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A STUDY TO ASSESS THE EFFICACY OF SELF-MANAGEMENT PROGRAM ON GESTATIONAL DIABETES MELLITUS AMONG GESTATIONAL DIABETES MELLITUS MOTHERS AT SELECTED HOSPITALS IN CHENNAI

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Abstract

Background: Gestational Diabetes Mellitus (GDM) is one of the most common metabolic disorders affecting pregnant women and is associated with significant maternal and fetal complications. The increasing prevalence of GDM, particularly in urban populations, highlights the need for effective management strategies. Self-management programs have been identified as an essential approach to improve glycaemic control, enhance adherence, and promote better health outcomes among GDM mothers. **Methods:** This study was conducted in selected hospitals Chennai among 30 mothers diagnosed with Gestational Diabetes Mellitus, who were selected using a non-probability convenient sampling technique. Ethical approval was obtained from the Institutional Ethics Committee. Data was collected using a structured tool comprising demographic variables, obstetrical variables, and a self-efficacy rating scale to assess the effectiveness of the self-management program. The intervention included structured education on diet, exercise, blood glucose monitoring, medication adherence, and lifestyle modification. **Results:** The

findings revealed that majority of participants were aged 20–24 years (34%), were housewives (67%), and resided in urban areas (54%). All participants were registered for antenatal care. Post-intervention results showed that 60% of mothers had very good compliance and 40% had good compliance with self-management practices. The mean post-test score was 3.6 ± 0.49 , and the calculated t-value (12.36) was statistically significant at $p < 0.05$ level, indicating the effectiveness of the self-management program. No significant association was found between post-test efficacy and selected demographic or obstetrical variables. **Conclusion:** The study concludes that self-management program was highly effective in improving compliance and self-care practices among mothers with Gestational Diabetes Mellitus. Structured educational interventions play a vital role in enhancing glycaemic control and reducing maternal and fetal complications. Nurses play a key role in implementing such programs through education, monitoring, and continuous support, thereby improving maternal health outcomes.



Keywords: Gestational Diabetes Mellitus, Self-Management Program, Self-Efficacy, Maternal Health, Compliance, Antenatal Care.

INTRODUCTION

Gestational Diabetes Mellitus (GDM) is defined as glucose intolerance that is first recognized during pregnancy [1]. It is one of the most common metabolic disorders affecting pregnant women and has emerged as a significant public health concern worldwide, especially in developing countries like India [2]. Pregnancy induces physiological insulin resistance due to hormonal changes such as increased levels of human placental lactogen, cortisol, and progesterone [3]. When the pancreas fails to compensate for this increased insulin demand, it results in hyperglycemia, leading to GDM [4]. This condition not only affects the health of the mother but also has serious implications for fetal development [5].

GDM is associated with several maternal complications, including preeclampsia, polyhydramnios, and increased rate of cesarean section [6]. Similarly, it contributes to fetal and neonatal complications such as macrosomia (large baby), birth injuries, neonatal hypoglycemia, and increased future risk of obesity and type 2 diabetes [7]. Evidence suggests that poor glycemic control during pregnancy significantly increases adverse maternal and fetal outcomes [8]. Despite its serious consequences, GDM is a manageable condition. Proper management through lifestyle modification, diet, exercise, blood glucose monitoring, and medication can significantly reduce complications [9]. Among these, self-management plays a crucial role [10].

Self-management refers to the ability of individuals to manage symptoms, treatment, physical and psychosocial consequences, and lifestyle changes inherent in living with a chronic condition [11]. In GDM, it includes dietary control, regular physical activity, blood glucose monitoring, medication adherence, and stress management [12]. Recent evidence emphasizes that patient education and self-management strategies improve glycemic control, adherence, and quality of life among GDM mothers [13]. Self-management programs provide mothers with knowledge, skills, and confidence to actively participate in their care [14]. Such programs are especially important in urban settings, where increasing urbanization and lifestyle changes contribute to rising GDM cases [15].

Need for the Study

Gestational Diabetes Mellitus has shown a rapid rise in its prevalence, particularly in India, which highlights the urgent need for effective preventive and management strategies [15]. Recent epidemiological studies show that GDM incidence in India ranges from 7.7% to 21.6%, with

some studies reporting around 14.9% incidence in antenatal women [16, 17]. This growing burden places significant stress on healthcare systems and increases the risk of long-term complications for both mother and child [2].

