



Nutritional Vulnerability among Children in Fishermen Households in Indonesia: A Secondary Analysis of SSGI 2024

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Abstract

Child malnutrition remains a major public health challenge in Indonesia and may be unequally distributed across household livelihood groups. Fishermen households are an important population group in coastal and island communities, but their children may still experience nutritional vulnerability despite proximity to fishery resources. This study aimed to describe the nutritional status of children under five living in fishermen households in Indonesia using the 2024 Indonesian Nutritional Status Survey (Survei Status Gizi Indonesia, SSGI). This study used a descriptive secondary analysis of aggregated data published in the SSGI 2024 report. The analysis focused on nutritional indicators by occupation of the household head, particularly fishermen households. The indicators included stunting, underweight, severe wasting, wasting, and overweight. Children in fishermen households represented 2.1% of the under-five population reported in the SSGI characteristics table, corresponding to 12,231 children. The prevalence of stunting among children in fishermen households was 28.4%, higher than the national prevalence of 19.8%. Underweight was also higher in fishermen households at 26.6%, compared with the national prevalence of 16.8%. Severe wasting and wasting were 2.6% and 9.9%, respectively, while overweight was 2.1%. These findings indicate that children in fishermen households experience a higher burden of chronic and acute undernutrition than the national average. Nutrition programs should pay greater attention to coastal and fisheries-based households by integrating growth monitoring, dietary improvement, health service access, and household-level nutrition education.

Keywords: Child Malnutrition, Fishermen Households, Stunting, Underweight, Wasting, SSGI 2024, Indonesia, Public Nutrition

1. Introduction

Child nutritional status is an important indicator of public health, human development, and social welfare because it reflects the quality of food intake, caregiving practices, health services, and the household environment in which children grow. Among children under five, nutritional problems such as stunting, underweight, wasting, and overweight represent different forms of growth disturbance and health risk. Stunting indicates chronic nutritional deprivation and repeated exposure to adverse health and environmental conditions, while wasting reflects acute undernutrition that may be associated with recent illness or insufficient food intake [1], [2]. Underweight may reflect both chronic and acute nutritional problems because it is influenced by body weight relative to age, whereas overweight represents an emerging form of malnutrition

associated with dietary transition and changing food environments [2], [3]. These different indicators show that child malnutrition is not a single condition, but a multidimensional public health problem that requires integrated nutrition, health care, and social interventions [3], [4].

Indonesia has made progress in reducing child stunting, but the problem remains uneven across regions, socioeconomic groups, and household livelihood categories. The 2024 Indonesian Nutritional Status Survey reported a national stunting prevalence of 19.8%, underweight prevalence of 16.8%, severe wasting prevalence of 1.2%, wasting prevalence of 6.2%, and overweight prevalence of 3.4% among children under five [1]. Although the national stunting figure indicates improvement compared with previous years, the remaining burden remains substantial and continues to require targeted public health responses [1], [6]. Global evidence also shows that child undernutrition contributes to impaired physical growth, delayed cognitive development, increased infection risk, and reduced productivity later in life [8], [9]. Therefore, understanding which population groups experience higher nutritional vulnerability is essential for strengthening equity-oriented nutrition policies and accelerating progress toward child health and development targets [3], [4].

The SSGI 2024 framework recognizes that child nutritional status is influenced by multiple determinants, including household and family factors, child feeding practices, breastfeeding, complementary feeding, access to health services, morbidity, sanitation, and socioeconomic conditions [1]. This framework is consistent with broader nutrition literature showing that child growth is shaped not only by biological factors but also by food systems, caregiving capacity, health care utilization, and environmental health [4], [8]. The survey also includes household characteristics such as education of the household head, occupation of the household head, urban-rural residence, maternal working status, and household economic status [1]. These variables allow nutritional problems to be examined as social and livelihood-related outcomes rather than merely as individual health conditions. As a result, SSGI 2024 provides an important basis for identifying vulnerable household groups that may need more specific nutrition and health care interventions.

Fishermen households are an important livelihood group in Indonesia, particularly in coastal, small-island, and fisheries-dependent communities. Although these households are closely connected to fishery resources, proximity to fish does not automatically guarantee adequate dietary intake and improved nutritional status among children. Fish and aquatic foods are important sources of high-quality protein, essential fatty acids, vitamins, and minerals that support child growth and development, especially during the first 1,000 days of life [10], [12], [13]. However, income uncertainty, seasonal fishing activities, market dependence, food prices, household purchasing power, maternal nutrition knowledge, sanitation, and access to health services may influence whether fisheries resources are translated into better child nutrition [14], [16]. This condition suggests that fishermen households should be understood not only as food-producing households, but also as potentially vulnerable households within coastal food systems [17], [20].

