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EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON SELF-CARE OF PRIMIGRAVIDA MOTHER WITH GESTATIONAL DIABETES MELLITUS IN SELECTED PHC, CHENNAI.

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Abstract:

Introduction: Gestational diabetes mellitus (GDM) is a condition characterized by glucose intolerance first detected during pregnancy. The present study aimed to evaluate the effectiveness of structured teaching programme on self-care of primigravida mother with gestational diabetes mellitus in selected PHC, Kaduvetti, Chennai. **Methodology:** The study used a one-group pretest-posttest design to assess self-care practices among primigravida mothers with gestational diabetes mellitus (GDM). Thirty eligible participants were selected through purposive sampling, and another 30 were randomly assigned as a control group. Mothers with high-risk conditions, communication barriers, or unwillingness to participate were excluded. Pre- and post-intervention data were collected to evaluate changes in self-care behaviors. **Result and Findings:** The study revealed that 76.7% of primigravida mothers initially had inadequate knowledge regarding self-care in gestational diabetes mellitus (GDM), 13.3% had moderate knowledge, and only 10% had adequate knowledge. After the structured teaching program, there was a significant improvement, with 93.3% of mothers attaining adequate knowledge and 6.7% showing moderate knowledge. **Conclusion:** The study concluded that the structured teaching program significantly improved the knowledge of primigravida mothers on self-care for gestational diabetes mellitus.

Keywords: Primigravida mother, gestational diabetes mellitus, self-care.

INTRODUCTION:

The self-care of primigravida mothers diagnosed with gestational diabetes mellitus (GDM) requires comprehensive strategies that encompass dietary management, physical activity, monitoring of blood glucose levels, emotional support, and educational resources. Each aspect plays a critical role in ensuring maternal and fetal health, as well as in reducing the risks associated with gestational diabetes.

Dietary management is paramount as it directly influences glycemic control. It is advised that pregnant women with GDM adhere to a balanced diet that limits refined sugars and carbohydrates while promoting whole foods such as fruits, vegetables, whole grains, and lean proteins. (Kim, 2010). Furthermore, postpartum consequences are best managed through early dietary interventions (Kramer et al., 2019).

Physical activity also serves as an essential component of self-care for mothers with GDM. Engaging in regular, moderate exercise is associated with improved metabolic control and reduced maternal weight gain during pregnancy. Meta-analyses suggest that exercise can decrease the incidence of GDM in overweight and obese women, emphasizing its importance for preventing excessive weight gain (Sanabria-Martínez et al., 2015; , Yin et al., 2013). Activities such as walking, yoga, and structured exercise programs are often recommended, and evidence supports their safety and efficacy for both maternal and fetal health (Sun, 2022).

Self-monitoring enables the timely identification of hyperglycemia or hypoglycemia, facilitating necessary adjustments in dietary intake and physical activity (Helmersen et al., 2021). This proactive approach aids in better managing the condition and significantly reduces the risks of pregnancy complications (Kim, 2010). In addition, support from healthcare providers in understanding the implications and methods of glucose monitoring is crucial for effective management (Helmersen et al., 2021).

Emotional and psychological well-being cannot be overlooked. The emotional impacts of GDM can lead to stress, anxiety, and depressive symptoms, which can adversely affect both maternal and fetal outcomes (Gampur & Kurniawati, 2021). Providing mothers with resources for mental health support, including counseling and community support groups, can help address these issues effectively. Gampur & Kurniawati, 2021).

Education is also crucial for enhancing maternal awareness and engagement in self-care practices. Tailored educational interventions have proven beneficial in guiding self-management and instilling confidence in mothers to manage their diet, exercise, and glucose monitoring effectively (Helmersen et al., 2021). Educational programs that include information about the risks associated with GDM and strategies for prevention of postpartum diabetes are essential for long-term health outcomes (Kramer et al., 2019).

In summary, the self-care regimen for primigravida mothers with GDM should involve a multifaceted approach incorporating diet management, regular physical activity, consistent monitoring of blood glucose levels, emotional support, and comprehensive education on managing their condition. These components collectively aim to improve maternal and fetal health and reduce the complications associated with gestational diabetes.

