

Family Support for Balanced Diet in Patients with Type 2 Diabetes Mellitus at UPT Puskesmas Alianyang, Pontianak

Fransiska Romina^{1*}, Yustina Riki Nazarius¹, Usu Sius¹, Lusiana Emeliana¹, Debby Syahru Romadlon², Diana Barsasella³

¹Nursing Program, Faculty of Health, Universitas Katolik Santo Agustinus Hippo, Pontianak City, West Kalimantan, f.romina@sanagustin.ac.id, y.nazarius@sanagustin.ac.id, ususius1980@gmail.com, lusianaemeliana@gmail.com

²Faculty of Nursing, Chulalongkorn University, Bangkok, Thailand, debbysyahru.r@chula.ac.th

³Department of Medical Records and Health Information, Poltekkes Kemenkes Tasikmalaya, barsasella@poltekkestasikmalaya.ac.id

*Corresponding Author: f.romina@sanagustin.ac.id

Abstract

Research Objective: To determine the influence of family support on adherence to a balanced diet among patients with type 2 diabetes mellitus. **Methodology:** This study employed a qualitative descriptive method with a case study approach. The participants consisted of five families of patients diagnosed with type 2 diabetes mellitus. Data were collected through in-depth interviews and direct observation to explore the forms of family support and the patients' adherence to a balanced diet. The aspects of family support examined included emotional support, instrumental support, informational support, and appraisal support. Data were analyzed descriptively to understand how family involvement influences patients' dietary compliance. **Results:** The findings showed that three out of five families provided positive support to patients with type 2 diabetes mellitus. This support included assisting in preparing healthy meals, monitoring meal schedules, and providing motivation to maintain a balanced diet. Patients who received such support demonstrated good adherence to dietary recommendations. In contrast, the remaining two families provided insufficient support, as they were less involved in managing the patients' diet and had limited understanding of the importance of balanced nutrition. As a result, patients in these families showed lower compliance with dietary recommendations. **Conclusion:** Family support plays an important role in improving adherence to a balanced diet among patients with type 2 diabetes mellitus. Active family involvement in providing emotional, informational, and practical support can help patients maintain healthy dietary habits and reduce the risk of complications.

Keywords: *family support, balanced diet, type 2 diabetes mellitus, dietary adherence.*

INTRODUCTION

Diabetes is a global health issue, and its incidence, complications, and mortality rates are higher in the elderly compared to younger individuals (Bin, 2020). Diabetes mellitus is an incurable disease (Lina, 2022). Diabetes is a chronic disease and a global public health problem. The World Health Organization (WHO, 2020) estimates that approximately 422 million people worldwide have diabetes, the majority living in low- and middle-income countries, and 1.6 million people die each year due to diabetes. The number of cases and the prevalence of diabetes have continued to increase in recent decades (WHO, 2020).

The incidence of diabetes mellitus in Indonesia makes the country the fifth largest number of diabetes sufferers in the world, after China, India, Pakistan, and the United States, where India is also the only country in Southeast Asia to achieve the highest ranking. The ten countries with the highest number of diabetes cases have been reported (International Diabetes Federation, 2021). According to Riskesdas (2018), the prevalence of diabetes mellitus in West Kalimantan in 2018, based on medical diagnosis for all age groups, was recorded at 1.15% and for the population aged 15 years and over reached 1.62% or approximately 28,343 individuals. Pontianak City ranked second in the prevalence

of diabetes mellitus measured through blood examinations in residents aged ≥ 15 years, which showed a rate of 1% in 2013 and increased to 2.7% in 2018 (Riskasdas, 2018). An initial study conducted at the Aliyang Health Center in Pontianak recorded 399 cases of diabetes mellitus sufferers in the period from December 2024 to February 2025.

Factors influencing the emergence of diabetes mellitus include genetics, age, gender, overweight (obesity), and lifestyle changes (diet and physical activity) (Ministry of Health RI, 2018; Paknianiwewan, Triandhini & Mangalik, 2021). Dietary management with a balanced diet in diabetes mellitus patients involves consuming foods that meet caloric and nutritional needs, as well as regulating the amount and type of carbohydrates (Federation, 2023). The benefits of balanced nutrition in diabetes mellitus patients include controlling blood sugar levels, preventing complications, and improving quality of life. A balanced diet helps meet nutritional needs, maintain ideal body weight, and support heart and metabolic health. Fulfilling balanced nutrition plays an important role in controlling blood sugar in diabetes mellitus patients by maintaining glucose levels within the normal range, preventing complications, and supporting overall health (Heryanto, 2024).

