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ANALYSIS OF THE EFFECTIVENESS OF THE ELDERLY HEALTHY BEHAVIOR MODEL WITH THE THEORY OF PLANNED BEHAVIOR APPROACH IN PANTAI LABU DISTRICT, DELI SERDANG

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Abstract

The Theory of Planned Behavior (TPB) method can shed light on the factors that influence healthy intentions and behaviors in the aged. The purpose of this study is to evaluate the success of the aged healthy behavior model in Pantai Labu District, Deli Serdang, using the TPB approach, as well as to investigate the relationship between attitudes, subjective norms, perceived behavioral control, intents, and healthy behaviors. This study was designed as a descriptive survey using a quantitative technique. The sample consisted of 104 elderly people aged 60 years and over, who were part of a population of 1,085 people in Pantai Labu District. Data were collected using a questionnaire that measured attitudes towards healthy behavior, subjective norms, perceived behavioral control, intentions, and actual healthy behaviors. Data analysis was carried out using validity and reliability tests, multiple regression analysis, and Pearson correlation tests. The study showed that attitudes towards healthy behaviors had the greatest influence on the elderly's intention to live a healthy lifestyle ($\beta = 0.45$). Subjective norms and perceived behavioral control also had significant effects, with coefficients $\beta = 0.30$ and $\beta = 0.25$, respectively. The TPB model explained 68% of the variation in healthy behavioral intentions. The relationship between intention and actual healthy behavior showed a significant positive correlation ($r = 0.72$), indicating that strong intentions were related to the implementation of healthy behaviors. The TPB model was effective in explaining the factors that influenced healthy behaviors in the elderly in Pantai Labu District. Positive attitudes, social support, and perceived behavioral control contributed significantly to the intention of the elderly to adopt a healthy lifestyle. This study recommends the development of interventions that focus on improving attitudes, social support, and overcoming the barriers faced by the elderly in implementing healthy behaviors.

Keywords: *Theory of Planned Behavior; Elderly Healthy Behavior; Intention; Attitude; Subjective Norm; Perceived Behavioral Control*

INTRODUCTION

The increasing number of elderly people in Indonesia along with increasing life expectancy has important implications for the health sector.[1] The elderly tend to be more susceptible to various health problems, both physical and mental, such as chronic diseases, decreased body function, and decreased quality of life. Global life expectancy has increased significantly in recent decades due to advances in health care, nutrition, and sanitation.[2][3][4] In Indonesia, this trend is also seen in the increasing proportion of the elderly in the population. According to data from the Central Statistics Agency (BPS), in recent years, life expectancy in Indonesia has continued to increase, so the elderly population has increased.[5][6]

Increasing life expectancy has implications for the demographic structure, where the proportion of the elderly to the total population increases. This affects the need for health services, pensions, and social support. The elderly are more susceptible to chronic diseases such as hypertension, diabetes, heart disease, and cancer. The decline in physiological function with age affects body systems such as cardiovascular, respiratory, and metabolic. Research shows that the prevalence of chronic diseases increases with age. For example, data from the World Health Organization (WHO) shows that more than 80% of the elderly suffer from at least one chronic disease.[7][8]

The natural aging process causes a decline in body functions, including decreased muscle strength, bone density, and cognitive function.[9][10] This increases the risk of accidents, falls, and disability. Studies show that decreased muscle mass (sarcopenia) and decreased bone density (osteoporosis) are common problems in older adults that can affect mobility and quality of life. Decreased quality of life in older adults can be influenced by various factors, including mental disorders such as depression and anxiety.[11][12] Research shows that deteriorating physical conditions and functional limitations often contribute to decreased quality of life.[13][14] In addition, changes in cognitive and social abilities can also affect quality of life in older adults.

The increasing number of elderly people accompanied by increasing life expectancy brings significant health challenges. The elderly are more susceptible to chronic diseases, decreased body function, and mental health problems, all of which affect their quality of life.[15][16] To address these challenges, it is important for the health system to adapt to the needs of the elderly, improve access to health services, and support a holistic community-based approach. Further research and development of policies that are responsive to demographic changes will be essential to optimize the health and well-being of the elderly in Indonesia.

Therefore, efforts to maintain and improve healthy living behavior among the elderly are very crucial. One approach that is considered effective in understanding and predicting healthy behavior in the elderly is the Theory of Planned Behavior (TPB).[17][18][19] In an aging society, the health of the elderly is one of the main issues that requires special attention.[20][21] The elderly often face complex health challenges that require attention and preventive measures. A healthy lifestyle, including a good diet, sufficient physical activity, and regular health check-ups, plays a crucial role in maintaining quality of life and slowing down the aging process.[22][23][24] However, the necessary lifestyle changes are often difficult for the elderly to implement, largely due to various psychosocial and environmental factors.

