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Drug vs Self-Care Management of Gestational Diabetes Mellitus: Knowledge and Practices of Women Attending Antenatal Clinics of Faisalabad

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Abstract: *Gestational diabetes mellitus is a significant and growing global health issue. Objectives: To assess the knowledge of women attending antenatal clinics in Faisalabad regarding GDM and its self-care management practices. Methodology: A descriptive cross-sectional study. The study's duration was 4 months from February 2023 to May 2023 and study setting areas included Allied Hospital Faisalabad and District Head Quatre Hospital Faisalabad. The population included women attending antenatal clinics in Faisalabad regarding GDM and its self-care management practices were assessed using a self-structured questionnaire. Results: Among the total of 384 participants, the majority (253; 65.9%) were less than 30 years old. Mostly (365; 95.1%) women are married. Mostly (201; 52.3%) are 26-30 years old during marriage. Mostly (160; 41.7%) are 1-5 Years have passed years of marriage. The results revealed that the majority of the participant nurses had an average level of practice 49.99%, below average level of attitude 22.52% and a satisfactory level of knowledge, 82.33%.*

Key Words: Knowledge GDM, Self-Care and Management Practices

Introduction

Gestational diabetes mellitus (GDM) is a growing global health concern, characterized by diabetes detected during the second or third pregnancy period without any preexisting type 1 or type 2 diabetes (Baz, Riveline, & Gautier, 2016). Globally, GDM affects 7-10% of pregnancies and is a significant health concern, according to world data estimates (Creanga, Catalano, & Bateman, 2022). GDM, a condition typically resolved post-childbirth, can have long-term medical effects on both the mother and child, increasing the risk of miscarriage, macrosomia, delivery complications, and stillbirth. (McIntyre et al., 2019). The prevalence of gestational diabetes mellitus (GDM) exhibits significant variation worldwide, influenced by demographic factors including maternal age, socioeconomic status, race/ethnicity, and body composition. This variability is further compounded by variations in screening protocols and diagnostic criteria used across different regions. Consequently, reported prevalence rates of GDM range widely, spanning from as low as 1%

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to as high as 28% across different populations. Gestational diabetes mellitus (GDM) may also be influenced by genetic factors, similar to the conventional manifestation of type 2 diabetes. These hereditary characteristics may contribute to differential impacts on the prevalence of the illness across different population groups (Plows et al., 2018).

There is a dearth of comprehensive research pertaining to gestational diabetes mellitus (GDM) on a large scale within the context of Pakistan. Nevertheless, previous investigations conducted in smaller hospital settings have shown a frequency ranging from 3.3% to 8%. The variation in screening methodologies used by various researchers poses challenges in determining the present state of gestational diabetes mellitus (GDM) within this nation (Riaz et al., 2019). Several recent large-scale clinical trials have shown a correlation between early identification and intensive treatment of gestational diabetes and reduced rates of maternal and fetal morbidity and mortality (Riaz et al., 2019). In order to mitigate the occurrence of congenital abnormalities and other health complications, it is important for expectant mothers to maintain optimal physical well-being both before and during the duration of their pregnancy. The incorporation of other disciplines is important in order to attain this objective. According to a new release by the World Health Organization (WHO), there is an increased likelihood of encountering complications during pregnancy and delivery among women diagnosed with gestational diabetes. Mothers who exhibit certain characteristics are more likely to have an elevated risk of developing type 2 diabetes in the future, and this risk is also anticipated to extend to their offspring (Jabeen et al., 2022).

Based on data provided by the International Diabetes Federation (IDF), it is estimated that around 16.8% of pregnancies, equivalent to one in six pregnancies, are affected by diabetes within this particular range. The prevalence of gestational diabetes mellitus (GDM) is seen in a significant proportion, namely 86.4%, of the population. Conversely, a smaller subset of individuals, including 13.6% of women, experience gestational diabetes (Fang et al., 2021). According to cohort research conducted in Sweden, it was shown that women with diabetes have reduced fertility, which is expected to be consistent with the frequency of diabetes in the general population (Liu et al., 2022).

Management of gestational diabetes typically involves making lifestyle changes, such as eating a healthy diet, getting regular exercise, and maintaining a healthy weight. Additionally, blood sugar levels will be monitored and medications, such as insulin, may be prescribed if needed. Close monitoring of fetal growth and well-being, as well as testing for diabetes after delivery, are also important for managing gestational diabetes. It is important to work closely with a healthcare provider to develop an individualized treatment plan (Rasmussen et al., 2020).

