

Impact of the LINE–Based Health Literacy Program on Health Behaviors and Gestational Weight Gain in Overweight and Obese Pregnant Women: A Quasi–Experimental Study

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Abstract: Being overweight or obese pre-pregnancy or during pregnancy is a significant risk factor affecting maternal and fetal health. Therefore, pregnant women in this group require specific care to prevent adverse outcomes. A quasi-experimental study was conducted to evaluate the impact of a Health Literacy Program on health behaviors and gestational weight gain among pregnant women who were overweight or obese, which was delivered via a LINE official account. The sample consisted of such women attending an antenatal clinic of a general hospital in southern Thailand. The experimental group received the health literacy program in addition to routine nursing care for eight weeks ($n = 30$), while the control group received only routine nursing care ($n = 30$). The study was conducted in the control group first, followed by the experimental group. Data were collected using a General Information Questionnaire and the Health Behavior Assessment Tool for Overweight or Obese Pregnant Women. Data analysis was conducted using descriptive statistics, independent t-test, paired t-test, and chi-square test.

The findings indicated that, following the intervention, the experimental group demonstrated significantly higher mean health behavior scores than at baseline, whereas the control group showed no change. In addition, the proportion of pregnant women who were overweight or obese who achieved gestational weight gain according to standard criteria was significantly greater in the experimental group compared with the control group. Therefore, the program is recommended as a guideline for antenatal care in this population, with further evaluation warranted in larger and more diverse settings.

Keywords: Health behaviors, Health literacy, Obesity, Overweight, Pregnant women, Thailand, Weight gain

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Introduction

Being overweight or obese during pregnancy constitutes a major global public health concern internationally, including in Thailand, which was the location for this study. National data from 2022 to 2024 indicated an increasing prevalence of obesity

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among women of reproductive age, at 17.1%, 17.7%, and 18.4%, respectively.¹ Similarly, data from the antenatal care unit of a general hospital in

southern Thailand from 2022 to 2024 showed that the proportions of pregnant women with overweight or obese were 25.20%, 23.60%, and 24.22%, respectively.²

Being overweight or obese adversely affects the health of both the mother and their fetus. Compared with women with a normal body mass index, pregnant women who are overweight or obese are at increased risk for pregnancy complications during the antenatal, intrapartum, and postpartum periods.³ These complications include hypertensive disorders, gestational diabetes mellitus,⁴ emergency cesarean delivery due to macrosomia, postpartum hemorrhage, postpartum infections, and complications in subsequent pregnancies.⁵ Fetuses of overweight or obese mothers are at higher risk of neonatal hypoglycemia and childhood obesity.⁶ Severe consequences can include maternal or fetal death.⁷

The primary goals of caring for pregnant women who are overweight or obese are to promote healthy behaviors and to ensure appropriate gestational weight gain.⁸ Specifically, when these women possess a clear understanding of the meaning and potential complications associated with excessive weight during pregnancy, receive accurate risk information, and are able to analyze the information provided critically, they are more likely to recognize the importance of adopting healthy behaviors,^{9,10} such as maintaining healthy dietary practices and engaging in appropriate physical activity.¹¹ In addition, ensuring appropriate gestational weight gain is essential. According to guidelines issued by the Institute of Medicine,¹² appropriate weekly weight gain recommended during the second and third trimesters is 0.27 kg (0.23–0.32) for overweight women and 0.23 kg (0.18–0.27) for women with obesity. These recommendations served as the reference standard at the hospital where the present study was conducted.

LINE is an effective digital platform for providing counseling, teaching, and health education,¹³ enabling rapid problem-solving and information exchange.¹⁴ It allows repeated access to information, saves time, reduces costs, and is free of charge. LINE has been used in various studies to promote health literacy.¹⁵ However, there are limited studies in Thailand among pregnant women who are overweight or obese. Thus, this study sought to promote health behaviors and appropriate gestational weight gain among this population. The aims were to support self-directed learning, enhance health information processing, enable timely problem-solving communication, and reduce maternal and fetal complications.

