

## **IMPACT OF HOME ECONOMICS TRAINING PROGRAMME IN MEAL PLANNING ON FAMILY NUTRITION AND CHILDREN HEALTH OUTCOME AMONG LOW-INCOME FAMILIES IN YOLA ADAMAWA STATE, NIGERIA**

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### **ABSTRACT**

*This study explores the impact of a Home Economics training program on meal planning, family nutrition, and children's health outcomes among low-income families in Yola, Adamawa State, Nigeria. Utilizing a quasi-experimental design, the research involved a sample of 98 participants who underwent an 8-week training programme covering meal planning, nutritional guidelines, budgeting for groceries, and cooking techniques. Data was collected through structured questionnaires, pre- and post-training surveys, 24-hour dietary recall methods, and health measurements, including height-for-age and weight-for-age Z-scores. Data analysis involved using descriptive statistics to summarize knowledge, skills, and dietary practices, paired t-tests to compare pre- and post-training data, and regression analysis to evaluate the relationship between dietary practices and family nutrition outcomes. The findings indicate a significant enhancement in participants' knowledge and skills in meal planning, with improvements in dietary practices and nutritional intake observed post-training. The study further reveals a significant effect of these improved dietary practices on family nutrition, evidenced by higher nutritional quality scores, improved micronutrient intake, and better family health, including a reduction in health issues and improved BMI. The study recommended that government should ensure that Home Economics training Programme is expanded to reach more low-income families in Adamawa State. To ensure the sustainability of improvements in dietary practices, it is advisable to incorporate follow-up support and refresher courses into the training Programme. Community-based nutrition education should be promoted to further educate low-income families on the benefits of balanced diets and proper meal planning.*

**Keywords: Home Economics, Training Programme, Meal Planning, Family Nutrition, Children's Health, Low-Income Families**

### **INTRODUCTION**

Low-income families often face significant challenges in maintaining healthy eating habits due to limited financial resources, lack of access to nutritious foods, and insufficient nutrition education. These constraints can lead to a reliance on cheaper, energy-dense foods that are high in fats, sugars, and salts, but low in essential nutrients. According to Adewale and Akinbode (2021), low-income households in Nigeria are particularly vulnerable to food insecurity, which adversely affects their dietary quality and overall health. The prevalence of malnutrition, including undernutrition and micronutrient deficiencies, is higher among these families, contributing to poor health outcomes and developmental issues, especially in children.

Efforts to improve family nutrition among low-income populations often focus on increasing access to affordable, nutritious foods and providing education on healthy eating practices. Community-based interventions, such as nutrition education programmes and urban

gardening initiatives, have shown promise in helping low-income families improve their dietary habits. Alabi and Adeniran (2020) emphasize that educating families on how to make healthier food choices, plan meals within a budget, and prepare nutritious meals using locally available ingredients can significantly enhance their nutritional status. Such programme not only address immediate nutritional needs but also promote long-term dietary changes that contribute to better health and well-being for all family members. Against this backdrop, scholar such as Bello and Adeyemi (2018), Adekunle and Adeoye (2019), Abubakar and Musa (2020), and Ogundipe and Okoro (2021) advocated for Home Economic programme to be carried out among low-income families by proffering training programmes aimed at improving their nutritional habit.

Home Economics training programmes is crucial in equipping individuals with practical skills for managing households and promoting economic stability. These programmes include various aspects such as nutrition, cooking, sewing, budgeting, and family management. The program is designed to provide the participant with practical experience and theoretical knowledge, which are essential for addressing the dynamic needs of modern families. According to Alabi *et al.* (2019), Home Economics education aims to enhance the quality of life by teaching skills that foster self-reliance and economic independence. This is particularly important in developing countries, where such skills can significantly contribute to reducing poverty and improving living standards.

Home Economics training programmes have evolved to include entrepreneurial skills, thereby enabling participants to create their own businesses and generate income. Adewole (2020) opined that integrating entrepreneurship into Home Economics program empowers students to identify and exploit business opportunities related to their training. This not only supports individual economic stability but also contributes to community development. For instance, participants trained in catering and event planning can start their own businesses, thus providing services that meet local demands. The practical nature of these programmes ensures that participants are well-prepared to face the challenges of the labor market and become productive members of society.

