareness regarding the different components related to prenatal care. In addition there were some gender differences where as female students had slightly higher ratings than males with no significant difference.
Regarding, students awareness concerning reproductive health, it is surprising that this item ranked the second in terms of poor awareness. As the majority of students had negative awareness concerning many of the statements included in it. Findings showed that students held positive awareness regarding premarital testing where as more than three quarters of them reported that premarital testing was necessary. This is in congruent with the findings of a study which was conducted in a Syrian adolescent in 2005 [12] where 87.5% of the students reported that premarital testing is necessary. There is a new law in Egypt which was legislated by the Ministry of Health and Population (MOHP) in the year 2008 which requires every couple to do premarital examination before marriage [13] It is astonishing to note that findings of this study showed that more than one third of students neither perceived early marriage or late marriage as representing risk factors. This result is in agreement with what was reported by the latest DHS in Egypt [14] that 24 percent of women had given birth to their first child before age 20. The high percentage of early marriage in the Egyptian population may be attributed to many cultural and social factors still prevalent among the population especially those residing in rural areas which could have led to this low awareness among people. On the other hand late marriages could have deleterious effects on both mother and her baby. [15] This is surprising to find this low level of knowledge among relatively educated and young population.

With respect to student's awareness on the components of antenatal care, the findings showed that the majority students agreed that pregnant women should visit the doctor when she has health complains. This is good practice since it will insure that pregnant women visit the health center or the doctor when she has any complaints, however studies have shown that access to antenatal care, as defined by the number of obstetric providers per county, could be linked to the risk of infant mortality rates [16].

On the other hand when students were asked about the necessity of conducting lab investigations during pregnancy almost one third of them were either uncertain or agreed that as long as the woman is not pregnant so there is no need to carry out any investigations. This is may be due to lack of access to reproductive health information during adolescence period either through health services or family services.

Concerning the student awareness on complications occurring during pregnancy and its impact study findings showed that the majority of students perceived hypertension as representing great risk on the health of the mother, it is a reassuring finding where hypertensive diseases of pregnancy lead to 22% maternal death in Egypt, however the majority of them were uncertain that hemorrhage occurring during the third trimester of pregnancy could occur again in future pregnancies. This is serious since there were 32 maternal deaths with hemorrhage per 100,000 live births in Egypt in the year 2004. [17] Postpartum hemorrhage is the leading cause of Maternal Mortality [18].

As regards to pregnancy outcome in terms of fetal losses or prematurity , low birth weight and baby with birth defects and its impact on future pregnancies, it could be said that these were not all recognized by students as representing risk factors for subsequent pregnancies. However it has been reported that the risk of pregnancy loss increases from 15- 20% in the first pregnancy to 40% after one spontaneous abortion; [19] yet only minority of the students perceived this fact. Students need more awareness concerning the meaning of pregnancy outcome and couple responsibilities.

Pertaining to student awareness concerning the role of chronic diseases in prenatal care; the findings from the present study showed that although half of students perceived Diabetes Mellitus (DM) as affecting both the mother and her baby yet about one third of them had negative awareness regarding the impact of Diabetes Mellitus, where they were not sure that Diabetes Mellitus may have health an adverse effect on the pregnant woman and/or her baby. This is serious since about one fifth of the sample has family history of DM. This does not go along with what is known that Maternal diabetes mellitus increases the risks of congenital abnormalities, miscarriage, unexplained stillbirth, premature delivery, macrosomia, and traumatic delivery. [20] Researches have convincingly shown that intensive glucose control before conception reduces the development and progression of diabetic complications. [21] On the other hand about one third were not sure or they did not perceive heart diseases & hypertension as prenatal risk factors. This is serious since about one fifth of the sample has family history of hypertension and a percentage of them already have hypertension. Knowing about chronic diseases is important among young generations in order to understand the relationship between these diseases and reproductive health. This is especially important for those suffering from any of these conditions.