Despite the relevance of fishermen households to coastal food systems, child nutrition studies often focus on general socioeconomic status, urban-rural differences, provincial disparities, or maternal and child health factors. Less attention has been given to occupation-based nutritional vulnerability, particularly among children living in fisheries-based households. This gap is important because household livelihood may shape income stability, food access, caregiving patterns, health service utilization, and exposure to coastal environmental risks [16], [17]. Identifying nutritional problems among children in fishermen households can support the design of livelihood-sensitive nutrition programs, especially in coastal communities where food availability, income, and health care access may fluctuate seasonally. Therefore, this study aimed to describe the nutritional vulnerability of children under five in fishermen households in Indonesia using the SSGI 2024 report, specifically by comparing the prevalence of stunting, underweight, severe wasting, wasting, and overweight among children in fishermen households with national estimates and selected occupational groups [1].

2. Materials and Methods

This study was conducted using a secondary data approach based on the publicly available Survei Status Gizi Indonesia (SSGI) 2024 report. The materials used in this study consisted of aggregate data on child nutritional status and household characteristics reported in SSGI 2024, particularly data related to the occupation of the household head. The method was designed to identify nutritional vulnerability among children under five living in fishermen households by comparing their nutritional indicators with national estimates and selected occupational groups. Because the analysis used published aggregate data, the study did not involve direct contact with respondents, biological specimen collection, or new field measurements. This methodological approach is appropriate for describing public health patterns and generating evidence for nutrition policy planning based on national survey data [1], [3], [4].

2.1 Study Design

This study used a descriptive secondary data analysis design. The data source was the publicly available SSGI 2024 report published by the Ministry of Health of the Republic of Indonesia. SSGI 2024 was a national cross-sectional survey designed to evaluate the nutritional status of children under five in Indonesia. The survey collected data at one point in time and did not involve any intervention or experimental treatment. Therefore, this study interpreted the findings as descriptive patterns of nutritional vulnerability rather than causal relationships between fishermen household status and child malnutrition [1].

A descriptive secondary analysis design was selected because the objective of this study was to summarize, compare, and interpret nutritional indicators that had already been collected and published in the national survey report. Secondary data analysis is commonly used in public health research when existing datasets or official reports contain relevant information for answering new research questions. In this study, the new analytical focus was not the overall national prevalence of malnutrition, but the nutritional condition of children under five in fishermen households as a specific livelihood group. This approach allowed the study to identify whether children in fishermen households had a higher burden of nutritional problems compared with the national average and other occupational groups. Such an approach is useful for developing targeted public health and nutrition recommendations, especially when primary data collection is not feasible or when national data already provide sufficient descriptive indicators [1], [4].

The cross-sectional nature of SSGI 2024 means that the survey measured nutritional status and related household characteristics during the same survey period. Cross-sectional survey data are suitable for estimating prevalence and describing the distribution of health problems across population groups. In the context of this study, the design allowed comparison of stunting, underweight, severe wasting, wasting, and overweight across occupational categories of household heads. However, cross-sectional data cannot determine temporal sequence or prove that household occupation directly causes child malnutrition. For this reason, the results of this study were interpreted carefully as evidence of nutritional vulnerability and group-level disparity rather than evidence of causality [1], [2], [3].

The use of SSGI 2024 as the main data source was appropriate because the survey was specifically designed to evaluate child nutritional status in Indonesia. SSGI 2024 reported anthropometric indicators such as stunting, underweight, severe wasting, wasting, and overweight, which are consistent with internationally recognized child growth assessment indicators. These indicators are important because they represent different forms of malnutrition, including chronic undernutrition, acute undernutrition, combined growth deficit, and excess body weight. The use of national survey data also improved the relevance of the study for policy discussion because the findings were derived from an official nutrition surveillance source. Therefore, the study design strengthened the ability of the article to connect empirical findings with nutrition program planning and health care interventions in vulnerable communities [1], [2], [3].

This study focused on fishermen households because occupation-based nutritional vulnerability remains less frequently discussed than geographic or socioeconomic disparities. Fishermen households may face specific livelihood risks, including income fluctuation, seasonal



work patterns, uncertain catch, market dependence, and uneven access to health and nutrition services. Although fish is an important source of animal protein and micronutrients for child growth, household involvement in fishing does not always guarantee adequate child dietary intake. By using SSGI 2024 data, this study examined whether children in fishermen households showed a higher prevalence of nutritional problems than the national estimate and other occupational categories. This design provided a practical basis for proposing livelihood-sensitive nutrition interventions in coastal and fisheries-based communities [1], [10], [12], [16].