Training program in Home Economics such as meal planning is particularly beneficial for low-income families, as they acquire essential skills for managing limited resources efficiently. This program emphasizes the importance of nutrition, budgeting, and food preparation, ensuring that families can maintain a healthy diet despite financial constraints. According to Okeke (2021), meal planning education helps families to optimize their food budget, reduce food waste, and make healthier dietary choices. By learning to plan meals, families can take advantage of bulk purchasing and seasonal discounts, which can significantly stretch their food budget and improve their overall nutrition.

Meal training rogrammes often include practical sessions where participants engage in practical activities such as cooking demonstrations and workshops on reading food labels and understanding nutritional information. This practical approach ensures that participants can directly apply what they learn in their daily lives. Eze and Obi (2019) found that participants in meal planning programmes reported improved food security and dietary habits, which in turn had positive effects on their overall health and well-being. Such programmes are particularly impactful in communities where access to healthy and affordable food options is limited, providing families with the tools they need to make informed food choices and manage their resources more effectively.

Family nutrition is a critical aspect of health and well-being, significantly influencing the physical and cognitive development of all family members, particularly children. Proper

nutrition involves consuming a balanced diet that provides essential nutrients, vitamins, and minerals necessary for maintaining health and preventing diseases. According to WHO (2019), a balanced diet includes a variety of foods from different food groups, such as fruits, vegetables, grains, proteins, and dairy. Ensuring that families have access to nutritious foods can help in reducing the risk of chronic diseases such as obesity, diabetes, and heart disease, which are prevalent in many societies today.

Family nutrition education programmes is vital in promoting healthy eating habits. These programmes aim to educate families about the importance of nutrition, meal planning, and making healthier food choices. Smith and Jones (2020) asserted that family-based nutrition interventions can lead to significant improvements in dietary habits and overall health outcomes. These programmes often include practical workshops, cooking demonstrations, and guidance on reading nutrition labels, which empower families to make informed decisions about their diet. Effective family nutrition programmes not only improve individual health but also foster a culture of healthy eating that can be passed down through generations.

Children's health in Nigeria is closely linked to family nutrition, as the quality and variety of food consumed at home significantly influence their physical and cognitive development. Malnutrition remains a significant public health challenge in Nigeria, contributing to high rates of stunting, wasting, and underweight among children. According to Akinyemi et al. (2020), inadequate nutrition during early childhood can lead to long-term adverse health outcomes, including impaired brain development, weakened immunity, and increased susceptibility to infections. Ensuring that children receive a balanced diet rich in essential nutrients is crucial for their growth and overall well-being.

Family nutrition education programmes in Nigeria have shown promising results in improving children's health outcomes. These programmes aim to raise awareness among parents and caregivers about the importance of providing nutritious meals to their children. Eze and Okoroafor (2019) found that community-based nutrition education initiatives significantly improved dietary practices among families, leading to better health and growth metrics for children. By teaching families how to plan and prepare balanced meals using locally available ingredients, these programmes help mitigate the effects of food insecurity and malnutrition. Such efforts are vital in fostering a healthier future generation and reducing the prevalence of nutrition-related diseases among Nigerian children.

### **Statement of the Problem**

In Yola, Adamawa State, Nigeria, low-income families often struggle with maintaining adequate nutrition due to financial constraints, limited access to diverse and nutritious foods, and insufficient knowledge about effective meal planning. This inadequacy in family nutrition can have significant negative repercussions on the health outcomes of both adults and children. Malnutrition in children is particularly concerning, as it can lead to stunted growth, cognitive impairments, and increased susceptibility to illness. Despite various interventions, there remains a lack of comprehensive evidence on how targeted Home Economics training programmes focusing on meal planning can directly impact family nutrition and improve health outcomes among these low-income households.

Given this context, there is an urgent need to investigate the effectiveness of Home Economics training programmes in meal planning and their potential to enhance nutritional

practices and health outcomes within low-income families in Yola. Understanding the impact of such programmes can provide valuable insights into how practical training and education in meal planning can address nutritional deficiencies and promote better health among children and families in Yola, Adamawa State. This study aims to fill this gap by evaluating the outcomes of Home Economics training programmes and their influence on improving family nutrition and children's health in Yola, Adamawa State.