In the context of the elderly in Pantai Labu District, Deli Serdang, understanding the factors that influence healthy behavior is very important to design appropriate interventions. Communities in this area generally have certain social and cultural characteristics that can influence subjective norms and perceptions of behavioral control related to health. In addition, the availability of health facilities and family and environmental support are also elements that cannot be ignored. Using the TPB approach, this study aims to analyze how attitudes, subjective norms, and perceptions of behavioral control influence healthy intentions and behaviors in the elderly in Pantai Labu District. The results of this study are expected to provide in-depth insights for policy makers and health service providers in designing more effective and targeted health promotion programs, especially for the elderly group.

LITERATURE REVIEW

1. The Theory of Planned Behavior (TPB)

TPB approach is one of the most widely used social psychology theories to predict and understand human behavior.[25][26] Developed by Icek Ajzen in 1985, TPB is rooted in an earlier theory, the Theory of Reasoned Action (TRA), also developed by Ajzen and Martin Fishbein.[27][28][29] TPB extends TRA by introducing a new component, namely perceived behavioral control, which is considered important in understanding behavior that is not fully under the control of the individual. TPB attempts to explain how psychological factors influence individual behavior.

The Theory of Planned Behavior (TPB) is a psychology theory developed by Icek Ajzen in 1985 to explain and anticipate human behavior in certain situations. If a person believes that those around them expect them to perform a particular behavior and they value those opinions, they are more likely to feel motivated to engage in the behavior. For example, if an individual's family strongly encourages healthy eating, that person may feel social pressure to adopt healthier dietary habits. Third, perceived behavioral control is the individual's perception of how easy or difficult it is to do the behavior, based on past experience or anticipated obstacles. This factor reflects the person's belief in their ability to successfully carry out the behavior, and it directly influences both their behavioral

intentions and the behavior itself. For example, if someone believes they have the time, resources, and physical capability to exercise regularly, their perceived control will be high, which increases the likelihood that they will intend to and actually engage in regular exercise. TPB focuses on deliberate behavior, which means that behavior does not occur by chance, but is influenced by various factors that shape a person's intention to act.[30][31][32] Although intention is the most important predictor of behavior, the TPB recognizes that behavior is not always completely under a person's control, so perceived behavioral control plays a key role.

Key Components of the TPB

Attitude toward Behavior

Attitude toward behavior reflects an individual's evaluation of the extent to which they view an action as good or bad.[33][34] This attitude is influenced by:

- Behavioral beliefs:
- Evaluation of behavioral outcomes

For example, in the context of health, a person's attitude toward a healthy lifestyle may be influenced by the belief that a balanced diet and regular exercise will reduce the risk of disease. If a person views these health benefits as very important, then they are likely to have a positive attitude toward healthy behavior.

Subjective Norm

Subjective norm refers to an individual's perception of social pressure from significant others, such as family, friends, or coworkers, to perform or not perform an action.[35][36][37] Subjective norms are influenced by:

- Normative beliefs
- Motivation to comply

How much an individual is motivated to comply with or follow the views of the social group. For example, a person may feel motivated to quit smoking because his or her family highly expects him or her to take care of his or her health, so this social pressure influences his or her intention to perform the behavior.

Perceived Behavioral Control

Perceived behavioral control is an individual's view about his or her capacity to undertake a specific activity, including internal and external circumstances that may support or hinder the action.[38] This component includes:

- Control beliefs

Beliefs about the existence of factors that may facilitate or hinder the behavior.

- Strength of control

How much the individual feels able to overcome these obstacles.

Perceived behavioral control is similar to the concept of self-efficacy introduced by Albert Bandura, where someone who feels able to act is more likely to do so. For example, someone who believes that he or she has enough time, access to sports facilities, and support from the social environment to exercise is more likely to do so.

Intention

Intention is the basic motivation that drives a person to behave. The stronger the person's intention, the more likely the action will be carried out. The three components mentioned above, attitude, subjective norms, and perceived behavioral control, all influence intention.[39] However, although intention is an important predictor, the TPB also recognizes that real-world constraints can prevent individuals from acting in accordance with their intentions, such as physical condition, finances, or access to the necessary facilities.

