

CHAPTER II

LITERATURE REVIEW

2.1 The Concept of Diet

2.1.1 Definition of Eating Patterns in Children

Dietary patterns are a method and effort to regulate the type and amount of food consumed with the aim of maintaining health, ensuring adequate nutritional intake, and preventing or promoting the development of disease (Amaliyah, M., 2021). Dietary patterns are an individual's behavior in choosing how to utilize food components when consuming food, including frequency, types of food consumed, and daily amounts (Uwa & Milwati, 2019). Dietary patterns are efforts to regulate food intake in a way that is beneficial for the body, maintaining nutritional balance and meeting the body's needs. Consuming a balanced diet will help maintain good eating habits in the long term.

Dietary patterns are an effort to provide a broad overview, controlling the amount and type of food consumed, regarding nutritional status, health maintenance, and disease prevention or treatment (Ministry of Health of the Republic of Indonesia, 2016). Dietary patterns provide information regarding the type and amount of food consumed by an individual or group of people at a certain time, and the amount and type of food consumed can be used to assess dietary intake (Ari Istiany, 2016).

A healthy diet includes a variety of foods that can meet a child's nutritional needs, depending on their age. Excess or deficiency of nutrients can lead to health problems in children. Elementary school age is a time when children experience growth and development, both in their thinking and emotional abilities. A child's growth and development is influenced by good nutritional intake, achieved through nutritional management (Jauhari, 2020).

2.1.2 Balanced Food Menu Patterns

The Indonesian government through the Ministry of Health of the Republic of Indonesia has introduced a daily food intake guide called "Isi Piringku", replacing the slogan "4 Sehat 5 Sempurna" which is no longer appropriate to the current climate. . The implementation of this program is fully supported by Danone Indonesia because it is in line with the Food Revolution Movement or Danone Food Revolution. Fulfilling the nutritional needs of children and adolescents is very important so that children and adolescents need to pay attention to their diet properly so that all their nutritional needs are met. Here is the contents of my plate according to the recommendations of the Ministry of Health, namely:

- a. Carbohydrate sources such as cassava, rice, noodles/vermicelli, corn, sago, and potatoes are staple foods that make up 2/3 of half the plate.
- b. Animal protein sources such as fish and other seafood, chicken, beef, eggs, milk, and dairy products are used as side dishes. Serve 1/3 of a

half-plate portion of plant-based protein sources such as tempeh, tofu, and nuts.

- c. Sources of vitamins and minerals include eggplant, carrots, spinach, watercress, turnips, spinach, broccoli, and tomatoes, which should make up two-thirds of a half-plate portion. Fruits that are good sources of vitamins and minerals, such as bananas, mangoes, papayas, apples, guavas, oranges, and langsung, can be consumed in one-third of a half-plate portion. (Manjilala, 2019).

2.1.3 Unhealthy Eating Patterns in Children

According to Anggie Irfansyah (2020), bad eating habits involve consuming unhealthy foods every day. Bad eating habits can be detrimental to your health. Some causes of unhealthy eating habits include:

- a) Skipping breakfast

Breakfast is necessary because of course we need to prepare a breakfast menu that includes the nutrients we need to maintain concentration during activities.

- b) Consuming large amounts of sweet foods and drinks

Sugary foods and drinks can raise blood sugar levels and increase the risk of diabetes. They can also lead to obesity.

- c) Eating fried foods

Can increase calorie intake and increase cholesterol.

d) Eating fast food

It turns out that fast food contains 80% saturated fat. Excessive junk food consumption leads to obesity and other diseases.

e) Lack of vegetable and fruit intake

The body needs fiber to aid digestion. Furthermore, not eating enough vegetables can lead to high blood pressure and other risks.

f) Eat late at night

It can cause weight gain and obesity and can cause increased stomach acid during the day (Anggie Irfansyah, 2020).