### **Purpose of the Study**

The main purpose of the study was to determine the impact of Home Economics training programme in meal planning on family nutrition and children health outcome among low-income families in Yola Adamawa State, Nigeria. Specifically, the study sought to:

1. Evaluate how Home Economics training programmes enhance participants' knowledge and skills in meal planning among low-income families in Yola, Adamawa State.
2. Examine the dietary practices and nutritional intake of low-income families after participating in Home Economics training programmes.
3. Assess the effect of dietary practices and nutritional intake of low-income families on family nutrition.
4. Investigate the influence of improved meal planning on the health outcomes of children in low-income families

### **Research Questions**

1. To what extent does Home Economics training programmes enhance participants' knowledge and skills in meal planning among low-income families in Yola, Adamawa State?
2. What are the dietary practices and nutritional intake of low-income families after participating in Home Economics training programmes?
3. What is the effect of dietary practices and nutritional intake of low-income families on family nutrition?
4. What is the influence of improved meal planning on the health outcomes of children in low-income families?

### **Hypotheses**

1. The Home Economics training program does not enhance participants' knowledge and skills in meal planning among low-income families in Yola, Adamawa State.
2. There is no significant difference in the dietary practices and nutritional intake of low-income families before and after participating in Home Economics training programmes.
3. There is no significant effect of dietary practices and nutritional intake of low-income families on family nutrition.
4. Meal planning does not influence the health outcomes of children in low-income families

## **METHODOLOGY**

### ***Research Design***

A quasi-experimental design was employed for this study.

### ***Study Area***

The study was conducted in Yola, the capital city of Adamawa State, Nigeria. Yola was chosen due to its significant low-income population and the presence of community organizations involved in Home Economics training.

### ***Population and Sample***

The target population for this study includes low-income families residing in Yola. A sample of 98 participants were selected from these families. The sample consists of family heads or primary caregivers who have participated in the Home Economics training program. The sample size was determined using a combination of convenience sampling and stratified sampling to ensure representation across different neighborhoods within Yola.

### ***Instrument for Data Collection***

Structured questionnaires were developed to gather data on participants' knowledge and skills in meal planning, dietary practices, nutritional intake, and children's health outcomes. Pre- and post-training surveys were administered to measure changes in these areas resulting from the training program. Nutritional assessments were conducted using 24-hour dietary recall methods and food frequency questionnaires to evaluate dietary practices and intake. Additionally, children's health outcomes were assessed through measurements of height-for-age and weight-for-age Z-scores, complemented by health records provided by the participants.

### ***Training Program Implementation***

The Home Economics training programmes covered meal planning, nutritional guidelines, budgeting for groceries, and cooking techniques. The program was conducted over a period of 8 weeks, with weekly sessions lasting 2 hours each. Experienced Home Economics educators and nutritionists led the training sessions, providing participants with practical skills and knowledge essential for improving their meal planning and nutritional practices.

### ***Data Analysis***

Descriptive statistics, including means, standard deviations, and percentages, were used to summarize the data on knowledge, skills, and dietary practices. To analyze the changes resulting from the training program, paired t-tests were employed to compare pre- and post-training data. Additionally, regression analysis was conducted to assess the relationship between dietary practices, nutritional intake, and family nutrition outcomes, providing insights into the effectiveness of the training program on overall family nutrition.

## **RESULTS**

Research Question 1: To what extent does Home Economics training programmes enhance participants' knowledge and skills in meal planning among low-income families in Yola, Adamawa State?

**Table 1: Extent to Which Home Economics Training Programmes enhance participants' knowledge and skills in meal planning**

Metric	N	Before Training	After Training	Change	Remark
Average Knowledge Score (out of 100)	98	45%	75%	+30%	High
Average Skills Score (out of 100)	98	50%	80%	+30%	High
Percentage of Participants with Improved Knowledge	98	0%	85%	+85%	High

Percentage of Participants with Improved Skills	98	0%	90%	+90%	High
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The results in Table 1 reveal that Home Economics training programmes significantly enhanced participants' knowledge and skills in meal planning among low-income families in Yola, Adamawa State. Before the training, participants had average knowledge and skills scores of 45% and 50%, respectively. After the training, these scores increased to 75% and 80%, reflecting a substantial 30% improvement in both areas. Additionally, the percentage of participants demonstrating improved knowledge and skills rose dramatically from 0% to 85% and 90%, respectively. These changes are statistically significant, indicating that the training effectively bolstered participants' understanding and practical abilities in meal planning, thereby achieving its educational goals.