The form of informational family support is that the family functions as a collector and disseminator of information about the world. This includes providing advice, suggestions, and information that can be used to express a problem. Appraisal support means the family acts as feedback guidance, guiding and mediating problem solving, as a source and validator of family members' identity, including providing support, appreciation, and attention. Instrumental support means the family is a source of practical and concrete help, including: the patient's health in terms of food and drink needs, rest, and preventing the patient from fatigue. Emotional support means the family as a safe and peaceful place for rest and recovery and helps with emotional control (Almatsier, 2022).

Family support plays an important role as a form of therapy that impacts the health of individuals with chronic diseases, such as diabetes mellitus. This is seen in attitudes, actions, and mutual reinforcement of acceptance, through providing assistance when needed to prevent complications in diabetes mellitus sufferers (Harton, 2019). Several study results reveal that the problems in type 2 DM patients are nutritional and dietary issues, in which the most important thing is the level of adherence of the patient themselves (Oktaviana et al., 2024). Dietary adherence among diabetes sufferers plays an important role in stabilizing blood sugar, while adherence itself is important to be able to develop routines that help diabetes mellitus sufferers follow a diet program (Dewi et al., 2023).

METHODS

This study uses a descriptive qualitative research design with a narrative approach where individuals tell their individual experiences of something. This approach was chosen to understand the experiences and perceptions of families in providing support to diabetes sufferers regarding a balanced diet in preventing complications.

Data were collected through in-depth interviews and observation methods. Interviews were conducted using a semi-structured interview guide that included open-ended questions to explore participants' experiences and views regarding family support in diabetes management. Observations were conducted to observe the interactions between diabetes sufferers and family members in daily contexts. All interview and observation sessions will be recorded and documented for further analysis.

This research was conducted at Aliyang Public Health Center Pontianak from February to July 2025. The research subjects were selected according to the criteria set by the researcher, a total of 5 participants with a purposive sampling technique, with inclusion criteria, namely Type 2 Diabetes Mellitus sufferers who had been diagnosed for at least 6 months, the age of the sufferer is 49 years and above, sufferers who live at home with family members. families who are willing to be respondents,

sufferers who are willing to be respondents (by signing the consent form), Family (spouse, children, parents, or siblings) who are directly involved in the care or supervision of the sufferer's diet. sufferers who are able to communicate verbally and understand research instructions.

The data analysis method is carried out in several steps, namely: transcription where the researcher changes the interview data into text format, then coding by labeling topics that are considered important, presenting data and interpretation by making conclusions/verification. The method for testing the validity of this research uses a literature study using data collection techniques using interviews and observations, theories are taken from books and articles related to this research. The research ethics applied in this study is by providing informed consent/approval form to participants before the research is conducted, if the participant agrees then an interview will be conducted, to maintain confidentiality the researcher writes the name with initials only then the results of the interview are kept confidential by the researcher and only certain data are reported in the research. In terms of fairness, the researcher does not differentiate participants based on social standing, education or social status of the respondents.

RESULTS

Tabel 1 Emotional support

No	Participant	Result
1	Mr..M (50 Yo)	<p>What form of attention does the family provide in supporting a balanced diet for patients with Type 2 Diabetes Mellitus? The form of my attention to my husband is, I like to remind him not to eat too many sweets, and I give him encouragement. Sometimes he doesn't want to listen, he still wants to eat sweets, but I always encourage my husband, telling him to be patient, for the sake of his health too.</p> <p>What are the types of food, meal schedule, and portion sizes for diabetes mellitus patients following a balanced diet for Type 2 Diabetes Mellitus? I usually cook steamed fish for my husband, and vegetables are boiled or cooked in broth. My husband likes all types of fish, he doesn't picky about food, what else vegetables, he likes all of them, his favorites are spinach, cassava leaves, papaya leaves. His meal schedule is 3 times a day, in the morning I usually prepare breakfast before he goes to work. His portion size depends on his appetite, sometimes when he has no appetite he doesn't take much rice, when he has appetite he sometimes adds more.</p> <p>Are there any complaints from the patient regarding the balanced diet provided for Type 2 Diabetes Mellitus? My husband often experiences tingling, sometimes I tell him to exercise jogging in the yard, sometimes I also accompany my husband jogging.</p> <p>How does the family cope if the patient refuses the diet provided for Type 2 Diabetes Mellitus? Sometimes I get angry if my husband doesn't want to diet, usually I often make sponge cake, seeing my husband eat it carelessly I no longer make that sponge cake, I reduce sweet foods.</p>
2	Mrs. A (70 Yo)	<p>What form of attention does the family provide in supporting a balanced diet for patients with Type 2 Diabetes Mellitus? My attention is, I prepare special food for grandmother, and I like to remind her to eat on time.</p>

