

Comparing Self-Management Behaviors Between Employed And Non-Employed Women with Diet-Controlled Gestational Diabetes Mellitus

Jiali Xu¹, M.N.S¹, Tatirat Tachasuksri, Dr.P.H^{2*}, Punyarat Lapvongwatana, Ph.D.²

Abstract

This study aimed to compare self-management behaviors (SMB) between employed and non-employed women with diet-controlled gestational diabetes mellitus (GDM) and to describe domain- and item-level patterns of SMB. A cross-sectional survey was conducted in the prenatal clinic of the Second Affiliated Hospital of Wenzhou Medical University. Using simple random sampling from the prenatal registration system, 160 women with diet-controlled GDM were recruited (89 employed, 71 non-employed). Sociodemographic and obstetric data were collected, and SMB was assessed using the 33-item GDM Self-Management Behavior Scale, which covers six domains. Descriptive statistics and independent-samples t-tests were used.

The overall SMB score was 105.65 (SD = 22.60; range 57-152), indicating a moderate level in both groups. Total SMB scores did not differ significantly between employed and non-employed women (104.56 ± 23.36 vs 107.01 ± 21.70 ; $t(158) = 0.681$, $p = 0.497$). No significant group differences were found in any SMB domain (all $p > 0.05$), although glucose monitoring showed the largest, non-significant difference (11.71 ± 4.41 vs 12.88 ± 4.17 ; $t = -1.450$, $p = 0.149$). Item-level analysis showed that employed women scored highest on daily vegetable intake and lowest on diet logging during glucose monitoring, whereas non-employed women scored highest on help-seeking when encountering SMB difficulties and lowest on progressively increasing exercise intensity.

In conclusion, employment status was not associated with meaningful differences in overall SMB among women with diet-controlled GDM, and both groups demonstrated only moderate self-management. Nursing interventions should focus on the relatively weak domains of SMB, particularly exercise management and glucose-monitoring, among pregnant women with GDM.

Key words: Diabetes, Gestational, Self-Management, Employment

¹ Studeant Master of Nursing Science Program in Midwifery

² Faculty of Nursing, Burapha University

* Corresponding author e-mail: tatirat@buu.ac.th

Introduction

Gestational diabetes mellitus (GDM), defined as glucose intolerance first recognised during pregnancy, has become one of the most common metabolic diseases in pregnant women globally (Buchanan et al., 2025). GDM complicates approximately 14% of pregnancies worldwide (Sweeting et al., 2024). In China, the prevalence of GDM has climbed steadily over the past three decades, with the estimated prevalence reaching approximately 15.7% by 2024 (International Diabetes Federation, 2025). Multiple factors drive this rise, including older maternal age, increasing obesity, and rapid urbanization (Wu et al., 2025). The consequences extend beyond pregnancy: GDM increases risks for hypertensive disorders, caesarean delivery, and macrosomia, while creating lasting vulnerabilities to obesity and type 2 diabetes in both mothers and offspring (Sweeting et al., 2024).

Although the prevalence of GDM has risen steadily in recent years, only about 15-30% of affected women require insulin therapy. The majority can achieve satisfactory glycaemic control through lifestyle modification and regular monitoring (Qian et al., 2024). This reality places self-management behaviors (SMB) at the heart of treatment, especially for women with diet-controlled GDM (A1GDM) (Carolan, 2013). The American Association of Diabetes Educators identifies seven core SMB of diabetes that provide a practical framework for assessing SMB (American Association of Diabetes, 2020). During pregnancy, these behaviors translate into specific actions: following medical nutrition therapy, maintaining structured physical activity, regularly monitoring blood glucose, responding quickly to abnormal readings, and actively engaging psychological and healthcare support (Tang, Liu, et al., 2023). Evidence indicates that higher levels of SMB improve glycaemic control in women with GDM, reduce adverse maternal and neonatal outcomes, and enhance self-efficacy and quality of life (Carolan, 2013).

