

## **Original Research Article**

### **EFFECT OF MATERNAL AGE AND OCCUPATION ON FEEDING HABITS AND NUTRITIONAL STATUS OF UNDER FIVE CHILDREN IN KIBIYA AND DALA LOCAL GOVERNMENT AREAS, KANO-NIGERIA.**

#### **Abstract**

**Objective:** The objective of this study focused on the effect of maternal Occupation and Age on feeding habit, and nutritional status of under- five children in Kibiya (rural) and Dala (Urban) local government areas of Kano State Nigeria,

**Study design:** A descriptive research design was adopted by this study to assess the level of nutritional status of under-five-children and to determine the relationship between age, occupation, economic status, attitudes and practices of mothers. Structured questionnaire was used to collect data on nutritional status, knowledge, attitudes and nutrition-related practices for a limited time period.

**Place and duration of the study:** The study was conducted in two local government areas in Kano State, DALA and KIBIYA LGA, between February, 2019 to July, 2019.

**Methods:** Descriptive research design was used for data collection. 198 and 170 mothers with their children from Kibiya and Dala respectively, were used for the study. Data generated was analyzed using Spss, Excel and was presented using frequency table, percentage, mean, standard deviation and correlation.

**Results:** In Kibiya, there was a very weak, positive correlation between maternal age under-five nutritional status with the exception of weight-for-height, which was found to be statistically significant ( $p < 0.005$ ). In Dala, the relationship was a very weak negative correlation with the exception of height-for-age which is positive correlated ( $p < 0.005$ ). Majority of the children were severely stunted with 44.1% in Dala and 56.1% in Kibiya, but there was no significant difference in the prevalence of severe stunting between the two LGAs. Furthermore, majority of the under-fives were within the range of adequate weight: 45.5% Dala and 58.2% Kibiya. However, the prevalence of severely underweight children in Kibiya is 11.2%. This is significantly higher compared to Dala with 2.4% which means severe underweight children in Kibiya is almost five times that in Dala. Prevalence of wasting (mild, moderate and severe) among under-five children were significantly higher in Dala compared to Kibiya ( $p < 0.01$ ).

**Conclusion:** The findings from this study shows that maternal Age is a significant factor that affect the nutritional status of the children in both local government but maternal Occupation has less impact on nutritional status of the children.

**Key words:** Age, Occupation, Nutritional status, Children under five.

## **1. INTRODUCTION**

Nutritional deficiencies and malnutrition generally affect children more than any other group. Poor nutrition occurs in developing countries, as well as in more prosperous areas of the world. WHO Progress Report (2002) indicates that hunger and malnutrition remain the most devastating problems to the world's poor and needy [1]. More than half the childhood deaths in developing countries are related to malnutrition [2]. Nearly 30% of humanity suffers from one or more of the multiple forms of malnutrition [3]. Child growth is therefore internationally recognized as an important public health indicator.

Under nutrition is not simply as a result of food insecurity. Many children in food secure environments and from fair socio-economic backgrounds are undernourished probably as a result of inadequate knowledge of breast feeding and complementary foods, age of the mother, maternal and paternal occupation, poor feeding practices and food restrictions due to cultural beliefs. These factors are often greater determinants of malnutrition than even the food availability itself.

In addition to predisposing children to death, under nutrition affects their immune system predisposing them to infections and if the under nutrition is not addressed early and corrected, these children could suffer irreversible physical and cognitive damage thereby impacting their future health, welfare and economic well-being. Prevention of under nutrition would be averting at least one third of childhood mortality and morbidity.

Mothers are the main caregivers and play important role in prevention of under nutrition. Unable to look after themselves which maybe as a result of lack of experience due to early marriage(age less than 18years) and poor source of income which is mostly common in northern part of Nigeria. The children completely depend on their mothers for their nourishment which is limited to what their mothers provide. The objective of this study focused on the effect of maternal Occupation and Age on feeding habit, and nutritional status of under- five children in Kibiya (rural) and Dala (Urban) local government areas of Kano State Nigeria,

## **2.0 MATERIALS AND METHODS**

### **2.1 Materials**

A weighing scale to take the child weight, stadiometer to measure the child length, MUAC tape, a measuring tape to know the head and chest circumference was used for anthropometric data.