Behavior

Behavior is the actual action taken by an individual. According to the TPB, behavior that is influenced by intention will be more likely to occur if the individual feels that they have sufficient control over the factors that influence the behavior.[40] This means that, even if a person has the intention to perform an action, if they feel they do not have enough control (e.g. due to physical or access limitations), they may not do it.

Applications of Theory of Planned Behavior

TPB has been widely applied in various fields to predict human behavior, such as:

• Health Behavior

TPB is often used to study health-related behaviors, such as eating habits, physical activity, smoking behavior, use of contraceptives, health checks, and vaccination behavior.

• Consumer Behavior

In a marketing context, TPB is used to predict consumer purchase intentions based on attitudes toward products, social norms related to brands, and perceived control over purchases.

• Environment

TPB is also applied to understand environmentally friendly behaviors, such as recycling, reducing waste, or using environmentally friendly transportation.

• Education

TPB has been used to study learning behaviors, such as participation in academic activities, intentions to continue education, and use of technology in learning. For example, research in the health field has shown that TPB can effectively predict an individual's intention to quit smoking, exercise regularly, or adopt a healthy diet. In each case, positive attitudes toward the behavior, support from the social environment, and belief in the ability to do so are important predictors of the expected behavior.

Criticism and Limitations of TPB

Although TPB has been widely used and proven effective, this theory also faces several criticisms, including:

• Focus on intentional behavior

TPB tends to ignore unintentional or automatic behavior that may be performed without conscious intention.

• Limitations in predicting long-term behavior

Some researchers argue that TPB is more effective in predicting short-term behavior, because a person's intentions can change over time.

• Lack of attention to emotional factors

TPB focuses mostly on cognitive processes and ignores the role of emotions or affective factors in influencing behavior.

• Inability to predict unplanned changes in behavior

2. Elderly community group (elderly)

The elderly population in Indonesia is an important part of the country's growing demographics. The elderly, defined as individuals aged 60 years and over according to Law Number 13 of 1998 concerning the Welfare of the Elderly, have experienced a significant increase in number along with the declining birth rate and increasing life expectancy. In 2021, the number of elderly people in Indonesia reached around 10.8% of the total population, or around 29 million people, and is expected to continue to grow in the coming decades, making Indonesia a country with an aging population. The elderly population in Indonesia (Senior Citizens) is a growing segment of the population, along with increasing life expectancy and decreasing birth rates. According to the Central Statistics Agency (BPS), the number of senior citizens in Indonesia has increased significantly, reflecting the demographic transition process in which Indonesia is shifting from a young population structure to an older population. This increase in the number of senior citizens has various social,

economic, and health implications for the country. Senior citizens are defined as individuals aged 60 years and over, in accordance with Law Number 13 of 1998 concerning the Welfare of the Elderly.

1. Demographics of the Elderly in Indonesia

Demographically, the elderly population in Indonesia varies widely based on factors such as gender, marital status, education level, and geographic location. The majority of the elderly are women because women have a higher life expectancy than men. According to data from the Central Statistics Agency (BPS), more than half of the elderly in Indonesia live in rural areas, where they generally work in the informal sector such as agriculture. Elderly people in Indonesia also tend to have lower levels of education, with most of them only completing primary education or even no formal education. Marital status is also an important characteristic of elderly people in Indonesia. Many elderly women live as widows due to higher husband mortality rates, while elderly men more often continue to live with their partners. Most elderly people who are still working are involved in informal sector work with relatively low incomes and without adequate social security. Based on BPS data, in 2020, the elderly population in Indonesia reached more than 9% of the total population, and this figure is predicted to continue to increase to reach 19.85% in 2045. This increase is due to a combination of decreasing fertility rates and increasing life expectancy which now averages 71.5 years for men and 75.6 years for women. This phenomenon shows that Indonesia is heading towards an aging society, where the proportion of elderly people is increasing compared to the younger age group. The elderly group is spread throughout Indonesia, but the highest concentration is in rural areas, where access to health services and social facilities is more limited compared to urban areas. In terms of gender, elderly women outnumber men, which is largely due to women's higher life expectancy.

2. Health of Elderly People in Indonesia

Elderly people in Indonesia face various health challenges related to the aging process. Data from the Basic Health Research *(Riskesdas)* shows that many elderly people suffer from a combination of chronic health problems that require long-term care. Despite increasing access to health services, many elderly people in Indonesia still face difficulties in obtaining adequate services, especially in rural areas. These barriers include high healthcare costs, lack of access to healthcare facilities, and limited health insurance programs that specifically cover the needs of the elderly. The Indonesian government has launched various initiatives such as the Healthy Indonesia Program and the National Health Insurance (JKN), but challenges in implementation and coverage of services for the elderly remain. Health problems are one of the biggest challenges faced by the elderly in Indonesia. Degenerative diseases such as hypertension, diabetes, heart disease, and stroke are increasingly common among the elderly. In addition, many elderly people experience a decline in physical and cognitive function, including problems with mobility, vision, hearing, and memory. This decline often results in a decrease in quality of life and increased dependence on family or caregivers.