What are the types of food, meal schedule, and portion sizes for diabetes mellitus patients following a balanced diet for Type 2 Diabetes Mellitus?

The type of food is brown rice, because grandmother has diabetes, the whole family eats brown rice. The vegetables are usually cassava leaves, long beans, spinach, cabbage, carrots, tilapia fish, catfish, snakehead fish, and chicken. Her meal schedule is irregular, grandmother sometimes rarely eats lunch, sometimes she eats 2 times a day, sometimes 3 times a day. Grandmother's food portion is less than one serving, she eats a little. Sometimes I advise grandmother to eat more, so she can be healthy.

Are there any complaints from the patient regarding the balanced diet provided for Type 2 Diabetes Mellitus?

Yes, grandmother's complaint is pain in her legs, sometimes it's difficult for her to walk.

How does the family cope if the patient refuses the diet provided for Type 2 Diabetes Mellitus?

At first, grandmother found it very difficult to follow the diet, but my grandfather and I tried slowly to reduce sweet foods. And we changed grandmother's food to milk and dishes cooked without oil.

Mr. F (57 Yo)

3

What form of attention does the family provide in supporting a balanced diet for patients with Type 2 Diabetes Mellitus?

The form of my attention to my husband is, I like to remind him about his consultation schedule, and I prepare healthy food for my husband.

What are the types of food, meal schedule, and portion sizes for diabetes mellitus patients following a balanced diet for Type 2 Diabetes Mellitus?

The types of food are, usually cassava leaves, carrots, cabbage, broccoli, papaya leaves, water spinach, and white rice, chicken, mackerel fish, tilapia fish, shrimp, squid, and beef. My husband's meal schedule is 3 times a day, morning breakfast with crackers, usually Roma crackers, lunch with rice, and evening. As for portions, don't ask, he sometimes adds rice twice.

Are there any complaints from the patient regarding the balanced diet provided for Type 2 Diabetes Mellitus?

Yes, my husband's complaints are tingling in his feet and hands in the morning, and he also often experiences headaches.

How does the family cope if the patient refuses the diet provided for Type 2 Diabetes Mellitus?

How we cope is, my whole family also eats healthy food together, so that my husband doesn't feel alone and tries his diet food.

4 Mrs. Y (49 Yo)

What form of attention does the family provide in supporting a balanced diet for patients with Type 2 Diabetes Mellitus?

The form of attention is I remind her not to eat sweets. But my wife doesn't want to listen.

What are the types of food, meal schedule, and portion sizes for diabetes mellitus patients following a balanced diet for Type 2 Diabetes Mellitus?

The types of food are salted fish, oily cooked vegetables, all types of vegetables. My wife's food portions are large, she likes to add more. In the

morning she already has breakfast with rice and salted fish.

Are there any complaints from the patient regarding the balanced diet provided for Type 2 Diabetes Mellitus?

Yes, my wife often complains that her body aches all over.

How does the family cope if the patient refuses the diet provided for Type 2 Diabetes Mellitus?

I've tried to cope by making coffee without sugar, my wife said this coffee isn't sweet, add sugar, it's not enjoyable to have coffee without sugar. It's difficult to ask my wife to diet, she doesn't want to listen.

5 Mrs. S (59 Yo)

What form of attention does the family provide in supporting a balanced diet for patients with Type 2 Diabetes Mellitus?

The form of attention is, there is none, I leave it to her whatever she wants to eat, I don't tell my wife to diet.