Conceptual Framework and Review of Literature

The conceptual framework of this study was grounded in Nutbeam's health literacy concept¹⁶ and integrated with a literature review to guide the development of a health literacy program (HLP) delivered via LINE. According to Nutbeam,¹⁶ health literacy is defined as an individual's ability and skill to access, understand, apply, and communicate health-related information to promote and maintain good health. Good health is categorized into three levels: 1) Functional health literacy: the ability to use health information in daily life to maintain health; 2) Communicative/interactive health literacy: the ability to select and apply health information to improve one's health; and 3) Critical health literacy: the ability to analyze, evaluate, and appropriately apply health information for decision-making about one's health.¹⁶

Furthermore, health literacy comprises six core components,¹⁶ which were adapted and integrated

across the levels of health literacy in this study, along with evidence from the literature. Component 1: Cognitive skills and Component 2: Access skills were developed into *Activity 2: “Not as Hard as You Think,”* aimed at enhancing basic health risk literacy (Level 1). Component 3: Communication skills were incorporated into *Activity 3: “Creative Communication.”* Component 4: Self-management skills were addressed in *Activity 4: “Sharing Stories.”* Component 5: Media literacy skills were integrated into *Activity 5: “Listen Carefully.”* Activities 3–5 focused on promoting interactive health literacy (Level 2). Component 6: Decision-making skills were included in *Activity 6: “Now I Know, I Will Change,”* targeting the development of critical health literacy (Level 3). Additionally, *Activity 1: “Get Ready to Learn”* prepared pregnant women with overweight or obese at their first antenatal visit, and *Activity 7: “Take Action”* encouraged participants to implement their planned health behaviors. Activities 2–7 were delivered via LINE OA, enabling participants to develop health literacy, which in turn would improve their health behaviors¹⁷ and support appropriate gestational weight gain within eight weeks.^{6,18}

A review of the literature indicates that healthy behaviors for pregnant women who are overweight or obese primarily involve dietary and physical activity practices, as these directly influence gestational weight gain.^{9,19} Furthermore, obesity has been associated with low health literacy.^{20–21} Individuals with obesity tend to have sedentary lifestyles, consume high-calorie foods of low nutritional quality, and engage in limited physical activity.^{11,22} Pregnant women with low health literacy often have inappropriate health beliefs and behaviors.²³ Conversely, higher health literacy enables individuals to seek, appraise, and apply health information effectively, leading to beneficial health

behaviors such as healthy eating and regular exercise.¹⁶ Among pregnant women, health literacy has been found to have a strong positive correlation with exercise behaviors,²⁴ and those who participate in health literacy programs demonstrate significantly improved health-promoting behaviors, with increased awareness, motivation, and engagement in physical activity.²⁵

The approach to achieving the recommended gestational weight gain for overweight or obese pregnant women combines promoting healthy eating and physical activity to maintain energy balance between dietary intake and energy expenditure.^{8–9}

1) Dietary behavior: Encouraging consumption of foods from all five food groups in appropriate proportions to meet nutritional needs, while reducing inappropriate eating habits such as snacking while watching television or working, eating until overly full due to food waste concerns, and lying down immediately after meals.^{26–27} 2) Physical activity: Promoting daily body movement and avoiding prolonged sitting or lying down, such as doing household chores, light exercise, or walking after meals; encouraging aerobic exercises and muscle-strengthening activities (e.g., walking, swimming, cycling, yoga); and recommending regular exercise for 30 minutes at least 3–5 times per week.^{3,28}

A review of the literature found no previous studies applying Nutbeam’s health literacy concept¹⁶ specifically to promote health behaviors and appropriate gestational weight gain among pregnant women overweight or obese. However, health literacy interventions have been implemented in other pregnant populations, including general pregnant women,²⁵ pregnant women with iron-deficiency anemia,²⁹ and pregnant women with gestational diabetes mellitus,³⁰ with positive health outcomes in all cases.

Study Aim and Hypothesis

This study aimed to evaluate the effects of the LINE OA-delivered Health Literacy Program on health behaviors and gestational weight gain in pregnant women who are overweight or obese. The hypothesis was that women who received HLP via LINE OA would have higher health behavior scores and a greater proportion achieving the recommended gestational weight gain than those receiving routine nursing care alone.

Methods

Design: A quasi-experimental study using a pretest-posttest control group design was conducted and reported in accordance with the Transparent Reporting of Evaluations with Non-randomized Designs (TREND) guidelines.