### **2.2 Study Area**

The study was conducted in two local government areas in kano state, DALA and KIBIYA LGA.

### **2.3 Research design**

A descriptive research design was adopted by this study to assess the level of nutritional status of under-five-children and to determine the relationship between age, occupation, economic status, attitudes and

practices of mothers. Structured questionnaire was used to collect data on nutritional status, knowledge, attitudes and nutrition-related practices for a limited time period.

## 2.4 Study population

The population of the study area in Dala LGA consisted of 418,759 population. Alh. Ibrahim Suleiman Dan'isle (Head of the Local Government Council), While kibiya, has an area of 404 km<sup>2</sup> and a population of 138,618 at the 2006 census from National Population Commission Kano.

Dala LGA.	KIBIYA LGA
Gender (C 2006)	Gender (C 2006).
Male: 237,943	Male: 70,942
Female: 180816	Female: 67676

### 2.4.1 Sample Size

The sample size for Dala and Kibiya LGA were determined using Yamane Formula

$$n = \frac{N}{1 + N(e)^2}$$

Where:

N= population size

n = sample size

e = the acceptable error = 7%

## 2.5. Measurement and data collection

The instrument was able to obtain information based on the specific objectives constructed by the researcher. The anthropometric measurement was taken using World Health Organization [4] acceptable standard. The instrument for weight measurement was bathroom scale. The scale was adjusted to zero and the subject made to climb without shoes, wrist watch, cap and other things. A structured and comprehensive questionnaire was prepared in English language. The questionnaire was administered to the respondents.

## 2.6 Data analysis

Data from the questionnaire and Measurements were checked for completeness and consistency over the period of the research. Data were then analyzed using SPSS statistical software and Microsoft office. Excel 2010 were used for data analysis and plotting graphs. Descriptive statistics such as frequency, percentage, mean and standard deviation and correlation were used to describe dependent and independent variables. Regression analysis had been used to check for association between dependent and independent variables. In all cases P value less than 0.05 was considered statistically significant.

### 3.0 RESULTS AND DISCUSSION

#### 3.1 Results

A total of 366 women participated in the study: 170 from Dala Local Government Area (LGA) and 196 from Kibiya LGA. The age of the participants ranged from 13 to 50 years. Table 1 shows that majority of the women were aged between 18 to 24 years, however, the mean age of mothers in Kibiya was significantly lower compared to those in Dala: 18.9% of mothers in Kibiya were aged 18 years and below compared with 0.6% of mothers in Dala ( $p < 0.01$ ). 12.3% of mothers in Kibiya had given birth more than 7 times. This was significantly higher than the percentage of mothers in Dala who have had more than 7 births (4.7%,  $p = 0.00$ ).

Majority of the index children were males (58.2%). Dala had the highest proportion of male children accounting for 65.3% compared to Kibiya which had 52%. The opposite is the case for females, Kibiya having a significantly higher proportion of female children. With regards to age of the index children, those in Kibiya were significantly younger compared to those in Dala (Table 1).

**Table 1. Sociodemographic characteristics of mothers and under-five children in Dala and Kibiya Local Government Areas, Kano, 2019 (n = 366).**

