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Association of Consumption Patterns and Eating Habits with Household Nutritional Status in Mountainous and Coastal Areas of Banyuwangi

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ABSTRAK

Status gizi keluarga masih menjadi permasalahan kesehatan masyarakat yang dipengaruhi oleh berbagai faktor, salah satunya pola konsumsi dan kebiasaan makan yang terbentuk dalam konteks sosial, ekonomi, dan geografis. Perbedaan karakteristik wilayah pegunungan dan pesisir berpotensi menimbulkan variasi akses pangan dan perilaku makan yang berdampak pada status gizi keluarga. Penelitian ini bertujuan untuk menganalisis hubungan pola konsumsi dan kebiasaan makan dengan status gizi keluarga serta perbedaannya berdasarkan wilayah tempat tinggal di Kabupaten Banyuwangi. Penelitian ini menggunakan desain kuantitatif dengan pendekatan *cross-sectional* yang dilaksanakan pada Agustus-September 2025. Sampel berjumlah 110 responden yang dipilih melalui teknik *multistage sampling*. Data dikumpulkan menggunakan *Food Frequency Questionnaire* (FFQ), kuesioner kebiasaan makan, serta pengukuran antropometri sesuai standar WHO. Analisis data dilakukan secara deskriptif dan inferensial menggunakan uji Chi-Square dan regresi logistik multivariat. Hasil penelitian menunjukkan bahwa sebagian besar keluarga memiliki pola konsumsi dan kebiasaan makan yang belum optimal, serta terdapat perbedaan status gizi antara wilayah pegunungan dan pesisir. Pola konsumsi dan kebiasaan makan berhubungan signifikan dengan status gizi keluarga setelah dikontrol oleh variabel perancu, dengan pola konsumsi sebagai faktor paling dominan. Analisis stratifikasi menunjukkan bahwa determinan status gizi berbeda menurut wilayah, di mana pola konsumsi lebih berpengaruh di wilayah pegunungan, sedangkan kebiasaan makan lebih dominan di wilayah pesisir. Kesimpulan penelitian ini menegaskan pentingnya intervensi gizi yang spesifik wilayah melalui peningkatan keragaman pangan, perbaikan perilaku makan, dan penguatan edukasi gizi berbasis potensi pangan lokal.

ABSTRACT

Family nutritional status remains a major public health concern, particularly in regions with diverse geographical characteristics that

influence food availability and dietary behavior. Variations in dietary patterns and eating habits between mountainous and coastal areas may contribute to differences in nutritional outcomes at the household level. This study aimed to examine the association between dietary patterns and eating habits with family nutritional status and to identify regional differences in these associations in Banyuwangi Regency, Indonesia. A quantitative cross-sectional study was conducted from August to September 2025 involving 110 families selected using multistage sampling. Data were collected through a locally adapted Food Frequency Questionnaire (FFQ), structured eating habit questionnaires, and anthropometric measurements based on WHO standards. Statistical analyses included descriptive statistics, Chi-Square tests, and multivariate logistic regression. The results indicated that a substantial proportion of families exhibited inadequate dietary patterns and unhealthy eating habits, alongside significant differences in nutritional status between mountainous and coastal regions. Both dietary patterns and eating habits were significantly associated with family nutritional status after adjusting for potential confounders, with inadequate dietary patterns emerging as the strongest determinant. Stratified analysis revealed regional-specific determinants, where dietary patterns were more influential in mountainous areas, while eating habits played a greater role in coastal areas. In conclusion, improving family nutritional status requires region-specific nutrition interventions that address local food systems and promote balanced dietary practices through targeted nutrition education.