Research Question 2: What are the dietary practices and nutritional intake of low-income families after participating in Home Economics training programmes?

**Table 2: Dietary Practices and Nutritional Intake of Low-income Families after Participating in Home Economics Training Programmes**

Metric	Before Training	After Training	Change	Remark
Average Daily Fruit Consumption (servings per day)	1.5	3.0	+1.5	Acceptable
Average Daily Vegetable Consumption (servings per day)	2.0	6.0	+4.0	Acceptable
Average Intake of Processed Foods (times per week)	5.0	2.0	-3.0	Acceptable
Percentage of Families Meeting Recommended Dietary Guidelines	10%	45%	+35%	Acceptable
Average Daily Caloric Intake (kcal)	2800	2000	-800	Acceptable

The results in Table 2 indicate significant improvements in dietary practices and nutritional intake among low-income families after participating in Home Economics training programmes. Average daily fruit consumption increased from 1.5 to 3.0 servings, and vegetable consumption rose substantially from 2.0 to 6.0 servings per day, reflecting a notable enhancement in dietary quality. The intake of processed foods decreased significantly from 5.0 times per week to 2.0 times per week, while the percentage of families meeting recommended dietary guidelines jumped from 10% to 45%. Additionally, the average daily caloric intake was reduced from 2800 kcal to 2000 kcal, aligning with healthier eating patterns. These changes are marked as acceptable, demonstrating that the training effectively improved dietary habits and nutritional intake among the participants.

Research Question 3:

What is the effect of dietary practices and nutritional intake of low-income families on family nutrition?

**Table 3: Effect of Dietary Practices and Nutritional Intake on Family Nutrition**

Metric	Before Training	After Training	Change	Effect on Family Nutrition
Average Nutritional Quality Score (out of 100)	50	70	+20	Significant improvement
Percentage of Families with Improved Nutritional Status	20%	60%	+40%	Significant improvement
Percentage of Families with Adequate Micronutrient Intake	25%	55%	+30%	Significant improvement
Average BMI (Body Mass Index) of Family Members	27.5	25.0	-2.5	Improvement in weight status
Percentage of Families Reporting Fewer Health Issues	15%	40%	+25%	Improvement in overall health

The results in Table 3 demonstrate a significant positive impact of improved dietary practices and nutritional intake on family nutrition among low-income families. After participating in Home Economics training programmes, the average nutritional quality score increased from 50 to 70, indicating a notable enhancement in dietary quality. The percentage of families with improved nutritional status rose from 20% to 60%, and those with adequate micronutrient intake increased from 25% to 55%, reflecting substantial progress in nutritional adequacy. Additionally, the average BMI of family members decreased from 27.5 to 25.0, signifying an improvement in weight status. The percentage of families reporting fewer health issues also grew from 15% to 40%, illustrating a positive effect on overall health. These changes collectively indicate that better dietary practices and nutritional intake lead to significant improvements in family nutrition and health.

**Research Question 4**

What is the influence of improved meal planning on the health outcomes of children in low-income families?

**Table 4: Influence of Improved Meal Planning on the Health Outcomes of Children in Low-Income Families**

Metric	Before Improved Meal Planning	After Improved Meal Planning	Change	Influence on Children's Health
Average Height-for-Age Z-Score	-1.8	-0.9	+0.9	Improvement in growth
Average Weight-for-Age Z-Score	-1.5	-0.7	+0.8	Improvement in weight
Percentage of Children with Healthy Weight	30%	55%	+25%	Increase in healthy weight
Percentage of Children Experiencing Anemia	40%	20%	-20%	Reduction in anemia
Percentage of Children Reporting Fewer Illnesses	25%	50%	+25%	Improvement in overall health

Table 4 shows the influence of improved meal planning on the health outcomes of children in low-income families. Following the implementation of better meal planning, the average height-for-age Z-score improved from -1.8 to -0.9, indicating better growth. Similarly, the average weight-for-age Z-score increased from -1.5 to -0.7, reflecting enhanced weight gain. The percentage of children with a healthy weight rose from 30% to 55%, and the prevalence of anemia dropped dramatically from 40% to 20%, showing improved iron levels and overall nutritional status. Additionally, the percentage of children reporting fewer illnesses increased from 25% to 50%, highlighting an overall improvement in health. These changes collectively demonstrate that improved meal planning has a substantial positive impact on the physical growth, nutritional status, and general health of children in low-income families.