Access to health services for the elderly is still a challenge, especially in rural areas. In addition, integrated health services specifically for the elderly, such as geriatrics, are still limited to certain hospitals and health facilities. The mental health of the elderly is also often overlooked, even though conditions such as depression and anxiety are very common among the elderly, especially those who feel isolated or lack social support. Awareness of the importance of mental health for the elderly needs to be raised, given the significant impact it can have on their well-being.

3. Social and Economic Conditions of the Elderly

Socially, many elderly in Indonesia are still highly dependent on family support, especially their children. The culture of filial piety in Indonesia places the family as the main source of economic and emotional support for the elderly. However, social changes such as urbanization and labor migration have resulted in reduced direct support from the family, leaving many elderly at risk of social isolation and poverty. On the economic side, many elderly in Indonesia still work to meet their daily needs due to the lack of adequate pension security, especially for those working in the

informal sector. Only a small proportion of elderly have access to pension funds or social security, and most rely on family assistance or social assistance from the government. Programs such as the Elderly Social Assistance aim to ease the economic burden on the elderly, but their coverage is still limited. The elderly in Indonesia have diverse social and economic characteristics. Most of the elderly are still involved in economic activities, especially in the informal sector such as agriculture, small trade, and housework. However, they often work due to economic necessity, given the low access to adequate social security or pension programs. Many elderly people depend on financial support from their families, especially children, due to limited income. On the social side, the elderly in Indonesia generally live in large families, where they still play an active role in family life, either in terms of caring for grandchildren or as respected figures in the family. However, with changes in modern lifestyle patterns and urbanization, many elderly people experience social isolation, especially in urban areas, where their children move or work in other areas, leaving the elderly alone or even in vulnerable situations.

4. Government Policies and Programs for the Elderly

The Indonesian government has introduced various policies to improve the welfare of the elderly, including through Law No. 13 of 1998 concerning the Welfare of the Elderly, which aims to provide protection and services to the elderly. The Ministry of Social Affairs works with local governments and various social institutions to provide programs that support the welfare of the elderly, including health services, social protection, and empowerment programs. One important program is the Posyandu Lansia, which provides routine health services such as blood pressure checks, nutritional monitoring, and mental health counseling for the elderly at the community level.

In addition, the government has also developed the Panti Sosial Tresna Werdha, which provides care for the elderly who do not have families or live in poverty. However, challenges in the distribution and quality of services still need to be overcome to reach all elderly people in Indonesia, especially those living in remote areas. The Indonesian government has developed various policies and programs to support the welfare of the elderly, both through Law Number 13 of 1998 concerning the Welfare of the Elderly and Presidential Regulation Number 88 of 2021 concerning the National Strategy for the Elderly. Some of the existing programs include Posyandu Lansia, which is a basic health service that focuses on disease prevention and maintaining the health of the elderly, as well as a home care program that provides direct care at home for the elderly who are unable to visit health facilities.

In addition, the government is also trying to increase the participation of the elderly in productive activities through training and development of small businesses for the elderly who are still able to work. The Prosperous Elderly Card Program is also one of the initiatives that provides social assistance for the elderly who are classified as economically disadvantaged. However, there are still many challenges in implementing policies, especially related to coordination between sectors, budget constraints, and public awareness of the importance of support for the elderly group. Most programs are still top-down, and do not involve the participation of the elderly in their planning and implementation.

The elderly population in Indonesia is growing rapidly and faces various complex challenges, both in terms of health, social, and economic.[41] Elderly people in Indonesia generally still rely on family support and are involved in informal sector work, but access to health services and social security is still limited. The Indonesian government has attempted to respond with various policies and programs, although there is still room for improvement in terms of implementation and coverage of services for the elderly.[42] With the increase in the elderly population projected to continue, issues related to the welfare of the elderly will become increasingly important in national policy. The elderly community group in Indonesia continues to grow and presents various challenges and opportunities. In terms of demographics, the increase in the number of elderly requires adjustments to policies and programs to ensure their welfare, especially in social, economic, and health aspects. Health problems, both physical and mental, are a major concern that require increased access to and quality of health services. Meanwhile, changes in family and community structures affect the social dynamics of the elderly, demanding more inclusive and sustainable policies. Government programs

are in place, but increased coordination, awareness, and resources are needed to ensure that the elderly can enjoy a decent and dignified life.