2.1.4 Factors Influencing Children's Eating Patterns

According to Hangraini (2021), there are six factors that influence eating habits, including:

1. Eating Behavior Factors

Eating behavior is a deeply rooted eating habit in an individual or group of people who eat three times a day as well as the frequency and type of food they consume.

2. Economic Factors

The economic factor is the family's total monthly income, including wages, salaries, and income. High income and lack of nutritional knowledge can cause the habit of overeating (Hangraini, 2021).

3. Environmental Factors

Environmental factors influence a person's eating behavior because a clean environment increases appetite and allows children and adolescents to enjoy food.

4. Socio-cultural factors

From a socio-cultural perspective, consuming foods that might influence local religions or naturalized cultural practices is prohibited.

Each region has its own unique eating habits (Hangraini, 2021).

5. Religious Factors

In terms of religious factors, generally people have eating habits that prioritize reading the composition of food before eating, and in particular in Islam there are prohibitions on types of food that are not allowed to be consumed because they are not halal.

6. Education Factor

In education, eating habits include knowledge about what foods can be consumed.

2.1.5 Meal Frequency in Children

Eating frequency refers to how often a person eats in a day, such as breakfast, lunch, dinner, and snacks. Eating frequency is how often or how many times a person eats (main meals and snacks) in a day. Eating frequency refers to the amount of food eaten each day. Food is naturally processed in the body by passing through the digestive tract from the

mouth to the small intestine. According to Suhardjo (in Amaliyah et al., 2021), eating frequency is the number or number of times a person eats in a day. The assessment of eating frequency includes: Eating frequently (once a day), Eating regularly (4-6 times a week), Eating normally (3 times a week), Eating occasionally (1-2 times a week), Eating rarely (<1 time a week), and Never eating.

A good diet for diabetes mellitus patients consists of low-calorie foods, such as vegetables such as cucumbers, cabbage, pumpkin, radishes, mustard greens, bamboo shoots, bean sprouts, eggplant, and tomatoes. Foods containing easily absorbed carbohydrates, such as sugar, fruit juice, and syrup, should be avoided. The most important thing in a diabetes mellitus diet is a consistent meal schedule to stabilize blood sugar levels, and to balance the types and portions of food with the required calories. The recommended calorie intake is 1,100-2,900 kcal. Calculating the required calories is as follows: Ideal body weight = $0.9 \times (\text{Height} - 100)$. For men, this is ideal body weight $\times 30$ kcal, and for women, it is ideal body weight $\times 25$ kcal (Utama et al., 2015).

2.1.6 Diet Measurement Methods

To determine each individual's eating patterns, a food consumption survey is conducted to determine eating habits, assess food and nutrient adequacy, and determine factors influencing food consumption

(Purnamasari et al., 2022). Methods for quantitatively measuring consumption include:

a. Method *food recall* 24 hours

This method is used as clearly as possible so that respondents can reveal the types and approximate amounts of food they consumed in the past few days. This "remembering" typically occurs 2-3 days ago.

b. Method *Food Frequency Questionnaire* (FFQ)

The Food Frequency Questionnaire (FFQ) is a method for assessing dietary intake that has unique characteristics compared to other methods. The FFQ provides an overview of a person's energy and other nutrient intake in terms of frequency. This frequency ranges from daily, weekly, monthly, and yearly, and is converted into daily consumption. The FFQ provides an overview of a person's eating habits and nutritional habits. The foods and ingredients listed in the FFQ can be produced to meet the needs of researchers and research institutions. This survey covers the intake of staple foods, side dishes, vegetables, and fruit. Consumption patterns are then assessed by adding all scores using the formula: total score = staple food score + side dish score + vegetable score + fruit score (Tarawan V et al., 2020).

