



DAFFODIL INTERNATIONAL UNIVERSITY

PROJECT REPORT ON

Nutritional knowledge and practices regarding pregnancy among university students who are already a mother.

SUBMITTED TO

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LETTER OF TRANSMITTAL

Date: 26-12-2022

Dr. Nizam Uddin

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Subject: Submission of Project Report

Dear Sir,

With due respect, I would like to present my project report for your kind approval. I have completed my project entitled "**Nutritional knowledge and practices regarding pregnancy among university students who are already a mother**". I have got the opportunity to communicate with many students from various department of our university throughout my project work. Besides that, I also got the chance to know their thought on nutritional status on pregnancy. I prepare this report through my experience in gathering the data and my findings. My idea, research works, and initiation of this report became successful for the consistent guidance of my supervisor and his suggestions and advice. I tried my best to connect with the students. I will always be available to answer any query regarding this report.

I have done my best to achieve the objective of my study and avoid any sorts of mistakes in preparing this report. I would be grateful if you give your informed advice on my efforts and oblige.

Sincerely Yours

Anika Tasnim

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DECLARATION

I am Anika Tasnim, bearing ID 182-34-774 a regular student of Nutrition and Food Engineering department, DIU hereby declare that this project report on "**Nutritional Knowledge gap regarding Pregnancy among University students**" This report is slowly prepared by me after completing data collection by visiting them physically from the Daffodil International university, smart city Ashuliya .

I also confirm that this report is uniquely prepared by me only for academic purposes.

Sincerely Yours

A handwritten signature in cursive script that reads "Anika Tasnim".

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LETTER OF APPROVAL

This is to certify that the project report on "**Nutritional knowledge and practices regarding pregnancy among university students who are already a mother**" prepared by Anika Tasnim, bearing ID No: 182-34-774 a regular student of the Department of Nutrition and Food Engineering has been approved for presentation and defense to complete her academic degree. We are pleased to declare that this report is uniquely prepared by the author and all the related works have been conducted by the student under our strong supervision and observation. It has not been submitted or published anywhere for any other purpose.

We wish her all the success in life.

Supervisor

A handwritten signature in black ink that reads "Nawal Sarwer". The signature is written in a cursive style and is slightly tilted to the right.

Nawal Sarwer

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ACKNOWLEDGEMENTS

Firstly, I want to express my gratitude and heartiest thanks to the graceful Almighty God for his diving blessings that helped me to complete my final year project work successfully. I want to express my gratefulness to my parents for their constant support and encouragement throughout my research work. I am grateful and wish my profound indebtedness to our honorable **Dr Nizam Uddin**, Head and Associate Professor, Department of Nutrition and Food Engineering, who has provided me with the opportunity to work on this project and enrich my knowledge. Also, I want to express my gratitude to my academic supervisor, respected **Md. Nawal Sarwer**, Lecturer, Department of Nutrition and Food Engineering, for his outstanding supervisor. He always provided feedback and suggestions, which helped me successfully complete my project report. I want to express my gratitude to all the teachers of my department for their outstanding guidance and teaching throughout my academic life. I would like to express my heartiest gratitude to my well-wishers, who helped me collect data from university to complete my project work. Finally, I want to give special thanks to those students who provided me with their valuable information to fill out the questionnaire and complete my data collection.

Abstract

Pregnancy is a particular time in a woman's life marked by intricate physiological changes that may harm her health and nutritional state. Nutritional education is crucial for behavior modification and has been linked to overall diet quality. There are several significant realities that we must face while pregnant. Some terms related to pregnancy, such as decision-making, are the most crucial and initial phase. Antenatal care is the treatment a pregnant woman receives from a medical practitioner while pregnant, additionally referred to as maternity care. The following were some warning indications of pregnancy that should be taken seriously. Convulsions, severe headaches with blurred vision, severe abdominal pain, being too weak to get out of bed, breathing quickly or having difficulty breathing, reduced fetal activity, fever, and swelling of the fingers, face, and leg are all symptoms of significant vaginal hemorrhage. Prenatal healthy and balanced nutrition, knowledge of basic nutrition, and delivery techniques After the placenta has been delivered, the mother and her newborn child will receive postnatal care for the next six weeks. Only breast milk should be given to your baby, and no other foods or beverages (including infant formula or water), except any necessary prescriptions or vitamin and mineral supplements. Additional Feeding - Around the age of 6 months, an infant's nutritional and energy requirements start to outpace breast milk, necessitating complementary foods. At this age, a baby is also developmentally prepared to eat other foods.