METHODOLOGY:

The study adopted a one-group pretest-posttest design to evaluate the self-care practices of primigravida mothers diagnosed with gestational diabetes mellitus (GDM). Thirty participants who met the inclusion criteria

(primigravida, GDM, and willingness to participate) were selected through purposive sampling. A control group, also consisting of 30 participants, was formed through random assignment. The exclusion criteria included mothers with heavy bleeding, high-risk pregnancies, those unable to communicate in English or Tamil, and those unwilling to participate. Pre- and post-intervention data were gathered to assess changes in self-care behaviors.

Data Collection Procedure:

Data collection took place in November at the antenatal clinic of the primary health center, with primigravida mothers diagnosed with gestational diabetes mellitus (GDM). The investigator explained the study's purpose and the benefits of self-care for GDM. A pre-test was conducted using a structured questionnaire, followed by a 30-minute teaching program on self-care. Seven days later, a post-test was administered using the same questionnaire, and an instructional module was distributed to all participants.

RESULT:

Table 1: Distribution of Demographic variables among primigravida mother

Demographic variables	Sample = 30	
	Frequency	Percentage
1. Age in years:		
a. 21-25 years	18	60.0
b. 26-28 years	9	30.0
c. 29-32 years	1	3.3
d. 32-34 years	2	6.7
2. Education		
a. Illiterate	1	3.3
b. Primary	8	26.7
c. High school	10	33.3
d. Graduate	11	36.7
3. Religion:		
a. Hindu	24	80.0
b. Muslim	1	3.3

c. Christian	5	16.7
4. Occupational status:		
a. Home maker	20	66.7
b. Daily wages	3	10.0
c. Business	4	13.3
d. Coolie	3	10.0
5. Family type		
a. Joint family	13	43.3
b. Nuclear family	17	56.7
6. Type of marriage:		
a. Consanguineous	24	80.0
b. Non- Consanguineous	6	20.0
7. Family income:		
a. Below 5000	0	0.0
b. 5001 – 10000	11	36.7
c. 10001 – 15000	11	36.7
d. Above 15000	8	26.7
8. Food pattern:		
a. Vegetarian	7	23.3
b. Non- Vegetarian	23	76.7

The demographic data of the sample (n=30) revealed that the majority of participants were between 21-25 years of age (60%), with smaller proportions in the 26-28 years (30%), 32-34 years (6.7%), and 29-32 years (3.3%) age groups. In terms of educational status, most participants were either high school graduates (33.3%) or graduates (36.7%), with 26.7% having attended primary school and 3.3% being illiterate. A predominant number of participants were Hindu (80%), followed by Christians (16.7%) and Muslims (3.3%). Occupation-wise, 66.7% were homemakers, while 13.3% were engaged in business, 10% in daily wages, and 10% as coolies. The majority lived in nuclear families (56.7%), with the remaining 43.3% in joint families. Regarding marriage type, 80% had consanguineous marriages, while 20% had non-consanguineous marriages. Most participants reported family incomes between 5001-15000, with 36.7% each earning between 5001-10000 and 10001-15000, and 26.7% earning above 15000. Lastly, a large majority of participants followed a non-vegetarian diet (76.7%), while 23.3% were vegetarians.