Studies have shown that poor knowledge and low adherence to treatment contribute to inadequate glycemic control, leading to preventable complications. [18] Reported that inadequate knowledge and poor adherence to self-care practices significantly worsen glycemic outcomes and increase maternal and fetal risks. Similarly, [19] highlighted that lack of awareness regarding diet, exercise, and glucose monitoring reduces adherence levels. Supporting these findings, [20] emphasized that structured education and continuous monitoring significantly improve self-management practices and glycemic control among mothers with gestational diabetes mellitus.

Overall, the evidence suggests that GDM prevalence is higher in urban populations due to lifestyle factors, while maternal age, BMI, and family history significantly increase the risk [6, 21]. Importantly, early diagnosis alone is insufficient without proper management, highlighting the need for comprehensive education and sustained adherence to self-care practices [8]. GDM not only affects current pregnancy outcomes but also has long-term consequences, such as increased risk of type 2 diabetes in mothers and a higher risk of obesity and diabetes in offspring [7, 10].

Further highlighted that poor knowledge and inadequate self-care practices are directly associated with poor glycemic control and increased complications [18]. Therefore, there is a strong need to develop and implement a structured self-management program to evaluate its effectiveness on maternal and fetal outcomes and to provide evidence-based recommendations for improving maternal care. This study was therefore undertaken to assess the efficacy of a self-management program on Gestational Diabetes Mellitus among GDM mothers at selected hospitals in Chennai, with the aim of improving maternal and fetal health outcomes.

Statement of the Problem

A Study to Assess the Efficacy of Self-Management Program on Gestational Diabetes Mellitus among Gestational Diabetes Mellitus Mothers at Selected Hospitals Chennai.

Objectives of the Study

1. To assess the efficacy of the self-management programme on Gestational Diabetes Mellitus among GDM mothers



2. To associate the efficacy of self-management programme on Gestational Diabetes Mellitus with selected demographic variables of GDM mothers

Hypotheses

H1: There will be a statistically significant difference in the level of efficacy of the self-management programme for Gestational Diabetes Mellitus (GDM) among mothers after the intervention.

H2: There will be a statistically significant association between the post-test level of efficacy of the self-management programme for GDM among mothers and selected demographic variables of GDM mothers.

Research Methodology

Research Approach & Design:

Quasi-experimental post-test design

Research Setting:

The study was conducted in RSRM Hospitals in Chennai.

Study Population:

Mothers diagnosed with Gestational Diabetes Mellitus attending antenatal clinics in selected hospitals, Chennai

Sample Size:

The sample size consisted of 30 GDM mothers

Sampling Technique:

A non-probability convenience sampling technique

Sampling Criteria:

Inclusion Criteria

- Mothers diagnosed with Gestational Diabetes Mellitus
- Mothers attending antenatal clinics at the selected hospital
- Mothers who are willing to participate in the study
- Mothers who can understand Tamil or English

Exclusion Criteria

- Mothers with pre-existing diabetes mellitus
- Mothers who are critically ill or not available during data collection

Data Collection Instruments:

Demographic Variables Proforma for Mothers with GDM: Age, Educational status, Occupation, income, Type & Duration of Marriage, Dietary Pattern, Residence, BMI, Source of Information.

Obstetric Variables Proforma for Mothers with GDM:

Registration of Pregnancy, No of Antenatal Visits, Gestational age in Weeks, Gravida, Parity, Mode of

Conception, History of Gestational Diabetes Mellitus in Previous Pregnancy, Treatment taken for Gestational Diabetes Mellitus, Complications arise due to a history of Gestational Diabetes Mellitus, History of Pregnancy Induced Hypertension in Previous Pregnancy, Treatment. Duration of treatment & complications arise due to a history of Pregnancy Induced Hypertension

Rating scale to Assess the Self-Efficacy of Mothers with Gestational Diabetes Mellitus

The rating scale was designed to assess mothers' perceived confidence in their ability to perform self-management activities for Gestational Diabetes Mellitus (GDM). The scale evaluates the level of adherence and compliance with recommended practices such as dietary management, blood glucose monitoring, physical activity, medication adherence, stress management, and health-care engagement.