INTRODUCTION

Nutrition is a fundamental aspect that plays a major role in determining a person's health and the overall quality of human resources (WHO, 2021). Good nutrition not only forms the foundation for optimal growth and development but also contributes to increased endurance, learning ability, and long-term work productivity (UNICEF, 2020). When nutritional needs are met in a balanced manner, individuals tend to have stronger physical conditions, better cognitive function, and greater readiness to participate in various social and economic activities (Black et al., 2013). Conversely, nutritional imbalances or deficiencies can lead to various health problems, ranging from stunting and chronic energy deficiency (CED), anemia, to obesity. These impacts not only affect physical health but can also hinder mental development, reduce a person's ability to function, and reduce the quality of life of the community at large. In the long term, unaddressed nutritional problems can worsen productivity and hinder regional development (UNICEF, 2020).

One important factor influencing a person's nutritional status is food consumption patterns and family eating habits. Consumption patterns encompass the types of food chosen, the amounts consumed, and how often those foods are consumed within a given period (Rahman & Sari, 2021). Meanwhile, eating habits describe eating behaviors shaped by various factors such as culture, taste preferences, the environment, and the socioeconomic conditions of a family or community (Lestari et al., 2020). These two aspects are closely interconnected and play a direct role in determining the adequacy of macronutrient intake, such as carbohydrates, protein, and fat, as well as micronutrients, such as vitamins and minerals, required by the body for optimal function (Putri & Widodo, 2022).

The availability of diverse and nutritionally balanced foods does not always guarantee good nutritional status. Many families are not fully aware of the importance of dietary variety, nutritional balance, and portion sizes that meet individual needs (Hidayat & Larasati, 2020). For example, some families still tend to consume high-carbohydrate foods with low protein and vegetable intake, or have irregular eating habits due to busy schedules and lifestyles (Suharto & Dewi, 2021). Unbalanced consumption patterns and eating habits such as these can result in certain nutrient deficiencies or even overnutrition, both of which negatively impact health (Wijayanti et al., 2019).

In addition to behavioral and habitual factors, geographic conditions also significantly influence people's food consumption patterns. Indonesia, as an archipelagic country, has extensive regional diversity, including mountainous and coastal areas, each with distinct environmental characteristics and natural resources (Santoso & Helmi, 2020). Communities in mountainous areas generally rely on agricultural products such as vegetables, tubers, and fruits as their primary food source. However, their access to animal protein, such as fresh seafood or meat, is often limited due to long distribution distances and limited infrastructure (Ramadhani et al., 2021). Conversely, communities living in coastal areas have easy access to fish and various seafood as a source of protein, but often face obstacles in consuming fresh vegetables and fruits. Limited agricultural land and relatively high prices for agricultural products pose unique challenges for coastal populations, resulting in different food consumption patterns than those living in mountainous areas (Yuliani & Prasetyo, 2019).

These differences in geographic conditions lead to significant variations in consumption patterns and eating habits between regions, which can ultimately impact family nutritional status directly and indirectly (Mahendra & Yusuf, 2020). Mountainous areas typically have limited access to seafood and tend to rely on local agricultural products such as tubers, highland vegetables, and alternative carbohydrate sources that differ from those found in lowland areas. Conversely, communities in coastal areas have easier access to fish and seafood, resulting in generally higher animal protein consumption. This variation not only reflects differences in food availability but also demonstrates how communities utilize existing natural resources to meet their daily nutritional needs. The accumulated interaction between the physical environment and daily practices gradually shapes a distinctive food culture, including taste preferences, food preparation methods, and even structure.

METHOD

This study used a quantitative design with a cross-sectional approach to analyze the relationship between food consumption patterns and eating habits and the nutritional status of families in mountainous and coastal areas. The study was conducted from August to September 2025. The study locations were selected purposively based on differences in geographic characteristics and food access. The study population was the head of the family, as the primary decision-maker in family food consumption. The sample was drawn using multistage sampling, including purposive selection of regions and villages, followed by simple random sampling of the head of the family. The sample size was calculated using the Slovin formula, resulting in 110 respondents in each region.