Sampling and Setting: The sample comprised pregnant women who were overweight or obese attending antenatal care at a general hospital in southern Thailand. The sample was selected using purposive according to the following inclusion criteria: 1) aged over 19 years; 2) singleton pregnancy at 14–28 weeks' gestation; 3) no symptoms of nausea or vomiting; 4) pre-pregnancy body mass index (BMI) ≥ 25 kg/m²; 5) absence of severe hypertensive disorders in pregnancy, diabetes mellitus, or thyroid disease; 6) possession of a smartphone capable of using the LINE application; 7) ability to read and write in Thai; and 8) willingness to participate in the study.

The sample size was determined using a power analysis table based on an effect size from a previous study¹⁸ on the effects of a self-management program on weight-control behaviors. Using the mean $\pm$ standard deviation of weight control behavior scores at the completion of the intervention in the experimental group (63.88 ± 8.57) and control group ($51.40 \pm$

13.45), the calculated effect size was 1.10, which is considered large.³¹ The researchers adjusted the effect size to 0.80, an acceptable value,³² with a significance level of 0.05 and a power of 0.80, resulting in a required sample size of 25 participants per group, or 50 in total.³³ To account for a potential 20% attrition rate,³² the sample size was increased to 30 participants per group, totaling 60 participants. Eligible participants were selected using purposive sampling, and no participants were lost to follow-up during data collection.

Ethical Considerations: The study protocol received ethical approval from the Human Research Ethics Committee for Social and Behavioral Sciences, Prince of Songkla University (Approval No. 2024–St Nur 029 [Internal], issued on 29 August 2024 to 29 August 2026). Permission to collect data was also granted by a general hospital in southern Thailand, the research setting.

Prior to data collection, the researcher provided eligible pregnant women with detailed information regarding the study, including its purpose, procedures, potential benefits, and possible risks, in a private consultation room to ensure confidentiality and privacy. Participation was entirely voluntary, with no coercion, and participants were informed that they had the right to withdraw at any time without affecting their antenatal care. All information obtained from participants was kept strictly confidential; participant names were replaced with codes during data analysis. Written informed consent was obtained from all participants prior to their enrollment in the study.

Instruments: The instruments used in this study comprised three categories: a data collection instrument, a research monitoring instrument, and experimental instruments.

Data Collection Instruments

The *General Information Questionnaire* consisted of two parts: Part 1 contained eight items on demographic characteristics (age, marital status,

education level, religion, occupation, income, family type, and cooking methods). Part 2 contained four items on obstetric information (pre-pregnancy BMI, number of pregnancies, gestational age at the first antenatal visit, and current gestational age), for a total of 12 items.

The Health Behavior Assessment for Pregnant Women with Overweight or Obese (HBAPWOO): This instrument was adapted from the Health Behavior Practices Questionnaire for Pregnant Women with Overweight or Obese developed by Gettong and colleagues.³⁴ The HBAPWOO consists of two domains: 1) dietary behaviors (15 items), for example, “*I consume foods that are boiled, steamed, grilled, or prepared as a salad instead of those fried in oil*”; and 2) physical activity behaviors (expanded from the original six items to eight items), for example, “*I spend my free time engaging in activities such as exercising or doing household chores*.” In total, the instrument contains 23 items, of which 17 are positively worded and six are negatively worded. Responses are assessed on a 5-point Likert scale. For positively worded items, response options are scored as follows: always (every day) = 5, often (5–6 days per week) = 4, sometimes (3–4 days per week) = 3, rarely (1–2 days per week) = 2, and never (not at all) = 1. For negatively worded items, the scoring is reversed: always = 1, often = 2, sometimes = 3, rarely = 4, and never = 5. The possible scores range from 23 to 115. Health behavior practices are classified into three categories: 23–54.33 (low level), 54.34–85.66 (moderate level), and 85.67–115 (high level). In our study, the content validity index (CVI) evaluated by three experts was 0.82, and the instrument demonstrated good internal consistency of the instrument was observed, as indicated by a Cronbach’s alpha of 0.87.