The tool consisted of 18 items under six components, with each item measured using a 5-point rating scale ranging from 0 to 4. The total obtainable score ranges from 0 to 90, with higher scores indicating greater self-efficacy in managing Gestational Diabetes Mellitus.

Reliability and Validity

Content validity was obtained by nursing and paediatric experts, The modification and suggestions of experts was incorporated in **Content validity** was established by a panel of experts in Nursing and Pediatrics. Their suggestions and modifications were incorporated into the final version of the tool.

The reliability of the tool was assessed using the Split-half method (0.82) and Cronbach's alpha (0.86), indicating high internal consistency.

Ethical Consideration

Approval was obtained from the IEC of Apollo College of Nursing, Chennai and permission was obtained from the concerned authorities of the setting.

Data Collection Process

Formal permission was obtained from the hospital authorities of the selected hospitals in Chennai prior to the commencement of the study. Ethical clearance was obtained from the Institutional Ethics Committee. The participants who met the inclusion criteria were identified with the assistance of healthcare professionals in the antenatal outpatient department and wards. The purpose of the study was clearly explained to the participants, and informed written consent was obtained. Confidentiality and anonymity of the participants were assured. The Self-Management Programme for Gestational Diabetes Mellitus (GDM) was administered to the participants. The programme included education on dietary management,



physical activity, blood glucose monitoring, medication adherence, and stress management. Appropriate teaching methods such as lecture, discussion, demonstration, and use of visual aids were utilized to enhance understanding. Following the implementation of the programme, the post-test assessment was conducted using a structured rating scale to assess the level of self-efficacy regarding self-management among GDM mothers. Each participant was given approximately 20–30 minutes to complete the questionnaire. The participants cooperated well throughout the data collection process, and the researcher expressed gratitude for their participation. The collected data were coded, tabulated, and analysed using descriptive statistics (frequency, percentage, mean, standard deviation) and inferential statistics using SPSS version 24.

RESULTS

Table 1 shows that the majority of participants were aged 20–24 years (34%). Most had a higher secondary education (37%), and the majority were housewives (67%). A large proportion had a monthly income of ₹15,001–20,000 (44%). Most participants belonged to non-consanguineous families (90%) and nuclear families (90%). Regarding marital characteristics, 40% had a duration of marriage of less than 2 years, and the majority were married (95.6%). More than half of the participants resided in urban areas (54%). With regard to lifestyle factors, most participants followed a mixed diet (both vegetarian and non-vegetarian) (84%), and the majority had a normal BMI (70%). Most participants were Hindus (67%), and the primary source of information on gestational diabetes mellitus was health care professionals (93%).

Table 2 shows that all participants were registered for pregnancy (100%). Regarding antenatal visits, majority

had more than four visits (93%), with respect to gestational age, most mothers were at 24 weeks (33%), in terms of gravida, the majority were primigravida (67%), regarding the mode of conception, the majority conceived naturally (80%), concerning the history of gestational diabetes mellitus in previous pregnancies, 53% had a history. Among those with a history of gestational diabetes mellitus, all (17%) had taken oral hypoglycaemic agents, all of them were on treatment for more than one year (17%), regarding the history of pregnancy-induced hypertension, only 40% reported no history, none had positive history. None of the participants required treatment for pregnancy-induced hypertension, and no complications were reported.

Fig 1 shows the frequency and percentage distribution of the post-test level of efficacy of the self-management program regarding gestational diabetes mellitus among participants (n = 30). Majority of participants had very good compliance (60%), while 40% had good compliance.

Table 3 shows that the mean post-test knowledge score was 3.6 with a standard deviation of 0.49. The mean score was compared with the standard value (cut-off score of 75%). The calculated one-sample t-test value was 12.36, which was found to be statistically significant at $p < 0.05$ level. The high t-value shows that the self-management program is statistically effective in improving compliance among mothers with gestational diabetes mellitus.

Table 4 shows that there is no statistically significant association between post-test level of efficacy and variables related to history, treatment, duration, and complications of gestational diabetes mellitus and pregnancy induced hypertension ($p > 0.05$). Chi-square test was not applicable for some variables due to zero frequencies.

