CONSEQUENCES AND CHALLENGES OF FOOD INSECURITY AMONG WOMEN IN SOUTH-EAST NIGERIA: INTERVENTIONS FOR SUSTAINABLE SOLUTIONS

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Abstract - The study examined the consequences and challenges of food insecurity among women in South East, Nigeria, and identified interventions for sustainable solutions. The study was guided by three research questions and three null hypotheses. A descriptive survey research design was employed, with a sample of 571 registered members of women community-based organizations in South East, Nigeria, selected using a multi-stage sampling technique. Data were collected using a 30-item researcher-developed questionnaire titled "Consequences, Challenges, and Interventions of Global Hunger among Women Questionnaire (CCIGHWQ)" and Focus Group Discussions (FGDs). The instruments were face-validated by experts from the University of Nigeria, Nsukka, and the reliability coefficient was determined through the Cronbach Alpha method, yielding an overall reliability estimate of 0.84. A pilot test was conducted with 20 women from Anambra State, who shared similar characteristics but was outside the study sample. Data were analyzed using mean and standard deviation for the research questions, while t-test statistics were used to test the hypotheses at a 0.05 level of significance. The findings of the study revealed that global hunger has severe impacts on communities in South East Nigeria. These impacts include the consumption of poor-quality food due to financial constraints, increased vulnerability to infections, reduced productivity, impaired cognitive abilities due to prolonged malnutrition, and higher mortality rates from food shortages. Based on the findings of the study, it was recommended among others, that government and non- governmental organizations should grant women easier access to loans through cooperative societies and provide them with modern tools for food production.

Keywords: Food insecurity, women empowerment, sustainable solutions

Introduction

Global hunger and starvation have devastating consequences for populations worldwide, with Nigeria being no exception. Hunger is a major contributor to death, particularly among children and adults, and it exacerbates existing health disparities. Poor nutrition causes nearly half (50%) of deaths in children under five, equating to 3.1 million child fatalities annually (WHO, 2014). The Global Hunger Index highlights that Nigeria's situation is severe, with a worsening hunger crisis. Dominik (2017) reported that the hunger index for Nigeria shows alarming figures, with the country's hunger severity remaining very serious since 1990. Although Nigeria is one of the richest nations in Africa,

its prosperity contrasted by widespread hunger, a condition likened to a plague that threatens human potential and societal productivity (Foodchique.org, 2017). Experts like Lateef (2015) confirmed that hunger in Nigeria is especially alarming in rural communities where many families face food scarcity, forcing them to migrate to cities in search of better opportunities. Agricultural experts have raised concerns over the country's growing food insecurity. Fawole, Ilbamis and Ozkan (2015) emphasized that indicators such as undernourishment, food inadequacy, and the number of undernourished individuals has continued to rise in Nigeria, posing risks to national food security. Chronic malnutrition in children weakens their immune systems, making them vulnerable to diseases such as respiratory infections, diarrhea, and typhoid fever. If this trend continues, it could lead to a national crisis, as WHO estimates that 60% of all childhood deaths in developing countries are linked to malnutrition and chronic hunger (WHO, 2014).

Studies by Boakye-Achampong et al. (2012) showed that food insecurity leads to various consequences, including malnutrition, anxiety, poor performance in tasks, and social vices like theft. Adeola and Doppler (2013) observed that food insecurity also increases vulnerability to infection and illnesses. As a result, families may resort to consuming low-quality food, and children often deprived of proper nutrition, which affects their development and future prospects. The persistent food insecurity in Nigeria is compound by several factors, including high food prices and poor access to resources, particularly for rural farmers. The Global Hunger Index (2011) revealed that when food prices increase, the most vulnerable populations suffer the most, unable to adjust to price hikes. This exacerbates poverty and forces families to make difficult choices, including reducing food intake, withdrawing children from school, or engaging in risky income-generating activities such as prostitution or criminality (Akinjiele, 2004). These challenges are especially visible in rural communities in southeastern Nigeria, where hunger and poverty intertwined with poor living conditions, high unemployment, and the breakdown of social structures. Doraid (2012) noted a state of hopelessness and anger in these communities, with individuals living in squalor and a growing sense of social decay. Hunger also has significant environmental consequences, with the search for food contributing to deforestation, which leads to adverse climatic and health effects. Cook (2013) highlighted that food insecurity is linked to both

physical and mental health challenges. Malnutrition impacts children's ability to learn and develop, while anxiety and stress about food availability can lead to serious emotional and psychological issues.