Ethical approval for new data collection was not required in this study because the analysis used published aggregate data from the SSGI 2024 report and did not use identifiable individual-level information. The original SSGI 2024 survey had obtained ethical approval from the Health Research Ethics Committee of Poltekkes Jakarta II, as stated in the report. The use of secondary aggregate data minimized ethical risks related to privacy, confidentiality, and informed consent. Nevertheless, the analysis was conducted by maintaining data integrity, avoiding overinterpretation, and ensuring that conclusions remained consistent with the descriptive nature of the available data. This ethical position is important in secondary data research because public health findings should be reported accurately and responsibly, especially when they concern vulnerable population groups [1], [4].

2.2 Data Source and Survey Characteristics

The primary data source of this study was the publicly available Survei Status Gizi Indonesia (SSGI) 2024 report published by the Ministry of Health of the Republic of Indonesia [1]. SSGI 2024 is an official national nutrition survey that provides information on the nutritional status of children under five and related determinant indicators at national, provincial, and district/city levels [1]. In this study, the SSGI 2024 report was used because it contains aggregate data on child nutritional status according to household characteristics, including the occupation of the household head [1]. The use of national survey data is important in public health nutrition research because it allows researchers to describe population-level patterns and identify vulnerable groups based on standardized indicators [3], [4]. Therefore, SSGI 2024 was considered appropriate for examining nutritional vulnerability among children in fishermen households in Indonesia.

SSGI 2024 was conducted in 38 provinces and 510 districts/cities, making it one of the most comprehensive national nutrition data sources in Indonesia [1]. Data collection was carried out from October 2024 to February 2025 across 33,681 census blocks, which provided broad geographic coverage across urban, rural, coastal, and inland areas [1]. The report stated that 273,959 households with children under five were successfully visited, indicating a large survey coverage for estimating child nutrition indicators [1]. This coverage is relevant to the present study because fishermen households are generally distributed in coastal and island areas, which are often underrepresented in small-scale nutrition studies [16], [17]. By using SSGI 2024, this study was able to position fishermen households within a broader national nutrition context rather than treating them as an isolated local population.

The SSGI 2024 survey used interviews and anthropometric measurements as the main data collection methods [1]. Interviews were conducted using Computer Assisted Personal Interviews, which can improve the consistency of data entry and reduce several types of field data errors [1]. Anthropometric measurements included body weight, height or length, and mid-upper arm circumference, which are commonly used to assess child growth and nutritional status [1], [2]. The nutritional indicators reported in SSGI 2024, including stunting, underweight, wasting, severe wasting, and overweight, are aligned with international child growth assessment concepts based on anthropometric standards [2], [3]. This methodological feature strengthens the reliability of SSGI 2024 as a data source for describing child malnutrition across population groups.

The sampling design of SSGI 2024 was based on a two-stage one-phase stratified sampling approach [1]. In the first stage, census blocks were selected using probability proportional to size with replacement, while in the second stage, households with children under five were selected systematically [1]. This sampling approach was intended to produce representative estimates for national, provincial, and district/city levels, which is essential for policy-oriented nutrition analysis [1]. In addition, the SSGI 2024 report applied data management procedures, quality control, data



cleaning, and weighting to support valid interpretation of survey findings [1]. Because the present study used published aggregate data from this survey, the analysis focused on descriptive comparisons rather than individual-level statistical modeling or causal inference.

2.3 Study Population

The population of interest in this study was children under five included in the 2024 Indonesian Nutritional Status Survey (SSGI 2024). This population was selected because children under five are a priority group in nutrition surveillance, growth monitoring, and public health intervention programs [1], [3]. In child nutrition research, the under-five age group is commonly used because this period represents a critical stage of physical growth, immune development, and cognitive development [2], [8]. Nutritional problems during this period may have long-term consequences for health, learning capacity, productivity, and human development [8], [9]. Therefore, analyzing the nutritional status of children under five provides important evidence for identifying vulnerable groups and improving child health policies [1], [4].

The specific analytical group in this study was children whose household head was classified as a fisherman in the SSGI 2024 characteristics table. Occupation of the household head was used as a household-level classification because it reflects the main livelihood source and may influence income stability, food access, and household welfare [1], [16]. In the context of this study, fishermen households were considered a relevant group because they are closely associated with coastal livelihoods and fishery-based food systems [16], [20]. Although fish and aquatic foods are important sources of protein and micronutrients, household dependence on fishing does not always guarantee adequate child nutrition [12], [13]. Thus, focusing on fishermen households allows this study to examine whether children in fisheries-based households experience specific nutritional vulnerability [1], [17].