Table 1: Frequency and percentage distribution of demographic variables of the Gestational Diabetes Mellitus mothers n = (30)

Demographic Variables	Frequency (f)	Percentage %
1. Age in years		
> 20 years	7	23
20-24 years	10	34
25-29 years	7	23
30-34 years	6	20
35-39 years	0	0
2. Educational Status		
2.1 No Formal Education	0	0
2.2 Primary Education	5	16
2.3 Higher Secondary Education	11	37
2.4 Under Graduate	11	37
2.5 Post Graduate	3	10
3. Occupation		
3.1 Employed	4	13



Demographic Variables	Frequency (f)	Percentage %
3.1.a. Labour	0	0
3.1.b House Maid	0	0
3.1.c. Class IV Worker	0	0%
3.2 House Wife	20	67
3.3 Own Business	6	20
4.Income per Month		
4.1. <Rs.10000	1	3
4.2. Rs.10001-15000	9	30
4.3. 15001-20000	13	44
4.4.>20001	7	23
5. Type of Marriage		
5.1. Consanguineous	3	10
5.2. Non-Consanguineous	27	90
6.Duration of Marriage		
6.1. <2 Years	12	40
6.2.2-4 Years	8	27
6.3.4-6 Years	7	23
6.4 6 >Years	3	10
7.Type of Family		
7.1. Nuclear Family	27	90
7.2. Joint Family	3	10
7.3. Extended Family	0	0
8.Area of Residence		
8.1 Rural	13	43
8.2 Urban	17	54
9. Dietary Pattern		
9.1. Vegetarian	6	20
9.2. Mixed (both & non vegetarian)	24	80
10. BMI Level based on WHO standards (in kg/m²)		
10.1 Malnourished (< 18.5)	5	17
10.2 Normal (18.5-24.9)	21	70
10.3 Over Weight (25-29.9)	4	13
10.4 Obesity (≥30)	0	0
11.Religion		
11.1. Hindu	20	67
11.2. Christian	3	10
11.3. Muslim	7	23
11.4. Others	0	0
12.Source of information on Gestational Diabetes Mellitus		
12.1 Mass Media	0	0
12.2 News Paper /Magazine	0	0
12.3 Family/Friends	2	7
12.4 Health care Professionals	28	93

Table 2: Frequency and percentage distribution of Obstetrical variables the Gestational Diabetes Mellitus mothers (N=30).

Demographic Variables	Frequency(f)	Percentage(%)
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1.Registration of Pregnancy		
1.1. Registered	30	100
1.2. Not Registered	0	0
2.No of Antenatal Visits		
2.1 No Visit	0	0
2.2 < 4 visits	28	93
2.3 >4 Visits	2	7
3.Gestational age in Weeks		
24 Weeks	10	33
25 Weeks	2	7
26 Weeks	7	24
27 Weeks	1	3
28 Weeks	8	27
29 Weeks	1	3
30 Weeks	1	3
4.Gravida		
4.1. 1	18	60
4.1. 2	9	30
4.1. 3 & above	3	10
5.Parity		
5.1. 0	20	67
5.2. 1	9	30
5.3. 2	1	3
5.4. 3 & above	0	0
6.Mode of Conception		
6.1. Natural Conception	24	80
6.2. Induction of Ovulation	5	17
6.3. Assisted Reproductive Technique	1	3
7.History of Gestational Diabetes Mellitus in Previous Pregnancy		
7.1 No	5	17
7.2 Yes	5	17
7.3 Not Applicable	20	66
7.a. If yes, treatment taken for Gestational Diabetes Mellitus		
7.a.1 Oral Hypoglycaemic Agents	5	20
7.a.2 Insulin therapy	0	0
7.a.3 Alternative and Complementary therapies	0	0
7.a.4 No treatment taken	0	0
7.a.5 Not Applicable	20	80
7.b. Duration of treatment taken for Gestational Diabetes Mellitus		
7.b.1 > 1 Year	5	20
7.b.2 1-2 Years	0	0
7.b.3 < 2 Years	0	0
7.b.4 Still on Medication	0	0
7.b.5 Not applicable	20	80
7.c. If any complications arise due to a history of Gestational Diabetes		
7.c.1 No	5	20
7.c.2 Yes	0	0
7.c.3 Not applicable	25	80
If yes, specify.....		
8. History of Pregnancy Induced Hypertension in Previous Pregnancy		