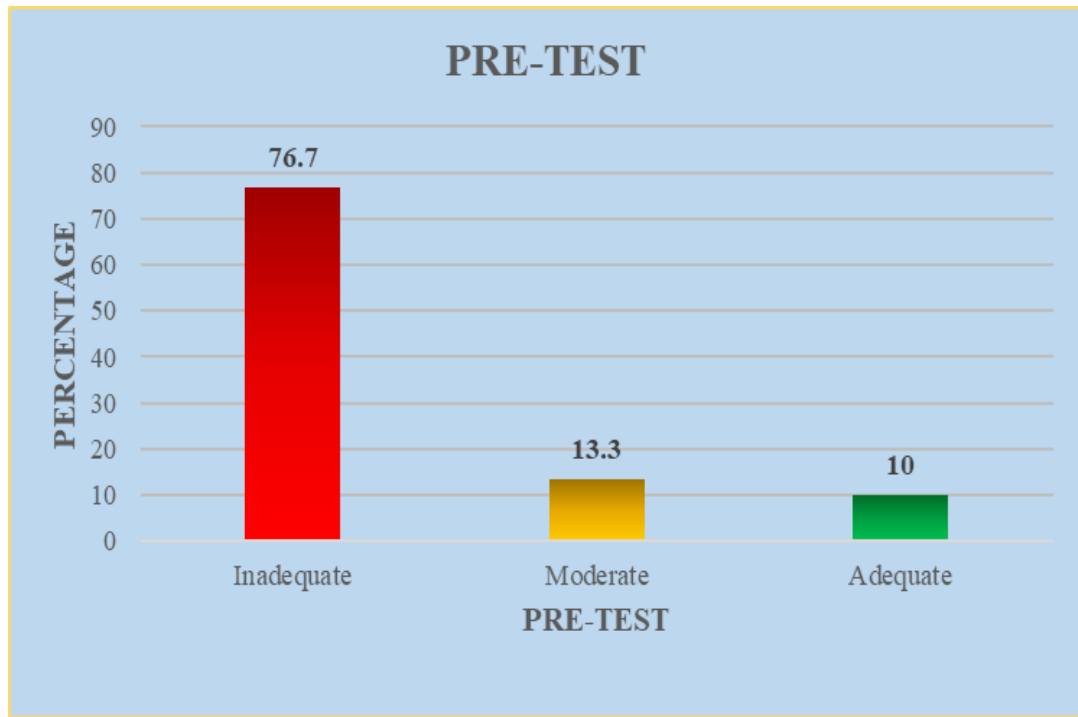
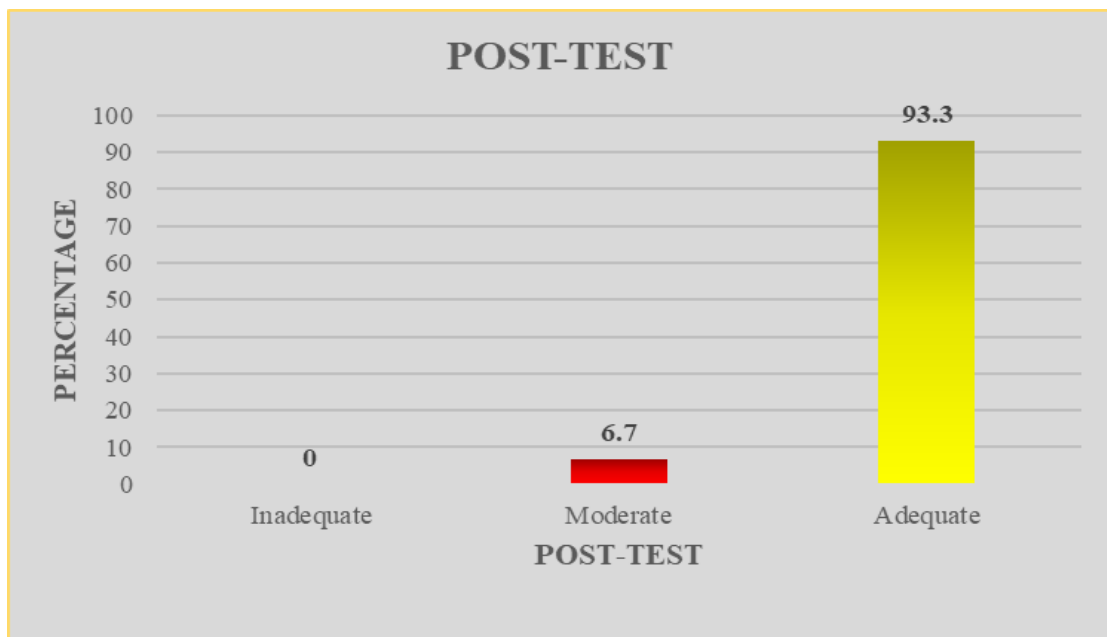
Figure 1: Pretest level of knowledge on self care of primei gravida mother with GDM.**Figure 2: Posttest level of knowledge on self-care of primi gravida mother with GDM.**

Figure 1 shows the pretest distribution of knowledge on self-care among primigravida mothers, assessed using 20 questions. The majority (76.7%) had inadequate knowledge, 13.3% had moderate knowledge, and 10% had adequate knowledge on gestational diabetes mellitus (GDM). Figure 2 illustrates the posttest results, where 93.3% of mothers demonstrated adequate knowledge and 6.7% showed moderate knowledge, indicating an improvement in knowledge levels.