Therefore, this study aims to assess the knowledge and practices of women attending antenatal clinics in Faisalabad regarding self-care management of GDM. The findings of this study will provide insights into the current status of GDM self-care management in Faisalabad and identify potential strategies to improve self-care management practices. The study will contribute to the existing literature on the barriers to effective self-care management of GDM and inform healthcare providers and policymakers on how to improve the health outcomes of women with GDM in Faisalabad.

The significance of the study is a statement that explains the potential impact and importance of the research. It highlights the value of the study and its potential contributions to the field of nursing and maternal health. In the case of this B.Sc Nursing thesis, the significance of the study for the topic "Self-care Management of Gestational Diabetes Mellitus: Knowledge and Practices of Women Attending Antenatal Clinics of Faisalabad" is Gestational diabetes mellitus (GDM) is a significant health issue that can have adverse outcomes for both the mother and fetus. The prevention and management of GDM through effective self-care management practices are crucial in ensuring better health outcomes for

both. Therefore, assessing the knowledge and practices of women attending antenatal clinics in Faisalabad regarding self-care management of GDM is important to improve the quality of care provided to pregnant women with GDM. This study will provide valuable insights into the current knowledge and practices of women attending antenatal clinics in Faisalabad regarding self-care management of GDM. It will also identify the barriers to effective self-care management of GDM in Faisalabad, Pakistan, and provide recommendations to improve the knowledge and practices of women attending antenatal clinics in Faisalabad.

Objectives

The objectives of the current study are:

1. To assess the knowledge of women attending antenatal clinics in Faisalabad regarding GDM and its self-care management practices.
2. To evaluate the practices of women attending antenatal clinics in Faisalabad regarding GDM and its self-care management practices.
3. To identify the barriers to effective self-care management of GDM among women attending antenatal clinics in Faisalabad.

Methodology

The section also includes a detailed description of the research procedures, such as the steps involved in data collection and the statistical analysis techniques employed.

Study Design

A descriptive cross-sectional study design was used.

Settings

Allied hospital and DHQ hospital Faisalabad.

Duration of Study

4 months from February to May 2023

Target population

Pregnant women come to antenatal clinics (outdoor patient departments) of study hospitals.

Sample Size: 384

$n = Z2\ 1\text{-}\alpha/2\ p\ (1\text{-}p)/\ d2$

Z =1st Standard normal variate error at 95% = 1.96

P= Expected proportion in population in Previous Study (50%)

d= Absolute error or Precision = 0.05

n= sample size = 384

Sampling Technique

Convenient sampling technique.

Sample Selection

- Inclusion Criteria: Pregnant women who have been clinically diagnosed with GDM and are attending antenatal clinic (OPD) of study hospitals.
- Exclusion Criteria: Pregnant women attending antenatal clinics (OPDs) but not diagnosed with GDM.

Data Collection Procedure

After taking the approval form from the authority and signed by the supervisor. We shall go to DHQ and allied hospital FSD for data collection and meet with the medical superintendent and Nursing superintendent for permission for data collection. Then we shall meet the pregnant women with GDM and introduce our research topic. After consent from the subjects, we shall collect our data. While conducting the interviews, the participants are permitted to respond to the questions according to the choice of their language.

Data Collection Tool

Self-structured questionnaire on GDM self-care management involving knowledge and practice-based questions.

Data Analysis Procedure

SPSS software version 26 was used and descriptive statistics were calculated.

Results

The goal of this study is to assess the self-care management of gestational diabetes mellitus: knowledge and practices of women attending antenatal clinics of Faisalabad. The sample for this study was selected from 384 Pregnant women coming from antenatal clinics (outdoor patient departments) of study hospitals. The sample was collected using an intentional sampling strategy. SPSS version 26 was used to search the findings. The study's findings are reported in tabular form in this chapter.

Demographic Information

Table 1

Detail information of all demographic information (N=384).

Age	Frequency	%
18-25	18	4.7%
26-30	7	1.8%
31-35	50	13.0%
36-40	197	51.3%
41 & above	112	29.2%
Age at Marriage		
18-25	43	11.2%
26-30	29	7.6%
31-35	212	55.2%
36 & above	100	26.0%
No of Children		
Zero	124	32.3%
One	127	33.1%
Multiple	133	34.6%
Pregnancy in Months		
1 to 3 months	145	37.8%
4 to 6 months	110	28.6%
7 to 9 months	129	33.6%
Education		
Illiterate	100	26.0%
Primary	81	21.1%
Secondary	90	23.4%
Bachelor	88	22.9%
Master	25	6.5%
Occupation		
Unemployed	118	30.7%
Self-employed	87	22.7%
Formal employed	107	27.9%
Professional	32	8.3%
Other	40	10.4%
Family Income		
Less than 15,000	114	29.7%
15,000 to 20,000	86	22.4%