Although SMB is important for diet-controlled GDM mothers, growing evidence indicates that many women with GDM particularly in China achieve only moderate levels of self-management (Shen et al., 2018). A Chinese study has shown that less than one-third of women with GDM fall into a “high self-management” class. Age, quality of life, body image concerns, and sleep problems all shape these outcomes (Guo et al., 2025). The challenges run deeper than numbers suggest. Pregnant women struggle with blood glucose decisions, find dietary guidelines bewildering, worry about exercise safety, and skip monitoring due to pain, cost, or time constraints (Xu et al., 2025). Many of these difficulties stem from Chinese sociocultural norms: beliefs that pregnant women should rest and “eat for two”, food taboos and deference to elders’ expectations often conflict with professional advice and limit women’s autonomy in dietary and activity-related decisions (Luo et al., 2024).

Grey recently updated the Self and Family Management Framework (SFMF), reconceptualizing SMB not as a static behavior but as an ongoing interplay between disease factors, personal traits, family dynamics, environmental contexts, and healthcare systems. Within this framework, employment serves as a pivotal environmental factor that shapes SMB by influencing time allocation, workplace support, and social roles (He et al., 2024). Comparing SMB between employed and non-employed women with GDM is important because employment status may influence a woman’s ability to manage her condition during pregnancy. On one hand, employment provides financial stability, health

insurance, and structured routines, which can facilitate the cultivation of a healthy lifestyle (Loerbroks et al., 2018). Conversely, contemporary urban work environments often present barriers to effective SMB. Evidence suggests that extended working hours and long commutes compel patients to rely more heavily on takeout or dining out, thereby reducing opportunities for home-cooked meals and encroaching upon time reserved for exercise and post-meal activities (Oostenbach et al., 2022). Moreover, the sedentary nature of many jobs further elevates the risk of poor glycemic control (Wang et al., 2025). The burden of SMB is also exacerbated by a lack of workplace support such as inadequate breaks, limited access to healthy food, or poor testing facilities combined with the pressures of demanding workloads, shift work, and overlapping family responsibilities (He et al., 2024).

Currently, most studies on GDM have primarily controlled for employment status as a covariate rather than examining it as a key exposure variable. Consequently, differences in SMB, including SMB status, among diet-controlled GDM pregnant women across employment statuses remain unclear. Using the Social and Family Management Framework (SFMF), this study compared SMB between employed and non-employed women with diet-controlled GDM, aiming to identify work-context-related SMB patterns and provide empirical suggestions for developing culturally sensitive nursing interventions.

Objectives

1) To describe the overall and domain-specific self-management behaviors (SMB) in employed and non-employed pregnant women with diet-controlled gestational diabetes mellitus (A1GDM).

2) To compare overall self-management behaviors (SMB) between employed and non-employed pregnant women with diet-controlled gestational diabetes mellitus (A1GDM).

Hypotheses

Non-employed pregnant women with diet-controlled GDM (A1GDM) would report higher total self-management behavior (SMB) scores than employed pregnant women.

Conceptual Framework

This study will be base on a revised Self and Family Management Framework (SFMF). In this framework, self- and family management are not only daily activities, but the main pathway through which resources, family and work environments, and the health-care system influence health outcomes (Grey et al., 2015). Within this framework, employment status serves as a crucial environmental factor that shapes SMB by influencing time allocation, workplace support, and social roles (He et al., 2024). Employed women may face challenges such as time constraints, work schedules, workplace environments, and limited opportunities for physical activity or regular glucose monitoring. These factors may affect their adherence to self-management practices. Both employed and non-employed pregnant women with GDM translate these conditions into effective SMB such as dietary management,

exercise management, and glucose monitoring, which then affect distal outcomes, including glycaemic control and the occurrence of complications. Previous studies have shown that better diabetes self-management is associated with lower HbA1c, fewer acute and chronic complications, and better overall health status, whereas poor self-management is linked to inadequate metabolic control and increased risk of adverse maternal and neonatal outcomes (Sweeting et al., 2024).