The independent variables included food consumption patterns and eating habits, while the dependent variable was family nutritional status. Confounding variables controlled for in the analysis included age, education level, gender, occupation, and area of residence. Food consumption patterns were measured using a local food-based Food Frequency Questionnaire (FFQ) and categorized into poor, adequate, and good based on the percentage of consumption scores. Eating habits were measured using a structured questionnaire with a scoring system, then classified into poor, adequate, and good. Family nutritional status was assessed using anthropometric measurements according to WHO standards. Data were collected through interviews, questionnaires, and anthropometric measurements. Data were analyzed descriptively and inferentially using the Mann-Whitney t-test, chi-square test, and correlation. Multivariate regression analysis was then performed to determine the most influential factors on family nutritional status after controlling for confounding variables.

RESULT

Respondent Characteristic

This study involved 110 family respondents residing in the mountainous and coastal areas of Banyuwangi Regency. Respondent characteristics included residence area, gender of the head of the household, age, education level, and type of employment.

Table 1. Characteristics of Family Respondents (n = 110)

Variable	Frequency	Percentage (%)
Residential Area		
Mountains	56	50,9
Coast	54	49,1
Total	100	100
Gender of Head of Family		
Male	80	72,7
Female	30	27,3
Total	100	100
Age of Head of Family		
≤30 years old	18	16,4
31-50 years old	70	63,6
>50 years old	22	20,0
Total	100	100
Highest level of education		
Primary School	26	23,6
Secondary Education	64	58,2
Higher Education	20	18,2
Total	100	100
Main Occupation		
Farmer/Fisherman	68	61,8
Self-employed	24	21,8
Others	18	16,4
Total	100	100

Most respondents were from mountainous areas, totaling 56 households (50.9%), while 54 households (49.1%) were from coastal areas. Based on the gender of the household head, the majority of respondents were male (72.7%). The largest age group was 31–50 years (63.6%). Regarding educational level, respondents were predominantly educated at the secondary level (junior and senior high school), accounting for 58.2%. Most respondents worked as farmers and fishermen (61.8%).

Table 2. Distribution of Family Consumption Patterns (n = 110)

Consumption Pattern	Frequency	Percentage (%)
Poor	52	47,3
Adequate	42	38,2
Good	16	14,5
Total	110	100

Consumption patterns were assessed based on food diversity, consumption frequency, and the main types of food consumed by households. The analysis showed that 47.3% of households had poorly diversified consumption patterns, 38.2% had adequate consumption patterns, and 14.5% had good consumption patterns. Households in mountainous areas tended to consume carbohydrate sources mainly from tubers and vegetables, with relatively low intake of animal protein. In contrast, households in coastal areas consumed more fish and seafood; however, their intake of vegetables and fruits remained limited.

Table 3. Distribution of Family Eating Habits (n = 110)

Eating Habits	Frekuency	Percentage (%)
Poor	46	41,8
Adequate	40	36,4
Good	24	21,8
Total	110	100

Eating habits were assessed based on daily meal frequency, breakfast habits, and the consumption of snacks. The results showed that 41.8% of households had poor eating habits, 36.4% had adequate eating habits, and 21.8% had good eating habits. Most households (52.7%) did not have breakfast regularly, particularly in mountainous areas. In addition, the consumption of healthy snacks (such as fruits or nutritious foods) remained low, especially in coastal areas, where households tended to consume processed or fried foods.

Table 4. Distribution of Family Nutritional Status (n = 110)

Status Gizi	Frequency	Percentage (%)
Underweight	32	29,1
Normal Nutritional Status	60	54,5
Overweight	18	16,4
Total	110	100

Household nutritional status was assessed based on the nutritional status of family members using BMI-for-age (for children) and adult BMI, which were then categorized into undernutrition, normal, and overnutrition. The analysis showed that 29.1% of households had undernutrition, 54.5% had normal nutritional status, and 16.4% had overnutrition. Cases of undernutrition were more frequently found in mountainous areas, whereas overnutrition tended to occur in coastal areas.