2.1.7 Impact of Irregular Eating Patterns on Child Growth and Development

According to Utomo et al., (2021), the impacts of irregular eating patterns are as follows:

a. Nutritional Needs Not Met

Research published by the National Institutes of Health shows that poor eating habits in children are closely linked to poor health and nutrition. Consistent with these findings, Reuters also found that children who frequently skip breakfast and lunch are more likely to experience deficiencies in vitamins A, D, E, and K, as well as several essential minerals.

b. Increases the Risk of Obesity

Another study reported by The Guardian newspaper found that disrupted daily routines, such as irregular meal and sleep schedules and frequently skipping breakfast, can increase a child's risk of obesity as an adult. Inconsistent eating habits not only slow metabolism but also trigger children to consume more high-calorie snacks outside of mealtimes. If not addressed promptly, inconsistent eating behavior in children can disrupt physical, cognitive, and emotional development, as well as increase the risk of metabolic syndrome, which can lead to diabetes in the long term.

c. Disrupts Brain Development

Irregular eating habits can lead to nutritional deficiencies in children, leading to decreased brain production, decreased cell size and complexity, and reduced ability of brain cells to communicate effectively with each other. Over the long term, this condition can impact a child's development and learning ability, leading to lower academic achievement, emotional problems, and poor personal health.

2.2 Concept of Diabetes Mellitus

2.2.1 Definition of Diabetes Mellitus in Children

Diabetes mellitus is a hormonal imbalance that prevents the body's cells from absorbing glucose from the blood. High blood sugar levels, or blood sugar levels that tend to be higher than normal (greater than 200 mg/dL), are the primary signs of diabetes mellitus (Ministry of Health of the Republic of Indonesia, 2020). Furthermore, sweet-tasting urine is another sign of diabetes mellitus.

Diabetes Mellitus is a disease that requires ongoing medical care and is a complex chronic disease, which includes more than just glycemic control. (American Diabetes Association, 2018). If Diabetes Mellitus is not well controlled, it can cause damage to various organs and tissues of the body, including visual impairment or cataracts (retinopathy), impaired kidney function (nephropathy), nerve damage (neuropathy), foot ulcers

and amputations, heart disease and stroke, and even death (Vorvick, 2019).

2.2.2 Classification of Diabetes Mellitus in Children

According to Kurniadi and Nurrahmi (2014), in general, diabetes mellitus (DM) in children is classified into 2 types, namely:

1. Type 1 diabetes

One of the most common types of diabetes in children and adolescents is type 1 diabetes. However, type 1 diabetes can also occur in infants, toddlers, and adults. An autoimmune disease causes type 1 diabetes, in which the child's immune system damages or destroys the pancreas itself, causing it to malfunction. As a result, children with type 1 diabetes produce little or no insulin. This condition can lead to high blood sugar levels, which in turn can damage body tissues and organs. The exact cause of type 1 diabetes in children is unknown. However, the following risk factors can increase the risk of type 1 diabetes in children:

- a) Genetic or hereditary factors, for example a history of type 1 diabetes in the family.
- b) History of viral infection.
- c) Unhealthy eating habits, for example consuming sweet foods or drinks such as candy, ice cream, packaged fruit juice, or dried fruit regularly.

2. Type 2 diabetes

Insulin resistance is a condition in which a child's body cells have difficulty using insulin to utilize blood sugar for energy. In some cases, decreased insulin production can lead to type 2 diabetes. This disorder can lead to elevated blood sugar levels in children. Those over the age of ten or adolescents are more susceptible to type 2 diabetes. Several risk factors that can increase a child's likelihood of developing type 2 diabetes include:

- a) Having a parent or sibling who has had diabetes.
- b) Obesity or obesity in children.
- c) The habit of frequently eating foods that contain a lot of sugar and fat.
- d) Less active or rarely exercise.