Complementary feeding is the term used to describe this shift. These are some of the basic terms that a pregnant woman learns. Female students in universities because will become mothers, and they must understand these phrases because doing so will make the pregnancy process easier for them. Over 153 female students of Daffodil International University participated in the survey. To evaluate and understand the concept of nutritional expertise, practices, and antenatal care for pregnant women, as well as potential influences on their food intake. To identify their areas of knowledge gaps and move beyond this study, we can endeavor to raise awareness.

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Chapter-1: Introduction

1.1 Background:

Pregnancy outcomes are greatly influenced by nutrition, which is recognized as a key factor in determining a healthy and successful pregnancy as well as the long-term health of the next generation. The condition of the body as a result of food intake, absorption, and utilization, as well as the impact of disease-related factors, is referred to as nutritional status. Increased nutritional needs during pregnancy may have an impact on the mother's and her unborn child's growth, development, and health. To effectively combat malnutrition and promote healthier eating habits, it is crucial to comprehend the nutrition knowledge of the prenatal women. Our goal was to evaluate university students' existing nutritional knowledge and any gaps in their understanding of pregnancy. Over 20 to 26-year-old college students from several departments participated in this study. All mothers are among these female students. This study will provide a sense of their knowledge level and gaps, which will be useful as we try to raise awareness among Bangladeshi university students.

1.2 Literature Review:

Every woman is highly concerned about her reproductive health. It is a critical component of human development and essential to overall health. Given that maternal mortality and morbidity rates are so much higher in developing nations, particularly Bangladesh, than in the industrialized world, many stakeholders are concerned about reproductive health (Haque M, 2015). High infant and maternal mortality rates show that mothers and children have access to insufficient health services. Health education is one of the most important elements that enable women to be aware of their rights and health condition and seek the proper medical care. It is widely acknowledged that maternal and child health and nutritional status are related. Pregnant women with inadequate nutritional status may also be a common issue in other low- and lower-middle-income nations. (WHO, n.d.)

Before the fourth month of pregnancy, women began prenatal care, and throughout their pregnancy, 78.2% of women attended six or more antenatal appointments. Women frequently understand the advantages of family planning. Women's perceptions of the risks and benefits of contraception, worries about how side effects may affect their daily lives, and assessments of how specific methods may affect relationships with partners or other family members can all have an impact on whether or not they choose to use, avoid using, or stop using family planning methods. (Olamijulo JA, 2012)

In developing nations, having adequate levels of zinc, calcium, and magnesium has been shown to improve pregnancy outcomes. It has also been shown that vitamin C and iodine deficiency are

factors in preterm birth and, correspondingly, newborn mental retardation. Additionally, there is proof that underweight pregnant women are more likely to have a preterm birth, low birth weight, and babies with intrauterine development retardation. According to another research, children whose moms were undernourished during pregnancy have higher rates of hypertension, lung cancer, and insulin resistance. (Shamim AA, 2016)

For many years, it has been understood that pregnant women should eat a healthy diet to maintain their own health, fulfill the demands of the developing fetus, and gain the stamina and vitality needed for childbirth and successful nursing. It is well-accepted that dietary diversity is a crucial component of a high-quality diet because it is directly linked to nutrition adequacy. It has been demonstrated that female children and adults' nutritional adequacy increase more with diet diversification than does the case for males. Additionally, it has been claimed that the quantity of food consumed is favorably related to nutrient intake. Food group diversity and adequate micronutrient intake in Bangladeshi women of reproductive age are associated. Diet diversity score (DDS) is a significant component of diet quality and is included in food-based dietary guidelines. It is regarded as an internationally accepted instrument for measuring a healthy diet. (Krebs-Smith SM, 1987)

In Bangladesh, poor family income, low levels of education, and sporadic food shortages linked to inadequate dietary intake are the main contributors to undernutrition, or low diet diversity, among rural residents. (Abdullah M, 1985) Therefore, it's crucial to comprehend the factors that influence the consumption of various food groups, especially the consumption of micronutrient-rich foods by pregnant women who are most at risk of having a diet that lacks variety. Such data could be used to identify vulnerable populations and encourage the intake of dairy and eggs, especially among those who cannot afford them, even with assistance from the safety net and other programs. (Rao S, 2001) Inadequate research has been done on the factors that contribute to the lack of variety in food among pregnant women in Bangladesh. Our study sought to explore the factors influencing high dietary diversity (HDD), and we discovered potential barriers to pregnant women in rural Bangladesh consuming foods rich in micronutrients like milk, eggs, and green vegetables, even when they are aware of the significance of such foods. (Shamim AA, Pregnant Women Diet Quality and Its Sociodemographic Determinants in Southwestern Bangladesh., 2016)