Another important subcategory of prenatal risk factors is related to nutrition and weight control. It is also worth mentioning that the majority had overall poor awareness about it. Nutrition and pregnancy outcome is a comprehensive subject covering all aspects of nutrition in both poor resource countries as well as in the more developed parts of the world. The persistent presence of maternal and fetal malnutrition in many parts of the world remains a major challenge, and their health consequences may even be larger than traditionally believed, given the hypothesis of developmental origins of health and disease. [22] Over all good nutritional status of the mother was mentioned as an important factor for her health and her baby's health by the majority of students in this study. However they did not perceive well the different nutritional components and their impact. The findings of this study showed that about two thirds of students did not perceive the important role that folic acid plays in pregnancy for the pregnant woman and her baby as well. This is in spite of the well known fact that folic acid deficiency may complicate one third of pregnancies [23]. The incidence is higher in multiple pregnancies and closely spaced successive gestations. If a pregnant woman takes enough amounts of folic acid supplements during the critical period of organogenesis; a significant number of the neural tube defects (NTDs), cardiovascular defects, urinary tract anomalies and oro-facial clefts can be prevented. Primary prevention of these congenital defects is a major public health concern. Certain vegetables, like beans, spinach, or tomatoes are particularly rich in folate [24,25,26].

With respect to the different nutritional components, to begin with iron deficiency is the most common nutritional
deficiency in the world. Severe iron deficiency can lead to one type of anemia. Iron supplementation of women during pregnancy protects both the mother and her infant against anemia. It is estimated that one-fifth of perinatal mortality and one-tenth of maternal mortality are attributable to iron deficiency anemia. In addition, low-protein intake during a critical period of development induces changes in the structure and function of skeletal muscle not skeletal system. The diet of well-nourished women in the prenatal period and throughout most of pregnancy has a significant effect on birth weight, and proteins are the macronutrient that has the greatest influence. The other important component in the diet of pregnant women is calcium. The developing baby needs calcium to grow strong bones and teeth, a healthy heart, nerves, and muscles, and to develop normal heart rhythm and blood clotting abilities. If the mother does not get enough calcium in her diet, the fetus will leach it from her bones, which may impair her own health later on [27].

In spite of all of this, the findings of this study showed that a percentage ranged between one third and more than two thirds of the students neither perceived the importance of iron nor calcium nor protein for the pregnant woman. This is in agreement with a research which was carried out to determine the factors affecting the knowledge of girls’ students concerning Iron deficiency anemia, in Quazvin city in Iran. Study results showed that 57.3% of students had poor knowledge on iron deficiency anemia. Another study that was done in Japan, Korea, Thailand and Indonesia also confirmed the same results, where students had poor overall knowledge about iron nutrition [29].

Many students in this study perceived the fact that taking more vitamins was healthy. There are many misconceptions related to nutrition. Another study that was conducted on students from a private institution in Portugal reported similar findings. Students had very low level of nutritional knowledge. A misconception is prevailing in our society that the more vitamins the person takes the healthier will be we have to combat these believe through better awareness campaigns.

Students in the current study also believe that protein help in building the skeletal system of the fetus. They need to improve their knowledge since protein plays its major role in the structure and function of skeletal muscle and not skeletal system itself. [31] They also did not know the role of iron and vitamin C in pregnancy. Moreover they also think that a pregnant woman should take milk in the same quantity as in non pregnant state. Students are not exposed adequately to health awareness campaigns and they do not have a reliable source for receiving health information. They do not also have an opportunity to receive proper counseling from professionals' especially nutritional counseling. Thus there is a need to improve community's awareness concerning prenatal risk factors. So health care professionals, especially maternity nurses, should be able to convey health messages based on needs assessment.

5. Conclusion

The findings of this study indicated that students' awareness toward many of prenatal risk factors were negative which reflects lack of awareness among adolescent students on prenatal risk factors. It highlights the fact that students are not well prepared to assume their future parenthood role. Lack of awareness among students may play affect their wellbeing and their offspring’s health. Many of the complications that could occur during pregnancy and delivery as well as birth outcome could be avoided through health screening and monitoring. More attention and support should be directed to young men and women from all sectors in the community.

6. Recommendations

Based on the results of this study the following are recommended:

1 - A youth friendly health center should be established within each secondary school. Special attention should be given to female adolescents' reproductive health. Efforts should be directed toward making assessment and early detection for prenatal risks. Counseling services should be made available to all students. Efforts should be directed toward identifying and correcting unhealthy behaviors.

2 - Health education topics should be included within the curriculum of adolescent students.

References