2.2.3 Signs and Symptoms of Diabetes in Children

According to Lestari & Zulkarnain (2021), diabetes mellitus has symptoms including:

- a. Polyuria (frequent urination)

Urinating more frequently than usual, especially at night. Blood sugar levels exceed the kidney's threshold (greater than 180 mg/dL), causing sugar to be excreted in the urine. The body attempts to absorb as much water as possible into the urine to reduce the concentration of urine excreted. This can lead to frequent urination

and large urine output. Normal daily urine output is about 1.5 liters, but in patients with uncontrolled diabetes, urine output can increase fivefold.

b. Polydipsia (frequent thirst)

Urinary incontinence causes dehydration. To address this issue, patients often crave water, especially cold, sweet, or large amounts of water, as it can make them thirsty.

c. Polyphagia (quickly feeling hungry)

Polyphagia is characterized by increased appetite and feelings of lack of energy. People with diabetes have problems with insulin, which reduces the absorption of sugar into the body's cells and produces less energy. Therefore, sufferers feel low on energy. In addition to the lack of sugar in the cells, the brain also perceives the energy deficiency as being due to insufficient food intake, leading to hunger and an attempt to increase food intake.

d. Weight Loss

Due to a lack of insulin, the body must process fat and protein for energy. People with uncontrolled diabetes can lose up to 500 grams of glucose in the urine each day, equivalent to a daily loss of 2,000 calories.

e. Other symptoms or additional symptoms that may occur usually manifest as complications such as tingling feet, itching, or sores that don't heal. In women, it can be accompanied by itching in the groin

area (pruritus vulva), and in men, it can be accompanied by a painful sensation at the tip of the penis.

2.2.4 Factors Affecting Blood Glucose Control in Children

According to Suryati (2021), several factors can affect blood glucose control in people with Diabetes Mellitus, including:

1) Dietary habit

Eating habits include a diet consisting of carbohydrates, fiber, fat, and protein. A diet high in carbohydrates and low in fiber can interfere with the stimulation of pancreatic beta cells, which produce insulin. Therefore, a balance of carbohydrates, fat, protein, fiber, and fruits is necessary to ensure the body's ability to process insulin effectively.

2) Physical activity

Regular physical activity for 30 minutes per day will reduce insulin resistance and improve the control of insulin use within the body's cells. It also lowers blood glucose levels in diabetic patients.

3) Obesity

Obesity causes the accumulation of fat tissue in the body and under the influence of insulin, fat accumulation increases, causing insulin resistance.

4) Stress level

Stress is caused by excessive cortisol production. Cortisol is a

hormone that can slow the action of insulin and cause increased blood glucose.

2.2.5 Management in Children

2.2.5.1 Pharmacological Management

Diabetes Mellitus sufferers who fail to control their blood glucose need to consider administering pharmacological therapy in the form of oral antidiabetic drugs and insulin (Muhammad, 2018).

a. Oral antidiabetics

Oral antidiabetic therapy can be performed with a single drug or a combination. The choice of oral antidiabetic must consider the severity of DM and the patient's general health, including other diseases and complications (Fatimah, 2015). Oral antidiabetic drugs include sulfonylureas (glibenclamide, glipizide, glimepiride, gliquidone, glicazide), glinides (repaglinide, nateglinide), biguanides (metformin/gluconeogenesis), thiazolidinediones (pioglitazone), alpha-glucoside inhibitors (acarbose), and DPP-4 inhibitors (vildagliptin, linagliptin, sitagliptin, saxagliptin, and alogliptin). (PERKENI, 2021).

b. Insulin

Insulin is used when someone experiences symptoms of hyperglycemia (polydipsia, polyphagia, polyuria) or HbA1C levels > 9% or GDS \geq 250 mg/dl. Insulin can be used in patients with

special conditions such as pregnancy, kidney failure, liver disease, and elderly patients (PERKENI, 2021). The hormone insulin functions to control blood glucose levels by binding to specific receptors on liver, fat, and muscle cells. When blood glucose levels increase, insulin triggers intracellular glucose translocation and increases glucose uptake by peripheral tissues (fat and muscle). In addition, insulin triggers glycolysis reactions in the liver and inhibits glucagon secretion by signaling liver cells to do so.

