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IMPLICATIONS OF POOR DIETARY PRACTICES ON PREGNANCY OUTCOME AS PERCEIVED BY WOMEN IN ILORIN SOUTH LOCAL GOVERNMENT AREA, KWARA STATE

IBRAHIM OLOGELE (Ph.D)

Abstract

This study investigated the implications of poor dietary practices on pregnancy outcomes as perceived by women in Ilorin South Local Government Area, Kwara State. Descriptive research design of survey type adopted for the study. The population of the study comprises of pregnant women in the study area. Multi-stage sampling technique that comprises of simple, proportionate, purposive and accidental sampling procedures used to select one hundred and ninety-eight respondents participated in the study. A researcher's developed questionnaire was used as an instrument for the study. The researcher's instrument validated and tested for reliability. The result of the reliability established used test-retest method. The result of the reliability indicated 0.76r which showed that the instrument was reliable. The collected data subjected to statistical analysis with the use of frequency counts and percentages. The result of the findings stated that, premature birth, maternal mortality and still birth are implications of poor dietary practices on pregnancy outcomes as perceived by women in Ilorin South Local Government Area, Kwara State. Therefore, the researcher's recommends among others that the local government health department should carry out enlightenment programme through mass media on implications of poor dietary practices on pregnant outcomes for women to protect the lives of both mothers and their babies.

Keywords: Implications, Perceived, Poor-dietary, Practices, Pregnancy-outcomes, Women

Introduction

Women have distinct nutritional requirements throughout their life – especially before and during pregnancy and while breastfeeding, when nutritional vulnerability is greatest. Ensuring women have nutritious diets and adequate services and care is fundamental for the survival and well-being of mothers and their children. Before pregnancy, women need nutritious and safe diets to establish sufficient reserves for pregnancy. During pregnancy and breastfeeding, energy and nutrient needs increase. Meeting them is critical for women's health and that of their child – in the womb and throughout early childhood. But in many parts of the world, the nutritional status of women is unacceptably poor. Far too many women – especially adolescents and those who are nutritionally at-risk – are not receiving the nutrition services they need to be healthy and give their babies the best chance to survive, grow and develop. Women's diets in many countries contain limited fruits, vegetables, dairy, fish and meat. During pregnancy, poor diets lacking in key nutrients – like iodine, iron, folate, calcium and zinc – can cause anaemia, pre-eclampsia, haemorrhage and death in mothers. They can also lead to stillbirth, low birth weight, wasting and developmental delays for children. UNICEF estimates that low birth weight affects more than 20 million newborns every year. Worldwide, women's diets are influenced by various factors, especially food access and affordability, gender inequality and social and cultural norms that may constrain women's ability to make decisions about their nutrition and care (UNICEF, 2023).

Amanuel and Tona (2018) pointed out that pregnancy is the most crucial nutritionally demanding period of every woman's life. The high demand of nutrients to deposit energy in the form of new tissue, growth of existing maternal tissues such as breast and uterus and increased energy requirements for tissue synthesis makes pregnant women more vulnerable to malnutrition. Dietary practice is defined as an observable actions or behavior of dietary

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habit and can be classified as good dietary practices and poor dietary practices. The incidence of dietary inadequacies as a result of dietary habits and patterns in pregnancy is higher during pregnancy when compared to any other stage of the life cycle.

Adequate and quality maternal nutrition is important for the health and reproductive performance of women as well as the health, survival, and development of children (Bloomfield, Spiroski & Harding, 2013; Nabarro, 2013). Particularly, the first 1000 days of life, from conception to age two, is often considered as "the window of opportunity to prevent chronic malnutrition, childhood obesity and medical complications arising later in life" (Pem, 2015; Mameli, Mazzantini & Zuccotti, 2016). Improvements in maternal and child nutrition can reduce multiple risks of Adverse Pregnancy Outcomes (APO) such as: foetal growth restriction, low birth weight babies and small-for-gestational age births. It also helps to prevent micronutrient deficiencies (Imdad & ZA, 2011; Islam, 2013). As the high nutritional cost of pregnancy and lactation contributes significantly to their poor nutritional status, healthy nutrition intake during pregnancy is critical for pregnant women (McGowan & McAuliffe, 2012).