According to the SSGI 2024 characteristics table, children in fishermen households accounted for 2.1% of the under-five population, with an estimated sample size of 12,231 children [1]. This proportion indicates that fishermen households represent a relatively small but important subgroup within the national under-five population. Although the percentage is lower than several other occupational groups, the absolute number of children in this category remains meaningful for public health interpretation [1]. The presence of this occupational category in SSGI 2024 provides an opportunity to examine nutrition issues from a livelihood-based perspective rather than only from geographic or socioeconomic classifications [4], [16]. Therefore, the study population was defined not merely by age, but also by household livelihood status as represented by the occupation of the household head [1].

The comparison population in this study included national estimates and selected occupational groups reported in SSGI 2024. These groups included children from households headed by farmers or agricultural laborers, private employees, entrepreneurs, laborers or drivers or domestic workers, non-working household heads, and civil servant, military, police, or state-owned enterprise workers [1]. The inclusion of comparison groups was intended to place the nutritional status of children in fishermen households within a broader national and occupational context. This approach is important because nutritional vulnerability may differ across livelihood groups due to differences in income patterns, food access, education, and health service utilization [4], [8]. By comparing fishermen households with other occupational groups, this study provides descriptive evidence of whether children in fishermen households face a relatively higher burden of malnutrition [1], [17].

2.4 Variables

The main exposure variable in this study was the occupation of the household head, with particular emphasis on the fisherman category. In SSGI 2024, occupation of the household head was reported as part of household characteristics, together with education level, urban-rural classification, maternal working status, and household economic status [1]. Occupation is an important social determinant because it may shape household income, livelihood security, food purchasing power, and access to health-related resources [4], [8]. In fishermen households, livelihood conditions may also be influenced by fishing season, weather variability, catch



uncertainty, and market dependence [16], [20]. Therefore, the fisherman category was used as a proxy for fisheries-based household livelihood in this descriptive secondary analysis [1], [17].

The outcome variables were child nutritional status indicators reported in SSGI 2024, namely stunting, underweight, severe wasting, wasting, and overweight. These indicators were selected because they represent different forms of child malnutrition and are commonly used in national and global nutrition monitoring [2], [3]. Stunting reflects chronic linear growth failure, while wasting reflects acute undernutrition or recent weight loss in relation to height [2], [8]. Underweight may reflect both chronic and acute nutritional problems because it is based on body weight relative to age [2], [3]. Overweight was also included because malnutrition includes both undernutrition and excess weight, especially in the context of nutrition transition [3], [5].

SSGI 2024 classified stunting as height-for-age z-score below -2 and underweight as weight-for-age z-score below -2 [1]. These classifications are consistent with the WHO Child Growth Standards, which are widely used to assess child growth and nutritional status across populations [2]. Severe wasting was classified as weight-for-height z-score below -3, while wasting was classified as weight-for-height z-score below -2 [1], [2]. Overweight was classified as weight-for-height z-score above +2, indicating excess body weight relative to height [1], [2]. The use of these standardized indicators allows comparison between SSGI 2024 findings and broader international evidence on child malnutrition [2], [3].

In this study, the selected variables were analyzed descriptively using aggregate prevalence values reported in the SSGI 2024 publication. The fisherman household category was compared with national prevalence estimates and selected occupational categories to identify differences in stunting, underweight, severe wasting, wasting, and overweight [1]. Because the available data were aggregate rather than individual-level microdata, this study did not conduct multivariable regression or adjustment for confounding variables such as income, maternal education, sanitation, breastfeeding, or health service access. This limitation means that the variables were used to describe nutritional vulnerability rather than to establish causal relationships [1], [4]. Nevertheless, the selected variables were sufficient to show whether children in fishermen households had a higher burden of nutritional problems compared with the national average and other livelihood groups [1], [17].

2.5 Data Analysis

The analysis in this study was conducted descriptively using aggregate prevalence data reported in the SSGI 2024 publication. Descriptive analysis was considered appropriate because the main objective of the study was to identify and compare nutritional vulnerability among children under five in fishermen households, not to test causal relationships [1], [4]. The nutritional indicators analyzed included stunting, underweight, severe wasting, wasting, and overweight, which are widely used in national and global child nutrition monitoring [2], [3]. Each indicator was presented as a percentage to describe the magnitude of nutritional problems among children in fishermen households. This approach allowed the study to provide a clear public health interpretation of the burden of malnutrition in a specific livelihood group [1], [17].