2.2.5.2 Non-Pharmacological Management

According to Jainurakhma et al., 2021, the provision of treatment in non-pharmacological implementation includes:

a. Nutritional Therapy

In patients who perform nutritional therapy well, they can experience a decrease in blood glucose and fat levels in the blood, which will prevent weight gain and cardiovascular disease. Daily calories that are recommended to be consumed are 50-60% carbohydrates, 20-30% fat, and 10-20% protein.

b. Physical Activity and Exercise

To lower blood sugar levels and prevent blood sugar levels from rising, it is recommended to do physical activity for 30 minutes every day, every week.

c. Blood Glucose Test

Patients can have the examination at the nearest health center or

do it themselves using the equipment they have.

d. Health Education

This education is carried out so that patients have the ability and improvement in understanding and knowing about DM.

2.3 Growth and Development of Elementary School Children

2.3.1 Definition of Elementary School Children

Article 1 Paragraph 1 of Law of the Republic of Indonesia Number 23 of 2022 concerning "Child Protection" stipulates that a child is a person who has not reached the age of 18. Decree of the Minister of Health of the Republic of Indonesia Number 25 of 2014 stipulates that a child is a person who is limited to the age of 18, including babies who are still in the womb. A child is someone who is still growing and developing and has special needs, such as psychological, physical, social, and spiritual needs (Ramadini 2022).

School-age children are children between the ages of 6 and 12. When a child starts school, education is considered compulsory. During this period, children become more independent in their activities, which is related to their relationships and interactions with their peers (Tusaniah and Khasanah 2021). Elementary school children are actually still in the developmental and growth stages, encompassing intellectual, emotional, and physical growth. Each child experiences different growth spurts, and each child is unique (Rosyabella 2023).

2.3.2 Concept of Growth and Development

Growth is visible change, while development is the addition of more complex bodily functions. Growth is a quantitative and measurable physical change. With the standardization of certain measuring instruments, growth can be measured using tools for height, weight, and head circumference based on age.

According to the Ministry of Health (2016), development is the improvement of more complex body parts and functions, such as walking and talking. Development is the behavioral aspect of growth, for example, individuals develop the ability to walk, talk, run, and perform increasingly complex activities (Kozier, Erb, Berman & Synder, 2016).

Internal and external factors influence growth and development. Internal factors include gender, racial differences, age, genetics, and chromosomes, while external factors include social, economic, nutritional, and psychological environmental conditions. Although the terms "growth" and "development" are often used to refer to dynamic processes, each has a different meaning. Growth and development are repetitive, periodic, and continuous processes influenced by maturation, environmental factors, and genetics (Kozier, Erb, Berman & Synder, 2016).

a) Physical Growth

During this period, average annual growth is 3–3.5 kg and 6 cm, with head circumference increasing by only 2–3 cm. This suggests that after seven years, myelination is complete and brain growth slows. Six-year-old boys and girls are approximately 115 cm tall. Their height increases to 150 cm by the time they are 12 years old (Kozier, Erb, Berman & Synder, 2011).

According to physical development, there are four components that make up the human body: the nervous system, muscles, endocrine glands, and body structure. Ideal physical growth and development are crucial for elementary school students because their physical growth directly and indirectly influences their daily behavior. Children's motor skills are directly influenced by their physical growth. At the same time, children's physical growth and development indirectly influence their views of others and themselves. This is evident in children's ability to adapt in general.

b) Cognitive Development

Cognitive ability is the ability to think that encompasses all intellectual abilities, such as problem-solving and memory. There are six categories of cognitive ability: knowledge/recognition, understanding, application, analysis, and comprehensive evaluation. Elementary school-aged children are engaging, realistic, and eager to learn. According to Samiudin (2017), most children lack the ability

to understand abstract concepts. Theoretically, Piaget stated that elementary school-aged children, aged seven to eleven, are in the third stage of cognitive development, known as the special operations stage. Children at this age are considered to have the ability to think abstractly (Trianingsh, 2016). Children studying in elementary school experience rapid cognitive development. Children begin to generate ideas, understand interpersonal relationships, and learn to solve problems in specific situations (Slavin, 2011). Teachers must have the ability to create a unique learning environment for children so they can learn to think rationally and solve problems more quickly (Trianingsh, 2016).