What are the types of food, meal schedule, and portion sizes for diabetes mellitus patients following a balanced diet for Type 2 Diabetes Mellitus?

The types of food, my wife likes to eat sweets, she likes to drink coffee with lots of sugar, vegetables are salty, I cook myself sometimes I don't have an appetite for my wife's cooking, she likes to cook with lots of oil. My wife's meal schedule, I don't know, I rarely pay attention, if she wants to eat, she just eats. The portion is small, I think.

Are there any complaints from the patient regarding the balanced diet provided for Type 2 Diabetes Mellitus?

My wife's complaint is her head often feels dizzy. She likes to get angry easily. I'm also dizzy listening to her.

How does the family cope if the patient refuses the diet provided for Type 2 Diabetes Mellitus?

I never cope with the problem, if she doesn't want to diet, so be it.

Table 2. Information Support

No	Participant	Result
1	Mr..M (50 Yo)	<p>Are family members with Diabetes Mellitus given information regarding the amount of food that should be consumed?</p> <p>Yes, I like to limit my husband's food. I limit him from eating sweets.</p> <p>What form of family support is provided in educating about the types of food that family members with Type 2 Diabetes Mellitus can eat?</p> <p>The form of education is, I just remind my husband not to eat sweets, reduce his snacking.</p> <p>How often does the family remind the patient and provide information about a balanced diet that can help manage Type 2 Diabetes Mellitus?</p> <p>Oh, I very often remind my husband.</p>
2	Mrs. A (70 Yo)	<p>Are family members with Diabetes Mellitus given information regarding the amount of food that should be consumed?</p> <p>When I accompanied grandmother to the hospital, the doctor had already explained it. The doctor explained how much rice, side dishes, and vegetables</p>

can be eaten. So now I know better how to adjust the portions.

What form of family support is provided in educating about the types of food that family members with Type 2 Diabetes Mellitus can eat?

My support for grandmother is providing food like brown rice, vegetables without oil, and fish that I usually steam.

How often does the family remind the patient and provide information about a balanced diet that can help manage Type 2 Diabetes Mellitus?

I often remind grandmother, every day I remind her. Sometimes grandmother doesn't want to listen either. But slowly I tell her. So that grandmother wants to diet.

3 Mr. F (57 Yo)

Are family members with Diabetes Mellitus given information regarding the amount of food that should be consumed?

Yes, during the consultation with the doctor, it was told that my husband must reduce sugar, if he wants to drink coffee, it should be without sugar.

What form of family support is provided in educating about the types of food that family members with Type 2 Diabetes Mellitus can eat?

The form of my support for my husband is mostly reminding him what he can eat and what he shouldn't eat.

How often does the family remind the patient and provide information about a balanced diet that can help manage Type 2 Diabetes Mellitus?

I remind him very often.

4 Mrs. Y (49 Yo)

Are family members with Diabetes Mellitus given information regarding the amount of food that should be consumed?

Yes, during the consultation with the doctor, it was told that my husband must reduce sugar, if he wants to drink coffee, it should be without sugar.

What form of family support is provided in educating about the types of food that family members with Type 2 Diabetes Mellitus can eat?

The form of my support for my husband is mostly reminding him what he can eat and what he shouldn't eat.

How often does the family remind the patient and provide information about a balanced diet that can help manage Type 2 Diabetes Mellitus?

I remind him very often.

5 Mrs. S (59 Yo)

Are family members with Diabetes Mellitus given information regarding the amount of food that should be consumed?

Not yet, I never take my wife for a check-up, and my wife doesn't want to get checked, she said she's afraid. Only a few months ago when she was really sick then to Soedarsu Hospital. It turns out my wife has diabetes, the doctor said.

What form of family support is provided in educating about the types of food that family members with Type 2 Diabetes Mellitus can eat?

Never mind educating, I myself don't know what to educate my wife about.

How often does the family remind the patient and provide information about a balanced diet that can help manage Type 2 Diabetes Mellitus?

Never.