Characteristics	Dala	Kibiya	P-value*
<b>Mothers' age (years)</b>	Frequency (%)	Frequency (%)	0.00
<18	1 (0.6)	37 (18.9)	
18 to 24	72 (42.6)	83 (42.3)	
25 to 30	74 (43.8)	39 (19.9)	
31 to 35	17 (10.1)	20 (10.2)	
>35	5 (3)	17 (8.7)	
<b>Mean (<math>\pm</math>Sd) age</b>	25.98 ( $\pm$ 4.54)	24.28 ( $\pm$ 7.54)	0.01
<b>Parity</b>			0.00
1 to 2	44 (25.9)	81 (41.5)	
3 to 4	91 (53.5)	51 (26.2)	
5 to 7	27 (15.9)	39 (20)	
>7	8 (4.7)	24 (12.3)	
<b>Index child gender</b>			0.01
Male	111 (65.3)	102 (52)	
Female	59 (34.7)	94 (48)	
<b>Index child age (month)</b>			0.01
$\leq 6$	14 (8.2)	26 (13.3)	
7 to 12	33 (19.4)	57 (29.1)	
13 to 18	16 (9.4)	22 (11.2)	
19 to 24	39 (22.9)	46 (23.5)	
25 to 36	38 (22.4)	24 (12.2)	
>36	30 (17.6)	21 (10.7)	
<b>Mean age</b>	24.61 ( $\pm$ 13.35)	19.65 ( $\pm$ 13.28)	0.00
<b>Mean fathers' age</b>	34.77 ( $\pm$ 7.08)	35.59 ( $\pm$ 9.68)	0.37

\*P-value determined using Chi-square and T-test for categorical and continuous variables respectively.

Though majority of the participants were first wives in their homes, Kibiya had a significantly higher proportion of mothers who rank 2<sup>nd</sup> or 3<sup>rd</sup> in their homes which is 28.4% compared to 8.2% in Dala. Majority of the mothers have received formal education up to primary (n = 139, 38%) and secondary level (n = 119, 32.5%). Among those who had no formal education, Kibiya had a significantly higher proportion accounting for 39.3% compared to 4.1% of the mothers in Dala. Concerning mother's occupation, majority are traders (n = 145, 39.6%), closely followed by housewives (n = 93, 25.4%). The difference in maternal occupation between the two LGAs was not statistically significant.

Concerning their husband's educational status, a significantly higher proportion of husbands without formal education was found in Kibiya: 47.4% compared to 5.3% in Dala. On the other hand, 58% of husbands in Dala have received post-secondary education. This is significantly higher than their counterparts in Kibiya – 8.7%. The major occupation of husbands in Kibiya was farming (86.1%), while that of Dala was business (67.5%). The difference in husband's major occupation between the two LGAs was statistically significant (Table 2).

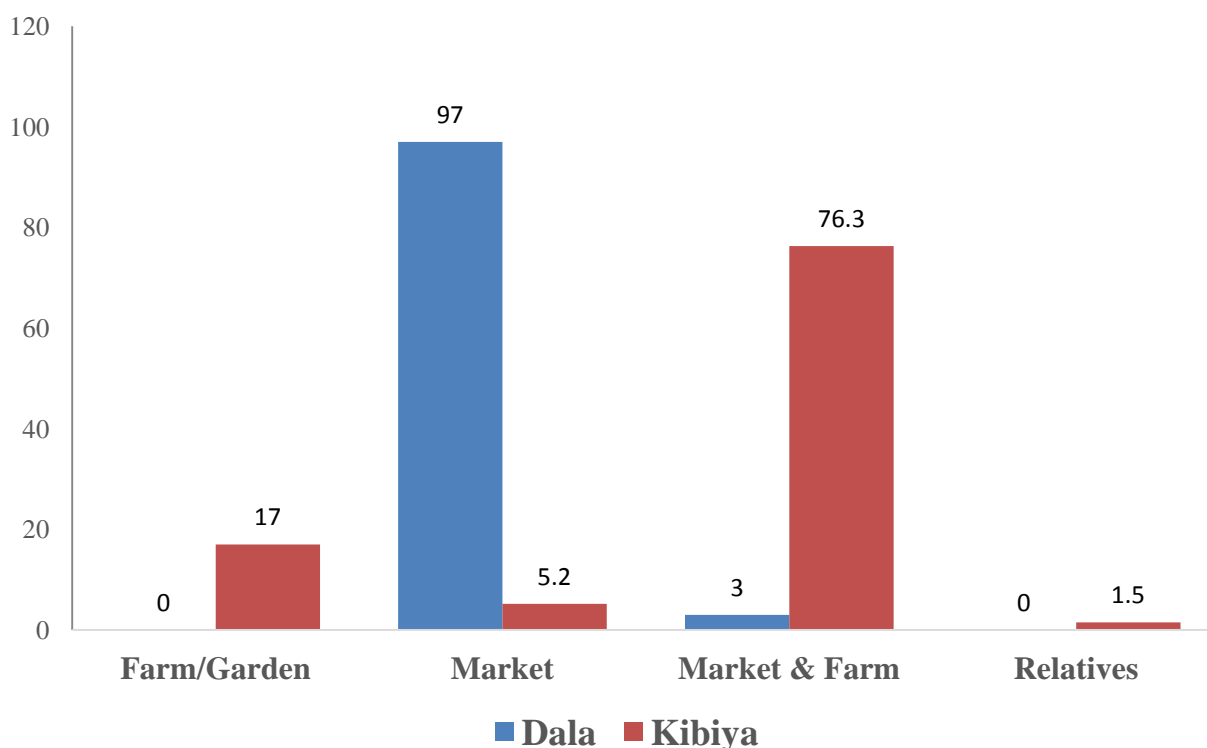
**Table 2. Socioeconomic characteristics of mothers and their husbands in Dala and Kibiya LGA, Kano, 2019 (n =366).**