Table 3: Association between level of knowledge on gestational diabetes mellitus of demographic variables in Post-test among primi gravida mother

Demographic variables	Knowledge in pre-test n = 30			
	n	Mean	SD	F and t test value and p value
1. Age in years:				
a. 21-24 years	18	18.28	2.32	F = 0.446 p = 0.645 (N.S)
b. 25-28 years	9	17.44	2.70	
c. 29-32 years &	3	17.33	2.52	
d. 32-34 years				
2. Educational status:				
b. Primary	9	18.22	1.30	F = 0.087 p = 0.917 (N.S)
c. High school	10	17.80	3.01	
d. Graduate	11	17.82	2.68	
3. Religion:				
a. Hindu	24	18.25	2.17	t = 1.470 p = 0.153 (N.S)
b. Muslim&	6	16.67	3.08	
c. Christian				
4. Occupational status:				
a. Home maker	20	17.65	2.78	F = 0.265 p = 0.850 (N.S)
b. Daily wages	3	18.67	2.31	
c. Business	4	18.50	0.58	
d. Coolie	3	18.33	1.53	
5. Type of family:				
a. Joint family	13	18.46	1.56	t = 1.054 p = 0.301 (N.S)
b. Nuclear family	17	17.53	2.88	
6. Type of marriage:				
a. Consanguineous	24	17.79	2.55	t = 0.638 p = 0.528 (N.S)
b. Non- Consanguineous	6	18.50	1.76	
7. Family income:				
b. 5001 – 10000	11	18.09	1.7	F = 1.512 p = 0.238(N.S)
c. 10001 – 15000	11	18.64	1.21	
d. Above 15000	8	18.75	3.92	

8. Food pattern:				
a. Vegetarian	7	18.71	1.50	t = 0.980
b. Non- Vegetarian	23	17.70	2.60	p = 0.335 (N.S)

Note: N.S – Not Significance

Table 3 presents the association between the level of knowledge scores and selected demographic variables, including age, education, religion, family status, and income. The chi-square test was used to determine the statistical significance of these associations.

DISCUSSION

The results suggest that ice pack massage significantly reduces pain perception during the first stage of labor for Primi mothers, reinforcing the idea that non-pharmacological pain management methods can provide effective relief during childbirth. Before the intervention, an overwhelming majority (86.7%) of mothers in both the experimental and control groups reported severe pain, illustrating the high intensity of labor pain that typically accompanies the first stage of childbirth (Al-Battawi et al., 2017). However, following the application of ice pack massage, a noticeable shift in pain perception occurred within the experimental group, with 73.3% reporting moderate pain post-intervention. In contrast, the control group exhibited less improvement, as 80% continued to experience severe pain post-test (Chaillet et al., 2014).

The significant changes observed in the experimental group, indicated by a p-value of 0.000, suggest a robust effect of the ice pack massage intervention. This aligns with findings from Al-Battawi et al., who reported that ice application could reduce pain intensity during the active phase of labor and enhances maternal coping and satisfaction (Al-Battawi et al., 2017). Similarly, Chaillet et al. conducted a meta-analysis that underscored the effectiveness of non-pharmacologic methods, including cold therapy, in pain management during labor (Chaillet et al., 2014).

The comparative reduction in pain perception in the experimental group reinforces the notion that non-pharmacological strategies, such as ice pack massage, serve as an effective adjunct to conventional pain management practices in obstetric care. This finding is consistent with other studies indicating that cold therapy can be beneficial in alleviating pain associated with childbirth (Nehbandani et al., 2019). Furthermore, the beneficial outcomes observed underscore the necessity of integrating such methods into routine obstetric

practices, as highlighted by Chang et al. in their systematic review demonstrating the efficacy of non-pharmacological coping strategies in reducing labor pain (Chang et al., 2022).

While the control group did exhibit a slight decrease in severe pain cases post-intervention (from 86.7% to 80.0%), the lack of a statistically significant change ($p = 0.18$) suggests that without active interventions, the perceived pain remains largely unchanged. This is corroborated by other studies that emphasize the effectiveness of active techniques compared to standard care practices (Czech et al., 2018; , Boateng et al., 2019). The positive outcomes associated with the use of ice pack massage could also be attributed to its mechanism of action, where cold induces analgesia by modulating pain pathways. Nehbandani et al. noted that cold therapy activates descending pain inhibitory pathways, which can effectively help mitigate labor pain (Nehbandani et al., 2019).