Digital Weighing Scale: A hospital-provided, calibrated, manufacturer-certified digital scale was used

to measure participants’ body weight in kilograms. Weight gain was assessed using the Institute of Medicine¹² guidelines, based on pre-pregnancy BMI, for the second and third trimesters. Overweight women (BMI 25–29.9 kg/m²) should gain 0.23–0.32 kg/week, whereas obese women (BMI ≥ 30 kg/m²) should gain 0.18–0.27 kg/week.

Research Monitoring Instrument: Participants used a dietary and physical activity record to document daily food intake (three meals per day) and physical activity. The record was submitted via LINE OA using a Google Form. The primary investigator (PI) reviewed the records daily.

Health Literacy Program (HLP) via LINE Official Account

The HLP was developed by the researchers and delivered both during antenatal clinic visits and through LINE OA. It comprised six sessions, each covering seven activities, lasting 15–40 minutes, over eight weeks. The program content was reviewed for accuracy, comprehensiveness, and linguistic clarity by three experts: 1) a faculty member in maternal, newborn, and midwifery nursing, 2) an advanced practice registered nurse specializing in midwifery, and 3) a nutritionist. In addition, the program was pilot tested with three pregnant women who were overweight or obese to ensure feasibility. The HLP included an electronic book (e-book) titled “Knowledge for Pregnant Women who are Overweight or Obese,” containing illustrated content on definitions, risk factors, consequences, goals, recommended care practices, and appropriate health behaviors.

A LINE OA platform (“health literacy”) accessible via a QR code was used for communication and program delivery. It comprised: 1) e-book content, 2) dietary and physical activity record forms, and 3) an appointment schedule for subsequent activities. Activity details are presented in **Figure 1**.