<b>Characteristics</b>	<b>Dala</b>	<b>Kibiya</b>	<b>P-value</b>
<b>Number of wives</b>	n (%)	n (%)	0.00
<b>One</b>	132 (77.6)	78 (39.4)	
<b>Two</b>	31 (18.2)	79 (39.9)	

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<b>Three</b>	7 (4.1)	31 (15.7)	
<b>Four</b>	0 (0.00)	10 (5)	
<b>Rank among wives</b>	1 (1)	2 (1 to 2)	0.00
<b>First</b>	156 (91.8)	139 (71.6)	
<b>Second and above</b>	14 (8.2)	55 (28.4)	
<b>Mother's Edu. Level</b>			0.00
<b>No formal Edu.</b>	7 (4.1)	77 (39.3)	
<b>Primary</b>	38 (22.4)	101 (51.5)	
<b>Secondary</b>	106 (62.4)	13 (2.6)	
<b>Post-secondary</b>	19 (11.2)	5 (2.6)	
<b>Mother's occupation</b>			0.19
<b>Housewife</b>	59 (35.5)	34 (25.4)	
<b>Business</b>	78 (53.8)	67 (46.2)	
<b>Public service</b>	7 (4.2)	10 (7.5)	
<b>Artisan</b>	22 (13.3)	23 (17.2)	
<b>Father's Edu. Level</b>			0.00
<b>No formal Edu.</b>	9 (5.3)	93 (47.4)	
<b>Primary</b>	23 (13.6)	54 (27.6)	
<b>Secondary</b>	39 (23.11)	32 (16.3)	
<b>Post-secondary</b>	98 (58)	17 (8.7)	
<b>Father's occupation</b>			0.00
<b>Farming</b>	4 (2.4)	167 (86.1)	
<b>Public service</b>	15 (8.9)	11 (5.7)	
<b>Business</b>	114 (67.5)	11 (5.7)	
<b>Artisan</b>	36 (21.3)	5 (2.6)	

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**Figure 1: Main source of food for mothers in Dala and biya LGA Kano, 2019.**

Feeding habit reported revealed that majority of the mothers do not practice exclusive breastfeeding: the proportion being significantly higher among mothers in Dala. Amongst mothers who practice exclusive breastfeeding, a significantly higher proportion were from Kibiya (table 3). The index children were breastfed for a mean duration of 15.17 (SD:5.11) months and 13.08 (SD:7.20) months by mothers in Dala and Kibiya respectively.