According to the revised SFMF, environmental context such as employment status and the work setting are key facilitators or barriers to self-management of chronic illness. When a condition compromises a woman's ability to remain employed, resources available for condition management may be markedly reduced, and work environments can further hinder adherence to dietary, activity and medication regimens.

In this study, employment status (employed vs non-employed) is defined as the independent variable, and self-management behaviors (SMB) are defined as the dependent variable (total score, domain scores and item-level behaviors). Non-employment may facilitate SMB in pregnant women with diet-controlled GDM, while employment may hinder SMB in pregnant women with diet-controlled GDM (He et al., 2024).

Methods

Study design and participants

This cross-sectional comparative study was conducted to compare self-management behaviors (SMB) between employed and non-employed pregnant women with diet-controlled gestational diabetes mellitus. Participants were pregnant women with diet-controlled GDM who attended the hospital's antenatal clinic in China. The inclusion criteria were: 1) Diagnosis of diet-controlled GDM (A1GDM) for at least one month before enrollment with a gestational age between 28 and 39 weeks; 2) Voluntary participation in the study and providing written informed consent; 3) Having ability to write and speak Chinese. The exclusions were: 1) complications related to diet-management such as: twins, hypertension, and thyroid illness and 2) a history of mental health conditions.

The sample size was calculated by G*Power 3.1.9.7. Based on previous studies, a conservative medium effect size (Cohen's $d = 0.50$) was assumed for the difference between the two employment groups (Mohebbi et al., 2019). For a two-tailed independent-samples t test (employed vs non-employed) with a significance level of $\alpha = 0.05$ and statistical power ($1-\beta$) of 0.80, the required sample size was estimated to be 64 participants per group (total $N = 128$). Considering 20% potential attrition, the target sample size was increased to 160 (Du et al., 2025). Ultimately, 160 women with diet-controlled GDM were enrolled, including 89 employed and 71 non-employed participants.

Research instruments

A demographic questionnaire includes general demographics: age, BMI, marriage status, working status during pregnancy, education level, and family income, and obstetric demographics: gestational age, gravidity, and parity.

Self-management behaviors were measured using the Gestational Diabetes Mellitus Self-Management Behavior Scale developed by Li (2019). The instrument comprises 33 items across six domains: dietary management, exercise management, weight control, blood glucose monitoring, risk assessment/management, and psychosocial adaptation. Each item is rated on a 5-point Likert scale from 1 (“never”) to 5 (“always”), yielding a total score ranging from 33 to 165, with higher scores indicating better self-management. For interpretation, a score rate was calculated as (observed score ÷ maximum possible score) × 100%. Scores >80% (133-165) were classified as high SMB, 60-80% (99-132) as moderate, and <60% (33-98) as low. In the original validation study, the scale showed excellent internal consistency (Cronbach’s α = 0.95). In this study, the Cronbach’s α was 0.94.

Data collection procedure

Data were collected in the hospital’s prenatal clinic between 18 August and 15 October 2024. Before recruitment, a list of potential participants was generated from the prenatal registration system, in which each patient is automatically assigned a queue number. Simple random sampling was applied by drawing queue numbers from this list. Pregnant women with GDM typically attended antenatal visits approximately every two weeks from enrolment at about 28 weeks of gestation and then once weekly until delivery. During these scheduled visits, the investigator screened women against the inclusion criteria, approached those whose queue numbers had been selected, and invited them to participate. After the study was explained, written informed consent was obtained in a private room, and the questionnaires were administered, taking approximately 25-35 minutes to complete. All questionnaires were checked immediately on site to ensure completeness.

Ethical considerations

The study was approved by the Ethics Review Committee of Burapha University (IRB: G-HS062/2567) and the hospital (IRB: 2024-K-228-02). Participants received privacy protections, anonymized data processing, and the right to withdraw voluntarily, without adverse treatment. Data will be destroyed after one year.