c) Moral Development

The word moral comes from the Latin *mos/moris* and can be interpreted as rules, values, customs, habits, and ways of life (Retno, 2013). At the same time, morality tends to accept and uphold moral rules, values, and principles (Yusuf, 2011). Total development is related to rules about what individuals should do in their interactions with others. From a behaviorist perspective, moral development is seen as the result of a series of stimuli learned by children, including the punishment and praise they frequently experience.

d) Spiritual Development

Parents are the first people to allow their children to gain knowledge and learn the fundamentals of life. Therefore, parents or

family members are the right place to begin the process of forming a child's religious attitudes and beliefs. Children spend most of their time with their parents, so they imitate them and learn from what they share. In this way, parents can instill religious values in their children. Children are certainly different from adults. They still encounter things they can see and feel directly. Therefore, it is necessary to adjust the language and delivery method appropriately so that children can understand the content being conveyed.

e) Psychosexual Development

Freud described school-age children (6-12 years) as entering an incubation period. During this stage, sexual orientation appears to be emphasized. Instead, developmental focus is concentrated on physical and intellectual activity (Kozier, Erb, Berman, & Synder, 2011). According to Freud's theory of child psychological development, the stages are divided into the oral phase (0 to 11 months), the infant phase (1 to 3 years), the phallic phase (3-6 years), and the latency phase (6 to 12 years). During the latency period, sexual energy remains but is directed toward other areas such as intellectual pursuits and social interactions. This stage is crucial for the development of social and communication skills, as well as self-confidence. Freud described the latency period as relatively stable. Therefore, this stage is not always referred to as a stage in theoretical descriptions, but as a distinct stage.

f) Psychosocial Development

School-age children are a transitional period of social interaction, a change that will impact the child. In this context, the role of the mother is replaced by the role of the teacher. Suryosubroto argues that the success of the teaching and learning process depends heavily on the teacher's ability to manage it.

2.3.3 Child Growth and Development Needs

According to (Wijaya, 2011) children's basic needs for optimal growth and development include nurturing, caring and sharpening, namely:

1. Physical-Biological Needs (ASUH)

Covers the needs for clothing, food and shelter, as well as nutrition, immunization, body and environmental hygiene, clothing, health services and medical treatment, sports, play and rest.

a. Nutrition

This must be met from the time the baby is in the womb. Mothers must ensure their nutrition is balanced by consuming nutritious foods and following well-planned menus. Breast milk is the most complete and balanced food for babies, especially during the first six months.

b. Immunization

Children should be given complete basic immunizations to protect them from preventable diseases.

c. Cleanliness

Includes food, drink, air, clothing, home, school, playground, and means of transportation.

d. Play, physical activity, sleep

Children should play, exercise, and sleep because this can increase growth hormones, appetite, carbohydrate, fat, and protein metabolism, and muscle and bone growth.

e. Health services

Children should be monitored and examined regularly. Children should be weighed at least eight times a year and SDIDTK at least twice a year. High doses of vitamin A are given every February and August. The purpose of routine monitoring is to detect and treat diseases and developmental disorders early, prevent illness, and monitor children's growth and development.

2. The Need for Love and Emotion (ASIH)

To ensure a child's physical, mental, and psychosocial growth in the first years of life, even from birth, a child desperately needs a close, harmonious, and consistent relationship with his or her mother. This is achieved in the following ways:

- a. Provides a sense of security and comfort, making children feel protected.
- b. Pay attention to his interests, desires and opinions
- c. Set an example (not forced)

- d. Helped, encouraged and appreciated
- e. Educated with joy, correcting with joy and love (not threats/punishment)

3. Stimulation Needs (ASAH)

Children should be stimulated to develop their sensory, motor, social-emotional, speech, cognitive, independence, creativity, leadership, and moral and spiritual abilities as quickly as possible. Factors that require early stimulation include the following:

- a. Billions of brain cells have been formed since the baby was six months old and there were no connections between brain cells;
- b. Parents should stimulate the connections between brain cells;
- c. New relationships will be formed with stimulation;
- d. The connections between brain cells will become stronger and more complex;
- e. The connections between brain cells will become more extensive and complex;
- f. Stimulates the left and right brain in a balanced way to develop mental-psychosocial development such as: noble character, personality, language skills, independence, creativity, productivity, morals, religion and ethics.