Pregnancy is the most crucial nutritionally demanding period of every woman's life. The high demand of nutrients to deposit energy in the form of new tissue, growth of existing maternal tissues such as breast and uterus and increased energy requirements for tissue synthesis makes pregnant women more vulnerable to malnutrition (Goldberg, 2002; Amanuel & Tona, 2018). In 2010, maternal and child under-nutrition was responsible for 1.5 million mortalities in the world (Lim, Vos, Flaxman, Danaei, Shibuya & Adair-Rohani, 2012). A serious problem of maternal under nutrition is evident in most countries in Sub-Saharan Africa, South-central and Southeastern Asia (Black, Allen, Bhutta, Caulfield, de Onis, Ezzati & Mathers, 2013). Malnutrition during pregnancy yield both short and long-term effects on the health of an infant by programming the infant's development and associated with risk of non-communicable diseases such as obesity, type 2 diabetes, hypertension and cardiovascular disease in later life (Koletzko, Brands & Poston, 2012). Malnourished mothers are more vulnerable to diseases, encounter more miscarriages and give birth to underweight children whose survivals are at risk.

Dietary practice is defined as observable actions or behavior of dietary habit and can be classified as having good dietary practices and poor dietary practices. The incidence of dietary inadequacies as a result of dietary habits and patterns in pregnancy is higher during pregnancy when compared to any other stage of the life cycle. Different scholars discovered that many women in developing countries restrict their food intake during pregnancy for different reasons such as to have smaller infants because smaller infants will carry a lower risk of delivery complications, cultural reason and perceived severity of delivery complications because big babies make delivery difficult (Daba, Beyene, Fekadu & Garoma, 2013; Kuche, Singh & Moges, 2015). Thus, low intake of essential nutrients such as protein, energy, vitamins C, Vitamin A and iron due to inappropriate nutrition practices together with environmental factors, socioeconomic factors and infections are common causes of maternal mortality, low birth weight and intrauterine growth retardation (Tena & Bacalo, 2002; Madhavi & Singh, 2011).

Adequate prenatal nutrition is a critical component of healthy growth and development and brain development is particularly sensitive to adequate proteins and lipids (Walker, 2005). A number of studies have showed associations between nutritional intake during pregnancy and behavioral and emotional functioning in offspring in humans (Liu & Raine, 2006). However, such studies have been limited because, although better nutrition can be experimentally manipulated, poor nutritional intake cannot be experimentally manipulated. Because correlates of poor nutrition such as low-income status, substance use, and maternal physical and mental health problems are also associated with poor

developmental outcomes for the offspring, confirming or refuting the role of prenatal nutrition in neurodevelopment in the human has been challenging.

Poor glycaemic control in diabetic mothers is associated with numerous serious effects, including a three-fold increase in congenital malformations as well as increases in miscarriage rates and perinatal mortality, compared to those with optimal glycaemic control (Scholl, Chen, Khoo & Lenders, 2004). The associated high glucose levels seen in these individuals also put them at an elevated risk for greater foetal and placental growth, leading to an increased risk for cesarean section deliveries (King, 2006; Nordin, Wei, Naing & Symonds, 2006). As well, there is an elevated risk for pre-eclampsia, a condition that puts both the mother and child at risk. At the other end of the spectrum, a low carbohydrate intake in pregnancy has a restrictive effect on foetal growth, indicating that maintenance of glucose levels within the normal range is important for optimal pregnancy outcome (Clapp, 2002).

One of the goals of the metabolic adaptations to foetal malnutrition appears to be to spare the brain from the effects of an inadequate nutrient supply as much as possible. As the body attempts to adapt to reduced caloric intake by reducing rates of metabolism, it is hypothesized that decreased cerebral metabolism is maintained after birth. Epidemiological studies have shown neurological, emotional and cognitive effects of prenatal malnutrition (Calder, 2002). A decrease in dendritic numbers was noted in malnourished offspring (Burdge, Dunn, Wootton & Jackson, 2002). This decline could be associated with a decreased blood flow due to reduced nutrient supply (Calder, 2000). A diet unbalanced in fatty acids can affect the foetal transfer of essential fatty acids. For example, improper fat intake has been reported to have adverse cerebral effects with decreased docosahexaenoic acid levels due to reduced foetal transfer (Nielsen, Norgard, Puho, Rothman, Sorensen & Czeizel, 2005).