Majority of the mothers (n = 229, 62.6%) could not give a reason for stopping breastfeeding. 111 (30.3%) reported that the child was too old/matured. The remaining indicated that the child wished to eat. There was a significant difference between reasons given by mothers in Dala and Kibiya as presented in table 3. Question which assessed the knowledge of breastfeeding showed that mothers in Kibiya possess poor knowledge compared to their counterparts in Dala.

**Table 3. Knowledge and practice of breast feeding among mothers in Dala and Kibiya (n = 366)**

Variables	Dala	Kibiya	P-value
<b>Breastfeeding Status</b>	n (%)	n (%)	0.00
<b>Currently breastfeeding</b>	100(58.8)	118(59.6)	
<b>Stopped breastfeeding</b>	70 (41.2)	80 (40.4)	
<b>Mean (<math>\pm</math>SD) duration of breastfeeding (months)</b>	15.17 ( $\pm$ 5.11)	13.08 ( $\pm$ 7.20)	0.00
<b>Reason for stopping breastfeeding</b>			

<b>Child wish to eat</b>	0 (0.00)	24 (12.4)	
<b>Child is matured</b>	69 (40.6)	42 (21.6)	
<b>No reason</b>	101 (59.4)	128 (66)	
<b>Appropriate time to introduce babies to food is from 6 months</b>			0.00
<b>Correct</b>	167 (98.2)	173 (89.2)	
<b>Incorrect</b>	3 (1.8)	21 (10.8)	
<b>From 6 months and above, breast milk alone cannot supply all the nutrient required for growth</b>			0.00
<b>Correct</b>	170 (100)	170 (86.7)	
<b>Don't know</b>	0 (0.00)	26 (13.3)	

\*P-value determined using Chi-square and T-test for categorical and continuous variables respectively

Child nutritional status indicators: height-for age (HAZ), weight-for-age (WAZ) and weight-for-height (WHZ) were calculated using WHO igrowup z-scores calculator ([https://apps.cpep-gcep.net/igrowup\\_cpeg/](https://apps.cpep-gcep.net/igrowup_cpeg/)). The mean score for Height-for-Age and Weight-for-Height were significant different between the two local government areas. Under-five children in Kibiya were more stunted than their counterparts in Dala. On the other hand, under-five children at risk of wasting were more in Dala compared to Kibiya. The mean score for Weight-for-Age (underweight) in Dala and Kibiya did not significantly differ from each other (table 4).

**Table 4. Average z-scores for Height-for-Age (HAZ), Weight-for-Age (WAZ) and Weight-for-Height (WHZ) for under-five children in Dala and Kibiya LGA Kano, Nigeria (n = 366)**

Indicators	Dala			Kibiya			t-value	P-value
	N	Mean	SD	N	Mean	SD		
Height-for-Age(stunting)								
Male	111	-2.99	3.08	102	-4.15	3.56	2.56	0.01
Female	59	-2.53	2.34	94	-3.99	3.33	3.19	0.00
Total	170	-2.83	2.85	196	-4.08	3.44	3.79	0.00
Weight-for-Age(underweight)								
Male	111	-1.16	1.15	102	-0.78	1.92	1.71	0.09
Female	59	-0.57	1.03	94	-0.69	2.03	0.49	0.62
Total	170	-0.96	1.14	196	-0.74	1.97	1.29	0.20



## Weight-for-Height (wasting)

Male	108	0.66	2.46	97	2.53	+	4.19	3.83	0.00
Female	58	1.14	2.50	88	2.73		4.10	2.91	0.00
Total	166	0.83	2.48	185	2.62		4.14	4.99	0.00

Z-scores for child nutritional status indicators were classified according to WHO child growth standards (2006) into Adequate, Mild, Moderate and Severe [5].