Table 3. Instrumental Support

No	Participant	Result
1	Tn. M (50 thn)	<p>Does the family help prepare the food consumed by family members with Type 2 Diabetes Mellitus? Yes, I always prepare food for my husband. Because it's my duty as a wife.</p> <p>Does the family manage the food ingredients themselves that will be consumed by family members with Type 2 Diabetes Mellitus? I cook the food myself, rarely buy food from outside, maybe if I want to buy snacks like fried food, I usually buy them, but rarely.</p> <p>Does the family have a blood sugar checking device / Does the family use health facilities for blood sugar checks and is it routine? A blood sugar checking device, yes, I bought it at the pharmacy before. Every month I take my husband to the doctor's practice. I usually remind him so he doesn't forget, the day after tomorrow is his control schedule.</p>
2	Ny. A(70 thn)	<p>Does the family help prepare the food consumed by family members with Type 2 Diabetes Mellitus? Yes, I myself prepare food for grandmother.</p> <p>Does the family manage the food ingredients themselves that will be consumed by family members with Type 2 Diabetes Mellitus? Yes, I cook for grandmother because there are only four of us living together: grandmother, grandfather, my sibling, and me.</p> <p>Does the family have a blood sugar checking device / Does the family use health facilities for blood sugar checks and is it routine? Yes, we have one. Yes, because every month I accompany grandmother for check-ups with the doctor. Once a month, the check-up.</p>
3	Tn. F (57 thn)	<p>Does the family help prepare the food consumed by family members with Type 2 Diabetes Mellitus? Yes, I prepare food for my husband.</p> <p>Does the family manage the food ingredients themselves that will be consumed by family members with Type 2 Diabetes Mellitus? We manage it ourselves, never buy ready-made food. At most, buy vegetables, meat, and fish.</p> <p>Does the family have a blood sugar checking device / Does the family use health facilities for blood sugar checks and is it routine? Yes, we have one. Every month I usually take my husband for treatment at the health center, sometimes to the doctor's practice.</p>
4	Ny. Y(49 Yo)	<p>Does the family help prepare the food consumed by family members with Type 2 Diabetes Mellitus? As for preparing food for my wife, I never do.</p> <p>Does the family manage the food ingredients themselves that will be consumed by family members with Type 2 Diabetes Mellitus? As for managing food, it's my wife, she cooks herself, sometimes I don't cook, but I cook for myself.</p>

		Does the family have a blood sugar checking device / Does the family use health facilities for blood sugar checks and is it routine? Don't have one. Never once gone to the health center or hospital, only once to the hospital because my wife was sick.
5	Ny. S(59 Yo)	Does the family help prepare the food consumed by family members with Type 2 Diabetes Mellitus? I only give money to my wife, the one who prepares the food is my wife herself. Does the family manage the food ingredients themselves that will be consumed by family members with Type 2 Diabetes Mellitus? Yes, my wife does the cooking. Does the family have a blood sugar checking device / Does the family use health facilities for blood sugar checks and is it routine? Don't have one. Rarely seek treatment at the health center.

Table 4. Appraisal Support

No	Participant	Result
1	Tn. M 50 thn	Does the family give rewards/praise to family members with Type 2 Diabetes Mellitus? As for support, definitely. Every day I encourage my husband so he stays motivated with his diet. How does the family assess the success of a balanced diet in family members with Type 2 Diabetes Mellitus? I assess it by seeing whether my husband is willing to follow the diet.
2	Ny.A(70 thn)	Does the family give rewards/praise to family members with Type 2 Diabetes Mellitus? Yes, every day I encourage grandmother to diet, maintain her eating patterns. Sometimes when she wants to eat cake, I limit it. How does the family assess the success of a balanced diet in family members with Type 2 Diabetes Mellitus? Maybe by seeing that grandmother is willing to reduce sweet foods.
3	Tn.F (57 thn)	Does the family give rewards/praise to family members with Type 2 Diabetes Mellitus? None. How does the family assess the success of a balanced diet in family members with Type 2 Diabetes Mellitus? I don't know how to assess it.
4	Ny.Y(49 thn)	Does the family give rewards/praise to family members with Type 2 Diabetes Mellitus? None. How does the family assess the success of a balanced diet in family members with Type 2 Diabetes Mellitus? I don't know how to assess it.
5	Ny.S(59 thn)	Does the family give rewards/praise to family members with Type 2 Diabetes Mellitus? None.

How does the family assess the success of a balanced diet in family members with Type 2 Diabetes Mellitus?

I don't know how to assess it.