Age	Frequency	%
21,000 to 30,000	113	29.4%
31,000 to 40,000	36	9.4%
More than 40,000	35	9.1%
Living Arrangements		
Living in a nuclear family	126	32.8%
Living in an extended family	124	32.3%
Others	134	34.9%
Weight in kg		
55-60kg	63	16.4%
61-80 kg	73	19.0%
81-100 kg	63	16.4%
More than 100 kg	185	48.2%
Blood glucose level		
Less than 95 mg/dL	59	15.4%
96-135 mg/dL	70	18.2%
More than 136 mg/dL	255	66.4%

Table 1 presents various demographic and health-related statistics. Following is an interpretation of the information:

Age distribution: The table shows that the majority of the surveyed population falls within the age range of 36-40 years, constituting 51.3% of the sample. The next significant age group is individuals aged 41 and above, comprising 29.2% of the participants. The younger age brackets of 18-25 and 26-30 represent 4.7% and 1.8% of the respondents, respectively. The group aged 31-35 accounts for 13.0% of the population.

Age at Marriage: Examining the age at which individuals got married, it is notable that the largest portion, 55.2%, falls within the range of 31-35 years old. A considerable number of respondents, 26.0%, got married at the age of 36 and above. The age groups 18-25 and 26-30 account for 11.2% and 7.6% of the sample, respectively.

Number of Children: The table reveals that the distribution of the number of children is relatively balanced among the surveyed individuals. The group with zero children constitutes 32.3% of the respondents, closely followed by those with one child at 33.1%. The remaining 34.6% consists of participants with multiple children.

Pregnancy in Months: Looking at the duration of pregnancies, the table indicates that the highest percentage, 37.8%, corresponds to pregnancies in the early stage, specifically 1 to 3 months. Pregnancies lasting 4 to 6 months account for 28.6% of the sample, and the remaining 33.6% represent pregnancies in the later stage, namely 7 to 9 months.

Education: When considering the educational background of the participants, it is observed that the majority have completed secondary education, comprising 23.4% of the sample. Bachelor's degree holders make up 22.9% of the respondents, while primary education and illiterate individuals constitute 21.1% and 26.0%, respectively. A smaller proportion, 6.5%, holds a master's degree.

Occupation: The occupation distribution among the surveyed individuals reveals that the highest percentage, 30.7%, consists of unemployed individuals. The second largest group is self-employed individuals, accounting for 22.7% of the respondents. Formal employment is reported by 27.9% of the sample, while 8.3% are engaged in professional occupations. The remaining 10.4% falls under the "Other" category.

Family Income: Analyzing the income levels, it is found that the largest percentage, 29.7%, corresponds to families with a monthly income of less than 15,000 units. Income ranges between 15,000 and 20,000 units are reported by 22.4% of

the respondents, while 29.4% fall within the range of 21,000 to 30,000 units. A smaller proportion, 9.4%, represents families with an income between 31,000 and 40,000 units, and 9.1% have a monthly income exceeding 40,000 units.

Living Arrangements: The table demonstrates that the respondents are fairly evenly distributed across different living arrangements. Living in a nuclear family is reported by 32.8% of the participants, closely followed by those living in an extended family at 32.3%. The remaining 34.9% represent individuals who reside in other living arrangements not specified in the table.

Weight: Examining the weight distribution, the table indicates that the majority of respondents, 48.2%, have a weight exceeding 100 kg. The weight ranges of 55-60 kg and 81-100 kg are reported by 16.4% each. Individuals weighing between 61-80 kg represent 19.0% of the sample.

Blood Glucose Level: The table reveals that a significant percentage, 66.4%, of the surveyed population has a blood glucose level above 136 mg/dL, which may indicate higher than normal blood sugar levels. The range of 96-135 mg/dL is reported by 18.2% of the respondents, while less than 95 mg/dL is reported by 15.4% of the sample.