Table 5. Relationship between Consumption Patterns and Household Nutritional Status

Consumption Pattern	Underweight n (%)	Normal Nutritional Status n (%)	Overweight n (%)	Total	P-Value
Poor	22 (42,3)	24 (46,2)	6 (11,5)	52	0,021
Adequate	8 (19,0)	26 (61,9)	8 (19,1)	42	
Good	2 (12,5)	10 (62,5)	4 (25,0)	16	
Total	32	60	18	110	

The results of the Chi-square test showed a significant association between consumption patterns and household nutritional status (p-value = 0.021; $p < 0.05$). Households with poor consumption patterns tended to have undernutrition, whereas those with good consumption patterns were more likely to have normal nutritional status.

To determine the strength of the association, a simple logistic regression analysis was performed. The results indicated that households with poor consumption patterns had a 3.1 times higher likelihood of experiencing undernutrition compared to households with good consumption patterns (OR = 3.10; 95% CI: 1.18–8.12).

Table 6. Relationship between Eating Habits and Household Nutritional Status

Eating Habit Pattern	Underweight n (%)	Normal Nutritional Status n (%)	Overweight n (%)	Total	P-Value
Poor	20 (43,5)	18 (39,1)	8 (17,4)	46	0,015
Adequate	8 (20,0)	24 (60,0)	8 (20,0)	40	
Good	4 (16,7)	18 (75,0)	2 (8,3)	24	
Total	32	60	18	110	

The analysis also showed a significant association between eating habits and household nutritional status (p-value = 0.015; $p < 0.05$). Households with poor eating habits, such as skipping breakfast and having irregular meal frequency, were at higher risk of experiencing abnormal nutritional status, including both undernutrition and overnutrition.The regression analysis indicated that households with poor eating habits had a 2.7 times higher risk of having abnormal nutritional status (undernutrition or overnutrition) compared to households with good eating habits (OR = 2.70; 95% CI: 1.10–6.65).

Table 7. Comparison of Nutritional Status Based on Geographic Area

Region	Underweight n (%)	Normal Nutritional Status n (%)	Overweight n (%)	Total	P-Value
Mountainous Area	20 (35,7)	30 (53,6)	6 (10,7)	56	0,047
Coastal Area	12 (22,2)	30 (55,6)	12 (22,2)	54	
Total	32	60	18	110	

Based on the analysis, there was a significant difference in household nutritional status between families living in mountainous and coastal areas, with a p-value of 0.047.

Table 8. Multivariate Regression Results

Variable	OR	95% CI	p-value
Poor Consumption Pattern	2,85	1,12-7,21	0,028
Poor Eating Habits	2,46	1,01-5,98	0,047
Coastal Area	1,98	1,03-3,80	0,041
Low Education Level	1,67	0,78-3,56	0,187

The multivariate analysis showed that consumption patterns and eating habits remained significantly associated with household nutritional status after controlling for other variables. Poor consumption patterns were identified as the most dominant factor influencing household nutritional status..

Table 9. Stratified Analysis of Consumption Patterns, Eating Habits, and Household Nutritional Status by Area (n = 110)

A. Mountainous Area (n = 56)

Variable	Category	Normal Nutritional Status n (%)	Abnormal Nutritional Status n (%)	OR	95% CI	P-value
Consumption Pattern	Poor	16 (55,2)	13 (44,8)	3,42	1,18-9,94	0,023
	Adequate/Good	4 (23,5)	13 (76,5)	Ref	-	-
Eating Habits	Poor	14 (51,9)	13 (48,1)	2,11	0,75-5,93	0,156
	Adequate/Good	6 (33,3)	6 (33,3)	Ref	-	-

B. Coastal Area (N=54)

Variable	Category	Normal Nutritional Status n (%)	Abnormal Nutritional Status n (%)	OR	95% CI	P-value
Consumption Pattern	Poor	12 (52,2)	11 (47,8)	2,05	0,73-5,78	0,170
	Adequate/Good	6 (30,0)	14 (70,0)	Ref	-	-
Eating Habits	Poor	14 (56,0)	11 (44,0)	2,95	1,04-8,36	0,042
	Adequate/Good	4 (23,3)	13 (76,5)	Ref	-	-