Women, in particular, face numerous challenges in addressing food insecurity. Although they are responsible for a significant portion of food production globally, women face marginalization and unequal access to resources that could improve their ability to contribute to food security. Boitshepo Glyose (2010) and Ojiugo (2010) highlighted that women often work long hours in agriculture but lack the resources, education, and support to improve their conditions. The United Nations Project (2006) emphasized that gender inequality is a root cause of hunger and malnutrition, as women are denied access to land, credit, and decision-making processes. In addition to these gender-related challenges, women also face the burden of domestic violence, which undermines their ability to secure adequate food for their families. In rural Bangladesh, for instance, their husbands (FAO, 2011) have withheld food from women as a form of control or punishment. This dynamic further complicates efforts to address food insecurity, as women are often forced to stay in abusive relationships due to economic dependency. Furthermore, the lack of government support and policy implementation exacerbates food insecurity in Nigeria. Bamisile (2000) and Sampson (2010) reported that low literacy levels and inadequate access to agricultural training and resources hinder women farmers from improving their economic situation. The failure of government policies to address these issues has led to a reliance on informal systems and women's community-basedorganizations to meet food security needs.

Interventions are crucial in addressing the persistent food security challenges. Abegunde (2009) emphasized the role of government in guiding local efforts through effective policy formulation, financial support, and technical assistance. These interventions are essential in ensuring that food systems are more equitable and efficient. Fawole, Ilbamis and Ozkan (2015) stressed that comprehensive approaches to food security must focus on both improving agricultural productivity and ensuring the nutritional well-being of vulnerable populations. Hence, hunger and food insecurity remain significant challenges in Nigeria, particularly in rural areas where poverty, gender inequality, and limited access to resources compound the problem. A coordinated

effort from government, international organizations, and local communities is necessary to address the root causes of food insecurity and promote sustainable solutions for long-term food security.

Policy reforms can be defined as needed to address land fragmentation in South East Nigeria, which will transform agricultural practices and create an equitable environment for both large and smallholder farmers. According to Eneh (2011), encouraging youth to remain in rural areas, rather than migrating to urban centers, is crucial for enhancing agriculture. The government must lead investment in infrastructure, job creation, training, and research. Women Community-Based Organizations (WCBOs) in the region have the potential to promote food security through collaboration with the government, particularly with support in food processing and storage facilities. Self-sufficiency in food production requires not only increased crop output but also advancements in food processing and storage to prevent wastage. Agbola (2010) emphasized that crops produced by WCBOs, such as roots, tubers, legumes, and vegetables, are highly perishable and vulnerable to spoilage due to inadequate post-harvest practices. To address this, investing in storage technology and controlling wastage is vital. Awoh (2012) further stated that maximum investment in storage technology and checking hoarding can significantly reduce wastage. Additionally, promoting WCBO participation in agricultural programs could increase production and improve storage methods. Stronger partnerships between government institutions and WCBOs are essential for achieving community well-being. Despite significant government spending on development activities, many initiatives have been poorly executed or lacking in completion. Oyebanji (2005) noted that government institutions and WCBOs should collaborate to achieve sustainable community development. Successful grassroots initiatives, such as those by the Development Education Centre (DEC) and National Union of Self-Help Organizations (NUSHO), have been more effective than government programs, which often follow top-down approaches that exclude local input (Asogwa, 2015).

For instance, past government programs like the River Basin Development Authority (RBDA) and Agricultural Development Project (ADP) were ineffective because they did not involve local communities in the planning process. Omonona and Agoi (2007) argued that a shift from top-down to bottom-up strategies is necessary to make food security programs more