The prevalence of each nutritional problem among children in fishermen households was compared with national prevalence estimates reported in SSGI 2024. This comparison was important because national estimates provide a reference point for determining whether the nutritional burden in fishermen households was higher or lower than the overall condition of children under five in Indonesia [1]. For example, stunting and underweight among fishermen households were interpreted in relation to the national prevalence to identify the magnitude of nutritional disparity [1], [3]. Such comparative interpretation is commonly used in public health nutrition to identify priority groups for intervention and policy attention [4], [8]. Therefore, the national prevalence served as the main benchmark for assessing the relative vulnerability of children in fishermen households [1].

In addition to national estimates, this study also compared fishermen households with selected occupational categories reported in the SSGI 2024 characteristics table. The comparison groups included farmers or agricultural laborers, private employees, entrepreneurs, laborers or drivers or domestic workers, non-working household heads, and civil servant, military, police, or



state-owned enterprise households [1]. Occupation-based comparison was used because household livelihood may influence food access, income stability, dietary quality, and utilization of health services [4], [16]. In the context of fishermen households, livelihood-related factors such as seasonal income, unstable catch, market dependence, and coastal accessibility may contribute to nutritional vulnerability [16], [20]. By comparing occupational groups, this study aimed to show whether children in fishermen households experienced a relatively higher prevalence of malnutrition than children from other livelihood backgrounds [1], [17].

Differences in prevalence were interpreted in percentage points to provide a simple and understandable measure of disparity. Percentage-point differences were calculated by subtracting the national or comparison-group prevalence from the prevalence observed among children in fishermen households [1]. Because this study used aggregated published data, individual-level regression analysis, risk estimation, and causal inference were not conducted. The absence of individual-level data also meant that potential confounding variables, such as maternal education, household income, sanitation, breastfeeding practices, and access to health care, could not be statistically controlled [1], [4]. Therefore, the findings were interpreted as descriptive evidence of nutritional vulnerability rather than proof of a causal effect of fishermen household status on child malnutrition [1], [3].

2.6 Ethical Consideration

This study used aggregate data from a publicly available SSGI 2024 report and did not access individual-level personal identifiers. Because the analysis relied only on published tables and summarized prevalence values, the study did not involve direct interaction with human participants or collection of new primary data [1]. Secondary analysis of publicly available aggregate data generally presents minimal ethical risk because individual respondents cannot be identified from the reported information [4]. Nevertheless, the study was conducted with attention to responsible data interpretation, especially because the analysis involved children and vulnerable livelihood groups [1], [8]. Therefore, additional ethical approval was not required for this secondary analysis [1].

The original SSGI 2024 survey had received ethical approval from the Health Research Ethics Committee of Poltekkes Jakarta II with approval number DP.04.03/I/KE/230/2024 [1]. This ethical approval covered the original survey procedures, including field data collection, interviews, and anthropometric measurements involving children under five and their households [1]. The survey also applied standardized instruments, trained enumerators, and quality assurance procedures to support the reliability and ethical conduct of data collection [1]. Since this study did not repeat fieldwork or access raw identifiable records, the ethical responsibility of the present analysis was limited to proper use, accurate reporting, and cautious interpretation of the published data. Thus, the study maintained consistency with the ethical framework of the original national survey [1], [4].

Confidentiality was maintained because the data used in this article were reported only in aggregate form. No names, addresses, household identifiers, or individual anthropometric records were accessed, extracted, or analyzed in this study [1]. The use of aggregate data reduced the possibility of privacy violation and protected the identity of children and households included in the original survey [4]. In addition, the analysis avoided presenting findings in a way that could stigmatize fishermen households or coastal communities. Instead, the results were framed as evidence to support more inclusive nutrition policies and livelihood-sensitive health interventions [1], [17].

Ethical reporting was also considered in the interpretation of the study findings. Because the analysis was descriptive and based on aggregate data, the study avoided making causal claims about the relationship between household occupation and child nutritional status [1], [3]. The discussion of fishermen households was framed within the broader context of livelihood vulnerability, food systems, health service access, and social determinants of nutrition [4], [16]. This cautious interpretation is important to prevent overgeneralization and to ensure that the findings are used constructively for public health planning [8], [20]. Therefore, the ethical position of this study emphasizes transparency, non-stigmatization, and responsible use of national nutrition data [1], [4].