Majority of the children were severely stunted: Dala had 44.1% (95% CI=36.6% to 51.6%), while Kibiya had 56.1% (95% CI=49.1% to 63%). But there was no significant difference in the prevalence of severe stunting between the two LGAs (table 5).

Furthermore, majority of the under-fives were within the range of adequate weight: 45.5% Dala and 58.2% Kibiya. However, the prevalence of severely underweight children in Kibiya is 11.2% (95% CI=6.8% to 15.6%). This is significantly higher compared to Dala with 2.4% (95% CI=0.1% to 4.7%), that is the rate of severe underweight among under-five children in Kibiya is almost five times that in Dala (table 5).

Prevalence of wasting (mild, moderate and severe) among under-five children were significantly higher in Dala compared to Kibiya ( $p < 0.01$ ) (table 5).

**Table 5. Nutritional status of under-five children in Dala and Kibiya LGA Kano, (n = 366).**

Indicators	Dala (n=170)			Kibiya (n=196)			p-value
	N	prevalence	95% CI	N	prevalence	95% CI	
<b>Height for Age (stunting)</b>							0.11
<b>Adequate</b>	39	22.9%	16.6-29.2%	30	15.3%	10.3 - 20.3%	
<b>Mildly stunted</b>	26	15.3%	9.9-20.7%	25	12.8%	8.1-17.4%	
<b>Moderately stunted</b>	30	17.6%	11.8-23.3%	31	15.8%	10.6 - 20.9%	
<b>Severely stunted</b>	75	44.1%	36.6 - 51.6%	110	56.1%	49.1-63.0%	
<b>Weight for Age (underweight)</b>							0.00
<b>Adequate</b>	78	45.9%	38.4 - 53.4%	114	58.2%	51.3%-65.1%	

<b>Mildly underweight</b>	67	39.4%	32.1 - 46.7%	36	18.4%	13.0-23.8
<b>Moderately underweight</b>	21	12.4%	7.4 - 17.3%	24	12.2%	7.6%-16.8%
<b>Severely underweight</b>	4	2.4%	0.1 - 4.7%	22	11.2%	6.8%-15.6%
<b>Weight for Height (wasting) Adequate</b>						0.00
<b>Mildly wasting</b>	124	74.7%	68.2 - 81.2%	166	89.7%	85.4 - 93.9%
<b>Moderately wasting</b>	28	16.9%	1.5 - 7.1%	8	4.3%	1.5 - 7.1%
<b>Severely wasting</b>	10	6.0%	2.4% - 9.6%	4	2.2%	0.1-4.2%
	4	2.4%	0.1 - 4.7%	7	3.8%	1.1%-6.5%

The relationship between maternal age and nutritional status of under-five children (as measured by HAZ, WAZ and WHZ) was determined using Pearson correlation coefficient.

In Kibiya LGA, there was a very weak, positive correlation between maternal age and under-five nutritional status. This implies that lower the age of the mother, the lower the scores of each nutritional indicator, that is, younger mothers are more likely to have malnourished under-five children. With the exception of WHZ, this relationship was found to be statistically significant i.e. true of the population of mothers in Kibiya LGA ( $p < 0.05$ )(Table 6).

In Dala LGA, the relationship was a very weak negative correlation: younger mothers had under-five children with adequate nutritional status. The exception was HAZ (stunting) which had a positive correlation. Only with WHZ (wasting) was the relationship true of the population of mothers with under-five children in Dala LGA ( $p < 0.05$ ): younger mothers are less likely to have wasted under-five children (Table 6).

**Table 6. Correlation between maternal age and nutritional indicators for under-five children in Dala and Kibiya LGA Kano, 2019**

Nutritional indicators	Maternal age (years)	
	<i>r</i>	P-value

Dala LGA

<b>Height-for-Age</b>	0.127	0.10
Weight-for-Age	-0.065	0.40
Weight-for-Height	-0.159	0.04

#### Kibiya LGA

<b>Height-for-Age</b>	0.172	0.02
Weight-for-Age	0.207	0.00
Weight-for-Height	0.006	0.93

$r$ =Pearson correlation coefficient

A one way analysis of variance (ANOVA ) between-groups was conducted to explore the effect of maternal occupation on nutritional status of under-five children.