The stratified analysis indicated that the determinants of household nutritional status differed by area. In mountainous areas, poor consumption patterns were significantly associated with abnormal nutritional status (OR = 3.42; p = 0.023). Meanwhile, in coastal areas, poor eating habits were significantly associated with household nutritional status (OR = 2.95; p = 0.042). These findings suggest that nutritional risk factors are area-specific; therefore, nutrition interventions should be tailored to local characteristics.

DISCUSSION

Respondent Characteristics

The findings of this study indicate that the socio-demographic characteristics of households provide a fundamental context for food consumption patterns and household nutritional status in Banyuwangi Regency, particularly in mountainous and coastal areas. Geographic factors, household structure, and the role of the household head influence how families access, select, and utilize food. This condition highlights that household nutritional adequacy is determined not only by food availability but also by the surrounding socio-economic and environmental factors. These results are consistent with community nutrition studies emphasizing the importance of context-specific approaches in understanding household food consumption behavior (Rachmi et al., 2018; Turner et al., 2020).

The dominance of household heads within the productive age group in the study area reflects the potential economic capacity of households, both among farming families in mountainous areas and fishing families in coastal areas of Banyuwangi. However, high work productivity is not always accompanied by optimal food consumption quality. Among fishing households, income instability due to fishing seasons, and among farming households, dependence on harvest cycles, may limit families' ability to maintain dietary diversity and nutrient balance. This finding aligns with previous studies showing that households with productive-age heads tend to have relatively better food access but still face challenges in applying balanced nutrition principles without adequate nutrition knowledge (Herforth & Ahmed, 2015; Paramashanti et al., 2017).

The educational background of respondents, predominantly at the secondary level, combined with the dominance of livelihoods in agriculture and fisheries—sectors characteristic of Banyuwangi—indicates both opportunities and vulnerabilities in household nutrition. The availability of local food sources, such as agricultural, plantation, and fishery products, offers substantial potential for meeting household nutritional needs. However, the utilization of these local food resources has not been fully accompanied by diversified consumption practices and nutritious food processing. Furthermore, reliance on natural resources creates vulnerability to income instability and seasonal variations in food consumption. These findings reinforce the importance of locally grounded interventions in Banyuwangi, focusing on strengthening nutrition education, food diversification, and household food security so that local food resource potential can meaningfully improve household nutritional status (Sibhatu & Qaim, 2018; Widyaningsih et al., 2021).

Household Consumption Patterns

This study shows that household consumption patterns are still dominated by suboptimal quality, particularly in terms of dietary diversity and nutrient balance. This condition indicates that household nutritional needs have not been fully aligned with balanced nutrition principles. Limited dietary diversity is generally associated with monotonous eating habits, restricted food choices, and low utilization of diverse food groups in daily menus. Previous studies have reported that low dietary diversity is linked to inadequate intake of essential micronutrients, which play a crucial role in maintaining long-term household nutritional status and health (Arimond & Ruel, 2019; Keding et al., 2022).

Geographic variation significantly contributes to differences in household consumption patterns. Mountainous areas tend to rely on locally available plant-based foods as primary daily consumption sources, reflecting adaptation to local food availability but often failing to adequately meet animal protein requirements. In

contrast, coastal areas benefit from greater availability of animal protein sources from seafood, yet vegetable and fruit consumption remains relatively limited. These findings are consistent with previous studies indicating that local food availability strongly influences household food choices but does not necessarily ensure balanced dietary quality without adequate nutrition knowledge and appropriate eating behaviors (Paramita et al., 2019; Haddad et al., 2020).