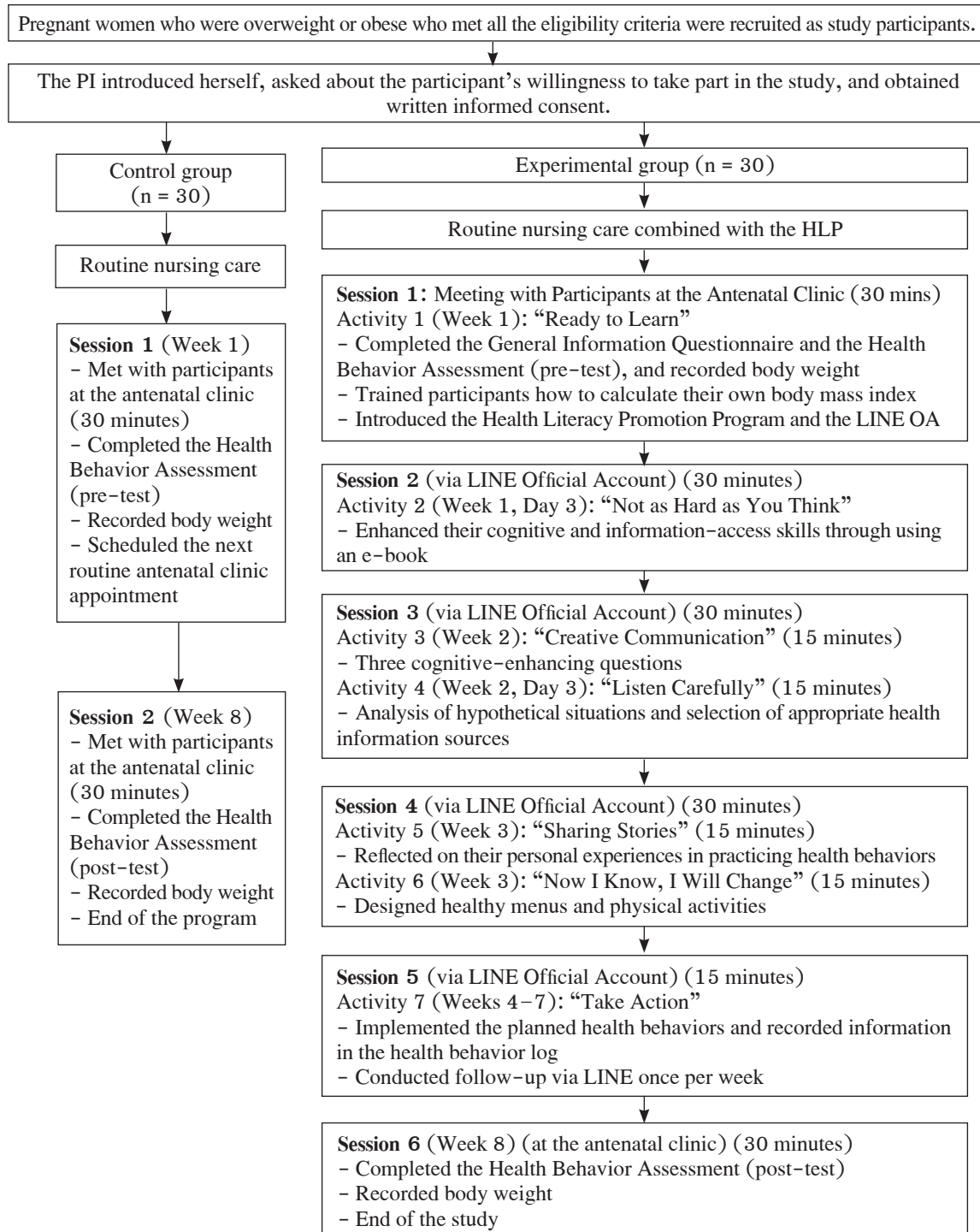


Figure 1. The Health Literacy Program via LINE Official Account

Routine Nursing Care: Both groups received standard antenatal care at the hospital's antenatal clinic for pregnant women with overweight or obesity, including history-taking, physical examination, antenatal check-up, dietary and exercise counseling, monitoring of recommended weight gain, and risk screening in accordance with hospital protocols.

Data Collection: Data were collected from December 2024 to May 2025. After receiving IRB approval, the PI posted a recruitment poster at the antenatal clinic. Nurses at the clinic invited pregnant women who were overweight or obese to participate in the study and screened them for eligibility based on the inclusion criteria. The PI introduced herself, established rapport, explained the study procedures and participants' rights, and obtained written informed consent from participants. The study was carried out in the control group first, followed by the experimental group. For the control group, participants first completed the General Information Questionnaire and the HBAPWOO (pre-test), and their weight was recorded from their antenatal care record book. After eight weeks, the PI administered the post-test using the HBAPWOO and recorded the participants' weight again from the antenatal care record book. Upon completion of data collection for the control group, the same procedure was implemented for the experimental group, with the addition of receiving the HLP via LINE OA (**Figure 1**). This sequential approach was used to prevent contamination between the two groups.

Data Analysis: The data were processed and analyzed using SPSS at a significance level of 0.05. Participant demographic and obstetric characteristics were summarized using descriptive statistical measures, including frequencies, percentages, means, and standard deviations. For hypothesis testing, assumptions were checked prior to analysis. Normality was assessed using the Kolmogorov-Smirnov and Shapiro-Wilk tests, as well as standardized skewness and kurtosis. Visual

inspection of histograms and Q-Q plots confirmed the results. Homogeneity of variances for independent t-tests was evaluated using Levene's test, which revealed no violations detected. Health behavior scores before and after the intervention within each group were normally distributed and met the assumptions for paired t-tests, which were applied. Comparisons of post-intervention health behavior scores between the experimental and control groups met the assumptions of normality, independence, and equal variance, allowing the use of independent t-tests. The proportions of women achieving recommended gestational weight gain were analyzed using chi-square tests, with all assumptions met (independence of observations, mutually exclusive groups, and expected cell counts ≥ 5). No other assumption violations were found.

Results

Characteristics of the participants

Both the experimental and control groups consisted of pregnant women who were overweight or obese and aged 20–40 years. Most participants were married, held a bachelor's degree, and practiced Buddhism. In terms of occupation, most women in the control group were engaged in trade or agriculture, whereas those in the experimental group were primarily employed as wage earners, in freelance work, or in trade/agriculture. The mean monthly household income was 19,533 THB (618.92 USD) for the experimental group and 21,433 THB (679.12 USD) for the control group. In both groups, the majority lived in nuclear families and purchased their own food.

Participants in both groups were classified as overweight based on pre-pregnancy BMI, and most were primigravidae. The majority attended their first antenatal visit before 12 weeks of gestation. At the time of the study, participants' gestational ages ranged from 14.14 to 27.71 weeks.