Table 2

Knowledge and Practice among *Gestational Diabetes Mellitus* Women *(N=384).*

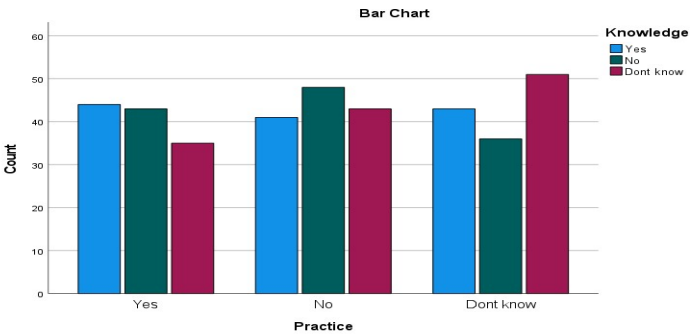
	Knowledge			Total
	Yes	No	Dont know	
	44	43	35	122
Practice	41	48	43	132
	43	36	51	130
Total	128	127	129	384

$\chi^2 = 4.369a$

Table 2 determines whether the association between knowledge and practice is statistically significant, you would typically perform a chi-squared test of independence. This test would involve comparing the observed χ value of 4.369 to a critical χ value from a chi-squared distribution with degrees of freedom determined by the size of the table and a chosen significance level (0.05). The χ statistic is a measure of how much the observed frequencies in the table differ from what would be expected if there were no association between knowledge and practice. In this case, χ is calculated to be 4.369.

Figure 1

Knowledge and Practice among Gestational Diabetes Mellitus Women



Discussion

This chapter presents a detailed discussion of the findings of the research. The findings are related back to the research questions and objectives and are compared and contrasted with findings from existing literature. The knowledge of GDM among women attending antenatal clinics in Faisalabad was found to be diverse. A significant proportion of participants demonstrated a good understanding of the disease, its implications, and self-care practices. However, a considerable number of participants showed inadequate knowledge, which is a concern. This is consistent with studies by Schaefer-Graf et al., (2020), who reported variable levels of knowledge about GDM among pregnant women. The importance of understanding GDM for its successful self-management cannot be understated, as emphasized by Chasan-Taber (2019).

Participants' self-care practices for GDM also varied greatly. Some women adhered strictly to recommended dietary practices, regular exercise, and blood glucose monitoring, while others reported inconsistent adherence. This finding is similar to those of Carolan et al., (2017) who noted variable adherence to self-care practices among women diagnosed with GDM. They attributed this variation to differences in patient education, socioeconomic status, and cultural beliefs.

One of the significant findings of this study was the identification of several barriers that hinder effective self-care management of GDM. These include lack of understanding of the importance of self-care, lack of time due to work or family responsibilities, financial constraints, lack of support from family members, and cultural beliefs. This observation resonates with the findings of Kaptein et al., (2020), who reported similar barriers in their study. These barriers have serious implications as they could lead to poor management of GDM, potentially endangering both maternal and fetal health. Despite these findings, it should be noted that this study has limitations. The use of convenience sampling may limit the generalizability of the findings, as the sample might not be representative of all pregnant women with GDM in Faisalabad. Additionally, self-reported practices might suffer from social desirability bias. Many women possess knowledge about GDM and are engaging in effective self-care practices, there is a significant proportion that lack adequate knowledge and are unable to consistently adhere to self-care practices due to several barriers. While this study provides valuable insights into the knowledge, practices, and barriers related to the self-care management of GDM among women attending antenatal clinics in Faisalabad, certain limitations must be acknowledged. This study has provided valuable insights into the knowledge, practices, and barriers related to self-care management of GDM among women attending antenatal clinics in Faisalabad. The findings from this study can inform the development of educational and support programs tailored to the needs and contexts of these women, which can improve their self-care practices and enhance their health outcomes. Remember to include specific findings from your study in the appropriate places and compare your results with previous research. The discussion should revolve around your research questions and objectives and should provide a deeper understanding of your findings.

Conclusion

This study set out to investigate the knowledge, practices, and barriers to self-care management of gestational diabetes mellitus (GDM) among pregnant women attending antenatal clinics in Faisalabad. The conclusions drawn from this study are as follows: Knowledge about GDM and its self-management practices is variable among pregnant women in Faisalabad. While some women demonstrate a good understanding, others lack crucial knowledge. This underscores the need for effective health education programs targeting this demographic, with the aim to enhance their understanding of GDM and its management. The self-care practices adopted by these women also vary greatly. Despite some women demonstrating commendable adherence

to recommended practices, a significant number do not follow these guidelines consistently. It is therefore crucial to promote better adherence to self-care practices among these women. Various barriers to effective self-care management of GDM were identified, including lack of understanding, time constraints, financial limitations, lack of family support, and cultural beliefs. These findings highlight the need for interventions addressing these barriers, in order to improve self-care practices and overall health outcomes.