Table 7 shows that in Kibiya LGA, there was no statistically significant difference in nutritional status among the various categories of mother's occupation, in other words maternal occupation does not impact nutritional status of under-five children.

Concerning mothers in Dala LGA, among the three nutritional status indicators, only WHZ (wasting) recorded a significant difference among various categories of mother's occupation. Post-hoc comparisons test indicated that the mean score for women involved in trading (M = 1.25, SD = 2.71) is significantly different from women who are public servants (M = -1.56, SD = 0.45): business mothers have adequately nourished under-five children compared to mothers in public service.

**Table 7: Relationship between maternal occupation and nutritional indicators for under-five children in Dala and Kibiya LGA Kano,**

Maternal occupation	N	Mean	SD	F	P-value
<b>A) Dala LGA</b>		<b>Nutritional status</b>			
			<b>HAZ</b>	<b>0.41</b>	<b>0.74</b>
Housewife	59	-2.58	2.28		
Business	78	-2.96	2.48		
Public service	7	-4.39	7.37		
Artisan	22	-2.51	3.29		
WAZ	2.52	0.06			
Housewife	59	-1.16	1.07		

Business	78	-0.74	1.13		
Public service	7	-1.67	1.29		
Artisan	22	-0.97	1.18		
		<b>WHZ</b>		<b>5.72</b>	<b>0.00</b>
Housewife	58	0.36	2.23		
Business	77	1.25	2.71		
Public service	6	-1.56	0.45		
Artisan	21	1.08	2.00		
<b>B) Kibiya LGA</b>					
		<b>HAZ</b>		<b>0.38</b>	<b>0.76</b>
Housewife	34	-4.76	4.89		
Business	67	-4.03	3.43		
Public service	10	-4.24	2.20		
Artisan	23	-3.80	2.91		
		<b>WAZ</b>		<b>0.92</b>	<b>0.43</b>
Housewife	34	-0.19	1.73		
Business	67	-0.68	2.15		
Public service	10	0.14	1.92		
Artisan	23	-0.70	1.56		
		<b>WHZ</b>		<b>0.90</b>	<b>0.44</b>
Housewife	31	4.06	4.80		
Business	63	2.86	4.58		
Public service	10	4.32	5.28		
Artisan	23	2.52	2.97		

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HAZ=Height-for-Age, WAZ=Weight-for-Age, WHZ=Weight-for-Age

### 3.2 Discussion

#### 3.2.1 Socio-demographic characteristics of mothers and under-five children in Dala and Kibiya Local Government Areas

According to the results of this study, there are three factors that are likely to influence the nutritional status of the under-five-children. These are the age of the mother, child parity, and index child age (months). It was evident from the findings that the age of the mother had a strong relationship with the nutritional status of the child. Teenage pregnancy, mothers below age 18 years, might have been in the plight as a result of role identification crisis. This results from peer influences and wanting to be seen to be also capable of behaving like adult [6]. This psychological attitude exposes them to early sex. This is

not to suggest that they are not biologically prepared to conceive [7], rather, that they are socially and economically incapable of controlling and managing the demands of child rearing. Such young women may not have been married and therefore would gain little or no social and financial support from their partners. In addition to this social dynamics is the issue of the risk of given birth to an underweight child at that age if the necessary nutritional requirements during pregnancy are not met?

In the context of this study, children delivered by women of this age could be stunting, and underweight, a risk factor for malnutrition. The tendency to give birth at this teenage age may be attributed to several factors among which are social perspectives of the number of children that a woman should have, culture, and religion as it happens that all of the respondents are Muslims.