Comparisons of demographic and obstetric characteristics between the experimental and control groups were conducted using independent t-tests, likelihood ratio tests, and chi-square tests; no statistically significant differences were identified (Table 1).

Table 1. Demographic and obstetric characteristics of participants (N = 60)

Characteristics	Control group (n = 30)		Experimental group (n = 30)		t/ χ^2	p-value
	n	%	n	%		
Demographic information						
Age (years)						
M (SD)	29 (6.134)		28 (5.024)		-0.228 ^a	0.249
Min–Max	20–40		20–38			
Marital Status						
Single	0	0	2	6.70	3.059 ^b	0.217
Married	22	73.30	22	73.30		
Separated	8	26.70	6	20.00		
Education level						
Primary–lower secondary education	7	23.30	5	16.70	1.790 ^c	0.774
Upper secondary education	12	40.00	9	30.00		
Bachelor’s degree	11	36.70	16	53.30		
Religion						
Buddhism	16	53.30	20	66.70	1.111 ^a	0.292
Islam	14	46.70	10	33.30		
Occupation						
Government employee	2	6.70	1	3.30	2.905 ^b	0.407
Employed/freelance	7	23.30	13	43.30		
Trading/Agriculture	15	50.00	12	40.00		
Not working	6	20.00	4	13.40		
Monthly income THB/USD						
M (SD)	21,433 (5,775)/ 679.12 (182.98)		19,533 (5,618)/ 618.92 (178.01)		-0.228 ^a	0.249
Min–Max	15,000–30,000/ 475.29–950.57		12,000–32,000/ 380.23–1,013.94			
Family characteristics						
Nuclear family	15	50.00	18	60.00	0.606 ^a	0.436
Extended family	15	50.00	12	40.00		
Food preparation						
Oneself	9	30.00	9	30.00	0.389 ^a	0.823
Family member	10	33.30	8	26.70		
Buy prepared meals	11	36.70	13	43.30		

Table 1. Demographic and obstetric characteristics of participants (N = 60) (Cont.)

Characteristics	Control group (n = 30)		Experimental group (n = 30)		t/ χ^2	p-value
	n	%	n	%		
Obstetric information						
Body mass index (BMI)						
Overweight (>25–29.9kg/m ²)	27	90.00	26	86.70	0.162 ^b	0.678
Obesity (> 30 kg/m ²)	3	10.00	4	13.30		
Number of pregnancies						
Primiparas	19	63.30	18	60.00	0.071 ^c	0.791
Multiparas	11	36.70	12	40.00		
Age at first prenatal visit (weeks)						
≤ 12	26	86.70	25	83.30	0.131 ^b	0.717
> 12	4	13.30	5	16.70		
Current gestational age (weeks)						
M (SD)	19.16 (3.234)		19.57 (3.468)		0.468 ^a	0.831
Min–Max	14.14–26.00		14.28–27.71			

Note. ^a = Independent t-test, ^b = Likelihood ratio, ^c = Chi-square test

Effects of the HLP via LINE OA

Before the intervention, mean health behavior scores did not differ significantly between the experimental and control groups. After the intervention, scores in

both groups increased significantly; however, scores in the experimental group were significantly higher than those in the control group (**Table 2**).

Table 2. Comparison of post-intervention mean health behavior scores between the control and experimental groups and between before and after the intervention in each group (N = 60)

Variable	Control group (n = 30)		Experimental group (n = 30)		t	p-value
	M	SD	M	SD		
Health behavior						
Pre-test	79.33	11.61	78.50	9.64	–0.302 ^a	0.763
Post-test	83.96	11.53	98.26	3.00	6.569 ^a	< 0.001
t	–5.556 ^b		13.343 ^b			
p-value	< 0.001		< 0.001			

Note. ^a = Independent t-test, ^b = Paired t-test

The proportion of pregnant women with overweight or obese who achieved the recommended gestational weight gain was significantly higher in the

experimental group compared to the control group, as shown in **Table 3**.

