



NURSING CARE FOR TYPE 2 DIABETES MELLITUS PATIENTS BASED ON NOLA J. PENDER'S HEALTH PROMOTION MODEL: A CASE REPORT

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ABSTRACT

Type 2 Diabetes Mellitus (T2DM) is a global health burden with increasing prevalence. Persistent hyperglycemia can lead to both microvascular and macrovascular complications. The patient's adherence to therapy, especially lifestyle modifications (diet and physical activity), is the main determinant of treatment success. The purpose of this case report is to analyze the basic concepts, key components, and application of the Nola J. Pender Health Promotion Model in the nursing practice of Type 2 Diabetes Mellitus. This study employed a descriptive case report design. Data were collected through comprehensive nursing assessment, including patient interviews, physical examinations, anthropometric measurements, laboratory results, and review of medical records. Data analysis was conducted using a theory-based approach by systematically mapping patient data to the components of Nola J. Pender's Health Promotion Model. The analysis showed that the Health Promotion Model effectively guided nursing interventions to promote positive health behaviors, such as physical activity, balanced nutrition, medication adherence, and stress management. This model provides a comprehensive framework that considers personal, interpersonal, and situational factors in the formation of health behaviors. Nola J. Pender's Health Promotion Model provides systematic guidance for nurses to identify factors influencing health behaviors and design holistic, client-centered interventions.

Keywords: diabetes mellitus; health promotion; nursing; patient care planning

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INTRODUCTION

Diabetes is a heterogeneous syndrome characterized by defined hyperglycemia, which is classified as type 1 diabetes, type 2 diabetes, specific type of diabetes, and gestational diabetes mellitus (American, 2024). Diabetes has become a worldwide health burden due to its high incidence, disability, and mortality, which is estimated to be the eighth most common cause of disability deaths (Vos et al., 2020; Ong et al., 2023). In 2021, there were 529 million people of all ages worldwide living with diabetes, and the prevalence of the global age standard was 6.1%, which increased by 90.5% from 3.2% in 1990, and is expected to reach 9.8%, affecting 13.1 billion people. It should be noted that type 2 diabetes accounts for more than 96% of all (NGO) et al., 2023).

Type 2 diabetes is a complex multifactorial polygenetic disease that can be associated with many risk factors. Type 2 diabetes, which accounts for about 90% of all diabetes cases, is associated with a variety of modifiable risk factors (e.g., unhealthy diet, obesity, lack of physical activity, smoking and alcohol consumption) and non-modifiable factors (e.g., age, gender, genetic factors and demographic factors) (Kautzky-Willer, Harreiter and Pacini, 2016; Zheng, Ley and Hu, 2018; Murray et al., 2020; Awad et al., 2021). In 2021, high BMI contributed more than 50% of the life years adjusted for global type 2 diabetes disability (NGO) et al., 2023). Other factors such as dietary risk, environmental or occupational risks, tobacco use, low physical activity, alcohol use are all part of the risk of type 2 diabetes (NGO) et al., 2023).

Sustained hyperglycemia can cause damage to target organs by increasing the risk of panvascular diseases, including microvascular diseases (such as diabetic retinopathy, nephropathy and neuropathy), and atherosclerotic macrovascular diseases (cardiovascular, cerebrovascular and other peripheral vascular diseases) (Sperry et al., 2007; Cephalous Assunta et al., 2025). Type 2 diabetes is only one component of metabolic dysfunction syndrome, and is often accompanied by other components of metabolic dysfunction syndrome, such as being overweight/obese (preobesity may be a more appropriate term than "overweight" because obesity is not determined solely by weight), steatotic liver disease related metabolic dysfunction, dyslipidemia. They are usually considered to be an upstream disease of type 2 diabetes (Lu et al., 2024).

The ability of the Health Promotion Model to explain and anticipate individual health actions through logical thinking, which shows how demographic variables are related to human values and, ultimately, influence individual behavior as well as lifestyle, has made it the model of choice for many health promotion organizations (Shahabi et al., 2022, 2024). Therefore, to improve the state of health, more attention should be paid to exercise and nutrition, and personalized arrangements also need to be made for patients (Petroni et al., 2021; Syeda et al., 2023; Ji et al., 2024). Educational activities about DM which are the responsibility of nurses who have an educational role in physical activity and healthy nutrition are unfortunately still mediocre. It is recommended that nurses plan and be formally involved in the process of implementing health promotion programs for patients (Martos-Cabrera et al., 2021). To improve patient adherence, the use of individual models is necessary to build strong relationships between healthcare teams and patients as well as change in healthcare behaviors. It is important to use nursing models in this area that allow nurses to be scientific and realistic towards a behavior, and in this context, one of the scientifically proven models is the Health Promotion Model (HPM) (He, Chen and Zeh, 2023).