METHOD

This study uses a quantitative approach with a survey method that aims to analyze the effectiveness of the elderly healthy behavior model in Pantai Labu District, Deli Serdang, based on the Theory of Planned Behavior (TPB). Quantitative research with a survey method is a systematic approach used in scientific investigations to collect, analyze, and interpret numerical data. This method focuses on quantifying phenomena and is often used to test hypotheses, understand relationships between variables, and generate data that can be generalized to a larger population. It typically involves testing pre-defined hypotheses and is often contrasted with qualitative research, which focuses on exploring phenomena through non-numerical data. The population of Pantai Labu District is 1,085 people, of which 104 are elderly people who are used as research samples.

Table 1. Population by Age Group and Gender in Deli Serdang Regency (People)

Age Group	Man		Woman		Total	
	2022	2023	2022	2023	2022	2023
60-64	33884	36312	35348	38235	69232	74547
65-69	23744	25519	24966	27522	48710	53041
70-74	12502	14976	13496	16504	25998	31480
75+	7935	8851	10527	11737	1846	2058

Source: https://deliserdangkab.bps.go.id/id/statistics-table/2/MTkyIzI=/jumlah-penduduk-menurut-kelompok-umur-dan-jenis-kelamin-di-kabupaten-deli-serdang.html

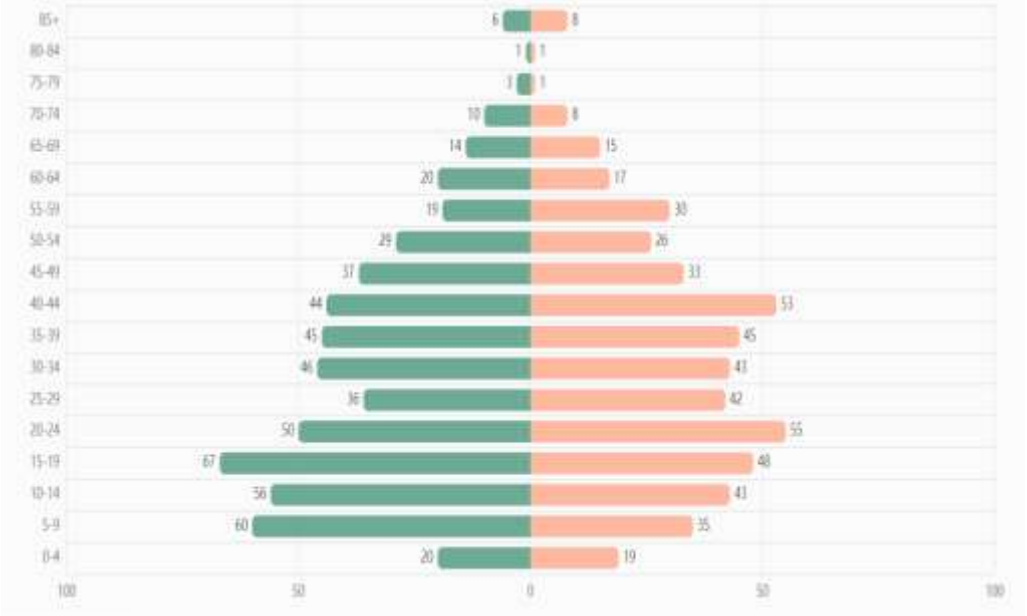

Figure 1. Population Pyramid of Pantai Labu Based on Age Group
Source: https://pantailabubaru.digitaldesa.id/infografis/penduduk

Description:
Male: Green
Female: Orange
So, the total number of elderly people in the sub-district is 104 people out of a total population of 1,085 people.

Research Design

This study used a descriptive survey design with a quantitative approach.[43] The survey method is one of the most common data collection techniques in quantitative research. A survey involves asking a set of structured questions to a sample of respondents to gather information about their characteristics, behaviors, attitudes, or opinions. Characteristics of Quantitative Research with Surveys; 1) Objective. Quantitative research with surveys seeks to measure variables, identify relationships, and make predictions based on empirical data. The aim is to ensure objectivity and replicability of the findings; 2) Structured Approach. Survey questions are highly structured and predefined, focusing on gathering standardized data.