2.3.4 Previous Research on the Relationship between Diet and the Risk of Diabetes Mellitus

NO	Title	Researcher Name	Publication Year	Research methods	Research result
1	The Relationship Between Diet and the Incidence of Diabetes Mellitus in Children at the Sitty Maryam Islamic Hospital, Tumiting District, Kots, Manado	Stephen Timah	2019	Descriptive analytics	The results of the study showed that 4 respondents (10%) had good eating habits and 7 respondents (17.5%) did not have diabetes. 25 respondents (62.5%) had bad eating habits, while 4 respondents (10%) did

					not have diabetes.
2	The Relationship between Dietary Patterns and the Incidence of Diabetes Mellitus in the Kassi-Kassi Community Health Center Working Area of Makassar City	1. Juripah 2.H. Muzakkir 3. Sri Darmawan	2019	Survey analytics	Based on the results of the study, it was shown that out of a total of 47 respondents, 21 respondents had a good diet (44.7%). Where 13 respondents (27.7%) had a good diet but did not suffer from diabetes, while 8 respondents (17.0%) had a good diet but did not

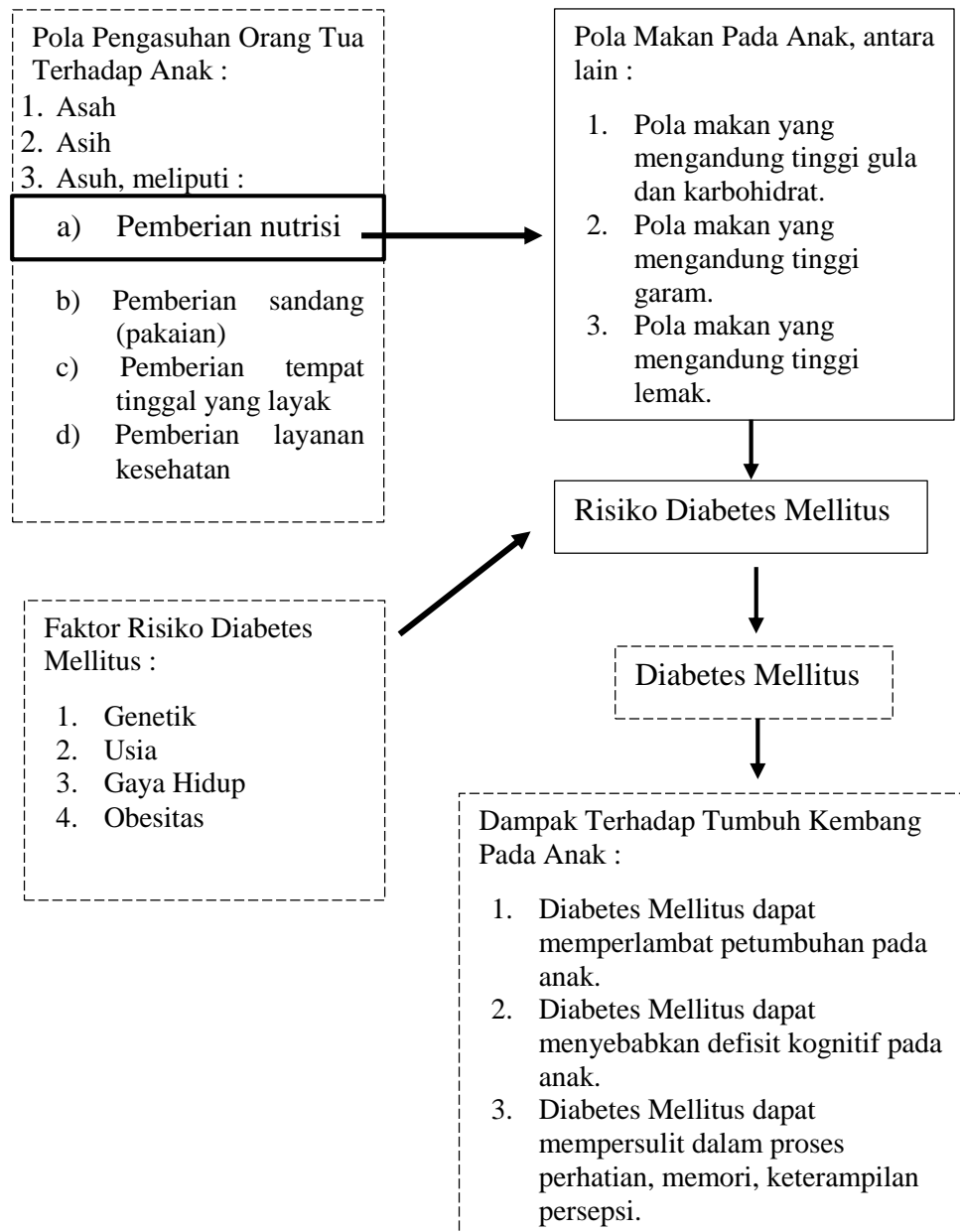
					<p>suffer from diabetes.</p> <p>Then 26 respondents had a bad diet (55.3%).</p> <p>Where 8 respondents (17.0%) had a bad diet but did not suffer from diabetes,</p> <p>while 18 respondents (38.3%) had a bad diet but did not suffer from diabetes.</p>
3	The Relationship Between Diet and the Incidence of	1. Jessica Hotmaida Tarihoran, 2. Goddess F. Syllabus	2022	Descriptive analytics	The study results showed that 19 (43.2%) people had