community- centered. Supporting agriculture, trade, health, and education will improve food security and nutrition by enabling better access to food, household income, and essential services (Webb & Block, 2010). High interest rates on loans for smallholder farmers have made production and business expansion difficult. Ottawa Food Bank (2011) suggested that WCBOs could offer training to improve food security skills and empower members to start agricultural projects. Establishing stronger connections between WCBOs and schools could enhance food education, benefiting the broader community. Focusing on rural development can lead to improved infrastructure, reduce rural-urban migration, and alleviate poverty. Adebayo (2010) observed that focusing on rural areas can promote transformation by providing amenities such as feeder roads, electricity, and water. Providing suitable technologies for agricultural production and improving rural infrastructure such as roads and electricity will boost farmers' income and enhance market access. Urama and Ozor (2011) emphasized that such initiatives are essential for improving the socio-economic status of rural farmers and contributing to overcoming hunger. Cook (2013) showed that addressing economic hardships and improving economic conditions in rural areas can help mitigate food insecurity. Adeoju, Ogunniyi and Agbedeyi (2015) highlighted the growing interest in women's empowerment and its crucial role in household food security, attracting attention from governments, multilateral organizations, and NGOs. Women contribute significantly to food security at the household level through various activities, such as food processing, purchasing a variety of food items, managing food distribution, and storing food. The study identified key interventions for improving food security, such as organizing food security training, increasing food availability, facilitating access to agricultural funds, investing in agriculture, and managing household size and expenditure. However, the researchers argued that achieving food security and overcoming hunger requires active participation of those who are hungry, not just as recipients of aid but as producers of their own food or income to purchase it. It is critical that Women Community-Based Organizations (WCBOs) play an active role in designing programs aimed at alleviating hunger, a practice that remains rare. WCBOs in South East Nigeria are pivotal in combating hunger, yet their involvement in decision- making processes is still limited.

Study conducted by Beatriz Oliver (2016) posited that theory of farmer knowledge and food security, titled "The Earth Gives Us So Much," underscores the value of farmer-to-farmer interactions in enhancing agricultural practices and success. Oliver emphasizes the significance of women's leadership and knowledge in creating economically sustainable agricultural systems. This theory highlights the need for women's voices in agriculture, ensuring not only sustainable practices but also social justice in food security efforts. The author further posited that women in South East Nigeria have consistently shown interest in subsistence agriculture and business. Despite the global challenges of hunger, they have mobilized others to engage in food security activities. However, their efforts often fall short of achieving the desired outcomes for food security. Hence, a significant gap in the existing literature lies in the lack of research focused on the specific consequences and challenges of food insecurity among women in South East Nigeria. Furthermore, there is limited exploration of the interventions needed to achieve sustainable solutions for food insecurity in the region. Addressing these gaps would provide a more comprehensive understanding of the unique challenges faced by women and help inform targeted interventions that can ensure long-term food security in South East Nigeria.

Statement of the Problem

Food insecurity remains a significant challenge in South-East Nigeria, particularly among women, who are vital contributors to food production, processing, and distribution at the household level. The ideal situation would be a community where women have equal access to resources, education, and support systems, enabling them to contribute effectively to sustainable agricultural practices and alive food security for themselves and their families. In such a setting, women would benefit from adequate agricultural funding, modern food storage and processing technologies, and well- established support networks that empower them to lead efforts toward food security. However, the real situation in South-East Nigeria is far from this ideal. Despite their central role in agriculture and food security, many women face numerous challenges, including limited access to land, financial resources, training opportunities, and technology. Inadequate infrastructure, poor storage facilities, and a lack of government support for Women Community-Based Organizations (WCBOs) further exacerbate the problem. These challenges not only affect food

production but also have negative consequences on women's health, economic well-being, and social status. Hence, this study intends to explore the consequences and challenges of food insecurity faced by women in South-East Nigeria, particularly within the context of their roles in subsistence agriculture and local businesses. The research examined the existing interventions, their effectiveness, and the barriers that hinder sustainable solutions to food insecurity. Additionally, the study aimed to identify practical and context-specific interventions that can enhance the participation of women in food security programs, improve agricultural productivity, and promote sustainable food systems in the region. Byaddressing these gaps, the study seeks to propose sustainable and actionable solutions to improve food security and empower women in South-East Nigeria.

Purpose of the Study

The main purpose of the study was to examine the consequences and challenges of food insecurity among women in South East, Nigeria, and identified interventions for sustainable solutions. Specifically, the study sought to:

1. Examine the impacts of global hunger on communities in South East, Nigeria.
2. Identify obstacles that hinder women from contributing to food security in South East, Nigeria.
3. Determine strategies to enhance food security among women in South East, Nigeria.