3. Results

This section presents the descriptive findings on the nutritional vulnerability of children under five living in fishermen households in Indonesia. The results were derived from aggregate data reported in SSGI 2024 and focused on household occupation as the main grouping variable [1]. The analysis first describes the proportion of children under five from fishermen households within the national survey population. It then compares the prevalence of stunting, underweight, severe wasting, wasting, and overweight among children in fishermen households with national prevalence estimates [1], [3]. These results provide an empirical basis for understanding whether children in fishermen households experience a higher burden of malnutrition compared with the general under-five population in Indonesia.

3.1 Characteristics of Children in Fishermen Households

Based on SSGI 2024, children from fishermen households represented 2.1% of the under-five population, equivalent to 12,231 children [1]. Although this proportion was relatively small, the number remains important from a public health perspective because it represents children living in fisheries-based livelihood households across Indonesia. Fishermen households are particularly relevant in the Indonesian context because many communities depend on coastal and marine resources for income and food systems [16]. However, livelihood dependence on fisheries does not automatically remove the risk of child malnutrition, especially when household income, food access, and health service utilization remain unstable [12], [20]. Therefore, the fishermen household group should be viewed as a meaningful subgroup for nutrition analysis rather than a marginal category [1], [17].

The proportion of children from fishermen households was smaller than children from households headed by entrepreneurs, farmers or agricultural laborers, private employees, and laborers, drivers, or domestic workers [1]. This distribution shows that fishermen households constituted a more specific occupational group within the national under-five population. However, a smaller population share does not necessarily indicate lower public health importance because vulnerability may be concentrated in smaller groups [4], [8]. In nutrition surveillance, identifying smaller but high-risk groups is important for improving the precision of program targeting and avoiding the masking of disparities behind national averages [3], [4]. Thus, the occupational classification in SSGI 2024 provides an opportunity to detect livelihood-related nutritional disparities among children [1].

The characteristics of fishermen households may differ from other occupational groups because fishing activities are often influenced by seasonality, weather conditions, market access, and income fluctuation [16], [20]. These livelihood conditions may affect household purchasing power and the ability to provide diverse foods for young children [12], [13]. Although fish is a nutrient-rich food source, children in fishermen households may not always benefit directly from fish availability if household catches are sold for income or if other complementary foods remain limited [12], [13]. This condition supports the need to examine fishermen households not only as food producers, but also as households that may experience economic and nutritional vulnerability [17], [20]. Therefore, the characteristics of children in fishermen households should be interpreted within the broader context of coastal livelihoods and household food security [16], [20].

The presence of 12,231 children from fishermen households in SSGI 2024 provides a useful descriptive basis for examining nutritional status in this livelihood group [1]. This sample size allows comparison with national estimates and selected occupational categories using aggregate prevalence values. Such comparison is important because national-level indicators may not fully capture the specific nutritional burden experienced by livelihood-based groups [3], [4]. In the present study, fishermen households were used as the main analytical group because they represent a coastal and fisheries-related population with potential nutritional vulnerability [17], [20]. Therefore, the following results focus on whether children in fishermen households show higher levels of stunting, underweight, severe wasting, wasting, and overweight compared with national estimates [1].



3.2 Nutritional Status of Children in Fishermen Households

The prevalence of nutritional problems among children in fishermen households was higher than the national prevalence for most undernutrition indicators reported in SSGI 2024 [1]. Stunting among children in fishermen households reached 28.4%, while the national prevalence was 19.8%, indicating a difference of 8.6 percentage points [1]. This finding suggests that children in fishermen households experienced a substantially higher burden of chronic undernutrition than the general under-five population. Stunting is commonly interpreted as a marker of long-term nutritional deprivation, repeated infection, inadequate caregiving, and poor environmental conditions [2], [8]. Therefore, the higher stunting prevalence in fishermen households indicates the need for more specific nutrition attention in coastal and fisheries-based communities [1], [17].

Underweight among children in fishermen households was 26.6%, compared with the national prevalence of 16.8%, resulting in a difference of 9.8 percentage points [1]. This was the largest difference among the nutritional indicators examined in this study. Underweight may reflect both chronic and acute nutritional problems because it captures low body weight relative to age [2], [3]. The high underweight prevalence in fishermen households may indicate that children in this group face persistent nutritional stress, insufficient dietary intake, illness burden, or a combination of these factors [8], [9]. This finding further supports the interpretation that fishermen households represent a nutritionally vulnerable livelihood group [1], [20].