Table 3. Comparison of the proportion meeting gestational weight gain criteria between the experimental and control groups (N = 60)

Weight gain	Control group (n = 30)		Experimental group (n = 30)		χ^2	p-value
	N	%	N	%		
Pre-test						
Meeting criteria	12	40.00	10	33.30	0.287	0.592
Not meeting criteria	18	60.00	20	66.70		
Post-test						
Meeting criteria	9	30.00	18	60.00	5.455	0.020
Not meeting criteria	21	70.00	12	40.00		

Discussion

The findings of this study demonstrated the effectiveness of the Health Literacy Program via the LINE Official Account in promoting health behavior and achieving the recommended gestational weight gain among overweight or obese pregnant women.

The application of Nutbeam's health literacy framework,¹⁶ combined with evidence synthesized from the literature, enabled the women to develop a clearer, more accurate understanding of the meaning and potential complications associated with excessive weight during pregnancy. By receiving risk-related information and critically analyzing the content, these women were better able to recognize the importance of engaging in healthy behaviors, including adopting healthier dietary practices and maintaining appropriate levels of physical activity.^{10,11} This finding aligns with previous studies reporting a strong positive correlation between health literacy and exercise behaviors during pregnancy.²⁴ Conversely, pregnant women with low health literacy have been shown to exhibit inappropriate health beliefs and unhealthy behaviors.³⁵ Similarly, a study conducted among pregnant women in Afghanistan demonstrated a statistically significant positive association between health literacy and overall health behavior practices.⁹

The e-book used in the program provided pregnancy-specific information for overweight or obese women, offering advantages such as accessibility, affordability, and the ability to review content anytime, anywhere. The content included definitions, current situations, risks, goals, appropriate health behaviors, and weight-control recommendations during pregnancy, supported by evidence-based references and accompanied by clear, colorful illustrations. This format increased participants' interest and facilitated practical application of health information in daily life,³⁶ enabling pregnant women to understand and apply behaviors appropriate to their health condition, such as healthy food selection and adherence to healthcare providers' recommendations.³⁷ Similar to a previous study, it was found that using e-books alongside smartphone applications significantly improved motivation for healthy behaviors and control of gestational weight gain.³⁸

Delivering the program via LINE OA also facilitated direct communication between participants and the researcher, a healthcare professional. LINE is an appropriate platform for counseling, teaching, and health education,¹³ enabling two-way interaction and repeated access to information, thereby saving time and reducing costs. In this study, weekly follow-ups via LINE OA enabled reinforcement of health behaviors and problem-solving and provided tailored feedback

based on each participant's progress. The rapid information-exchange capabilities of LINE OA¹⁴ align with findings from a previous study that demonstrated that weekly follow-ups via LINE, aimed at addressing barriers and providing continuous support, significantly improved weight-control behavior scores compared with routine care.¹⁸

The program also incorporated self-monitoring tools, such as daily logs of dietary intake and physical activity, allowing participants to systematically observe their own behaviors, identify areas for improvement, and set and monitor personal goals. This approach has been shown to enhance accountability and foster sustained health behavior changes. Similar to a previous study, it was found that dietary and exercise self-monitoring in pregnant women who were overweight or obese resulted in significantly higher weight control behavior scores compared to routine care.¹⁸ Previous studies support our finding that dietary logging combined with specific exercise tracking (e.g., arm swinging) significantly improved both dietary and exercise behaviors after the intervention.³⁹

Furthermore, by promoting both dietary control and physical activity, the program contributed to achieving the recommended gestational weight gain. Dietary regulation, combined with physical activity, supports energy balance between caloric intake and expenditure.^{8,9} Consistent with a prior study,²⁵ the application of Nutbeam's health literacy concept¹⁶ through lectures, demonstrations, and skills training significantly improved gestational weight gain and health behaviors, including healthier dietary practices and appropriate exercise.

Limitations

This study has several limitations. First, because the PI both administered the intervention and collected the data, unconscious bias may have been introduced, potentially affecting internal validity, particularly for self-reported health behaviors.

Second, participation was limited to individuals who owned a smartphone with internet access and could use the LINE application, which may limit generalizability. Third, the quasi-experimental design involved assigning participants to the experimental and control groups at different time periods; therefore, differences in contextual or environmental conditions may have influenced the study outcomes.