Data analysis

Data were analysed using IBM SPSS Statistics version 27.0, with the level of statistical significance set at α = .05 (two-tailed). Descriptive statistics (means and standard deviations for continuous variables, and frequencies and percentages for categorical variables) were used to summarize sociodemographic, obstetric and employment characteristics, as well as self-management behaviour (SMB) scores. Differences in SMB total scores and domain scores between employed and non-employed women with diet-controlled GDM were examined using independent-samples t tests. The distribution of continuous variables and test residuals was inspected using histograms, Q-Q plots and Shapiro-Wilk tests, and homogeneity of variances between groups was assessed with Levene’s test.

Results

A total of 160 women with diet-controlled GDM were enrolled in this study, including 89 employed and 71 non-employed women. The mean age was 31.49 ± 3.80 years, and most participants were 24-34 years old (83.1%), married (95.6%), living in urban areas (75.0%), and had a bachelor's degree (62.5%). In addition, 46.9% of the participants reported a monthly family income of 8,000-12,000 yuan.

Table 1 reveals that participants were 24-42 years old, with similar mean ages in the two groups (employed: 31.37 ± 3.88 years; non-employed: 31.65 ± 3.72 years). Most women were married (95.5% and 95.8%, respectively) and lived in urban areas (82.0% of employed and 66.2% of non-employed women). Educational level was relatively high: 73.0% of employed women and 57.7% of non-employed women had a bachelor's degree or above. In both groups, almost half of the families reported a monthly income between 8,000 and 12,000 yuan and about one third of the families between 12,000 and 23,000 yuan. Statistical comparisons showed that only residence differed significantly between the employed and non-employed groups ($\chi^2 = 5.28$, $p = 0.022$), whereas age, marital status, educational level, and monthly family income did not differ significantly (all $p > 0.05$).

Table 1. Demographic characteristics

Characteristics	Employed (n = 89)		Non-employed (n = 71)		Statistic	p-value
	(n)	(%)	(n)	(%)		
Age (years)	(M=31.37, SD = 3.88, Min-Max = 24-41)		(M=31.65, SD = 3.72, Min-Max = 24-42)		t = -.46	.648
24-34	74	83.1	59	83.1		
35-42	15	16.9	12	16.9		
Status of marriage					-a	.163
Unmarried	0	0	2	2.8		
Married	85	95.5	68	95.8		
Divorced	4	4.5	1	1.4		
Residence					$\chi^2 = 5.28$	.022
Rural area	16	18.0	24	33.8		
Urban area	73	82.0	47	66.2		
Educational level					-a	.105
Below high school/technical secondary school	4	4.5	10	14.1		
High school/technical secondary school	20	22.5	20	28.2		
Bachelor's degree	61	68.5	39	54.9		
Master's degree and above	4	4.5	2	2.8		

Table 1. (Cont.)

Characteristics	Employed (n = 89)		Non-employed (n = 71)		Statistic	p-value
	(n)	(%)	(n)	(%)		
Monthly income of family					-a	.584
< 5,000 yuan	1	1.1	3	4.2		
5,000-8,000 yuan	12	13.5	14	19.7		
8,000-12,000 yuan	44	49.4	31	43.7		
12,000-23,000 yuan	27	30.3	20	28.2		
> 23,000 yuan	5	5.6	3	4.2		

^a p-values were calculated using the Fisher-Freeman-Halton exact test because more than 20% of the cells had expected counts less than 5.

As shown in Table 2, gestational age at survey was 31.20 ± 3.11 weeks (25-38) in employed women and 32.18 ± 3.60 weeks (26-39) in non-employed women. More than two-thirds of the employed (74.2%) but only about half of the non-employed (53.5%) were at 28-32 weeks, whereas 46.5% of the latter were already at 33-39 weeks. Gravidity and parity were similar between groups, with about 60% primigravida and around two-thirds nulliparous. Previous GDM was uncommon (9.0% vs 12.7%). Pre-pregnancy BMI was also comparable: roughly half of each group had a healthy weight, about 40% were overweight or obese, and obesity was slightly more frequent in non-employed women (15.5% vs 12.4%).