Severe wasting among children in fishermen households was 2.6%, which was higher than the national prevalence of 1.2% [1]. Wasting was also higher among children in fishermen households, with a prevalence of 9.9% compared with the national prevalence of 6.2% [1]. Wasting indicates acute undernutrition and may be associated with recent food shortage, illness, poor dietary quality, or inadequate care during critical periods of growth [2], [3]. In fisheries-based households, acute nutritional vulnerability may be influenced by seasonal income patterns, changing fish catches, food price fluctuations, and uneven access to health services [16], [20]. Therefore, the elevated wasting prevalence suggests that children in fishermen households may require not only long-term stunting prevention but also short-term nutritional support and illness prevention strategies [1], [4].

In contrast to undernutrition indicators, overweight among children in fishermen households was 2.1%, lower than the national prevalence of 3.4% [1]. This pattern indicates that the main nutritional concern among children in fishermen households was undernutrition rather than excess weight. However, overweight remains relevant in child nutrition monitoring because the global nutrition agenda recognizes the coexistence of undernutrition and overnutrition as part of the double burden of malnutrition [3], [5]. The lower overweight prevalence in this group may reflect different food access patterns, household economic conditions, or dietary environments compared with more urbanized or higher-income groups [4], [14]. Overall, the findings in Table 1 show that children in fishermen households had higher stunting, underweight, severe wasting, and wasting, but lower overweight compared with national estimates [1].

Table 1. Nutritional status of children in fishermen households compared with national estimates

Nutritional indicator	Fishermen households (%)	National prevalence (%)	Difference (percentage points)
Stunting	28.4	19.8	+8.6
Underweight	26.6	16.8	+9.8
Severe wasting	2.6	1.2	+1.4
Wasting	9.9	6.2	+3.7
Overweight	2.1	3.4	-1.3

3.3 Comparison with Other Occupational Groups

Children in fishermen households showed the highest prevalence of stunting among the occupational categories reported in the SSGI 2024 characteristics table [1]. Stunting among children in fishermen households was 28.4%, higher than children in farmer or agricultural laborer households at 26.0%, non-working household heads at 23.2%, laborer, driver, or domestic worker households at 21.5%, entrepreneur households at 18.0%, private employee



households at 14.2%, and civil servant, military, police, or state-owned enterprise households at 13.6% [1]. This pattern indicates that children in fishermen households experienced a greater burden of chronic undernutrition than children in several other livelihood groups, including groups commonly associated with unstable income and informal work [4], [8]. Stunting reflects long-term exposure to inadequate nutrition, recurrent infection, poor sanitation, and limited access to health and care services, all of which may be shaped by household livelihood conditions [2], [8]. Therefore, the higher prevalence of stunting in fishermen households suggests that fisheries-based families should be considered a priority group in nutrition vulnerability assessment and coastal-sensitive intervention planning [1], [17].

Underweight showed a similar pattern across occupational categories in SSGI 2024 [1]. Children in fishermen households had an underweight prevalence of 26.6%, higher than farmer or agricultural laborer households at 21.4%, non-working household heads at 19.8%, laborer, driver, or domestic worker households at 17.9%, entrepreneur households at 15.9%, private employee households at 12.4%, and civil servant, military, police, or state-owned enterprise households at 11.0% [1]. Underweight represents low body weight for age and may reflect chronic undernutrition, acute undernutrition, or a combination of both conditions [2], [3]. The higher underweight prevalence among children in fishermen households may indicate persistent nutritional stress related to livelihood instability, seasonal income, food access, dietary diversity, illness burden, and health service utilization [4], [16], [20]. Thus, the comparison with other occupational groups strengthens the interpretation that children in fishermen households experience notable nutritional vulnerability and require integrated interventions addressing child feeding, household food security, coastal health services, and livelihood-sensitive nutrition support [1], [17].

Table 2. Stunting and underweight by occupation of household head [1]

Occupation of household head	Stunting (%)	Underweight (%)
Fishermen	28.4	26.6
Farmers/agricultural laborers	26.0	21.4
Not working	23.2	19.8
Laborers/drivers/domestic workers	21.5	17.9
Entrepreneurs	18.0	15.9
Private employees	14.2	12.4
Civil servant/military/police/SOE	13.6	11.0

4. Discussion

This study found that children under five in fishermen households experienced a higher burden of undernutrition than the national average. The prevalence of stunting, underweight, severe wasting, and wasting was higher among children in fishermen households, while overweight was lower. This pattern suggests that the dominant nutritional problem in fishermen households is undernutrition rather than overnutrition.