This allows for consistency in responses and ease of data analysis; 3) Large Sample Size. Surveys are usually administered to a large sample size to ensure that the results can be generalized to the broader population. The larger the sample size, the more reliable and representative the results; 4) Statistical Analysis: Data collected through surveys is primarily analyzed using statistical methods such as descriptive statistics (mean, median, mode) and inferential statistics (correlations, regressions, significance testing). The goal is to test hypotheses or examine relationships between variables; 5) Hypothesis Testing: Quantitative research often begins with a hypothesis or a set of hypotheses that the researcher seeks to test through data collection and analysis. Surveys are a primary tool for testing such hypotheses. The survey was conducted to collect data from elderly people aged 60 years and over. The purpose of the study was to examine the relationship between TPB variables, namely attitudes, subjective norms, perceived behavioral control, intentions, and healthy behaviors.

Population and Sample

The population of this study was all elderly people in Pantai Labu District, totaling 104 people out of a total population of 1,085 people. Given the relatively small and manageable number of elderly people, all elderly people who met the inclusion criteria were taken as research samples (total sampling). This technique allows for an accurate picture of the characteristics and behavior of the elderly in the area.

Inclusion Criteria:

- Aged 60 years and over.
- Living in Pantai Labu District, Deli Serdang.
- Able to provide information independently or through a companion.

Exclusion Criteria:

- Elderly people who experience cognitive or physical disorders that hinder participation in the study.

Research Instrument

Data collection was conducted using a structured questionnaire designed based on the Theory of Planned Behavior.[44] This questionnaire consists of several sections that measure the components of the TPB:

1. Attitudes toward Healthy Behavior
   Measuring the elderly's beliefs and evaluations of healthy living behaviors, such as diet, exercise, and regular health checks.
2. Subjective Norms
   Measuring the elderly's perceptions of social support from family, friends, or the community for healthy behaviors.
3. Perceived Behavioral Control
   Measuring the elderly's beliefs in their ability to live a healthy lifestyle, including factors that can facilitate or inhibit such behaviors.
4. Intention to Behave Healthily
   Measuring how strong the elderly's desire is to implement healthy behaviors.
5. Actual Healthy Behavior
   Measuring healthy behaviors carried out by the elderly in everyday life.

Each item in the questionnaire is measured on a 5-point Likert scale, where 1 indicates very strong disagreement, and 5 indicates very strong agreement.

Data Collection Procedure

Data collection was carried out directly with the help of trained enumerators. Enumerators visited the elderly at their respective homes to provide questionnaires. If the elderly had difficulty understanding the questions, the enumerators helped explain without influencing the answers. This approach ensured the accuracy of the data collected and increased the level of participation.
The steps in data collection include:

1. Preparation of valid and reliable questionnaire instruments.
2. Training enumerators to assist in data collection.
3. Conducting a trial of the instrument on several elderly people to ensure the clarity and ease of use of the questionnaire.
4. Implementation of field surveys to all elderly respondents.

Data Analysis Techniques

The collected data were analyzed using statistical software, such as SPSS, with the following stages:

1. Descriptive Analysis
   Conducted to describe the characteristics of respondents, such as gender, age, education level, and health status.
2. Validity and Reliability Test
   The questionnaire was tested for validity using Confirmatory Factor Analysis (CFA) to ensure that each item measured could represent its variables. The reliability of the instrument was tested using the Cronbach's Alpha coefficient to ensure consistency of the answers.
3. Multiple Regression Analysis
   Used to test the influence of attitudes, subjective norms, and perceived behavioral control on the intention to behave healthily. The multiple regression model formula used is:

Intention=β0+β1(Attitude)+β2(Subjective Norm)+β3(Perceived Behavioral Control)+ε\text{Intention} = \beta_0 + \beta_1 (\text{Attitude}) + \beta_2 (\text{Subjective Norm}) + \beta_3 (\text{Perceived Behavioral Control}) + \varepsilonIntention=β0+β1(Attitude)+β2(Subjective Norm)+β3(Perceived Behavioral Control)+ε
Where:

- Intention: Intention to behave healthily.
- Attitude: Attitude towards healthy behavior.
- Subjective Norm: Subjective norms related to healthy behavior.
- Perceived Behavioral Control: Perception of behavioral control.
- ε\varepsilonε: Error term.

4. Correlation Analysis
5. Coefficient of Determination (R^2)

To minimize bias in the study, the following steps were taken: 1) Randomization in Interviews. Determination of the order of elderly interviews was carried out randomly to prevent sampling bias; 2) Tested Instruments: The questionnaires used were adapted from instruments that have been tested in previous studies with adjustments for the local context; 3) Enumerator Training: Enumerators were trained not to influence respondents' answers and to maintain objectivity during the data collection process. Quantitative research with a survey method is a powerful tool for collecting and analyzing data in a structured, objective, and replicable way. By employing statistical techniques, this method can test hypotheses, explore relationships between variables, and produce findings that are generalizable to larger populations. Despite its limitations in depth and complexity, the survey method is particularly effective for gathering broad data quickly and efficiently, making it a staple in fields that require empirical, data-driven insights.