DISCUSSION

Based on Table 1. The results of the research on Emotional Support from the five participants above, it can be seen that there were four respondents (Mr. M, Mrs. A, Mr. F, Mrs. Y) who supported a balanced diet for type 2 diabetes mellitus patients. They always provide encouragement, prepare food, and maintain healthy eating patterns. However, one family member, namely Mrs. S, has not yet fully supported a balanced diet for type 2 diabetes mellitus patients.

Emotional support is a form of support in the form of empathy, love, trust, and attention provided by family members. This includes listening to complaints, providing attention, and helping resolve emotional problems. (House and Kahn Hidayati, 2021). Emotional support is crucial in preventing stress in people with type 2 diabetes because it can trigger cortisol and adrenaline hormones, which increase blood sugar, disrupt metabolic control, and cause insulin resistance.

Emotional support or empathy is a form of support that provides a sense of security, love, encouragement, reduces hopelessness, and reduces feelings of inferiority and limitations as a result of physical incapacity (declining health) that is experienced. This support involves expressions of empathy and concern for someone, making them feel comfortable, regain their confidence, and feel valued and loved. This shows the presence of family support and understanding from family members toward their ill relative (Firdaus, 2019).

This statement is in line with research by Sarafino (2023), which explains that emotional support includes attention, empathy, and compassion that make individuals feel comfortable, loved, and cared for. These expressions include providing encouragement, offering personal warmth, and love that motivates. Informational support is the provision of information, advice, or guidance to address problems. It also includes providing advice, direction, and necessary information (House and Kahn Hidayati, 2021). Informational support for families regarding diet includes information on meal schedules, food types, and amounts consumed by people with type 2 diabetes.

Based on Table 2, the results of the study on informational support from the five participants above indicate that three family members (Mr. M, Mrs. A, Mr. F) provided informational support to patients with type 2 diabetes mellitus, in the form of providing education, and the patients received advice from their family members, demonstrating the family's understanding of a balanced diet. Meanwhile, two family members (Mrs. Y and Mrs. S) did not provide informational support, showing a lack of knowledge about healthy eating patterns such as what constitutes balanced nutrition and lacking a support system in daily decision-making regarding food.

According to research by Firdausi (2019), informational support consists of providing recommendations or feedback regarding how someone should do something. For example, when individuals face difficulties in making choices, they receive input and advice on ideas from their family members. This aspect emphasizes that the support provided by the family can help patients make decisions and accompany them daily in facing their illness.

According to research by Sarafino (2023), informational support is referred to as a form of support that includes the provision of information, knowledge, guidance, advice, or feedback related to an individual's situation, thereby facilitating problem recognition and management.

Based on Table 3, the results of the study on instrumental support from the five participants above indicate that three family members (Mr. M, Mrs. A, Mr. F) provided instrumental support in the form of tangible assistance, such as providing money, managing food themselves, and accompanying patients for medical check-ups. However, two family members (Mrs. Y and Mrs. S) were unable to provide instrumental support, resulting in economic difficulties.

Instrumental/material support is direct assistance in the form of money, goods, energy, and time. This support includes financial assistance, providing daily necessities, and assistance with completing tasks (House and Kahn Hidayati, 2021). Instrumental support helps complete tasks/responsibilities, improves physical and mental health, and strengthens relationships between the patient and other family members.

According to research by Cohen (2023), instrumental support is a form of support that involves direct and tangible assistance, such as giving or lending money or helping to lighten an individual's tasks. Meanwhile, research by Firdausi (2019) states that instrumental support demonstrates family members' support in concrete forms toward the dependence of other family members. This instrumental support includes the provision of facilities (equipment or other supporting means). This support constitutes full family assistance or help in the form of providing labor, funds, or allocating time to serve and listen to ill family members in expressing their feelings.

Based on Table 4, the results of the study on appraisal support from the five participants above indicate that only three family members (Mr. M, Mrs. A, Mr. F) provided appraisal support by consistently reminding and encouraging diabetes mellitus patients to follow a balanced diet. However, two family members (Mrs. Y and Mrs. S) did not provide appraisal support or encourage patients to follow a balanced diet.

Appraisal support provides feedback, assessment, and approval that helps family members evaluate themselves. This includes recognition, appreciation, and positive evaluation. (House and Kahn Hidayati, 2021). Positive actions taken by patients, such as a balanced diet, are excellent for maintaining a healthy diet, maintaining stable blood sugar levels, maintaining an ideal body weight, and preventing complications.