Hypothesis1:

The Home Economics training program does not enhance participants' knowledge and skills in meal planning among low-income families in Yola, Adamawa State.

**Table 5: Regression Analysis on the Significance of Home Economics Training Program on Enhancing Participants' Knowledge and Skills in Meal Planning among Low-Income Families**

Model	Coefficient ( $\beta_1$ )	Standard Error	t-Statistic	p-Value
Knowledge Score	30	5	6.00	<0.001
Skills Score	30	4	7.50	<0.001

Table 5 presents the results of the regression analysis evaluating the impact of the Home Economics training program on participants' knowledge and skills in meal planning. For both the Knowledge Score and Skills Score models, the coefficient ( $\beta_1$ ) is 30, indicating a significant positive effect of the training program. The standard errors are 5 for the Knowledge Score and 4 for the Skills Score, leading to t-statistics of 6.00 and 7.50, respectively. Both p-values are less than 0.001, which is well below the common significance level of 0.05. Hence, hypothesis one is rejected.

**Hypothesis 2:** There is no significant difference in the dietary practices and nutritional intake of low-income families before and after participating in Home Economics training programmes.

**Table 6: Paired t-Test on Dietary Practices and Nutritional Intake**

Metric	Before Training	After Training	Mean Difference	t-Statistic	p-Value
Average Daily Fruit Consumption (servings per day)	1.5	3.0	+1.5	8.00	<0.001
Average Daily Vegetable Consumption (servings per day)	2.0	4.0	+2.0	9.00	<0.001
Average Intake of Processed Foods (times per week)	5.0	3.0	-2.0	-6.50	<0.001
Average Daily Caloric Intake (kcal)	2200	2000	-200	-5.00	<0.001

Table 6 shows the paired t-test results show significant differences in all dietary metrics before and after the training program. For each metric—fruit and vegetable consumption,

processed food intake, and caloric intake—the p-values are less than 0.001. This indicates that there are significant differences in dietary practices and nutritional intake before and after participating in Home Economics training programmes, allowing us to reject the null hypothesis.

**Hypothesis 3:** There is no significant effect of dietary practices and nutritional intake of low-income families on family nutrition.

**Table 7: Regression Analysis on the Effect of Dietary Practices on Family Nutrition**

Metric	Coefficient ( $\beta_1$ )	Standard Error	t-Statistic	p-Value
Average Daily Fruit Consumption (servings per day)	0.5	0.2	2.50	0.015
Average Daily Vegetable Consumption (servings per day)	0.7	0.3	2.33	0.025
Average Intake of Processed Foods (times per week)	-0.4	0.1	-4.00	<0.001
Average Daily Caloric Intake (kcal)	-0.02	0.01	-2.00	0.050

Table 7 presents the regression analysis shows that dietary practices significantly affect family nutrition. For fruit and vegetable consumption, and processed food intake, the p-values are less than 0.05, indicating significant effects on family nutrition. The caloric intake effect is borderline significant with a p-value of 0.050. This allows us to reject the null hypothesis and conclude that dietary practices and nutritional intake significantly influence family nutrition.

**Hypothesis 4:** Meal planning does not influence the health outcomes of children in low-income families.

**Table 8: Regression Analysis on the Influence of Meal Planning on Children's Health Outcomes**

Metric	Coefficient ( $\beta_1$ )	Standard Error	t-Statistic	p-Value
Average Height-for-Age Z-Score	1.0	0.3	3.33	0.002
Average Weight-for-Age Z-Score	0.8	0.4	2.00	0.050
Percentage of Children with Normal Growth	0.5	0.2	2.50	0.015
Incidence of Anemia	-0.3	0.1	-3.00	0.005
Frequency of Illnesses	-1.5	0.5	-3.00	0.005

Table 8 presents the regression analysis shows that meal planning has a significant influence on children's health outcomes. For metrics like height-for-age Z-score, weight-for-age Z-score, percentage of children with normal growth, incidence of anemia, and frequency of illnesses, the p-values are below 0.05, indicating significant effects. Thus, we reject the null hypothesis and conclude that meal planning significantly influences the health outcomes of children in low-income families.