RESULTS AND DISCUSSION

This study aims to analyze the effectiveness of the elderly healthy behavior model with the Theory of Planned Behavior (TPB) approach in Pantai Labu District, Deli Serdang. This study used a descriptive survey design with a quantitative approach, involving 104 elderly people from a total population of 1,085 people. The results of this study focus on three main components of TPB: attitudes, subjective norms, perceived behavioral control, and measured healthy intentions and behaviors.

Table 2. Number of Villages/Kelurahan Health Facilities by Type of Health Facilities in Pantai Labu Subdistrict, 2019–2022

Jenis Sarana Kesehatan *Type of Health Facilities*	2019	2020	2022
(1)	(2)	(3)	(4)
Rumah Sakit *Hospital*	-	-	-
Rumah Sakit Bersalin *Maternity Hospital*	-	-	-
Poliklinik/Balai Pengobatan *Polyclinic*	1	1	2
Puskesmas Rawat Inap *Public Health Center with Inpatient Care*	1	1	1
Puskesmas Tanpa Rawat Inap *Public Health Center without Inpatient Care*	-	-	-
Apotek *Pharmacy*	4	4	3

Source: BPS data 2019-2022
https://deliserdangkab.bps.go.id/id/publication/2023/09/26/2eb036bed9021fab2cd33475/kecamatan-pantai-labu-dalam-angka-2023.html

Table 3. Number of Villages/ Subdistrict by Availability of Sport Facilities/Fields in Pantai Labu Subdistrict, 2022

Jenis Olahraga *Type of Sport*	Kondisi Fasilitas/Lapangan Olahraga *Condition of Sport Facilities/Fields*			Tidak Ada Fasilitas/ Lapangan Olahraga *No Sport Facilities/ Fields*
	Baik	Rusak Sedang	Rusak Parah	
(1)	(2)	(3)	(4)	(5)
Sepak Bola/*Soccer*	8	3	-	8
Bola Voli/*Volley Ball*	5	4	-	10
Bulu Tangkis/*Badminton*	8	2	-	9
Bola Basket/*Basket Ball*	1	-	-	18
Tenis Lapangan/*Court Tennis*	-	-	1	18
Tenis Meja/*Table Tennis*	7	2	-	10
Futsal/*Futsal*	2	1	-	16
Renang/*Swimming*	-	-	-	19
Bela Diri/ *Martial Arts*	8	-	-	11
Bilyard/ *Billiards*	3	-	-	16
Fitnes, Aerobik, dll/*Fitness, Aerobics, etc*	-	-	-	19
Lainnya/*Others*	-	-	-	19

Source: BPS data 2019-2022
https://deliserdangkab.bps.go.id/id/publication/2023/09/26/2eb036bed9021fab2cd33475/kecamatan-pantai-labu-dalam-angka-2023.html

Respondent Characteristics

From the 104 elderly people who participated, their demographic characteristics are described as follows:

- Gender: A total of 54 people were male, while 50 people were female.
- Education Level: A total of 60% of respondents had primary education, 25% had secondary education, and only 15% had higher education.
- Health Condition: Most respondents (68%) reported having chronic health problems, such as hypertension or diabetes, but remained independent in their daily activities.

Attitudes Towards Healthy Behavior

Attitudes towards healthy behavior include the elderly's perceptions of the importance of maintaining a healthy diet, regular exercise, and regular health checks. The results of the analysis showed that:

- 84% of respondents had a positive attitude towards the importance of maintaining a healthy lifestyle, especially in terms of diet and exercise.
- Respondents who had a positive attitude toward healthy behavior showed a good understanding that these habits could prevent degenerative diseases and extend their active life.
- Only 16% of respondents had a neutral or negative attitude, due to the belief that lifestyle changes in old age will not have much impact on their health.