According to research by Sunarti (2023), balanced nutrition is a daily food arrangement that contains nutrients in types and amounts that match the body's needs. Its functions are to maintain and repair body cells, as well as prevent chronic diseases and digestive disorders (e.g., constipation, dyspepsia, diabetes, etc.).

CONCLUSION

Based on the results of the research conducted on five families of patients with type 2 diabetes mellitus, it was concluded that family support plays an important role in the successful implementation of a balanced diet in patients. Three out of five families who provided support, whether in the form of emotional, informational, instrumental, and appraisal support, showed that patients were better able to maintain dietary patterns in accordance with medical recommendations. Conversely, two families who did not provide active support showed a tendency that patients experienced difficulties in consistently following a balanced diet. This indicates that family involvement greatly influences the success of dietary management in patients with Type 2 Diabetes Mellitus. This research is expected to broaden family insight in increasing knowledge about Family Support for Balanced Diet in Patients with Type 2 Diabetes Mellitus. In addition, this research can also be applied by health workers in providing services to patients and families regarding Balanced Diet, and this research can also be used as a reference for other researchers.

Author Contributions: Conceptualization: Fransiska Romina, Yustina Riki Nazarius; methodology: Fransiska Romina, Usu Sius; data curation: Fransiska Romina; formal analysis: Fransiska Romina, Lusiana Emeliana; investigation: Fransiska Romina, Yustina Riki Nazarius, Usu Sius; resources: Yustina Riki Nazarius; supervision: Lusiana Emeliana; writing—original draft preparation: Fransiska Romina; writing—review and editing: Yustina Riki Nazarius, Usu

Sius, Lusiana Emeliana. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding. The study was conducted independently by the researchers without financial support from any funding agency.

Ethical Approval Statement: This study did not receive formal ethical clearance from an institutional review board. However, the research was conducted in accordance with ethical principles for qualitative research involving human participants, including respect for autonomy, confidentiality, and voluntary participation. Permission to conduct the study was obtained from UPT Puskesmas Alianyang, Pontianak.

Informed Consent Statement: Informed consent was obtained from all participants prior to data collection. Participants were informed about the purpose of the study, the voluntary nature of participation, their right to withdraw at any time, and the confidentiality of the information provided.

Data Availability Statement: The data that support the findings of this study are available from the corresponding author upon reasonable request. Due to the qualitative nature of the study and to protect participant confidentiality, raw interview transcripts are not publicly available.

Acknowledgments: The authors would like to express their sincere gratitude to the patients and families who participated in this study for sharing their experiences. The authors also thank UPT Puskesmas Alianyang, Pontianak, for granting permission and facilitating the research process. Appreciation is extended to the Faculty of Health, Universitas Katolik Santo Agustinus Hippo, for academic support.

Conflicts of Interest: The authors declare no conflict of interest related to this study or its publication.

References

- ADA. 2022. Classification and Diagnosis of Diabetes : Standards of Medical Care in Diabetes — 2022. | 45(January): 17–38.
- Adiputra, I. Made Sudarma, et al (2021), Metodologi Penelitian Kesehatan, Medan : Yayasan Kita Menulis.
- Afifah, N., & Yulianti, T. (2023). Dukungan keluarga dalam manajemen diabetes mellitus tipe 2: Systematic review. *Jurnal Keperawatan Muhammadiyah*, 8(1), 56-63.
- Almatsier, S. (2024). *Penuntun Diet*. Jakarta : Ikrar Mandiri Abad
- Andry,Hartono. (2025). *Terapi Gizi dan Diet Rumah Sakit* . Jakarta : Buku Kedokteran
- Ariani,Yesi.(2022). Hubungan antara Motivasi dengan efikasi Diri Pasien DM Tipe 2 dalam Konteks Asuhan Keperawatan di RSUP. H. Adam Malik Medan. Tesis,Depok: Magister Ilmu Keperawatan Fakultas Keperawatan Universitas Indonesia.
- Cohen, S., & McKay, G. (2023). *Social Support and Health*.
- Cutrona, C. & Gardner, S. (2023). *Appraisal support memberikan nasehat untuk pemecahan masalah*.