In Bangladesh, where there is a high incidence of both over nutrition and under nutrition at 17% and 24%, respectively, there is a nutritional transition. When different foods are available in the home, educational interventions must have an emphasis on redistributing family food budgets in favor of variety rather than reliance on foods with few calories and high in fat. They also must place an emphasis on improving the diet of pregnant women. (Ahmed T, 2012)

1.3 Objective of the study:

Most of the students in our country have less nutritional knowledge during their pregnancy period. In our country, early marriage is common. Because of early marriage, most women can't continue their studies and have little knowledge of pregnancy and child health. They are unaware of many other pregnancy risk factors or warning signs. As a result, most parents, particularly mothers in our nation, are unaware of the importance of maintaining a healthy diet throughout pregnancy. I want to make parents aware of these facts so that they may think about them, adopt a good eating regimen, seek medical attention as needed, and raise healthy children. This study also shows which factors we need to focus on to decrease the knowledge gap among mothers.

1.4 Specific objectives:

- To find out their knowledge during pregnancy and what they understand the relationship between nutrition and pregnancy.
- To find the correlation between the dietary pattern of the mother during pregnancy.
- To find the correlation between the mother's health status like before and after pregnancy care.
- Find out about socio-economic fact regarding pregnancy.
- Identify their awareness of pregnancy.

Chapter-2: Methodology

2.1 Study Design

This study concentrated on the knowledge gap among female students who were already mothers. Both quantitative and qualitative data have been gathered and analyzed in this study project. Additionally, the information needed for this study is more specific. Therefore, I started my research using a convenient sampling strategy, which is a methodology where researchers gather data from the easily available pool of respondents.

2.2 Area of the study

The study was conducted on female students of **Daffodil International University Smart City Ashulia** from various departments aged between 20 to 26 years. Only the students who agreed to share their data were considered for analysis.

2.3 Population of the study

This study included the female students of **Daffodil International University Smart City Ashulia** from various departments aged between 20 to 26 years who were already mothers.

2.4 Data Collection

Firstly, a standardized questionnaire was developed for the collecting data, and then the questionnaire was filled up by face-to-face interviews; I used the face-to-face interview methods to collect all data from different departments around the **Daffodil International University Smart City Ashulia, Dhaka**.

2.5 Study Period

August 2022 to December 2022

2.6 Data Collection Period

October 2022 to November 2022

2.7 Data Analysis Method

For data analysis, SPSS software was utilized. It is easy to use; it offers advanced statistical analysis, a vast library of machine learning algorithms, text analysis, open-source extensibility, integration with big data and seamless deployment into applications.

Chapter 3: Results and Discussion

3.1 Findings

3.1.1 Socio-demographic characteristics of the mother

Education level of the mother- This study was conducted among 153 students. All of them have two or more children. Most of the mothers were well educated. According to the table, 43.8% of the mothers were in their fourth year of their bachelor's degree. 29.4% were in their third year of a bachelor's degree, while 7.2% were in their second year. We can also see that 19.6% of mothers achieved their master's degree. Taking these findings into account, we can conclude that, despite their high levels of education, most mothers lack knowledge about healthy lifestyles and proper dietary patterns.

Education year	%
Second	7.2
Third	29.4
Fourth	43.8
Masters	19.6

Maternal age of the reproductive women- According to the Bangladesh Demographic and Health Survey (BDHS), the average pregnancy age for women of reproductive age is 19 years, compared to 20 to 34 years for young adults and 35 years for adults. (BDHS, 2017-2018) In this study, among 153 mothers, the average age is 23.8 years.

Decision of pregnancy- In our country, most of the time, the pregnancy decision is made by both husband and wife in every family. In some cases, due to the rural area or a less educated family, only the husband makes the decision. According to this study, we can see that the majority is both decisions, which is 89.4%. 3.9% of decisions are made solely by the husband, and a smaller proportion, such as 1.3%, are self-made.