CONCLUSION

The study concluded that the structured teaching program significantly improved the knowledge of primigravida mothers on self-care for gestational diabetes mellitus. It also identified a significant relationship between knowledge levels and demographic factors, underscoring the importance of targeted health education for better self-care practices.

BIBLIOGRAPHY:

1. Gampur, I. and Kurniawati, H. (2021). Antenatal care experience in pregnant women with gestational diabetes. *Women Midwives and Midwifery*, 1(3), 20-29. <https://doi.org/10.36749/wmm.1.3.20-29.2021>
2. Helmersen, M., Sørensen, M., Lukasse, M., Laine, H., & Garnweidner-Holme, L. (2021). Women's experience with receiving advice on diet and self-monitoring of blood glucose for gestational diabetes mellitus: a qualitative study. *Scandinavian Journal of Primary Health Care*, 39(1), 44-50. <https://doi.org/10.1080/02813432.2021.1882077>
3. Kim, C. (2010). Gestational diabetes: risks, management, and treatment options. *International Journal of Women S Health*, 339. <https://doi.org/10.2147/ijwh.s13333>
4. Kramer, C., Campbell, S., & Retnakaran, R. (2019). Gestational diabetes and the risk of cardiovascular disease in women: a systematic review and meta-analysis. *Diabetologia*, 62(6), 905-914. <https://doi.org/10.1007/s00125-019-4840-2>

5. Maso, G., Alberico, S., Wiesenfeld, U., Ronfani, L., Erenbourg, A., Hadar, E., ... & Hod, M. (2011). "ginexmal rct: induction of labour versus expectant management in gestational diabetes pregnancies". *BMC Pregnancy and Childbirth*, 11(1). <https://doi.org/10.1186/1471-2393-11-31>
6. Sanabria-Martínez, G., García-Hermoso, A., Poyatos-León, R., Álvarez-Bueno, C., Sánchez-López, M., & Martínez-Vizcaíno, V. (2015). Effectiveness of physical activity interventions on preventing gestational diabetes mellitus and excessive maternal weight gain: a meta-analysis. *Bjog an International Journal of Obstetrics & Gynaecology*, 122(9), 1167-1174. <https://doi.org/10.1111/1471-0528.13429>
7. Sun, R. (2022). The harm and prevention and control of gestational diabetes mellitus. *Highlights in Science Engineering and Technology*, 19, 106-111. <https://doi.org/10.54097/hset.v19i.2701>
8. Yin, Y., Li, X., Tie-jun, T., Luo, B., & Liao, S. (2013). Physical activity during pregnancy and the risk of gestational diabetes mellitus: a systematic review and meta-analysis of randomised controlled trials. *British Journal of Sports Medicine*, 48(4), 290-295. <https://doi.org/10.1136/bjsports-2013-092596>
9. Akhtar, T., Tasleem, H., Saeed, G., & Khan, J. (2024). Gestational diabetes mellitus: closely monitored yet ignored. *Pakistan Armed Forces Medical Journal*, 74(SUPPL-2), S164-S168. <https://doi.org/10.51253/pafmj.v74isuppl-2.4587>
10. Al-Dhefeeri, M. and Al-Hashimi, B. (2024). Knowledge of pregnant women about gestational diabetes and it is effect on both mother and baby in a sample from primary health care centers in al-rissafa health director - baghdad. *International Journal of Advanced Community Medicine*, 7(3), 43-47. <https://doi.org/10.33545/comed.2024.v7.i3a.324>
11. Almatrafi, S. and Sekhar, C. (2024). Knowledge of gestational diabetes mellitus among adult females in al qassim province, saudi arabia: a cross-sectional study. *Cureus*. <https://doi.org/10.7759/cureus.53166>
12. Park, S., Lee, J., Jang, I., & Kim, Y. (2018). Knowledge and health beliefs about gestational diabetes and healthy pregnancy's breastfeeding intention. *Journal of Clinical Nursing*, 27(21-22), 4058-4065. <https://doi.org/10.1111/jocn.14539>

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