8.1 No	10	33
8.2 Yes	0	0
8.3 Not Applicable	20	67
8a. If yes, treatment taken Pregnancy Induced Hypertension		
8.a.1 Anti Hypertensives	0	0
8.a.2 Alternative and Complementary therapies	0	0
8.a.3 No treatment taken	0	0
8.a.4 Not applicable	30	100
8.b. Duration of treatment taken Pregnancy Induced Hypertension		
8.b.1 > 1 Year	0	0
8.b.2 1-2 Years	0	0
8.b.3 < 2 Years	0	0
8.b.4 Still on Medication	0	0
8.b.5 Not applicable	30	100
8.c. If any complications arise due to a history of Pregnancy Induced Hypertension		
8.c.1 No	0	0
8.c.2 Yes	0	0
8.c.3 Not Applicable	30	100%
If yes, specify.....	0	0

Table 3: Efficacy of Self-Management Program on Gestational Diabetes Mellitus among Mothers with Gestational Diabetes Mellitus
n = 30

Test	Mean Score	SD	One-sample t-test value
Post test	3.6	0.49	12.36

Table 4: Association between Efficacy of Self-Management Program among Mothers with Gestational Diabetes Mellitus with Selected Demographic Variables n = 30.

Demographic Variables	Good Compliance		Very Good Compliance		Chi square Test & p-value
	n	%	n	%	
1. Age in years					
15-19 years	5	17	2	7	4.12, p > 0.05 NS
20-24 years	3	10	7	23	
25-29 years	3	10	4	13	
30-34 years	1	3	5	17	
35-39 years	0	0	0	0	
2. Educational Status					
2.1 No Formal Education	0	0%	0	0	3.76, p > 0.05 NS
2.2 Primary Education	1	3	4	13	
2.3 Higher Secondary Education	6	20	5	17	
2.4 Under Graduate	5	17	6	20	
2.5 Post Graduate	0	0	3	10	
3. Occupation					
3.1 Employes	2	7	2	7	2.95, p > 0.05 NS
3.1a. Labour	0	0	0	0	
3.1.b House Maid	0	0	0	0	
3.1.c. Class IV Worker	0	0	0	0	
3.2 House Wife	6	20	14	46	
3.3 Own Business	4	13	2	7	
4. Income per Month					
4.1. <Rs.10000	1	3	0	0	2.88, p > 0.05



4.2. Rs.10001-15000	4	13	5	17	NS
4.3. 15001-20000	5	17	8	26	
4.4.>20001	2	7	5	17	
5. Type of Marriage					0.42, p > 0.05 NS
5.1. Consanguineous	2	7	1	3	
5.2. Non-Consanguineous	10	33%	17	57	
6.Duration of Marriage					3.21, p > 0.05 NS
6.1. <2 Years	7	23	5	17	
6.2.2-4 Years	2	7	6	20	
6.3.4-6 Years	3	10%	4	13	
6.4 6 >Years	0	0	3	10	
7.Type of Family					0.36, p > 0.05 NS
7.1. Nuclear Family	11	37	16	53	
7.2. Joint Family	1	3%	2	7	
7.3. Extended Family	0	0	0	0	
8.Area of Residence					2.31, p > 0.05 NS
8.1 Rural	7	23	6	20	
8.2 Urban	4	13	13	44	
9. Dietary Pattern					0.58, p > 0.05 NS
9.1. Vegetarian	2	7%	4	13	
9.2. Mixed (both &non vegetarian)	10	33	14	46	
10. BMI Level based on WHO standards (in kg/m2)					1.74, p > 0.05 NS
Height -----		Weight -----			
10.1 Malnourished (< 18.5)	2	7	3	10	
10.2 Normal (18.5-24.9)	9	30	12	40	
10.3 Over Weight (25-29.9)	1	3	3	10	
10.4 Obesity (≥30)	0	0	0	0	
11.Religion					2.67, p > 0.05 NS
11.1. Hindu	9	30	11	37	
11.2. Christian	0	0	3	10	
11.3. Muslim	2	7	5	17	
11.4. Others	0	0	0	0	
12.Source of information on Gestational Diabetes Mellitus					NS
12.1Mass Media	0	0	0	0	
12.2 News Paper /Magazine	0	0	0	0	
12.3 Family/Friends	0	0	0	0	
12.4 Health care Professionals	12	40	18	60	
1.Registration of Pregnancy					NS
1.1. Registered	12	40	18	60	
1.2. Not Registered	0	0	0	0	
2.No of Antenatal Visits					0.21, p > 0.05 NS
2.1 No Visit	0	0	0	0	
2.2 < 4 visits	11	37	17	57	
2.3 >4 Visits	1	3	1	3	
3.Gestational age in Weeks					5.12, p > 0.05 NS
24 Weeks	4	13	5	17	
25 Weeks	2	7	0	0	
26 Weeks	3	10	5	17	
27 Weeks	0	0	1	3	
28 Weeks	2	7	6	20	
29 Weeks	1	3	0	0	
30 Weeks	0	0	1	3	