Table 2. Obstetric history

Variables	Employed (n = 89)		Non-employed (n = 71)	
	(n)	(%)	(n)	(%)
Gestational age (weeks)	(M = 31.20, SD = 3.11, Min-Max = 25-38)		(M = 32.18, SD = 3.60, Min-Max = 26-39)	
28-32	66	74.2	38	53.5
33-39	23	25.8	33	46.5
Gravidity	(Min-Max = 1-5)		(Min-Max = 1-8)	
1	52	58.4	43	60.6
2	24	27.0	19	26.8
≥ 3	13	14.6	9	12.7
Parity				
0	59	66.3	52	73.2
1	26	29.2	14	19.7
2	4	4.5	4	5.6
3	0	0	1	1.4

Table 2. (Cont.)

Variables	Employed (n = 89)		Non-employed (n = 71)	
	(n)	(%)	(n)	(%)
GDM or Not (Last time)				
Previous GDM history	8	9.0	9	12.7
No	81	91.1	62	87.3
Pre-pregnancy BMI	(M = 23.29, SD = 3.73, Min-Max = 16.30-33.32)		(M = 23.80, SD = 3.85, Min-Max = 16.41-34.73)	
Under weight (<18.50 kg/m ²)	7	7.9	4	5.6
Healthy weight (18.50-<23.90 kg/m ²)	46	51.7	35	49.3
Overweight (23.90-<28.00 kg/m ²)	25	28.1	21	29.6
Obesity (≥28.00 kg/m ²)	11	12.4	11	15.5

As shown in Table 3, the overall SMB score for women with diet-controlled GDM was 105.65 (SD = 22.60; range 57-152), indicating a moderate level of self-management. In both employed and non-employed groups, exercise management was low (M = 13.72, SD = 5.45 vs M = 12.94, SD = 5.79). Glucose monitoring was low among employed women (M = 11.71, SD = 4.41) but moderate among non-employed women (M = 12.88, SD = 4.17). All other subscales dietary management, weight management, risk assessment and management, and psychosocial adaptation were in the moderate range for both groups.

Across domains, the highest- and lowest-scoring items were largely the same in employed and non-employed women. Within dietary management, both groups scored highest on item 7 ("I eat 300-500 g of vegetables per day, with at least two-thirds being dark green leafy vegetables"; employed: M = 3.75; non-employed: M = 3.58) and lowest on item 9 ("I limit my daily fat intake to ≤ 25 g, about 2-3 tablespoons"; employed: M = 3.13; non-employed: M = 2.93). For exercise management, item 14 (choosing a suitable type of exercise such as walking, swimming or antenatal exercise; employed: M = 3.36; non-employed: M = 3.09) had the highest mean score in both groups, whereas item 10 (progressively increasing exercise intensity; employed: M = 2.97; non-employed: M = 2.07) had the lowest. In weight management, item 15 (weekly weighing on a fixed day; employed: M = 3; non-employed: M = 3.42) had the highest mean score, while item 17 (recording body weight after each measurement; employed: M = 2.92; non-employed: M = 2.78) was the lowest in both groups. For glucose monitoring, reporting blood glucose results to the doctor at each antenatal visit (item 22; employed: M = 2.93; non-employed: M = 3.09) showed the highest scores, whereas keeping detailed dietary records during periods of SMBG (item 21; employed: M = 2.56; non-employed: M = 2.56) showed the lowest. In risk assessment and management, employed women scored highest on item 23 (attending antenatal check-ups regularly as scheduled; M = 3.26) and lowest on item 27 (seeking prompt medical attention for unexplained nausea, vomiting or headache; M = 2.85), while