Conclusions and Implications for Nursing Practice

The HLP delivered via LINE OA effectively promoted appropriate health behaviors and supported recommended gestational weight gain among pregnant women who were overweight or obese. Nurses, midwives, and other relevant healthcare professionals can apply the HLP in antenatal care for this population by creating a QR code to allow participants to access the health literacy activities directly. Future studies should explore additional outcomes of health literacy promotion, including maternal and neonatal health outcomes. They should employ randomized controlled trials across multiple sites to more rigorously evaluate the program's impact.

Author Contributions

Conceptualization, Method and design: N.J., W.C., W.S.

Data collection, Data analysis and interpretation: N.J.

Drafting the manuscript: N.J.

Editing and revising the manuscript: W.C.

Final approval of the manuscript: N.J., W.C., W.S.

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ผลของโปรแกรมส่งเสริมความรอบรู้ด้านสุขภาพผ่านไลน์ต่อพฤติกรรมสุขภาพ และการเพิ่มขึ้นของน้ำหนักในหญิงตั้งครรภ์ที่มีน้ำหนักเกินและอ้วน : การวิจัยกึ่งทดลอง

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บทคัดย่อ: ภาวะน้ำหนักเกินหรืออ้วนก่อนตั้งครรภ์เป็นปัจจัยเสี่ยงสำคัญที่มีผลต่อสุขภาพมารดาและทารก ดังนั้น หญิงตั้งครรภ์กลุ่มนี้ต้องได้รับการดูแลที่เฉพาะเจาะจงเพื่อป้องกันผลกระทบที่จะเกิดขึ้น การวิจัยกึ่งทดลองนี้ มีวัตถุประสงค์เพื่อศึกษาผลของโปรแกรมส่งเสริมความรอบรู้ด้านสุขภาพผ่านบัญชีไลน์ออฟฟิเชียลต่อพฤติกรรมสุขภาพและการเพิ่มขึ้นของน้ำหนักในหญิงตั้งครรภ์ที่มีน้ำหนักเกินหรืออ้วน กลุ่มตัวอย่างเป็นหญิงตั้งครรภ์ที่มีน้ำหนักเกินหรืออ้วนที่มาฝากครรภ์ ณ แผนกฝากครรภ์ โรงพยาบาลทั่วไปแห่งหนึ่งในภาคใต้ ประเทศไทย และมีคุณสมบัติตามเกณฑ์คัดเข้า กลุ่มทดลองได้รับโปรแกรมฯ และการพยาบาลตามปกติ เป็นระยะเวลา 8 สัปดาห์ ($n = 30$) กลุ่มควบคุมได้รับการพยาบาลตามปกติอย่างเดียว ($n = 30$) ดำเนินการวิจัยในกลุ่มควบคุมแล้วเสร็จ จึงดำเนินการในกลุ่มทดลอง เครื่องมือที่ใช้ในการเก็บข้อมูล ประกอบด้วยแบบสอบถามข้อมูลทั่วไป และแบบประเมินพฤติกรรมสุขภาพในหญิงตั้งครรภ์ที่มีน้ำหนักเกินหรืออ้วน วิเคราะห์ข้อมูลโดยใช้สถิติพรรณนา สถิติทีอัสระ สถิติทีคู่ และสถิติทดสอบไคสแควร์

ผลการวิจัยพบว่า กลุ่มทดลองมีคะแนนเฉลี่ยพฤติกรรมสุขภาพสูงกว่าก่อนทดลองอย่างมีนัยสำคัญทางสถิติ และมีคะแนนเฉลี่ยพฤติกรรมสุขภาพสูงกว่ากลุ่มควบคุมอย่างมีนัยสำคัญทางสถิติ รวมทั้งมีสัดส่วนของหญิงตั้งครรภ์ที่มีน้ำหนักเกินหรืออ้วน ที่มีน้ำหนักเพิ่มขึ้นตามเกณฑ์ขณะตั้งครรภ์ มากกว่ากลุ่มควบคุมอย่างมีนัยสำคัญทางสถิติ ดังนั้น ควรนำโปรแกรมนี้ไปใช้เป็นแนวทางในการดูแลหญิงตั้งครรภ์ที่มีน้ำหนักเกินหรืออ้วน อย่างไรก็ตามควรมีการทดสอบโปรแกรมนี้ในวงกว้างต่อไป

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