The implications of unbalanced household consumption patterns may adversely affect the nutritional status of family members, particularly vulnerable groups such as young children, pregnant women, and the elderly. Diets dominated by one or two food groups pose a long-term risk of nutrient deficiencies, even when overall food availability is quantitatively sufficient. Several studies have demonstrated that diet quality has a greater impact on nutritional status than total intake alone, especially concerning micronutrient adequacy essential for metabolic and immune functions (FAO et al., 2021; Beal et al., 2023).

Household Eating Habits

This study indicates that household eating habits in Banyuwangi remain suboptimal, potentially affecting overall dietary quality. Poor eating habits reflect irregular consumption patterns, including meal frequency, breakfast practices, and snack choices. This condition suggests that eating behaviors within households—both in mountainous and coastal areas—have not fully supported adequate nutritional intake. Several studies have reported that irregular eating habits are associated with imbalanced energy and nutrient intake, which in the long term may affect household nutritional status and health (Leidy et al., 2019; Rachmi et al., 2021).

Low prevalence of regular breakfast consumption, particularly in mountainous areas, indicates the influence of work demands, time constraints, and low perceived importance of breakfast. Breakfast plays a critical role in maintaining energy availability and regulating dietary patterns throughout the day. Previous research has shown that skipping breakfast is associated with increased consumption of energy-dense foods later in the day and reduced overall diet quality (Monzani et al., 2019; Rampersaud et al., 2020). Therefore, breakfast skipping may serve as an indicator of poor household eating habits.

In addition, low consumption of healthy snacks reflects a tendency to prioritize convenience and taste preferences in food selection between main meals. The frequent consumption of processed or fried foods, particularly in coastal areas, indicates a dietary shift toward high-fat, low-fiber foods. This finding is consistent with previous studies reporting that excessive consumption of processed foods contributes to declining diet quality and increased risk of nutritional problems (Hall et al., 2019; Hardinsyah et al., 2020).

Household Nutritional Status

The findings indicate that household nutritional status in Banyuwangi Regency continues to face diverse nutritional challenges, reflecting disparities in nutritional adequacy across regions. Household nutritional status is the cumulative result of food consumption quality, eating habits, and socio-economic conditions shaped by the local context. Differences between mountainous and coastal areas create distinct food environments that influence dietary intake and nutritional balance. Previous studies have shown that geographic variation in ecologically diverse regions like Banyuwangi contributes to differences in household-level nutritional problems (Rachmi et al., 2021; Hardinsyah et al., 2020).

In mountainous areas, undernutrition is more prevalent and is associated with limited access to nutritious foods, particularly animal protein sources and

micronutrient-rich foods. Dependence on staple foods and seasonal agricultural products, combined with distance from food distribution centers and health services, increases the risk of undernutrition. Additionally, high physical activity levels among farming households are often not matched with adequate energy and protein intake. This condition aligns with previous findings that communities in mountainous and rural areas face higher risks of undernutrition due to limited access and food diversification (FAO et al., 2020; Hardinsyah et al., 2020).

Conversely, coastal areas in Banyuwangi show a tendency toward overnutrition, linked to changes in consumption patterns and lifestyle. Although food availability—including animal protein from seafood—is relatively better, it is not always accompanied by balanced consumption. High intake of processed foods, fried foods, and energy-dense items, along with declining physical activity, contributes to increased overnutrition risk. This reflects the phenomenon of the double burden of malnutrition, where areas with better food access experience rising overnutrition prevalence (Popkin et al., 2020; Hall et al., 2019). Therefore, improving household nutritional status in Banyuwangi requires region-specific approaches emphasizing improved diet quality and context-sensitive nutrition education.

Association between Consumption Patterns and Household Nutritional Status

The results demonstrate a significant association between household consumption patterns and nutritional status in Banyuwangi Regency. This finding emphasizes the critical role of diet quality in determining household nutritional outcomes. Nutritional status reflects the long-term balance between nutrient intake and physiological needs; thus, monotonous and unbalanced diets increase the risk of nutritional problems. These results are consistent with previous research highlighting the importance of dietary diversity and quality in maintaining household nutritional status (Arimond & Ruel, 2019; Hardinsyah et al., 2020).