Pregnancy poses a significant risk for malnutrition because extra nutrients are needed to support the growth of the developing foetus (WHO, 2011). Food insecurity and malnutrition continue to be a challenge worldwide and developing countries are the most affected (Davis, Chang, Mancini, Nathanson, Witter & O'Brien, 2010). In developing countries, micronutrient deficiencies are predominant among women of reproductive age, with numerous unfavourable effects on women's health, work, and survival (Black, Victora, Walker, Bhutta, Christian & De Onis, 2013). To lessen the causes of malnutrition globally, the first two goals of the Sustainable Development Goals (SDGs) seek to reduce poverty and end all forms of malnutrition and hunger by 2030 (Johnston, 2016). One major contributor to maternal malnutrition in developing countries according to a systemic review of 62 studies carried out in developing countries is inadequate dietary intake mainly due to inadequate quantity, quality and diversified diets, poverty, high-intensity agricultural labor, and high fertility rate (Lee, Talegawkar & Merialdi, 2013). Accordingly, findings revealed that inadequate intakes of macronutrients and micronutrients in pregnant women are common due to their typically monotonous diets, based largely on plants or cereals and deficient of micronutrient dense foods such as vegetables, fruits and animal sources (Lee, et al, 2013). Dietary diversity is one of the recommended strategies to improve maternal diet and prevent malnutrition, through increased daily intake of the various food groups in one's diet (Desta, Akibu, Tadesse & Tesfaye, 2019).

According to Nigeria Demographic and Health Survey (NDHS), the prevalence of undernutrition and overnutrition among women aged 15 to 49 years in Nigeria are 11% and 25%, respectively. Although the World Health Organization (WHO) and Food and Agricultural organization of the United Nations (FAO) recommend consumption of at least two servings of fruits and three servings of vegetables per day, approximately 16.0 million (1.0%) disability-adjusted life years and 2.8% of deaths worldwide (1.7 million) have been attributed to low fruits and vegetable consumption. Most pregnant women in Nigeria have been shown to consume vegetables but almost half of them still avoid eggs, fish, meat, and chocolate beverage which are high in protein needed by the fetus because of taboos. Maternal

and child undernutrition is highly prevalent in low and middle-income countries, resulting in substantial increases in mortality and overall disease burden (Olatona et al., 2021).

Olatona et al., (2021) pointed out that, in Nigeria, 32% of children younger than five years are stunted, 3.5% are severely wasted, 20.2% are underweight. More than a third of child deaths and 11% of the total disease burden worldwide are due to maternal and child under nutrition. Maternal under nutrition increases the probability of poor pregnancy outcomes and contributes to at least a fifth of maternal death globally. According to World Food Program, approximately half of all pregnant women in developing countries are anemic which causes about 110,000 deaths during childbirth each year. Moreover, underweight babies from malnourished mothers are 20% more likely to die before the age of five. Other causes of maternal death are all strongly associated with maternal malnutrition.

A baby, who dies after 28 weeks of pregnancy, but before or during birth, is classified as a stillbirth. There are nearly 2 million stillbirths every year – one every 16 seconds. Over 40% of all stillbirths occur during labour – a loss that could be avoided with improved quality and respectful care during childbirth including routine monitoring and timely access to emergency obstetric care when required. Experiencing a stillbirth during pregnancy or childbirth is a tragedy insufficiently addressed in global agendas, policies and funded programmes. There are psychological costs, especially to women and their families, such as maternal depression, financial consequences and economic repercussions, as well as stigma and taboo. In 2014, the World Health Assembly endorsed the Every Newborn Action Plan (ENAP), which includes a global target of 12 or fewer third trimester (late) stillbirths per 1,000 total births in every country by 2030. In 2021, 139 mainly high-income and upper middle-income countries had met this target, but 56 countries will not reach the ENAP target by 2030 if further efforts are not made. If current trends continue, 15.9 million babies will be stillborn; nearly half of these (7.7 million, 48%) will occur in sub-Saharan Africa (WHO, 2023).