Subjective Norms

Subjective norms measure the social pressure or support felt by the elderly from family, friends, and the community regarding healthy behavior. The results of the study showed that:

- 72% of the elderly felt quite strong support from family and friends to live a healthy lifestyle. They considered that family and close friends encouraged them to eat healthy foods, exercise, and have regular health checks.
- However, 28% of the elderly felt that they did not receive adequate social support. Some of them reported that their families did not care much about their health, so they were less motivated to change healthy behaviors.
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Perceived Behavioral Control

Perceived behavioral control measures the extent to which the elderly feel they have the ability to carry out healthy actions. The results of the analysis showed that:

- 65% of respondents felt they had quite good control over healthy behaviors. They believed that they had access to health facilities, healthy food, and support from family and health workers to implement a healthy lifestyle.
- Another 35% felt that they did not have full control over their health. Reasons often cited include physical limitations due to age, poor economic conditions, or limited access to health facilities, such as fitness centers or medical services.

Actual Healthy Behavior

Actual healthy behaviors measured include daily activities such as exercise frequency, adherence to a healthy diet, and regular visits to health services. The results showed that:

- 70% of respondents consistently implement healthy behaviors, such as light exercise at least 3 times a week and maintaining a healthy diet by reducing consumption of foods high in fat and sugar.
- 30% of respondents reported difficulty in implementing healthy behaviors consistently, even though they had good intentions. Some of the reasons expressed included limited physical conditions, high costs for healthy food, and long distances from health facilities.

Multiple Regression Analysis

To test the influence of attitudes, subjective norms, and perceived behavioral control on healthy behavior intentions, multiple regression analysis was conducted. The results are as follows:

Intention=0.45(Attitude)+0.30(Subjective Norm)+0.25(Perceived Behavioral Control)+ε\text{Intention} = 0.45 (\text{Attitude}) + 0.30 (\text{Subjective Norm}) + 0.25 (\text{Perceived Behavioral Control}) + \varepsilonIntention=0.45(Attitude)+0.30(Subjective Norm)+0.25(Perceived Behavioral Control)+ε

These results indicate that:

- Attitudes toward healthy behavior have the greatest influence on the intention of the elderly to undergo healthy behavior, with a regression coefficient of 0.45.
- Subjective norms also have a significant influence, but lower than attitudes, with a coefficient of 0.30.
- Perceived behavioral control has the lowest influence, but remains significant, with a coefficient of 0.25.

The coefficient of determination (R^2) is 0.68, indicating that the TPB model can explain 68% of the variation in the intention to behave healthily.

Relationship Between Intention and Healthy Behavior

The Pearson correlation test between intention and actual healthy behavior shows a strong and significant relationship, with a correlation value of r = 0.72. This indicates that the higher the intention of the elderly to undergo healthy behavior, the more likely they are to actually carry out the healthy behavior in their daily lives. From the analysis results above, the main findings of this study are: 1) Elderly people who have a positive attitude towards healthy behavior, feel supported by their family, and have good control over their health conditions tend to have a strong intention to live a healthy lifestyle; 2) However, despite having a strong intention, some elderly people experience obstacles in consistently implementing healthy behaviors, especially due to physical, economic, and access to health facilities limitations; 3) Attitude towards healthy behavior is the most influential factor in shaping the intention of elderly people to live a healthy lifestyle, followed by subjective norms and perceived behavioral control.

This study shows that the Theory of Planned Behavior model is effective in explaining the intention and healthy behavior of elderly people in Pantai Labu District. Positive attitudes towards healthy behavior, social support from family, and good perceptions of control play an important role in increasing the intention of elderly people to live a healthy lifestyle. However, interventions that focus more on eliminating physical and economic barriers are needed to ensure that elderly people can implement healthy behaviors consistently.

CLOSING

Conclusion

This study demonstrates that a healthy behavior model based on the Theory of Planned Behavior may accurately predict healthy behavior in the elderly in Pantai Labu District, Deli Serdang. Health initiatives can be better designed to benefit the elderly by boosting positive attitudes, supporting social norms, and perceived behavioral control. The study found that attitudes towards healthy behavior have the biggest influence on the elderly's intention to follow a healthy lifestyle ($\beta = 0.45$). Subjective norms and perceived behavioral control also have a significant effect, with coefficients $\beta = 0.30$ and $\beta = 0.25$, respectively. The TPB model explains 68% of the variation in healthy behavior intentions. The relationship between intention and actual healthy behavior shows a significant positive correlation ($r = 0.72$), indicating that strong intentions are related to the implementation of healthy behavior. The TPB model is effective in explaining the factors that influence healthy behavior in the elderly in Pantai Labu District. Positive attitudes, social support, and perceived behavioral control contribute significantly to the intention of the elderly to adopt a healthy lifestyle. This study recommends the development of interventions that focus on improving attitudes, social support, and overcoming the barriers faced by the elderly in implementing healthy behaviors.

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