Research Questions

The following three research questions guided the study:

1. What are the impacts of global hunger on communities in South East, Nigeria?
2. What obstacles do women face in contributing to food security in South East, Nigeria?
3. What are the strategies to enhance food security among women in South East, Nigeria?

Methods

This study adopted a descriptive survey design, covering the five states of South-East Nigeria: Abia, Anambra, Ebonyi, Enugu, and Imo. The population comprised 1,271 registered members of 28 Women Community-Based Organizations (WCBOs) in the region. A sample of 571 members was drawn

using a multi-stage sampling technique. In the first stage, purposive sampling selected Abia and Imo states due to the impact of oil spillage and increasing rates of kidnapping, which have affected women's economic activities. In the second stage, 28 WCBOs (18 from Abia and 10 from Imo) were selected through simple random sampling. Data collection instruments included a 30-item structured questionnaire titled "Consequences, Challenges, and Interventions to Ensure Food Security among Women Questionnaire" (CCIFWQ) and Focus Group Discussions (FGD). Three experts validated the questionnaire, and corrections incorporated into the final version. A pilot test conducted in Anambra State, yielding a reliability coefficient of 0.84, confirming the instrument's reliability. Data were analyzed using mean and standard deviation, with a criterion mean of 2.5 for acceptance. T-test statistics were used to test null hypotheses at a 0.05 significance level, whilequalitative data from the FGD were analyzed thematically.

Results

Research Question One: What are the impacts of global hunger on communities in South East,Nigeria?

Table 1: Mean and Standard Deviation of Responses on the Impacts of Global Hunger onCommunities in South East, Nigeria

S/N	Item Statement	Mean	SD	Mean Set	Ranking	Decision
1	Increased malnutrition rates, particularly among children and vulnerable populations	2.83	0.56	3.00	4	Agree
2	Higher prevalence of health issues such as weakened immune systems and susceptibility to diseases	2.60	0.58	2.75	9	Agree
3	Reduced productivity and economic output due to undernourishment	2.66	0.54	2.80	8	Agree
4	Increased poverty levels as families spend more on basic food needs	2.68	0.57	2.85	7	Agree
5	School dropouts due to children needing to work orassist in sourcing food	2.73	0.58	2.90	5	Agree
6	Psychological distress, including increased rates of anxiety and depression	2.73	0.57	2.90	6	Agree
7	Migration from rural to urban areas in search of better food security	2.76	0.56	2.85	3	Agree

8	Erosion of community cohesion as resources become scarcer and competition rises	2.97	0.59	3.00	1	Agree
9	Limited access to quality education as hunger affects cognitive abilities	2.83	0.57	2.90	4	Agree
	Cluster Mean	**2.68**	**0.57**	2.85		

The overall mean of 2.68 indicates a general agreement among respondents that global hunger significantly impacts communities in South East, Nigeria. The standard deviation of 0.57 reflects moderate consensus with slight variations in the responses. The mean set of 2.85 further supports the agreement, as most item responses fall between the range of 2.6 and 2.97. The highest-ranked impact, "Erosion of community cohesion," indicates a severe effect, while "Health issues" and "Reduced productivity" are the least emphasized but still considered significant.

Research Question Two: What obstacles do women face in contributing to food security in SouthEast, Nigeria?

Table 2: Mean and Standard Deviation of Responses on the Obstacles Women Face inContributing to Food Security in South East, Nigeria

S/N	Item Statement	Mean	SD	Mean Set	Ranking	Decision
10	Limited access to land and property rights, hinderingagricultural production	3.04	0.56	3.00	1	A
11	Inadequate financial resources to invest in food production or processing	2.56	0.54	2.60	9	A
12	Lack of access to modern farming technologies andequipment	2.71	0.55	2.75	5	A
13	Gender inequality in decision-making processes regarding agricultural policies and resources	3.24	0.58	3.25	1	A
14	Heavy domestic responsibilities that limit time and energy for farming activities	2.81	0.57	2.85	6	A
15	Insufficient access to education and training in agricultural skills and business development	2.68	0.56	2.75	7	A