Statement of Problem

Pregnancy is a period when nutrient intake is extremely important to meet the mother's usual requirements, needs of the growing fetus, and to store nutrients required for fetal development and lactations. So, better nutrition is related to improved infant, child, and maternal health, stronger immune systems, safer pregnancy and childbirth, lower risk of non-communicable diseases (such as diabetes and cardiovascular disease), and longevity. Maintaining good nutrition and a healthy diet during pregnancy is essential for the health of both the mother and her child. Maternal malnutrition during pregnancy increases the risk of gestational anemia, obstructed labor, postpartum hemorrhage, preeclampsia, miscarriages, and fetal deaths during pregnancy, preterm delivery, and maternal mortality.¹ For the newborn, it can cause low birth weight, stillbirth, birth asphyxia, preterm birth, neonatal death, and fetal intrauterine growth retardation that may have long-life consequences on newborn development (Wagaye et al., 2021).

Inadequate nutrition during fetal development resulting from poor dietary habits leads to reprogramming within fetal tissues and poses as a risk factor for non-communicable diseases in later life. Pregnant women must get all essential nutrients and gain sufficient weight, the two main modifiable risk factors influencing maternal and infant outcomes. Appropriate nutrition and weight gain benefits pregnant women to meet the demands of her offspring, her own body needs, and to prepare her body for lactation. Low weight gain during pregnancy is risk factors for the delivery of infants too small for gestational age leading to neonatal mortality and morbidity, failure to grow, slow cognitive development and chronic diseases in adulthood (Amanuel & Tona, 2018).

Meanwhile limited studies have examined the implications of poor dietary practices on pregnancy outcomes in Nigeria. Maternal dietary practices during pregnancy play an

important role in determining the long-term health and nutritional status of both the mother and her growing fetus. Poor dietary practices during pregnancy may result in increased rates of stillbirths, premature birth, low birth weight, maternal and prenatal death. Thus, this study was aimed to assess the implications of poor dietary practices on pregnancy outcomes among women in Ilorin South Local Government Area, Kwara State.

Research Questions

The following research questions were tested;

1. Will premature birth be an implication of poor dietary practices on pregnancy outcomes as perceived by women in Ilorin South LGA, Kwara State?
2. Will maternal mortality be an implication of poor dietary practices on pregnancy outcomes as perceived by women in Ilorin South LGA, Kwara State?
3. Will still birth be an implication of poor dietary practices on pregnancy outcomes as perceived by women in Ilorin South LGA, Kwara State?

Methodology

The research design used for the study was a descriptive research design of survey type. The population for the study comprises of all women of reproduction age (15-45 years) in Ilorin South Local Government Area, Kwara State. A multi stage sampling technique was used for the study. At stage one, simple random sampling technique was used to select one ward out of 11 wards in the study area, this was done through balloting which involves choosing one of the wrap paper by one of the research assistants. Akanbi V ward was chosen which has 6599 women of reproductive age. Stage two, proportionate sampling technique was used to sample 198 respondents from Akanbi V ward using 3% of the population. Stage three, purposive sampling procedure was used to select one health centre that has the highest number of registered mothers in the selected ward which is Kulende Primay Health Care Centre. Stage four, accidental sampling technique was used to select one hundred and ninety-eight respondents that were participated in the study. The instrument used for the study was a researcher-developed questionnaire validated by three experts in a related field and tested for reliability. The test-retest method was used to obtain the reliability of the instrument. Pearson Product Moment Correlation was used to obtain a correlation coefficient result of $r = 0.76$. The researcher administered the instrument with the help of the three trained research assistants. Descriptive statistics of frequency counts and percentages was used to analyse the research questions used for the study at 0.05 alpha level of significance.

Results

Testing of Research Questions

Research Question 1: Will premature birth be an implication of poor dietary practices on pregnancy outcomes as perceived by women in Ilorin South LGA, Kwara State?