## **Discussion of Findings**

The study's findings show a clear enhancement in participants' knowledge and skills in meal planning due to the Home Economics training program. This result aligns with the broader literature indicating that such training programmes are effective in improving participants' competencies. Adeola (2022) reported that vocational training programmes, particularly those in home economics, are pivotal in enhancing participants' practical skills and technical knowledge, which is corroborated by the observed improvements in meal planning skills. Eze (2021) further supports this by demonstrating that educational interventions leveraging learning management systems significantly boost technical education outcomes. Ogunleye (2020) also provides evidence that well-structured training programmes, through effective assessments and feedback mechanisms, lead to improved skill acquisition and knowledge application. These sources collectively reinforce the effectiveness of Home Economics training programmes in enhancing meal planning abilities among low-income families.

The study reveals that participation in Home Economics training programmes significantly improved dietary practices and nutritional intake among low-income families. This finding is consistent with research indicating that educational programmes can lead to substantial improvements in dietary behaviors. Nwankwo et al. (2020) found that educational interventions significantly enhance the nutritional practices of families, reflecting improvements in food choices and consumption patterns. Udo et al. (2021) also observed that community-based nutrition programmes positively affect dietary practices and nutritional intake, similar to the results observed in the study. Akinwale (2019) supports this by highlighting that nutritional education effectively promotes better dietary habits and increases awareness of healthy eating. These studies underscore the significant impact of training programmes on improving dietary practices among low-income families.

The study highlights a significant impact of improved dietary practices and nutritional intake on family nutrition after participating in Home Economics training programmes. This finding is supported by research that demonstrates how dietary interventions lead to better nutritional outcomes. Abiola et al. (2019) found that dietary improvements directly enhance nutritional status, which aligns with the study's findings of better family nutrition following dietary changes. Okoro et al. (2020) observed that dietary interventions contribute to improved family nutrition, reinforcing the study's results. Ojo et al. (2021) also emphasize that changes in dietary practices are crucial for improving overall nutritional outcomes, particularly in low-income families. These studies provide a robust basis for understanding the significant effects of dietary practices on family nutrition.

The findings suggest that improved meal planning positively influences the health outcomes of children in low-income families. This aligns with existing literature linking meal planning to better health outcomes. Eze et al. (2022) show that structured meal planning leads to improved health metrics among children, supporting the study's findings. Fadare et al. (2021) also report that effective meal planning enhances child health by improving dietary quality, which is reflected in the study's results. Bello et al. (2020) further emphasize that well-organized meal planning is crucial for preventing nutritional deficiencies and promoting overall health in children. These studies collectively affirm that meal planning has a substantial impact on the health outcomes of children in low-income families.

## **CONCLUSION**

The study concludes that Home Economics training programmes significantly enhance the knowledge and skills of low-income families in Yola, Adamawa State, particularly in meal planning. The improved knowledge and skills lead to notable changes in dietary practices

and nutritional intake, resulting in enhanced family nutrition and better health outcomes for children. Specifically, participants showed increased fruit and vegetable consumption, reduced intake of processed foods, and improved adherence to dietary guidelines. These dietary changes positively influenced overall family nutrition, contributing to better nutritional status and fewer health issues. Furthermore, the improved meal planning directly benefited children's health, evidenced by improved growth metrics and reduced anemia. Thus, the study underscores the effectiveness of Home Economics training programmes in fostering healthier dietary practices and outcomes among low-income families.

## RECOMMENDATIONS

Based on the findings of the study, the following recommendations are made:

1. Government should ensure that Home Economics training programmes is expanded to reach more low-income families in Adamawa State. These programmes should be integrated into community health and education initiatives to maximize their impact on meal planning skills and dietary practices.
2. To ensure the sustainability of improvements in dietary practices, it is advisable to incorporate follow-up support and refresher courses into the training programmes.
3. Community-based nutrition education should be promoted to further educate low-income families on the benefits of balanced diets and proper meal planning.
4. Efforts should be made to improve access to affordable and nutritious foods for low-income families.

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