Decisions of mothers	%
Self-decision	1.3
Husband	3.9
Both	89.4

3.1.2 Knowledge of the mother during pregnancy

Knowledge of ANC- Antenatal care is necessary to safeguard women's and their unborn children's health. Women who receive this type of preventive healthcare can learn from qualified

medical professionals about healthy pregnancy behaviors, better understand the warning signs of pregnancy and childbirth, and get social, emotional, and psychological support during this crucial period of their lives. Pregnant women can receive tetanus vaccinations, therapy for hypertension to prevent eclampsia, vitamin supplements, and other services through antenatal care. HIV testing and drugs to stop mother-to-child transmission of the virus are additional antenatal care services. Health professionals can give pregnant women drugs and mosquito nets sprayed with insecticide in regions where malaria is endemic to help prevent this crippling and occasionally fatal condition (UNICEF). (UNICEF, n.d.)

According to our findings, every mother is completely knowledgeable about ANC. Furthermore, everyone is aware of the required number of ANC.

Table 4: Knowledge during pregnancy	
Knowledge of mothers	%
Knowledge on ANC	100
Knowledge on the number of ANC required	100

Knowledge of danger sign- Around 289,000 women worldwide reportedly passed away in 2013 due to difficulties associated with pregnancy and childbirth. Severe bleeding, infections, high blood pressure throughout pregnancy, obstructed labor, and unsafe abortion are the main problems that cause 80% of all maternal deaths. However, if the proper steps are done as soon as possible, many maternal deaths can be avoided. Given that difficulties can arise at any time throughout pregnancy, every woman has to be aware of the warning signs. Vaginal bleeding, excruciating headaches, blurred vision, high fever, swollen hands or cheeks, and decreased fetal activity are some of these warning indications. These warning signals typically denote the presence of an obstetric problem that could occur before, during, or after delivery. Understanding these warning signs can empower women to make wise choices and seek the necessary medical attention.

In our study, we can see that most students know more than three types of danger signs, 76.46%. A smaller percentage of students know all types of danger signs, which is 14.38%. 7.86% of students know at least three danger signs, and only 1.3% of students don't know about danger signs. As a result, we can conclude that the knowledge gap associated with this danger sign affects a very small percentage of the population. Furthermore, we can see that approximately 66.66% of the 153 students experienced a danger sign during their pregnancy.

Table 5: Knowledge about danger sign of pregnancy	
Danger sign	%
Knows about all the danger sign	14.38

Knows more than three danger sign	76.46
Knows at least three danger sign	7.86
Does not know about danger sign	1.3
Experienced danger sign during pregnancy	66.66

3.1.3 Dietary pattern of mother:

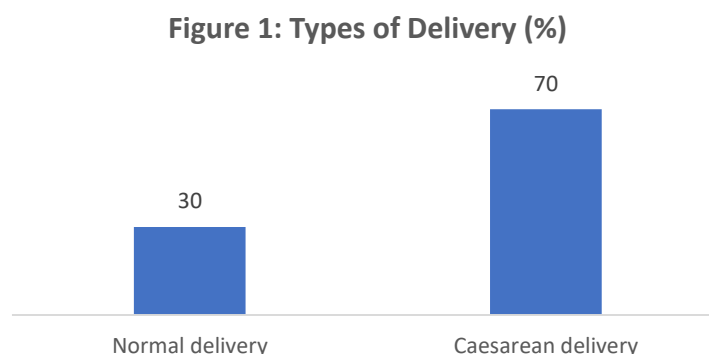
Comparison of the dietary pattern before and during pregnancy- Among the 153 respondents, they could consume more food during pregnancy. Certain micronutrient and macronutrient requirements increase during pregnancy. As the mother had to fulfill nutritional requirements not only for herself but also for the child growing inside her body. All the mothers reported that, they have consumed more food during the pregnancy than before.

Primary food and nutrition list during pregnancy- According to the study, 153 respondents were all mothers. About 98% of mothers maintain a balanced food list during their pregnancy period, and 90% maintain adequate weight gain, and 69.28% intake proper vitamin and mineral supplements. In addition, 7.84% of people exercise regularly.

Adequate weight gain	90
Balanced food list	98
Regular exercise	7.84
Regular vitamin and mineral supplement	69.28

After close observation of the data collected from the study, we can also see that a huge portion of mothers were very lazy or didn't care about regular exercise. Only a few were concerned about it, which is 7.84%.

Delivery method- According to these tables, approximately 70% of mothers have a caesarean section and 30% have a normal delivery.