Table 1: Premature birth as an implications of poor dietary practices on pregnancy outcomes

S/N	ITEMS	SA	A	Positive Response	D	SD	Negative Response
1	Suboptimal nutritional status may make the growing foetus more vulnerable to harmful environmental exposures	77 (38.9%)	79 (39.9%)	156 (78.8%)	31 (15.6%)	11 (5.6%)	42 (21.2%)
2	Taking a regular diet during pregnancy lead	66 (33.3%)	87 (43.9%)	153 (77.2%)	38 (19.2%)	7 (3.5%)	45 (22.7%)

3	to premature birth Unbalanced nutrition during pregnancy for babies result in premature birth	75 (37.9%)	95 (48.0%)	170 (85.9%)	25 (12.6%)	3 (1.5%)	28 (14.1%)
4	Insufficient dietary intake during pregnancy for babies leads to premature birth	58 (29.3%)	96 (48.5%)	154 (77.8%)	34 (17.2%)	10 (5.1%)	44 (22.3%)
	Mean			158 (79.8%)			40 (19.2%)

Table 1 shows that the mean values of positive response 158 (79.3%) is greater than the mean value of negative response 40 (19.2%). Therefore, the results indicated that poor dietary practice is an implication of premature birth on pregnancy outcomes as perceived by women in Ilorin South LGA, Kwara State.

Research Question 2: Will maternal mortality be an implication of poor dietary practices on pregnancy outcomes as perceived by women in Ilorin South LGA, Kwara State?

Table 2: Maternal mortality as an implication of poor dietary practices on pregnancy outcomes

S/N	ITEMS	SA	A	Positive Response	D	SD	Negative Response
5	Insufficient dietary intake can be linked to maternal mortality.	98 (47.5%)	63 (31.8%)	161 (79.3%)	22 (11.1%)	15 (7.6%)	37 (18.7%)
6	Smoking during pregnancy cause maternal mortality.	89 (44.9%)	73 (36.9%)	162 (81.8%)	27 (13.6%)	9 (4.5%)	36 (18.1%)
7	Consumption of fish and other sea food that contain omega fatty acids, especially during pregnancy help to prevent maternal mortality.	90 (45.4%)	70 (35.4%)	160 (80.8%)	30 (15.1%)	8 (4.0%)	38 (19.1%)
8	Increase risk of micronutrient deficiency during pregnancy lead to maternal mortality.	110 (55.6%)	63 (31.8%)	173 (87.4%)	19 (9.6%)	6 (3.0%)	25 (12.6%)
	Mean			164 (82.8%)			34 (17.2%)

Table 2 shows that the mean values of positive response 164 (82.8%) is greater than the mean value of negative response 34 (17.2%). Therefore, the results indicated that poor dietary practice is an implication of maternal mortality on pregnancy outcomes as perceived by women in Ilorin South LGA, Kwara State.

Research Question 3: Will still birth be an implication of poor dietary practices on pregnancy outcomes as perceived by women in Ilorin South LGA, Kwara State?

Table 3: Still birth as an implication of poor dietary practices on pregnancy outcomes

S/N	ITEMS	SA	A	Positive Response	D	SD	Negative Response
9	Taking a regular diet during pregnancy result to still birth	85 (42.9%)	87 (43.9%)	172 (86.8%)	24 (12.1%)	2 (1.0%)	26 (13.1%)
10	Smoking can lead to stillbirths	76 (38.4%)	91 (46.0%)	167 (44.4%)	24 (12.1%)	7 (3.5%)	31 (15.6%)
11	Alcohol intake during pregnancy results to stillbirth	99 (50.0%)	60 (30.3%)	159 (80.3%)	23 (11.6%)	16 (8.1%)	39 (19.7%)
12	Low intake of micronutrients during pregnancy leads to still birth	71 (35.9%)	94 (47.5%)	165 (83.4%)	25 (12.6%)	8 (4.0%)	33 (16.6%)
	Mean			166 (83.8%)			32 (16.2%)

Table 3 shows that the mean values of positive response 166 (82.8%) is greater than the mean value of negative response 32 (16.2%). Therefore, the results indicated that poor dietary practice is an implication of still birth on pregnancy outcomes as perceived by women in Ilorin South LGA, Kwara State.