METHOD

The conceptual framework of the Nola J. Pender Health Promotion Model consists of three main components that interact with each other systematically. The first component is individual characteristics and experiences that include previous behaviors as well as personal factors (biological, psychological, and sociocultural). Previous behaviors have a direct or indirect influence on the implementation of current health promotion behaviors, while personal factors are predictors of behavior that are naturally formed in accordance with the behavioral targets to be achieved (Alligood, 2021; Barreto *et al.*, 2021; Santi and Baldissera, 2023).

The second component is *behaviour-specific cognitions and affect*, which is at the heart of this model. This component consists of six elements, namely perceived *benefits of action*, perceived *barriers to action*, perceived self-progress or self-confidence (*perceived self-efficacy*), *activity-related affect*), interpersonal influences that include family, friends, and providers or health workers, as well as situational influences that include choices, nature of needs, and environmental aesthetics. These six elements collectively influence an individual's decision and commitment to perform health-promoting behaviors.

The third component is behavioral outcomes that include the immediate need to compete and alternative options (low control and high control) that can affect commitment to the action plan. Commitment to the action plan is a crucial stage that connects cognition and affection with the implementation of actual health-promoting behaviors. The end result of this model is the realization of optimal health promoting behavior. This model shows that all components are dynamically interconnected and have a feedback mechanism, whereby the health promotion behaviors that have been carried out will again influence the characteristics and experiences of the individual for subsequent health behaviors, creating a continuous cycle in an effort to achieve optimal health (Figure 1)

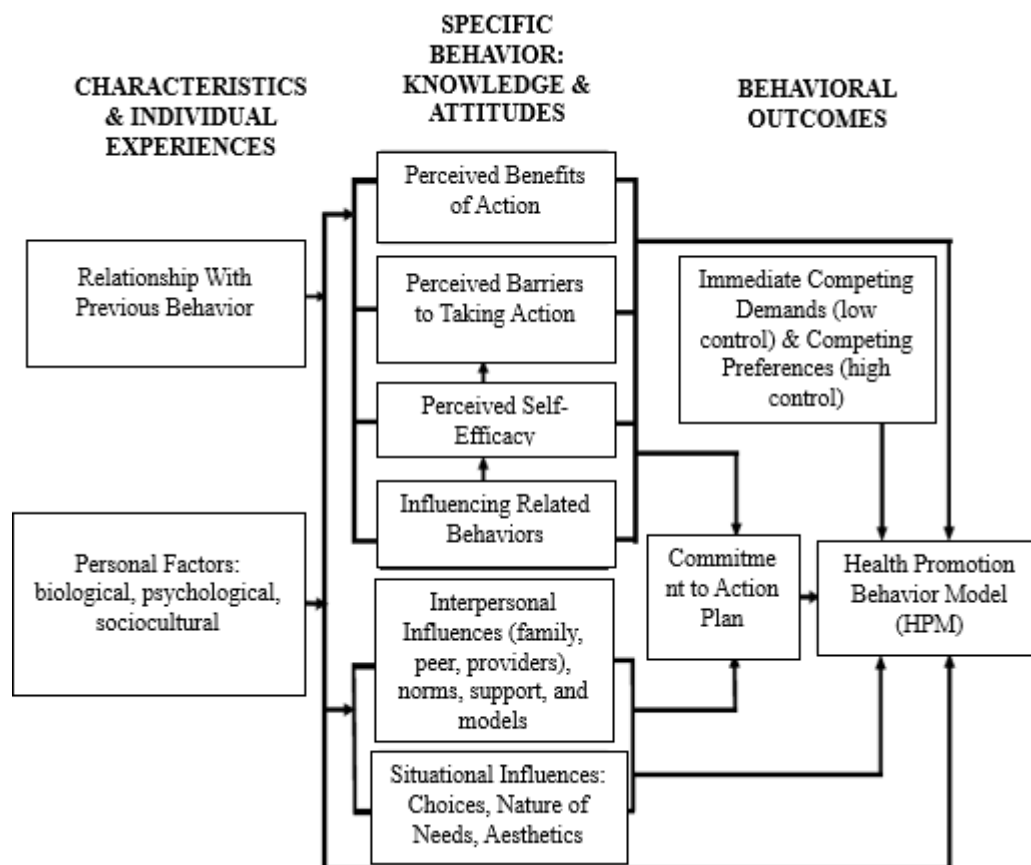


Figure 1. Revision of the Health Promotion Model (From Pender, N.J., Murdaugh, C.L., & Parsons, M.A)