	Diabetes Mellitus at the Namoranbe Community Health Center, Deli Serdang Regency				poor diets and suffered from diabetes, while 7 (15.9%) did not. Meanwhile, 4 (9.1%) respondents with proper diets suffered from diabetes, while 14 (31.8%) did not.
4	The Relationship Between Diet and Controlled Blood Sugar Levels in Type II	1. Nur Alianastasya 2. Siti Khoiroh	2020	Correlational Research	The research results showed that out of 90 respondents, 54 (54.0%) respondents had good

	Diabetes Mellitus Patients at Abdul Wahab Sjahranie Regional Hospital, Samarinda				eating patterns, while 36 respondents had poor eating patterns (36.0%). These results show that there is a significant relationship between diet and controlled blood sugar levels in type II diabetes sufferers.
5	The Relationship Between Diet and the	1. Irma Handayani	2024	Quantitative Research	The results showed that 20 respondents

	<p>Incidence of Diabetes Mellitus at the Binjai Community Health Center, Binjai City</p>	<p>2. Ilham Syahputra Siregar 3. The White Light of Ramadan</p>			<p>had diabetes, 16 of whom (53.3%) ate unhealthy food, while 10 respondents did not have diabetes, and 14 of whom (46.7%) ate healthy food.</p>
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2.4 Kerangka Konsep



Gambar 2.1 Kerangka Konsep Hubungan Pola Makan dengan Risiko Terjadinya Diabetes Mellitus Pada Anak SD Kelas 4-6 di SDN Tasikmadu 1 Malang

Keterangan :

= Diteliti

= Tidak diteliti

2.5 Hypothesis

The research hypothesis was conducted to see whether or not there is a relationship between eating patterns and the risk of diabetes mellitus in elementary school children, so the hypothesis proposed is:

H0: There is no relationship between dietary patterns and the risk of diabetes mellitus in elementary school children.

H1: There is a relationship between dietary patterns and the risk of diabetes mellitus in elementary school children.