non-employed women scored highest on item 24 (following doctors' advice to complete additional examinations such as urine ketone tests or fundus examinations; $M = 3.42$) and lowest on item 26 (taking rapid-acting carbohydrates when blood glucose falls below 3.3 mmol/L; $M = 3.02$). Regarding psychosocial adaptation, both groups had their highest scores on item 33 (seeking help from others when encountering difficulties in self-management during pregnancy; employed: $M = 3.63$; non-employed: $M = 3.64$) and the lowest scores on item 30 (obtaining information about GDM from books, television or the internet; employed: $M = 3.25$; non-employed: $M = 3.13$)

Independent-samples t tests were conducted to compare SMB scores between employed and non-employed women (Table 3). No significant differences were found in overall SMB or in any of the six subscales, including dietary management, exercise management, weight management, glucose monitoring, risk assessment and management, and psychosocial adaptation (all $p > .05$). Although the largest t value was observed for glucose monitoring ($t = -1.45$, $p = .149$), this difference did not reach statistical significance.

Table 3. SMB by employment status in women with diet-controlled GDM: descriptive statistics and independent-samples t tests (Employed $n = 89$; Non-employed $n = 71$)

Subscales	Groups	Possible range	Actual range	Mean	SD	Level	t	p
Dietary management	employed	9-45	12-45	30.88	6.21	Moderate	.04	.969
	Non-employed		15-43	30.94	6.34	Moderate		
Exercise management	employed	5-25	5-25	13.72	5.45	Low	-.95	.344
	Non-employed		5-25	12.94	5.79	Low		
Weight management	employed	4-20	4-20	12.91	5.30	Moderate	-.35	.730
	Non-employed		4-20	13.75	5.05	Moderate		
Glucose monitoring	employed	4-20	4-20	11.71	4.41	Low	-1.45	.149
	Non-employed		4-20	12.88	4.17	Moderate		
Risk assessment and management	Employed	6-30	8-30	21.04	5.46	Moderate	-1.35	.180
	Non-employed		12-30	21.81	4.05	Moderate		
Psychosocial adaptation	Employed	5-25	8-25	16.69	4.48	Moderate	.91	.363
	Non-employed		7-25	17.44	4.41	Moderate		
Overall SMB	Employed	33-165	57-152	104.56	23.36	Moderate	-.68	.497
	Non-employed		69-147	107.01	21.70	Moderate		

Discussion

In this study, both employed and non-employed women showed only moderate levels of total score of SMB rather than high levels, which is consistent with previous studies (Guo et al., 2025). Specifically, dietary management remained moderate, exercise management was the lowest-scoring

domain, and glucose monitoring was relatively weak. Although all participants received standardized education and follow-up the hospital, many appeared to struggle with translating comments on diet, exercise and glucose monitoring into daily SMB (Xu et al., 2023).

Based on the revised SFMF, self-management is shaped by the joint influence of knowledge, self-efficacy, resources and contextual demands, rather than by employment status alone (Grey et al., 2015). Several factors may therefore explain why both groups remained at a moderate level. First, health literacy in Chinese women with GDM is often fragmented: they can answer factual questions, but have limited ability to apply this knowledge to complex behaviours such as carbohydrate exchange, estimation of hidden fat, or dynamic adjustment of diet and monitoring plans in real-life situations (Tan et al., 2023). Second, cultural beliefs such as “eating for two” and “rest as much as possible during pregnancy”, together with family members’ tendency to discourage physical activity, frequently conflict with professional advice and reduce adherence to dietary and exercise regimens (Luo et al., 2024). Third, most participants were primigravida with no previous experience of diabetes self-management; qualitative work suggests that such women are easily overwhelmed by the simultaneous demands of dietary restriction, exercise, weight control, SMBG and record-keeping, making long-term adherence difficult (Luk et al., 2025). In addition, structural features of the Chinese health-care system high patient volumes in tertiary hospitals, short consultation times and shortages of diabetes-specialist staff mean that education is often intermittent and one-way, with limited ongoing support (Zhou et al., 2019).