3.1.4 Health condition of mother and children:

Time of breastfeeding after birth- For the first six months of a child's life, UNICEF and WHO advise initiating exclusive breastfeeding as soon as possible after birth. For the first six months, a baby should only be breastfed; no other food should be given to them. This improves sensory and cognitive development and shields them against contagious and chronic illnesses. In our study, we can see that a major portion of mothers start their breastfeeding within 1 hour after delivery, which is 93.46%.

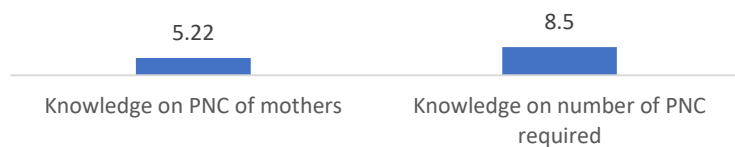
Table 18: Time of breastfeeding after birth	
Time	%
Within 1 hour (colostrum)	93.46

Knowledge on the importance of colostrum- Colostrum, which is often referred to as beestings or first milk, is the first type of milk that mammals, including humans, create after giving birth. Your baby's immune system is strengthened by colostrum, which also offers concentrated nourishment. The following are some advantages of colostrum: strengthens the immunological system of your infant. by protecting the intestines, aids in creating a healthy gut. According to this study, we can see that about 94.11% of respondents know colostrum is important for physical growth and development. 93.46% of mothers believe it is important for a baby's digestion, and 43.13% believe it is important for immune system development.

Table 9: Knowledge on the importance of colostrum	
Importance	%
Build immunity system	43.13
Physical growth and development	94.11
Helps in digestion	93.46

Knowledge on PNC of mothers- Preventive healthcare includes prenatal care, sometimes referred to as antenatal care. It is given in the form of medical checkups, which include advice on leading a healthy lifestyle and the distribution of medical information about prenatal nutrition, including prenatal vitamins and maternal physiological changes in pregnancy. This prevents potential health issues throughout the course of the pregnancy and promotes the health of both the mother and the unborn child. The prevalence of maternal death, miscarriages, birth abnormalities, low birth weight, newborn infections, and other preventable health issues has decreased as a result of the availability of standard prenatal treatment, including prenatal screening and diagnosis.

Figure 2: Knowledge on PNC



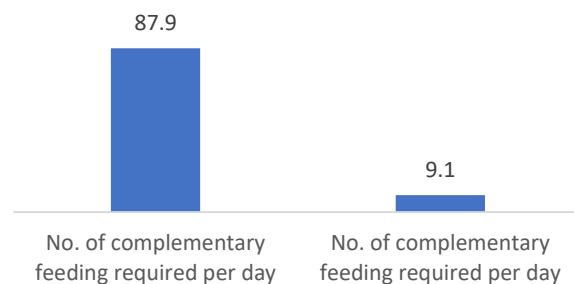
In this study, we can see that the maximum number of respondents do not know about PNC; they have no knowledge about PNC, and their number is 94.78%. And also, 91.50% of mothers do not know the actual number of PNCs that need to be taken during pregnancy.

Knowledge on complementary feeding- After six months, a baby's nutritional and energy requirements start to outpace those of breast milk, necessitating the consumption of supplemental foods. At this age, a baby is also developmentally prepared to eat other foods. Complementary feeding is the term used to describe this shift.

An infant's growth may stall if complementary foods are not offered at the age of 6 months or if they are introduced improperly. (WHO, n.d.)

According to our study, we can see that a smaller portion of mothers does not know about the number of complementary feedings required per day, which was 12.1%.

Figure 3: Knowledge on complementary feeding



3.2 Discussion

This study included 153 mothers who had previously given birth to a child. Some significant findings were made through the study. The information provided by the respondents helped us know the dietary pattern of those mothers who had given birth to a child. The study discovered not only dietetic patterns but also some important facts, such as the mother's health before and after pregnancy, children's health, their eating habits, and others. The study's main goals were to identify the knowledge gap of mothers during pregnancy, the correlation between mothers' diet patterns during pregnancy, and the correlation between the health status of the mother and child.