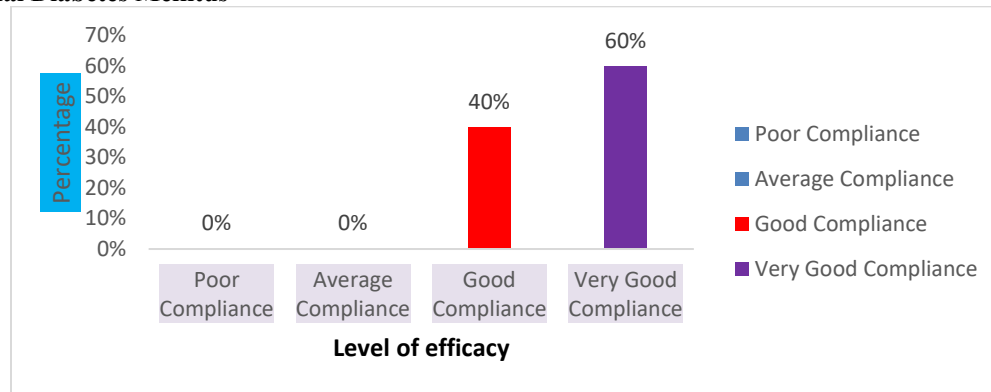


4.Gravida					0.49, p > 0.05 NS
4.1. 1	7	23	11	37	
4.1. 2	4	13	5	17	
4.1. 3 & above	1	3	2	7	
5.Parity					1.12, p > 0.05 NS
5.1. 0	7	23	13	44	
5.2. 1	4	13	5	17	
5.3. 2	1	3	0	0	
5.4. 3 & above	0%	0	0%	0	
6.Mode of Conception					0.64, p > 0.05 NS
6.1. Natural Conception	10	33	14	47	
6.2. Induction of Ovulation	2	7	3	10	
6.3. Assisted Reproductive Technique	0	0	1	3	
7.History of Gestational Diabetes Mellitus in Previous Pregnancy					1.58, p > 0.05 NS
7.1 No	3	10	2	7	
7.2 Yes	1	3	4	13	
7.3 Not Applicable	6	20	14	47	
7.a. If yes, treatment taken for Gestational Diabetes Mellitus					1.88, p > 0.05 NS
7.a.1 Oral Hypoglycaemic Agents	3	12	2	8	
7.a.2 Insulin therapy	0	0	0	0	
7.a.3 Alternative and Complementary therapies	0	0	0	0	
7.a.4 No treatment taken	0	0	0	0	
7.a.5 Not Applicable	6	24	14	56	
7.b. Duration of treatment taken for Gestational Diabetes Mellitus					1.88, p > 0.05 NS
7.b.1 > 1 Year	3	12	2	8	
7.b.2 1-2 Years	0	0	0	0	
7.b.3 < 2 Years	0	0	0	0	
7.b.4 Still on Medication	0	0	0	0	
7.b.5 Not applicable	6	24	14	56	
7.c. If any complications arise due to a history of Gestational Diabetes					0.03, p > 0.05 NS
7.c.1 No	11	37	16	53	
7.c.2 Yes	1	3	2	7	
7.c.3 Not Applicable	0	0	0	0	
If yes, specify.....					
8. History of Pregnancy Induced Hypertension in Previous Pregnancy					0.62, p > 0.05 NS
8.1 No	4	13	6	20	
8.2 Yes	0	0	0	0	
8.3 Not Applicable	6	20	14	47	
8.a. If yes, treatment taken Pregnancy Induced Hypertension					NS
8.a.1 Anti Hypertensives	0	0%	0	0	
8.a.2 Alternative and Complementary therapies	0	0	0	0	
8.a.3 No treatment taken	0	0	0	0	
8.a.4 Not applicable	10	33	20	67	
8.b. Duration of treatment taken Pregnancy Induced Hypertension					NS
8.b.1 > 1 Year	0	0	0	0	
8.b.2 1-2 Years	0	0	0	0	
8.b.3 < 2 Years	0	0	0	0	
8.b.4 Still on Medication	0	0	0	0	
8.b.5 Not applicable	10	33	20	67	
8.c. If any complications arise due to a history of Pregnancy Induced Hypertension					NS
8.c.1 No	0	0	0	0	
8.c.2 Yes	0	0	0	0	