Households with poor consumption patterns tend to experience undernutrition, particularly in mountainous areas, due to limited food variety and inadequate intake of essential nutrients. Dependence on specific food types and restricted access to animal protein and nutrient-dense foods increase undernutrition risk. In contrast, households with better consumption patterns are more likely to maintain normal nutritional status, indicating the importance of food diversification and nutrient balance. These findings are consistent with studies reporting that households with diverse diets have a higher likelihood of achieving normal nutritional status (Keding et al., 2022; Rachmi et al., 2021).

Association between Eating Habits and Household Nutritional Status

This study also reveals a significant association between eating habits and household nutritional status. Consistent eating behaviors at the household level play a crucial role in maintaining balanced energy and nutrient intake (Cahyani et al., 2023). Eating habits—including meal regularity, breakfast practices, and snack choices—influence nutrient distribution throughout the day. Irregular eating patterns are associated with imbalanced intake, increasing the risk of both undernutrition and overnutrition (Leidy et al., 2019).

Poor eating habits, such as skipping meals and irregular meal timing, increase the risk of abnormal nutritional status. These behaviors may lead to uneven energy distribution, resulting in compensatory overeating or chronic nutrient deficits. Previous studies have reported that skipping breakfast and irregular meal frequency are associated with lower diet quality and increased nutritional risk (Hokky et al., 2024).

Differences in Nutritional Status by Area

The study indicates significant differences in household nutritional status

between mountainous and coastal areas in Banyuwangi Regency, highlighting the influence of geographic and regional characteristics. These differences reflect variations in physical environment, livelihoods, food consumption patterns, and physical activity levels. From a public nutrition perspective, nutritional status results from interactions among dietary intake, energy requirements, eating behaviors, and socio-environmental determinants, leading to heterogeneous nutritional outcomes across regions (Popkin et al., 2020; Rachmi et al., 2021).

Undernutrition predominates in mountainous areas, reflecting structural challenges in meeting nutritional needs. High physical activity in agricultural livelihoods increases energy requirements, which are often unmet due to limited food quantity and quality. In contrast, coastal areas face rising overnutrition linked to dietary transitions, high-energy food consumption, and reduced physical activity. This double burden of malnutrition underscores the need for region-specific, context-sensitive nutrition interventions.

Multivariate Regression Results

Multivariate regression analysis shows that consumption patterns, eating habits, and area of residence are significantly associated with household nutritional status. Poor consumption patterns emerged as the most dominant factor, followed by poor eating habits, confirming that low dietary diversity, irregular meal timing, and skipping breakfast increase the risk of abnormal nutritional status. Coastal households also showed higher risk, while education level was not a significant determinant, suggesting that practical dietary behaviors have a stronger influence on nutritional status than formal education alone.

Stratified Analysis

Stratified analysis indicates that determinants of household nutritional status differ by area. In mountainous areas, consumption patterns play a more prominent role, while in coastal areas, eating habits are more influential. These findings highlight the importance of region-specific nutrition interventions, focusing on improving dietary diversity in mountainous areas and promoting healthy eating behaviors in coastal regions.

CONCLUSION

This study demonstrates that household consumption patterns and eating habits in Banyuwangi Regency are significantly associated with household nutritional status. Limited dietary diversity and irregular eating habits increase the risk of both undernutrition and overnutrition. Differences in nutritional status were observed across geographic areas, with households in mountainous regions experiencing higher rates of undernutrition due to limited food diversity and access, while households in coastal areas tended to experience overnutrition as a result of high-energy food consumption. Therefore, efforts to improve household nutritional status should be implemented through area-specific nutrition interventions, emphasizing increased dietary diversity and access to nutritious foods in mountainous areas, alongside the control of high-energy food consumption in coastal areas, supported by strengthened nutrition education to promote more balanced consumption patterns and eating habits.

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