In this case report, data were collected through a comprehensive nursing assessment process, including patient interviews, physical examination, anthropometric measurements, laboratory findings, and review of medical records. Data analysis was conducted using a theory-based qualitative approach, in which all patient data were systematically interpreted and mapped according to the three main components of Nola J. Pender’s Health Promotion Model: individual characteristics and experiences, behavior-specific cognitions and affect, and behavioral outcomes. This analytical process was used to guide nursing diagnosis, intervention planning, and evaluation of health-promoting behaviors.

RESULT

Mrs. R, a 45-year-old woman, works as an elementary school teacher in East Jakarta. She came to the Internal Medicine Polyclinic for routine check-ups after being diagnosed with Type 2 Diabetes Mellitus one month ago. The diagnosis was confirmed during periodic health checks at school with a GDP of 156 mg/dL, a 2-hour GD of PP 245 mg/dL, and an HbA1c of 7.8%. Currently, Mrs. R takes Metformin 2x500 mg, but she admits that she often forgets to take the medication 2-3 times a week. Mrs. R complained that she still often felt thirsty, especially during the day, urinating 6-7 times a day, getting tired easily, especially in the afternoon, and sometimes tingling in her legs at night. Mrs. R is married and has 2 children aged 15 and 12. Her family history shows that her mother has suffered from Type 2 DM since the age of 50 and now has complications of kidney failure and retinopathy. Her older sister also suffers from Type 2 DM but is well controlled, with HbA1c always below 6.5%. Mrs. R herself has a history of gestational diabetes when she was pregnant with her second child 12 years ago and a history of high cholesterol since 2 years ago which has never been controlled. His father suffers from hypertension, while his younger brother is in good health.

In daily life, Mrs. R teaches from Monday to Friday from 07.00-14.00, with most of the time spent sitting or standing in class. His diet is irregular and unhealthy. He had a hasty breakfast with white rice, side dishes, and sweet tea. At 09.30 he used to buy fried food or bread from the school canteen with his teacher friends. Lunch is in the school cafeteria with large portions of white rice, side dishes, and vegetables. In the afternoon around 16.00 he eats cakes or sweet snacks with sweet tea while relaxing. Have dinner with the family with white rice, side dishes, and vegetables around 19.00, and sometimes eat fruit or snacks again around 21.00 while watching television. Mrs. R rarely eats vegetables, prefers fried meat and chicken, and drinks 4-5 glasses of sweet tea per day. Mrs. R's physical activity is minimal. He has no regular exercise program and only walks from the parking lot to the classroom about 50 meters. Weekends are spent more at home watching television or taking breaks. She tried to participate in aerobic gymnastics 2 months ago but stopped because she felt tired and her body became sore. His hobbies are watching Korean dramas and cooking. Mrs. R does not smoke and does not consume alcohol. His sleep pattern is quite good, he goes to bed at 23.00 and wakes up at 05.00 with a duration of 6 hours per day, although he sometimes wakes up to urinate.

From the physical examination, it was found that the general condition looked good, compostable, cooperative but looked anxious. The vital signs showed blood pressure of 130/85 mmHg, pulse of 82 times per minute regular, respiration 18 times per minute, temperature of 36.7°C, and oxygen saturation of 98%. Anthropometric measurements showed a height of 155 cm, a body weight of 68 kg with an ideal body weight of 52.6 kg, a BMI of 28.3 kg/m² indicating class I obesity, a abdominal circumference of 92 cm indicating central obesity, a hip circumference of 102 cm, with a waist-to-hip circumference ratio of 0.90 indicating a high risk. Other physical examinations within normal limits, no diabetic ulcers were found, the pulsation of the dorsalis pedis artery was palpable, sensitivity was good, and physiological reflexes were normal.