8.c.3 Not Applicable	10	33	20	67
If yes, specify.....	0	0	0	0

Figure 1: Frequency and Percentage Distribution of Posttest Level of Efficacy of Self-Management Program on mothers with Gestational Diabetes Mellitus



DISCUSSION

The findings of the study revealed that the majority of participants belonged to the age group of 20–24 years, indicating that Gestational Diabetes Mellitus (GDM) is increasingly affecting younger women in the reproductive age group. Most of the mothers had attained at least secondary-level education, suggesting a moderate level of literacy that may facilitate better understanding and adoption of health education. A considerable proportion of participants were housewives, which could influence lifestyle patterns such as dietary habits and physical activity levels. Furthermore, majority of mothers belonged to nuclear family living in urban areas, reflecting the growing impact of urbanization, sedentary lifestyle, and dietary transitions on the rising prevalence of GDM. These findings are consistent with previous studies that identify urban living and lifestyle-related factors as significant contributors to GDM, [16, 21] who reported higher prevalence rates among urban populations and significant associations with lifestyle factors. All participants were registered for antenatal care, indicating good utilization of maternal health services; however, most had fewer than four antenatal visits, highlighting a gap in continuous monitoring and follow-up care. The majority of mothers were primigravida with natural conception, aligning with commonly observed maternal profiles, while only a small proportion reported a previous history of GDM, emphasizing the importance of early detection and preventive strategies in subsequent pregnancies. Similar observations were reported [17], who emphasized the importance of early screening and continuous antenatal follow-up to reduce complications.

The results of the study demonstrated that the self-management programme was highly effective. Post-test

findings revealed that 60% of mothers exhibited very good compliance and 40% showed good compliance, with none falling into poor or average categories. The mean post-test score (3.6 ± 0.49) was significantly high, and the calculated t-value (12.36) indicated strong statistical significance ($p < 0.05$). This clearly establishes that structured self-management education significantly enhances adherence to recommended practices, including dietary control, blood glucose monitoring, physical activity, and medication adherence. These findings are supported by earlier research, [13] who reported significant improvements in glycaemic control and self-management behaviors following a mobile health intervention, [14], who demonstrated improved self-efficacy and reduced HbA1c levels after structured diabetes self-management education. Similarly, [22] found that behavioral-based educational interventions significantly improved self-management practices and reduced blood glucose levels among GDM mothers. Moreover, the study found no statistically significant association between post-test efficacy levels and selected demographic or obstetrical variables ($p > 0.05$). This suggests that the self-management programme was uniformly effective across different population groups, irrespective of age, educational status, income, or obstetric history. It highlights that structured educational interventions can be universally implemented and are beneficial across diverse maternal populations. This finding is consistent with studies such as [23], which emphasized that self-management and lifestyle interventions are effective across varied demographic groups, reinforcing their applicability in diverse healthcare settings.

CONCLUSION



The study concludes that self-management program was highly effective in improving compliance among mothers with gestational diabetes mellitus. Structured education significantly enhanced their ability to manage diet, physical activity, glucose monitoring, and treatment adherence. The findings emphasise that self-management education is a crucial component in the management of GDM and can contribute significantly to reducing maternal and neonatal complications.

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