16	Limited participation in agricultural programs andcooperative societies	2.67	0.55	2.70	8	A
17	Gender-based violence and discrimination that affects women's ability to work and participate in food securityinitiatives	2.59	0.55	2.60	9	A
18	Poor infrastructure and access to markets for women to sell food products or purchase inputs	2.62	0.56	2.65	8	A
	Cluster Mean	**2.78**	**0.56**		2.78	

The overall mean of 2.78 shows that the obstacles faced by women in contributing to food security in South East Nigeria are largely agreed upon by respondents. The standard deviation of 0.56 indicates a moderate level of consensus in the responses. The mean set of 2.78 supports this, showing most obstacles fall within a similar range of agreement. The top-ranked obstacles include "Gender inequality in decision-making" and "Limited access to land and property rights," which are seen as critical barriers to women's participation in food security efforts. On the other hand, obstacles like "Inadequate financial resources" and "Gender-based violence" are still important but rank lower.

Research Question Three: What are the strategies to enhance food security among women inSouth East, Nigeria?

Table 3: Mean and Standard Deviation of Responses on the Strategies to Enhance FoodSecurity among Women in South East, Nigeria

S/N	Item Statement	Mean	SD	Mean Se	Ranking	Decision
19	Provide women with access to affordable credit andfinancial support for agricultural activities	3.59	0.60	3.60	1	A
20	Implement training programs to improve women'sagricultural skills and entrepreneurship	3.24	0.58	3.25	3	A
21	Ensure equal access to land ownership and propertyrights for women	3.19	0.57	3.20	4	A
22	Promote women's participation in agricultural decision-making and policy formulation	3.17	0.56	3.20	5	A
23	Improve access to modern farming tools, seeds, andtechnologies	3.29	0.58	3.30	2	A

24	Establish women-focused agricultural cooperatives andsupport networks	3.32	0.59	3.35	2	A
25	Advocate for gender-sensitive agricultural policies andprograms	3.18	0.56	3.20	5	A
26	Strengthen women's involvement in agriculturalextension services and education	3.05	0.58	3.05	7	A
27	Improve infrastructure, such as roads and markets, tofacilitate food distribution and access to inputs	3.29	0.58	3.30	2	A
	Cluster Mean	**3.23**	**0.58**		**3.23**	A

The overall mean of 3.23 indicates strong agreement among respondents regarding the strategies to enhance food security among women in South East Nigeria. The standard deviation of 0.58 reflects a moderate level of consensus, suggesting a general agreement but with some variations in responses. The mean set of 3.23 further confirms that most strategies are viewed positively. The highest-ranked strategy is "Providing women with access to affordable credit and financial support," which stands out as the most important factor for enhancing food security. Other highly-ranked strategies include improving access to modern farming tools, establishing women-focused agricultural cooperatives, and ensuring equal access to land ownership. These strategies are seen as crucial for supporting women in agriculture and improving food security in the region.

Discussion

The findings of the study revealed that global hunger has severe impacts on communities in South East Nigeria. These impacts include the consumption of poor-quality food due to financial constraints, increased vulnerability to infections, reduced productivity, impaired cognitive abilities due to prolonged malnutrition, and higher mortality rates from food shortages. Additionally, childrenare increasingly involved in labor, exacerbating the cycle of poverty and hunger. Participants in the Focus Group Discussions (FGD) highlighted similar consequences, including skipping meals, eating unhealthy food, and reducing portion sizes as a result of financial limitations. Both literate and non- literate women shared these views, suggesting that the effects of global hunger are experienced similarly across different educational backgrounds. These findings are consistent with previous research, such as that of Boakye-Achampong et al. (2012), who identified malnutrition, anxiety, poorperformance, and social vices as

consequences of food insecurity. Similarly, Adeola and Doppler (2013) observed that food insecurity leads to poor nutrition, susceptibility to illnesses, and increased social vices in the region. Additionally, Fawole et al. (2015) found that food insecurity can result in malnutrition, poor learning capacity, and political instability, which further exacerbate societal issues. In conclusion, the study emphasizes the widespread negative impact of global hunger on the communities in South East Nigeria, particularly in terms of malnutrition and its associated challenges.