Among employed and non-employed women, dietary-management scores were moderate level (employed $M = 30.88$; non-employed $M = 30.94$). The highest-scoring item was eating 300-500 g of vegetables daily with at least two-thirds of the intake consisting of dark-green varieties, whereas the lowest-scoring item was limiting daily fat intake to ≤ 25 g (about 2-3 tablespoons). Previous study has found that vegetable-rich dietary patterns are culturally acceptable in China and are associated with a lower risk of GDM (Chen et al., 2020). In contrast, pregnant women find it difficult to quantify fat intake because traditional cooking uses unspecified amounts of oil, portion guidance is rarely framed in grams or tablespoons, mixed dishes and restaurant meals obscure the actual fat content, and diet education seldom teaches practical skills for estimating or measuring fat (Hui et al., 2014).

Exercise management was the lowest SMB domain in both groups (employed $M = 13.72$; non-employed $M = 12.94$). Adherence was highest for choosing a suitable low-impact activity (employed $M = 3.36$; non-employed $M = 3.09$), but lowest for gradually increasing exercise intensity (employed: $M = 2.97$; non-employed: $M = 2.07$). Increasing intensity requires sustained engagement, the ability to interpret intensity/progression cues, and sufficient self-efficacy (Harrison et al., 2018). Previous studies show that pregnancy-related discomfort, fear of fetal harm, rest-oriented cultural norms and a lack of tailored advice are all associated with poor exercise management (Craig et al., 2020). Non-employed women, who tend to spend more time at home, often receive stronger family messages to “rest more” and have fewer opportunities for structured exercise beyond housework, which may contribute

to their lower scores (Sun et al., 2023).

Weight management demonstrated moderate scores across both groups (employed: $M = 12.91$; non-employed: $M = 13.75$), with the highest adherence to weekly weighing on a fixed day (employed $M = 3.00$, non-employed $M = 3.42$) but notably lower engagement in recording body weight measurements (employed $M = 2.79$, non-employed $M = 2.78$). Non-employed women scored slightly higher overall, which may reflect greater flexibility in daily schedules and fewer work-related barriers to accessing a scale. Compared with simply stepping on a scale, keeping written records is a more demanding self-monitoring task that requires sustained attention, executive function and motivation (Burke et al., 2011). In addition, women with GDM often report weight-related stigma, body-image concerns and anxiety about excessive gestational weight gain, which can make them reluctant to record and confront their weight trajectory (Carolan, 2013).

Glucose monitoring revealed moderate scores with notable employment-related differences (employed: $M = 11.71$; non-employed: $M = 12.88$), with the highest adherence to reporting blood glucose results to healthcare providers at antenatal visits (employed $M = 2.93$, non-employed $M = 3.09$) but markedly lower engagement in keeping detailed dietary records during self-monitoring periods (employed $M = 2.56$, non-employed $M = 2.79$). Prenatal visits provide fixed review points at which glucose records are routinely requested and directly guide treatment decisions, making reporting simple, expected and useful, thereby enhancing adherence (Broughton & Douek, 2019). In contrast, detailed food logging requiring constant remembering and estimation, adds emotional stress, exposes gaps in dietary skills, and is poorly supported by existing recording tools, making it easily disrupted by social and work contexts (Martis et al., 2018). For employed women, additional workplace barriers rigid schedules, limited privacy, concerns about stigma around visible self-care, the inconvenience of carrying equipment, and work-related stress further constrain glucose monitoring (He et al., 2024).