The high prevalence of stunting among children in fishermen households is particularly important. Stunting reflects long-term nutritional inadequacy and repeated exposure to adverse household, environmental, and health conditions. In this study, the stunting prevalence among children in fishermen households was 28.4%, substantially higher than the national prevalence of 19.8% [1]. This finding indicates that children in fisheries-based households may require more targeted nutritional attention.

The high underweight prevalence among children in fishermen households also deserves attention. Underweight was 26.6% in fishermen households, compared with the national prevalence of 16.8% [1]. This difference indicates that children in fishermen households may experience both chronic and acute nutritional stress. The relatively high prevalence of wasting at 9.9% further suggests that some children may face short-term nutritional deprivation, illness-related weight loss, or inadequate dietary intake during vulnerable periods.



These findings may appear paradoxical because fishermen households are directly connected to fish, an important source of animal protein and micronutrients. However, access to fishery resources does not automatically translate into adequate child nutrition. Fish caught by fishermen may be sold to meet household income needs, while household food consumption may remain limited by income instability, market access, food prices, caregiver knowledge, child feeding practices, and health service availability [3], [4]. Therefore, nutrition problems in fishermen households should not be understood only as a food availability issue, but as a broader household welfare and health care issue.

The findings also support the need for coastal-sensitive nutrition interventions. Current nutrition programs should pay greater attention to livelihood-based vulnerability. In fishermen households, intervention strategies may include community-based growth monitoring, nutrition education for mothers and caregivers, promotion of protein-rich complementary feeding, improved access to health services, and integration of nutrition programs with coastal community development. Such an approach is consistent with nutrition-sensitive intervention frameworks that address both immediate dietary factors and underlying social determinants [5], [6].

This study has several limitations. First, it used aggregate data from the published SSGI 2024 report rather than individual-level microdata. Therefore, this study could not conduct multivariable analysis or control for potential confounders such as household income, maternal education, sanitation, breastfeeding practices, and health service access. Second, the occupation of the household head was used as a proxy for fishermen household status. Third, the analysis was descriptive and cannot establish causal relationships. Despite these limitations, the study provides useful preliminary evidence that children in fishermen households are nutritionally vulnerable and should be considered in public nutrition planning.

5. Conclusions

Children under five living in fishermen households in Indonesia experience higher levels of stunting, underweight, severe wasting, and wasting than the national average reported in SSGI 2024 [1]. The prevalence of stunting and underweight in this group was also higher than several other occupational categories, indicating that fishermen households represent an important livelihood-based vulnerable group in child nutrition [1], [17]. These findings suggest that child malnutrition in fishermen households should not be understood only as a household food availability issue, but also as a broader problem related to livelihood instability, dietary quality, health service access, and social determinants of nutrition [4], [16]. Although fishermen households are closely connected to fishery resources, access to fish does not automatically guarantee adequate nutrition for children if household income, food allocation, complementary feeding, and health care remain limited [12], [13]. Therefore, children in fishermen households require greater attention in nutrition surveillance, public health planning, and coastal community development programs [1], [20].

The findings of this study also show that occupation-based analysis can provide useful insight for identifying hidden nutritional disparities within national survey data [1]. National averages are important for monitoring progress, but they may conceal specific vulnerable groups whose nutritional burden is higher than the overall population [3], [4]. In this study, fishermen households showed a higher prevalence of undernutrition indicators than many other occupational groups, suggesting that nutrition policies should consider livelihood characteristics as part of targeting strategies [1], [17]. Since stunting and underweight are associated with long-term consequences for growth, cognitive development, health, and productivity, early identification of vulnerable groups is essential for preventing intergenerational nutrition problems [8], [9]. Thus, the results support the need for more livelihood-sensitive and equity-oriented approaches in child nutrition policy [4], [16].

Nutrition interventions in Indonesia should include more specific attention to coastal and fisheries-based households through integrated programs involving nutrition education, child growth monitoring, health service access, dietary diversity improvement, and household food security strengthening [1], [4]. Programs for fishermen households should not only promote fish consumption, but also ensure that children receive adequate complementary foods, animal-source



foods, micronutrient-rich diets, and regular health care services [10], [12], [13]. Community-based interventions may be strengthened through Posyandu, nutrition counseling, maternal education, sanitation improvement, and social protection programs that are responsive to seasonal income fluctuations in fisheries-based livelihoods [1], [6], [16]. Because this study used aggregate published data, future research should use individual-level SSGI microdata or primary field surveys to examine the determinants of malnutrition among children in fishermen households more comprehensively [1], [4]. Overall, fishermen households should be recognized as a priority group in efforts to reduce child undernutrition and improve child health outcomes in coastal Indonesia [17], [20].

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