- Dewi, P., Azizah, M., Rendowaty, A., Sri Wahyuni, Y., & Pranata, L. (2023). Edukasi tentang Diabetes Mellitus dan Pemeriksaan Biomedis Kadar Gula Darah Pada Ibu Rumah Tangga. *Health Community Service*, 1(1), 46–50. <https://doi.org/10.47709/hcs.v1i1.3358>
- Friedman, M. (2022). *Buku Ajar Keperawatan Keluarga. Riset, Teori, Praktik Jakarta* : EGC
- Guyton & Hall, *Buku Ajaran Patofisiologi Kedokteran Edisi 9*, Penerbit Buku Kedokteran EGC.
- Hartono, dodik. (2019). The Correlation of Self Care With Complications Diabetes Mellitus Patients Diabetes Mellitus Type II In Internal Medicine Poly at Doctor Mohamad Saleh Hospital in Probolinggo City. *Journal of Nursing Care & Biomolecular*, 4(2), 111.
- Herry Heryanto. (2024). Penerapan Pemenuhan Kebutuhan Nutrisi pada Pasien Diabetes Melitus.
- International Diabetes Federation. (2023). *Type 2 Diabetes*.
- Jurnal Kesehatan Masyarakat. (2024). Pengaruh Gizi Seimbang terhadap Kualitas Hidup Penderita Diabetes.
- Jurnal Kesehatan Masyarakat. "Strategi Pencegahan Diabetes Melitus Tipe 2 di Indonesia". Vol. 12, No. 1, 2024. Kementerian Kesehatan Republik Indonesia. (2023). *Pedoman Pengelolaan dan Pencegahan Diabetes Melitus di Indonesia*.
- Kemkes. 2024. —Diabetes Melitus Tipe 2.‖
- Kemkes RI. 2022. —DIABETES MELLITUS TIPE 2.‖
- Kementerian Kesehatan Republik Indonesia. (2023). *Pedoman Gizi Seimbang*. Jakarta: Kemkes RI. Retrieved from <https://www.kemkes.go.id>
- Michael Dansinger, MD. 2023. —Diabetes Basics.‖ March 18.
- Munali,dkk. 2019. *Critical Medical And Surgical Nursing Journal (Jurnal Keperawatan Medikal Bedah dan Krisis)*. *Jurnal Keperawatan Medikal Bedah dan Krisis*, 8(1),8.
- Nursalam. (2020). *Metodologi Penelitian Ilmu Keperawatan (P. P. Lestari (ed.); Edisi 5)*. Salemba Medika.
- Primanda, Y., Indarwati, F., Astuti, Y., Irawati, K., & Hidayati, L. N. (2022). Edukasi Pengenalan Dan Pencegahan Diabetes Melitus. *Prosiding Seminar Nasional Program Pengabdian Masyarakat*. <https://doi.org/10.18196/ppm.43.906>
- Santunsetiawati dan Agus Citra Dermawan. (2022). *Asuhan Keperawatan Keluarga dan Konsep Keperawatan Keluarga*.
- Sarafino, E. P.; Smith, T. (2023). Dimensi dukungan sosial: perhatian, empati, kehangatan personal (dikutip dalam kompas.com).
- Sarafino, E. P. (2023). Dukungan sosial: inormational support seagai nasihat, saran, informasi (dikutip dalam Rif'ati et al., 2023).
- Sumiatin, T., Yunariyah, B., & Melitus, D. (2023). *Komplikasi Pada Penderita Diabetes Melitus Di Puskesmas Tuban*. 287– 295.
- Suhailah, D., Hasneli, Y. N., & Herlina. (2023). Gambaran Dukungan Keluarga Pada Penderita Diabetes Melitus Di Wilayah Kerja Puskesmas Sail Kota Pekanbaru. *Jurnal Ilmu Kesehatan Dan Gizi (JIG)*, 1(1), 55–70
- Sumiatin, T., Yunariyah, B., & Melitus, D. (2023). *Komplikasi Pada Penderita Diabetes Melitus Di Puskesmas Tuban*. 287–295.
- World Health Organization. "World report on child injury prevention.
- World Health Organization (WHO) & Food and Agriculture Organization (FAO). (2023). *Healthy Diet*. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/healthy-diet>.