Risk assessment and management displayed moderate scores across both groups (employed: $M = 21.04$; non-employed: $M = 21.81$), though with distinct highest-scoring items: employed women scored highest on attending antenatal check-ups regularly as scheduled ($M = 3.26$), while non-employed women scored highest on following doctors' advice to complete additional recommended examinations ($M = 3.42$). However, employed women scored lowest for promptly seeking medical help when experiencing unexplained nausea, vomiting or headache ($M = 2.85$), while non-employed women scored lowest for taking fast-acting carbohydrates when glucose fell below 3.3 mmol/L ($M = 3.02$). Studies show that women with GDM often feel anxious, stressed and overwhelmed by SMB demands, and cultural norms that value endurance or "putting up with it" can delay help-seeking even when alarming symptoms occur (Luo et al., 2024). While guidelines emphasize clear education on recognizing and treating hypoglycemia, clinical practice reports suggest such training is frequently incomplete in busy antenatal services (American Diabetes Association Professional Practice Committee, 2025).

Psychosocial adaptation was moderate and highly similar between groups (employed: $M = 16.69$; non-employed: $M = 17.44$). In both groups, the highest scores were for seeking help from others when facing self-management difficulties during pregnancy (employed: $M = 3.63$; non-employed: $M = 3.64$), and women were more likely to discuss how to manage GDM with family or friends (employed: $M = 3.50$; non-employed: $M = 3.24$) than to obtain information from books, television or the internet (employed: $M = 3.25$; non-employed: $M = 3.13$). In the Chinese cultural context, pregnancy and GDM are commonly regarded as family matters, so husbands and older female relatives become the main providers of emotional, practical and health-information support (Luo et al., 2024). At the same time, many women lack confidence in judging the reliability of online content and feel confused by large volumes of sometimes conflicting information, leading them to prefer “trusted” interpersonal sources over written or anonymous web-based materials (Xu et al., 2024).

This study found no significant difference in SMB between employed and non-employed pregnant women, which is consistent with the revised Self- and Family Management Framework. The framework regards employment as only one element of the environmental context, while SMB is mainly shaped by individual, family and health-care system factors (Grey et al., 2015). Previous studies suggest that health literacy, social support, and self-efficacy are stronger predictors of SMB than occupation or other sociodemographic characteristics (Tang, Zhong, et al., 2023). In our study, pregnant women in both groups received similar diabetes education and follow-up in the same tertiary hospital, so these key determinants were likely comparable, thereby weakening the independent effect of employment status. Non-employed women may have greater flexibility in managing their daily routines, which could facilitate adherence to recommended SMB. In contrast, employment may have had counterbalancing effects on SMB: while work can limit time and flexibility for meal planning, exercise, and glucose monitoring, it may also provide better access to health information, financial resources, insurance coverage, and more regular routines, partly offsetting these constraints (Oostenbach et al., 2022).

Moreover, employment may influence the pattern of SMB rather than only the total score. Research on Chinese pregnant nurses with GDM has shown that heavy workloads and shift work can interfere with dietary management, physical activity, and timely glucose monitoring during working hours, whereas workplace support can partly reduce these burdens (He et al., 2024). Recent qualitative evidence also shows that time pressure, fatigue, and insufficient support remain important barriers to GDM self-management (Luk et al., 2025). In practical terms, employed women may find it difficult to eat regular meals on time, estimate oil and portion size in canteen or restaurant food, complete postprandial walking, or perform SMBG and record-keeping at recommended times because of fixed schedules, meetings, commuting, shift duties, or limited break flexibility (Luk et al., 2025). These challenges suggest that employment may influence the pattern of SMB rather than only the total score, especially in domains such as dietary management and glucose monitoring.

Conclusion and Implementation

In this study, pregnant women with diet-controlled GDM showed an overall moderate level of SMB, and total SMB scores did not differ significantly between employed and non-employed participants. These findings indicate that employment status alone is not a major determinant of SMB, while key behaviors remain suboptimal. Nursing interventions should therefore focus on strengthening exercise management, improving practical dietary skills, particularly fat control, and supporting glucose-monitoring behaviors that require sustained daily implementation, especially record-keeping. For employed women, additional guidance may be needed to address work-related barriers to maintaining regular meals, postprandial activity, and timely SMBG.

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