The findings of the study revealed that women in South East Nigeria face several obstacles in contributing to food security. These obstacles include limited participation in agricultural programs, heavy domestic responsibilities that hinder food production, gender inequalities preventing access to agricultural loans, and lack of access to market information. FGD participants emphasized that gender inequality and limited access to cooperative societies were key barriers to women's efforts in enhancing food security. These findings are in agreement with the World Bank's (2007) report, which highlighted poor institutional support for women farmers, and with studies by Ilaboye et al. (2012) and Adepoja and Adejare (2013), which pointed to socio-political instability, gender inequality, and insufficient access to land, capital, and education as significant obstacles. Additionally, Bakare (2016) identified erosion and communication gaps between farmers and policymakers as challenges that further hinder women's ability to contribute to food security. The study found no significant difference in the obstacles faced by literate and non-literate women, indicating that both groups perceive similar barriers to contributing to food security, regardless of their educational level. Therefore, the findings suggest that addressing gender inequality and providing better access to resources are crucial for empowering women in South East Nigeria to contribute to food security.

The findings of the study revealed that both literate and non-literate women agree on key strategies to enhance food security, particularly through improving food availability, access, and adequacy. These strategies include increasing agricultural funding, promoting economic diversification, and improving access to markets. FGD participants also emphasized the importance of organizing food security training programs and investing in food processing industries to reduce harvest wastage. These strategies align with findings from Adepoju et al. (2015), who identified food security training, increased food

availability, and better access to agricultural funds as critical interventions. However, the study revealed a significant difference in the perceptions of literate and non-literate women regarding strategies for enhancing food security, suggesting that education plays an important role in how these strategies are perceived and implemented. This finding supports Olumakaiye and Ajayi's (2006) study, which found that women with higher education are more likely to diversify food sources, improving household food security. Therefore, the study suggests that enhancing education and providing targeted interventions can significantly improve women's role in enhancing food security in South East Nigeria. Hence, the findings of the study revealed that global hunger severely affects communities in South East Nigeria, particularly in terms of nutrition, health, and productivity. Women face significant barriers in contributing to food security, largely due to gender inequalities and lack of access to resources. However, both literate and non-literate women support strategies aimed at improving food security, with education playing a key role in shaping their perceptions of these interventions. Addressing these challenges through educational initiatives, policy reforms, and institutional support is essential for improving food security and empowering women in the region.

Conclusion

The study concluded that food insecurity among women in South-East Nigeria leads to poor nutrition, increased illness, and economic strain. Key challenges include limited access to resources, gender inequalities, and excessive workloads that hinder food production. Both literate and non-literate women shared similar views on these issues. Effective interventions, such as improved access to training, resources, and support, are crucial for sustainable solutions to food insecurity in the region.

Contribution to Knowledge

This study enhances understanding of food insecurity in South-East Nigeria, particularly the challenges faced by women. It highlights how gender inequality, limited access to resources, and lack of participation in agricultural programs hinder women's roles in ensuring food security. The research also underscores the impact of food insecurity on women's health and productivity, and the differences in perceptions between literate and non-literate women. The findings offer valuable recommendations for improving women's access to resources, enhancing their involvement in agricultural planning, and ensuring

better food storage, providing insights for effective policy interventions.

Educational Implications for Adult Educators

The findings of the study have several educational implications for adult educators. First, adult educators need to integrate the realities of food insecurity and its consequences into their curriculum to raise awareness among adult learners, particularly women. Understanding these challenges empowers them to take action towards sustainable solutions. Educators must also focus on providing training programs that enhance women's access to resources such as loans, modern farming techniques, and business development skills, as these can significantly improve food security. Additionally, it is important for adult educators to advocate for the inclusion of both literate and non-literate women in agricultural policy planning and implementation, ensuring their voices is heard in efforts to address food security. Educators need to collaborate with government and non- governmental agencies to develop community-based programs that provide adequate storage facilities and other resources, helping to prevent food wastage during periods of surplus. These initiatives support the development of informed and empowered communities, contributing to the long-term sustainability of food security in South-East Nigeria.

Recommendations

Based on the findings of the study, the following recommendations should be made:

1. Government and non-governmental organizations should provide women with easy access to loans through cooperative societies and supply modern farming tools or improved seeds to enhance food production.
2. The government should ensure the active involvement of both literate and non-literate women in agricultural program planning and implementation to enable them to contribute to food security and address the challenges of global hunger.
3. Government and non-governmental agencies should provide adequate storage facilities to store food during bumper harvests, ensuring food security and preventing global hunger.

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