Discussion of Findings

The result of the tested research question one shows that the mean value of positive response higher than the mean value of negative response. Majority of the respondents 158 (79.3%) agreed that premature birth is an implication of poor dietary practices on pregnancy outcomes. Therefore, this implies that premature birth is an implication of poor dietary practices on pregnancy outcomes as perceived by women in Ilorin South Local Government Area, Kwara State. This finding is in line with view of Lee, et al, (2013) which indicates that maternal diets before and during pregnancy could influence rates of preterm birth, low birth weight (LBW) and Small for Gestational Age (SGA) births. Also, Grieger et al.,(2014) pointed out that preterm birth is a leading cause of infant disease and death and occurs in approximately one in 10 pregnancies globally. Researchers have confirmed that women who eat a poor diet before they become pregnant are around 50% more likely to have a preterm birth than those on a healthy diet. The study shows that women who consistently ate a diet high in protein and fruit prior to becoming pregnant were less likely to have a preterm birth, while those who consistently ate high fat and sugar foods, and take-out food were about 50% more likely to have a preterm birth. More so, Amanuel &Tona, (2018) argued that maternal dietary practices during pregnancy play an important role in determining the long-term health and nutritional status of both the mother and her growing fetus. Poor dietary practices during pregnancy may result in increased rates of stillbirths, premature birth, low birth weight, maternal and prenatal death.

The result of the tested research question two shows that the mean value of positive response higher than the mean value of negative response. Majority of the respondents 164 (82.8%) agreed that maternal mortality is an implication of poor dietary practices on pregnancy outcomes. Therefore, this reveals that maternal mortality is an implication of poor dietary practices on pregnancy outcomes as perceived by women in Ilorin South Local Government Area, Kwara State. This finding support the view of Madhavi and Singh (2011) who noted that low intake of essential nutrients such as protein, energy, vitamins C, Vitamin

A and iron due to inappropriate nutrition practices together with environmental factors, socioeconomic factors and infections are common causes of maternal mortality, low birth weight and intrauterine growth retardation. Also, Lim, Vos, Flaxman, Danaei, Shibuya and Adair-Rohani (2012) pointed out that maternal and child under-nutrition was responsible for 1.5 million mortalities in the world. More so, Amanuel and Tona (2018) opined that the incidence of dietary inadequacies as a result of dietary habits and patterns in pregnancy is higher during pregnancy when compared to any other stage of the life cycle. Many women in developing countries restrict their food intake during pregnancy for different reasons such as to have smaller infants because smaller infants will carry a lower risk of delivery complications, cultural reason and perceived severity of delivery complications because big babies make delivery difficult. Thus, low intake of essential nutrients such as protein, energy, vitamins C, Vitamin A and iron due to inappropriate nutrition practices together with environmental factors, socioeconomic factors and infections are common causes of maternal mortality, low birth weight and intrauterine growth retardation

The result of the tested research question three shows that the mean value of positive response higher than the mean value of negative response. Majority of the respondents 166 (82.8%) agreed that still birth is an implication of poor dietary practices on pregnancy outcomes. Therefore, the null hypothesis three was rejected. This implies that still birth is an implication of poor dietary practices as perceived by women in Ilorin South Local Government Area, Kwara State. This finding is supported by Zepro (2015) who reported that avoidance of honey, oranges and pineapples in Ethiopia for reasons linked to having a baby with discoloured skin; inducement of abortion or stillbirth. Also, Wagaye et al (2021) posited that malnutrition in every form presents a significant and complex problem across the world. Today the world faces a double burden of malnutrition that includes both undernutrition and overweight, especially in low-and middle-income countries. Maternal undernutrition in low and middle-income countries causes more than 3.5 million maternal and under-five children to death and permanently disabled by the physical and mental effects of a poor dietary intake in the earliest months of life. It also contributes to 800,000 neonatal deaths annually and stunting, wasting, and micronutrient deficiencies are estimated to cause nearly 3.1 million child deaths annually.

Conclusion

Based on the findings of this study, the following conclusions were made:

1. Premature birth is an implication of poor dietary practices on pregnancy outcomes as perceived by women in Ilorin South Local Government Area, Kwara State.
2. Maternal mortality is an implication of poor dietary practices on pregnancy outcomes as perceived by women in Ilorin South Local Government Area, Kwara State.
3. Still birth is an implication of poor dietary practices on pregnancy outcomes as perceived by women in Ilorin South Local Government Area, Kwara State.

Recommendations

Based on the research work, the following recommendations were made:

1. The health educators should educate pregnant women on the importance of maintaining proper adequate dietary intake to avoid premature birth.
2. The local government health department should carry out enlightenment programme through mass media on implications of poor dietary practices on pregnant women to protect the lives of both mothers and their babies.
3. Nutritionist should educate pregnant women on importance of adequate nutritional intake to prevent still birth.

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