Despite these insights, the study had limitations. The findings may not be generalizable due to the use of convenience sampling. Furthermore, the use of self-reported measures may have introduced bias. Moving forward, healthcare providers and policymakers should consider these findings in their efforts to enhance the management of GDM among pregnant women. Interventions that aim to improve knowledge, facilitate effective self-care practices, and address the identified barriers could potentially improve the health outcomes of both the mother and the fetus. Future research should aim to validate these findings in larger and more diverse populations and explore effective strategies to address the identified gaps. These conclusions, derived from the findings of this study, underscore the importance of comprehensive and tailored interventions for pregnant women with GDM. Given the potential complications of GDM for both the mother and the child, the importance of these interventions cannot be overstated.

Recommendations

Based on the findings and conclusions of this study, the following recommendations can be made:

1. There is a need for comprehensive health education programs for pregnant women at antenatal clinics. These programs should aim to enhance women's understanding of GDM, its potential complications, and the importance of self-care management.
2. Healthcare providers should regularly assess the knowledge and practices of pregnant women with GDM to identify gaps and provide appropriate guidance. They should emphasize the importance of adhering to recommended dietary practices, regular exercise, and blood glucose monitoring.
3. Given the influence of cultural beliefs identified in this study, culturally sensitive approaches should be incorporated into health education programs and counselling. This could include collaborating with community leaders or using culturally appropriate materials and communication methods.
4. Policymakers should consider these findings in their efforts to enhance maternal health. They could develop policies that promote health education and provide resources for pregnant women with GDM. This could include subsidies for medical supplies or the provision of free or low-cost educational resources.
5. More research is needed to validate the findings of this study in larger and more diverse populations. Future research could also explore the effectiveness of different interventions in improving the knowledge and practices of pregnant women with GDM, and in overcoming the identified barriers.

References

Baz, B., Riveline, J., & Gautier, J. (2016). Endocrinology Of Pregnancy: Gestational diabetes mellitus: definition, aetiological and clinical aspects. *European Journal of Endocrinology*, *174*(2), R43–R51. https://doi.org/10.1530/eje-15-0378

Creanga, A. A., Catalano, P. M., & Bateman, B. T. (2022). Obesity in pregnancy. *The New England Journal of Medicine*, *387*(3), 248–259. https://doi.org/10.1056/nejmra1801040

Fang, X., Qu, J., Shu, H., Sun, X., Li, J., Liu, Q., Jin, S., Xia, W., Xu, S., Wu, Y., Li, J., Zheng, T., & Li, Y. (2021). Associations of urine metals and metal mixtures during pregnancy with cord serum vitamin D Levels: A prospective cohort study with repeated measurements of maternal urinary metal concentrations. *Environment International*, *155*, 106660. https://doi.org/10.1016/j.envint.2021.106660

Jabeen, A., Amberina, A. R., Sreedhrala, A., Mummareddi, D. E., & Begum, G. S. (2022). World Health Organization versus Diabetes in Pregnancy Study Group India Approaches in the screening of gestational diabetes among pregnant women with risk Factors: A study among rural population of Telangana, South India. *Cureus*. https://doi.org/10.7759/cureus.29799

Liu, S., Leone, M., Ludvigsson, J. F., Lichtenstein, P., D Onofrio, B. M., Svensson, A., Guðbjörnsdóttir, S., Bergen, S. E., Larsson, H., Kuja-Halkola, R., & Butwicka, A. (2022). Association and Familial Coaggregation of Childhood-Onset Type 1 Diabetes with Depression, Anxiety, and Stress-Related Disorders: A Population-Based Cohort Study. *Diabetes Care*, *45*(9), 1987–1993. https://doi.org/10.2337/dc21-1347

McIntyre, H. D., Catalano, P., Zhang, C., Desoye, G., Mathiesen, E. R., & Damm, P. (2019). Gestational diabetes mellitus. *Nature reviews Disease primers,* *5*(1), 47. https://doi.org/10.1038/s41572-019-0098-8

Plows, J. F., Stanley, J. C., Baker, P. N., Reynolds, C. M., & Vickers, M. H. (2018). The Pathophysiology of Gestational diabetes mellitus. *International Journal of Molecular Sciences*, *19*(11), 3342. https://doi.org/10.3390/ijms19113342

Rasmussen, L. M., Poulsen, C. W., Kampmann, U., Smedegaard, S. B., Ovesen, P., & Fuglsang, J. (2020). Diet and healthy lifestyle in the management of gestational diabetes mellitus. *Nutrients*, *12*(10), 3050. https://doi.org/10.3390/nu12103050

Riaz, M., Nawaz, A., Masood, S. N., Fawwad, A., Basit, A., & Shera, A. S. (2019). Frequency of gestational diabetes mellitus using DIPSI criteria, a study from Pakistan. *Clinical Epidemiology and Global Health*, *7*(2), 218–221. https://doi.org/10.1016/j.cegh.2018.06.003