The results of the control laboratory showed a GDP of 142 mg/dL, a 2-hour GD of PP of 198 mg/dL, and an HbA1c of 7.5% which showed a slight improvement from 7.8% but had not reached the target below 7%. The lipid profile showed total cholesterol of 232 mg/dL, LDL of 152 mg/dL, HDL of 42 mg/dL, and triglycerides of 190 mg/dL which were all above normal. Kidney function is still good with urea 28 mg/dL, creatinine 0.9 mg/dL, and eGFR above 90 mL/min/1.73m². Liver function was also normal with SGOT 24 U/L and SGPT 28 U/L. Urinalysis showed one positive glucose, negative protein, and microalbuminuria of 18 mg per 24 hours which was still within normal limits. The monofilament test showed normal results with sensations felt at all examination points.

Assessment According to *Health Promotion Theory* (Nola J Pender)

Based on a study using the *Health Promotion Model* (HPM) of Nola J. Pender in the case of Mrs. R (45 years old, an elementary school teacher with Type 2 Diabetes Mellitus), various factors were found that affect her health promotion behavior:

1. Individual Characteristics and Experience

a. Previous Behavior:

Mrs. R has a history of suboptimal health behaviors, characterized by non-adherence to taking medication (forgetting 2-3 times/week), failure to maintain an exercise program, and never regular control for high cholesterol

Negative experience with gestational diabetes 12 years ago is not used as a learning for prevention

b. Personal Factors:

Biological: Class I obesity (BMI 28.3 kg/m²), central obesity (abdominal circumference 92 cm), suboptimal glycemic control (HbA1c 7.5%), dyslipidemia, and low aerobic capacity

Psychological: Low motivation, anxious seeming, possible impaired self-esteem, and suboptimal understanding of DM management

Socio-Cultural: Educated with a S1 degree, stable economic status, but affected by unhealthy eating culture in the work environment

2. Cognition and Behavior-Specific Affects.

a. **Perceived Benefits:** Mrs. R shows an awareness of the importance of health control (comes regular check-ups), but does not fully understand the long-term benefits of lifestyle changes and adherence therapy.

b. **Perceived Barriers:**

Significant barriers include a busy work routine, the availability of unhealthy food in the school cafeteria, negative experiences with exercise (tiredness and soreness), and a preference for sedentary activities

Social barriers from the habit of eating with fellow teachers are also inhibiting factors

c. **Self-Efficacy:**

Mrs. R has a low level of self-efficacy in all aspects of DM management, as can be seen from: inability to maintain medication adherence, no change in diet after 1 month of diagnosis, failure to maintain an exercise program and lack of effective strategies to overcome obstacles

d. **Activity-Related Affect:**

1) Dominant negative affectation of health-promoting behaviors: Feeling tired and aches towards exercise, Strong preference for foods high in sugar and fried foods, Anxiety about a diagnosis of DM and enjoying more sedentary activities (watching TV)

2) Interpersonal Influence:

Positive influence: Older sister as a successful role model (DM is well controlled).

Negative influences: Role models of mothers with serious complications, unhealthy eating culture with co-workers, family support exists but is not optimal in supporting lifestyle changes

3) Situational Influences:

Environments do not support health-promoting behaviors: Workplace provides easy access to unhealthy foods, Home environment supportive, sedentary lifestyle, No sports facilities at school, Work and family demands limit time for health activities

3. Commitments and Behavioral Outcomes

of Action Plan Commitments:

Mrs. R showed an initial commitment to routine control, but a strong and consistent commitment to comprehensive behavior change has not been formed.

Nursing Diagnosis

The nursing diagnosis in such cases is:

1. Knowledge Deficit b.d mistake following recommendations
2. Obesity b.d eating perception disorders
3. Activity intolerance b.d monotonous lifestyle

Implementation

1. Interventions on individual characteristics and experiences

a. Optimization of Personal Factors

1) Biological Implementation:

a) Conducted a comprehensive assessment of anthropometric parameters (BMI 28.3 kg/m², abdominal circumference 92 cm) and metabolic biomarkers (HbA1c 7.5%, lipid profile)

b) Set a gradual weight loss target of 5-10% of the initial weight (target: 61-63 kg in 3 months)

c) Integrate a gradual physical activity program according to the patient's aerobic capacity

2) Psychological Implementation:

a) Apply motivational interviewing techniques to explore readiness for behavior change

b) Provide psychological counseling to manage anxiety related to the diagnosis and

complications of DM

c) Implementing cognitive restructuring strategies to change negative perceptions about chronic disease management