According to the study, it was found that, among the 153 respondents, 43.8% were highly educated. However, not every mother was aware of the impact of a proper dietary pattern during pregnancy, taking the necessary dietary supplements, exercising, eating junk food, and an early diagnosis of gestational diabetes or obesity on their child's mental health. With this information in mind, we can conclude that many parents, even those with advanced degrees, are unaware of the significance of a healthy lifestyle and a balanced diet for the development of a healthy child. Lack of knowledge definitely contributes to raising a healthy child and is not just the cause of this. Because raising awareness will benefit the child's mental and physical development as well as the mother's ability to live a healthy lifestyle and have a good pregnancy and delivery. The average age of the mothers was also discovered to be 23.8 years. As previously stated, all respondents were students who were unable to complete their studies due to their pregnancy; they had a significant knowledge gap in their health as well as child health. According to this study, we can also see that all of the respondents knew about ANC. We can say that all parents are aware of their health during pregnancy. They consult the doctor properly. However, there was some confusion about PNC. PNC was unknown to 94.78% of mothers. We can say that the respondents had a huge knowledge gap about PNC.

Knowledge of danger signs during pregnancy is an important finding. During the pregnancy period, mothers face many types of danger signs. Severe bleeding, infections, high blood pressure throughout pregnancy, obstructed labor, and unsafe abortion are the main problems that cause 80% of all maternal deaths. However, if the proper steps are taken as soon as possible, many maternal deaths can be avoided. As per the data collected, we can see that a big portion of mothers didn't know about all the danger signs. Only 14.38% of people recognize all of the danger signs, and 76.46% recognize more than three.

This study has focused on the dietary pattern during the gestational period. It has been found that all of mothers modify their eating patterns. 100% of mothers ate more than usual. During pregnancy, a person's need for some micro and macro nutrients increases. As the mother needed to meet her own nutritional needs as well as those of the developing infant inside of her. As can be seen from the explanation above, various nutrients are necessary. This study, which focused

on the dietary habits of the respondents, discovered that the majority of them were deficient in important nutrients during their gestation. During the pregnancy period, all mothers should maintain the primary food and nutrition list for their health. In this study, approximately 98% of participants followed a healthy, balanced diet. 69.28% of mothers maintain proper vitamin and mineral supplements. Exercise is very important for mothers in pregnancy, but there is a huge gap on this; it's approximately 7.84%.

According to this study, among 153 students, 70% of women gave birth by caesarean section and 30% by normal section. About 93.46% are capable of giving breastmilk within 1 hour. In this study, an important factor is colostrum. It's essential because it's nutrient-dense and high in antibodies and antioxidants, which help build a newborn baby's immune system. Colostrum is rich in nutrients that protect and nourish a baby unlike anything else. It also helps in the baby's physical growth and development and digestion. In our study, all the mothers were not concerned about the importance of colostrum. A few mothers are familiar with one or two terms. Colostrum is important for physical growth and development, and it is also important for digestion, according to 94.11% of people. We can also see a complementary feeding factor here. A major portion of mothers had no knowledge of this term. Only 9.1% of those polled are aware of the number of days of complementary feeding.

As a result of this study, the majority of mothers with children were unaware of the proper pregnancy diet pattern. They were less knowledgeable about their own and their children's health. There is also a common issue; as we all know, our study group consisted of university students from various departments. We notice one thing, which is that in the allied health science departments, students were more concerned than in any other department. So, we should make other students more knowledgeable about their health in many ways.

Chapter 4: Conclusion

This study, conducted among 153 respondents, found a nutritional knowledge gap among mothers during pregnancy. Firstly, all respondents were university students from different departments, and they are unconcerned about their own or their children's health. Proper nutrition is critical during pregnancy, but there are many gaps in mothers' knowledge. There are also some common factors like ANC, PNC, the importance of colostrum, and complementary feeding. All of the mothers had proper knowledge of the ANC but very poor knowledge of the PNC. They didn't know the importance of colostrum or what complementary feeding was. Regular exercise is also important during pregnancy, but very few mothers exercise regularly.

Recommendations:

- The mother's physical and mental health should be known to the parents and other family members during pregnancy. A mother is more likely to give birth to a healthy child if she lives in a happy and healthy environment.
- Keeping a healthy diet and intake. A pregnant woman should be under the care of a doctor and a nutritionist simultaneously so that she can follow a proper diet plan in accordance with her health issues and challenges. Keeping in mind that nutrient-dense food can be found in both pricey and inexpensive foods.
- Maintain a healthy lifestyle by abstaining from junk food, engaging in some form of physical activity when pregnant, quitting smoking, getting enough sleep, etc.

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