3) Socio-Cultural Implementation:

a) Utilize the patient's educational and employment status as a teacher to improve understanding of DM self-management

b) Identify and modify unhealthy eating cultures in the work environment

b. Modification of previous health behavior

intervention strategies:

1) Analyze the factors that cause the failure of previous aerobic gymnastics programs to identify specific barriers

2) Utilizing the gestational diabetes experience as a basis for learning about the importance of preventing complications

3) Using the patient's maternal history of complications (kidney failure and diabetic retinopathy) as an external motivation for therapeutic adherence

4) Make the success of the older sister (HbA1c <6.5%) a positive role model that can be emulated

2. Interventions on cognition and behavior-specific affects.

a. Increased Perceived Benefits

Structured Education:

1) Provide evidence-based education on the benefits of optimal glycemic control in preventing microvascular (nephropathy, retinopathy, neuropathy) and macrovascular (coronary heart disease, stroke) complications

2) Explain the causal relationship between a 1% reduction in HbA1c and a 21% reduction in the risk of complications

3) Visualize the short-term (reduced symptoms of polyuria, polydipsia, fatigue) and long-term (disability prevention, improved quality of life) benefits

4) Using a personalized education approach by linking the benefits of therapy to the patient's social role as a teacher and mother

b. Reduction of Perceived

Barriers Problem-Solving Strategies:

1) Temporal Barriers:

a) Develop effective time management by integrating health promotion activities into daily routines

b) Plan a 30-minute physical activity schedule in the morning (05.30-06.00) before leaving for work or in the afternoon (16.00-16.30) after work

2) Physical Barriers:

a) Apply the principle of progressive overload by starting light intensity physical activity (10 minutes of walking) that is gradually increased

b) Teaching warm-up and cooling techniques to prevent musculoskeletal discomfort

c) Providing education about the phenomenon of physiological adaptation to sport

3) Environmental Barriers:

a) Developing coping strategies to avoid buying fried foods in the school canteen

b) Plan meal preparation by bringing healthy provisions from home

c) Teach assertive techniques to decline friend invitations without disrupting social relationships

4) Family Barriers:

a) Involve family members (husband and child) in a diet modification program with a family-centered care approach

b) Educate families about the importance of social support in chronic disease management

c. Strengthening Self-Efficacy Implementation

Based on Bandura Theory:

- 1) Performance Accomplishment:
 - a) Setting behavioral targets with SMART (Specific, Measurable, Achievable, Relevant, Time-bound) principles:
 - (1) Weeks 1-2: Reduction of sweet tea consumption from 4-5 cups to 2 cups per day
 - (2) Weeks 3-4: Implementation of 15-minute walks, 3 times per week
 - (3) Month 2: Achievement of 2 kg weight loss
 - b) Provide positive reinforcement for each milestone to improve the mastery experience
- 2) Vicarious Experience:
 - a) Facilitate peer learning by connecting patients to the Prolanis support group or community
 - b) Encourage sharing experiences with older sisters who manage DM
- 3) Verbal Persuasion:
 - a) Provide encouragement and affirmation consistently
 - b) Using therapeutic communication to increase patient confidence
- 4) Physiological States:
 - a) Teach stress management techniques (*deep breathing exercise, progressive muscle relaxation*)
 - b) Helps patients interpret physical sensations positively (e.g., post-exercise fatigue as a sign of the body adapting, not a sign of failure)

d. Activity-Related Affect Modification

Behavioral Activation Strategies:

- 1) Identify activities that generate positive affects and integrate them with health-promoting behaviors
- 2) Watch Korean dramas while walking on a treadmill or using a stationary bike
Develop healthy menu cooking skills with low-carb, low-fat modified recipes
- 3) Using reframing techniques to turn negative perceptions of exercise into "time for yourself" or "health investments"
Applying the hedonistic principles of expectancy-value theory by seeking enjoyable physical activity

e. Optimizing the Interpersonal Influence of Multi-Level Interventions:

- 1) Family Level:
 - a) Provide family health education on the pathophysiology of DM and holistic management principles
 - b) Involve your husband as a medication reminder to increase adherence
 - c) Implement family meal planning to create a supportive diet environment
- 2) Peer/Colleague Level:
 - a) Develop strategies to deal with social pressure related to unhealthy eating habits
 - b) Encourage the formation of a "health buddy system" by inviting other teachers to exercise together
- 3) Health Professional Level:
 - a) Build strong therapeutic relationships through trust and empathy
 - b) Provide continuous follow-up and monitoring to maintain motivation

f. Situational Influence Modification

Environmental Restructuring:

- 1) Modification of the Work Environment:
 - a) Identifying alternative food choices in healthier school canteens
 - b) Planning the timing to avoid the canteen at the time of buying fried foods (09.30)
 - c) Bring healthy snacks (cut fruit, nuts, plain yogurt) as a substitute
- 2) Home Environment Modification:
 - a) Conduct home environment assessments and provide recommendations

- b) Provide water in strategic places to increase hydration
- c) Reduce the stock of high-sugar snacks at home
Store medication reminders in a visible place (desk, bedroom)
- d) Rearrange room layout to minimize sedentary time
- 3) Stimulus Control:
 - a) Set smartphone alarms as medication reminders at 07.00 and 19.00
 - b) Using a weekly pill organizer with a day label to improve adherence
 - c) Installing visual cues (motivational posters, target goals) in frequently seen areas

3. Intervention on Action Plan Commitments

a. Development of a Specific Action Plan

Written Conduct Contract:

- 1) Pharmacological Management:
 - a) Commitment: Timely consumption of Metformin 2×500 mg with an adherence rate of at least 90%
 - b) Strategy: Using a dual reminder system (alarm + weekly medicine box)
 - c) Monitoring: Daily compliance checklist in smartphone app or monitoring book
- 2) Diet Modifications:
 - a) Specific commitments:
 - (1) Reduce the portion of rice from 3/4 cup to 1/2 cup (100 grams) per meal
 - (2) Substitution of fried foods with healthy alternatives (fresh fruit, boiled beans)
 - (3) Elimination of sugary tea, replaced with unsweetened tea or water (target 8 cups/day)
 - (4) Increase vegetable consumption to a minimum of 2 servings per day
 - b) Strategy: Meal planning and meal preparation every weekend
 - c) Monitoring: Food diary with food photography documentation
- 3) Physical Activity Program:
 - a) Commitment: 30-minute walk, 5 times per week with a goal of 150 minutes per week
 - b) Alternative: Diabetes exercises online via digital platform (YouTube) 3 times per week
 - c) Progressive strategy:
 - (1) Weeks 1-2: 15-minute walk, 3×/week
 - (2) Weeks 3-4: 20-minute walk, 4×/week
 - (3) Weeks 5-8: 30-minute walk, 5×/week
 - d) Incidental exercise: Increase daily activity (use stairs, further parking)
- 4) Self-Monitoring:
 - a) Self-monitoring blood glucose (SMBG) 2 times per week in fasting conditions
 - b) Weekly weight measurement on the same day (Sunday morning)
 - c) Comprehensive documentation in the monitoring book (glucose levels, weight, physical activity, food intake)
 - d) Monthly follow-up control to the polyclinic for biomarker evaluation and medication adjustment

b. Competing Demands and Preferences Management

Integration Strategy:

- 1) Competing Demands Management:
 - a) Identify priorities and allocate time effectively between the demands of work, family, and self-care
 - b) Using time-blocking techniques to schedule health promotion activities as "non-negotiable appointments"
 - c) Involve families in meal preparation to reduce the burden of time
- 2) Management of Competing Preferences:
 - a) Apply the principle of "habit stacking" by combining hobbies (watching Korean dramas) with physical activity
 - b) Develop healthy cooking recipes that remain flavorful to maintain enjoyment in cooking
 - c) Using self-regulation strategies to reject immediate gratification for long-term health

benefits

4. Implementation of Outcomes: Health Promotion Behaviors

a. Short-Term Comprehensive Program (1-3 Months)

- 1) Biomedical Targets:
 - a) HbA1c: Reduction from 7.5% to <7%
 - b) Fasting blood glucose: <126 mg/dL
 - c) Blood glucose 2 hours postprandial: <180 mg/dL
 - d) Weight: A decrease of 5-7 kg (from 68 kg to 61-63 kg)
 - e) Lipid profile: Improvement of total cholesterol, LDL, HDL, and triglycerides towards normal values
- 2) Target Behavioral:
 - a) Medication adherence: Minimum 90%
 - b) Physical activity: Consistent 150 minutes per week
 - c) Diet modification: Implementation of meal plan as recommended
 - d) Self-monitoring: Adherence to a self-monitoring schedule
- 3) Subjective Targets:
 - a) Reduction of symptoms of polydipsia, polyuria, and fatigue
 - b) Reduction in the frequency of paresthesia in the lower extremities
 - c) Improved quality of life and well-being

b. Continuous Evaluation and Monitoring

Success Indicators:

- 1) Process Evaluation:
 - a) Adherence to action plan (medication, diet, exercise)
 - b) Quality self-monitoring and documentation
 - c) Problem-solving ability to face obstacles that arise
 - d) Patient satisfaction with health promotion programs
- 2) Evaluation Outcomes:
 - a) Achievement of metabolic biomarker targets (HbA1c, blood glucose, lipid profile)
 - b) Changes in anthropometric parameters (weight, BMI, abdominal circumference)
 - c) Improvement in functional capacity and energy level
 - d) Prevention of acute complications (hypoglycemia, hyperglycemia) and delayed progression of chronic complications
- 3) Sustainability Strategy:
 - a) Continuous reinforcement through positive feedback and celebration of success
 - b) Adjustment action plan based on evaluation and barriers found
 - c) Maintenance phase planning to maintain long-term health behaviors
 - d) Relapse prevention strategies by identifying high-risk situations and developing coping mechanisms

DISCUSSION

The case study found the patient's blood sugar levels GDP was 156 mg/dL, GD 2 hours PP was 245 mg/dL, and HbA1c was 7.8%, which is a case of hyperglycemia. This high blood sugar level is caused by an unhealthy lifestyle and diet. The patient did not learn from the experience of having gestational diabetes 12 years ago.

The success of a treatment is the result of teamwork involving nurses/doctors, clients, and families. For In people with type 2 diabetes, adherence is the main determinant of the success of therapy. Patients should actively do self-monitoring (such as checking blood sugar and weight) to understand their body condition. Health workers are obliged to provide social support to patients and their families. By involving families in providing support, patient compliance levels will also increase (Grunberg, 2024; Nene, 2024).

Additionally, it is important to address the patient's lack of understanding of DM, its management,

potential complications, and caution in drug use/infusion installation. This provision of the right information is crucial in improving adherence and achieving superior therapeutic outcomes. In this context, nursing services are an indicator of the quality of health services. The role of nurses is essential, encompassing the process of reviewing, determining diagnosis, planning, implementation, and evaluation of care based on nursing standards (Gleason et al., 2021; Potter et al., 2025). The goal is to meet the basic needs of patients as well as maintain or improve their ideal well-being.

Previous studies have reported that proper health education equips patients with the knowledge and skills to control their glucose and HbA1c levels to avoid long-term complications. The measurement results showed that the average HbA1c value decreased from 6.97 to 6.75 (Martos-Cabrera et al., 2021). Another study proves the effectiveness of educational interventions in improving the construction of mNola's health promotion model J Pender and blood sugar levels of type 2 diabetic patients. The results of the educational intervention show that the use of appropriate educational approaches as well as the development of educational content appropriate for the target population can significantly improve treatment adherence behaviors (Shahabi et al., 2024).

Type Nola's health promotion J Pender allows people to be encouraged to take control of their lifestyles, particularly people whose health is at risk (Salamanca-Ramos, 2015). The nursing approach embodied in the health promotion model allows people to be guided to achieve proper health and well-being, as well as identify the risk factors that stand in the way of this, thus enabling them to take action against it and change it if necessary. Hence the importance of the role of nursing professionals in encouraging empowerment towards behaviors that support health and self-care (Miranda) et al., 2017).

CONCLUSION

Suboptimal control of Type 2 Diabetes Mellitus (HbA1c 7.5%) is affected by a combination of biological factors (obesity, dyslipidemia), psychological (anxiety, low self-efficacy), and environmental influences that inhibit compliance. Nursing interventions using Nola J. Pender's Health Promotion Model (HPM) focused on strengthening self-efficacy, reducing barriers, and modifying the environment. The implementation of a structured action plan including medication adherence, dietary modification, and physical activity is comprehensively necessary to achieve biomedical targets (<7%) and improve patient health promotion behaviors. The health promotion model explores the risk factors associated with DM disorders and also promotes a better understanding of health-disorder processes, and consequently can be used by nursing professionals to support behavioral changes in patient health.

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