### **3.2.2 Maternal occupation and nutritional status of under-five-children**

It is evident that the occupation engaged by the respondent had an association ( $p=0.05$ ) with the nutritional status of the child. Even though this suggests that their earning patterns may affect the nutritional status of the child, it could not explain the phenomenon since it did not influence the nutritional status of the child. It could be that, at the relative youthful age, the mothers gets to engaged in work to be seen as responsible, unfortunately their earnings are not enough to reflect on the nutritional status of the children even though from their perspective the job is giving them adequate earnings. The figures from this study shows that there are no significant difference in maternal occupation and nutritional status of under-five-children, in other words maternal occupation does not impact nutritional status of under –five-children with the exception of Dala having wasting recorded for respondents who are public servants. In the study areas, women in their early reproductive age (16-30 years) rarely engage in wage earning employment. This is either due to cultural and religious practices or lack of employment opportunities. Most of the newly married mothers were in the category of housewives and were totally dependent on their husbands financially. Their status was determined to a large extent by their husbands or relatives who demanded that they stay at home as culturally and traditionally expected of new brides. The arrival of young children who need a lot of attention causes the mother to be at home most of the time, especially in the absence of an older sibling, extended family (e.g., grandmother) or an alternative caregiver. However, the pressure of increasing needs coupled with more demands from the extended families "forces" the mother to practice farming, business, public service or artisan. This agrees with [8] findings which state that farming among the Digo's is regarded as a form of indignity therefore it is usually carried out when a mother has little or no options. Older mothers who are no longer strictly tied down by the religious and cultural beliefs step out of their homes to engage in income generating activities. Older women in this muslim community are seen as being less socially threatening, so their husbands can allow them to go to the market to carry out their business while their younger counterparts are secluded and veiled [9]. Occupation status seems to be dynamic, depending on the age of mother and proximity to the market. On the other hand, some mothers were inhibited from getting involved with income generating activities by proximity to a market venue. In such a situation mothers tended to be involved in farming and

sold their farm produce like groundnut, beans, maize, millet and fruits when there was demand at a neighbouring market place. [10] found a similar trend in the marketing of cash crops at the coast. The latter depended on the presence of a market place. In some areas, households far from the market invested much of their resources in becoming better farmers because of the fertile land available. The main activities that business women got involved in rural community were mainly the selling of foodstuffs e.g., fried soya beans, groundnut, local rice and beans, kunun geda, sugar cane, local spaghetti, danwake and fruits. Most food preparations were done either late in the night (especially the yeast products i.e. waina that were left to ferment overnight, soya beans cake soya bean pap) or very early in the morning. This was possible because at such times the younger children were either asleep or being taken care of by the older siblings. The handicrafts were made when the mothers were selling at the market and during most free times at home.

### **3.2.3 Nutritional status of children in Dala and Kibya LGA**

Under nutrition is not simply as a result of food insecurity. Many children in food secure environments and from fair socio-economic backgrounds are undernourished probably as a result of inadequate knowledge of breastfeeding and complementary foods, age of the mother, maternal and paternal occupation, poor feeding practices and food restrictions due to cultural beliefs. These collective factors are often greater determinants of malnutrition than even the food availability itself. In addition to predisposing children to death, under nutrition affects their immune system predisposing them to infections and if the under nutrition is not addressed early and corrected, these children could suffer irreversible physical and cognitive damage thereby impacting their future health, welfare and economic well-being. Prevention of under nutrition would be averting at least one third of childhood mortality and morbidity. Nonetheless, how this relationship plays out among the urban poor compared with the rural poor has not yet been settled in scientific literature. Poverty has been identified as a major underlying factor for stunting in Nigeria [11]. With respect to this study it has been shown that occupation does not impact nutritional status of under five children with the exception of mothers in urban settlement who engage in public service had little significance difference in Dala ( $p=0.05$ ), which is similar to majority of work done on the same topic. This is due to the fact that mothers working as civil servant have fewer times for the care of their children. Most of the mothers have enough food to feed their children, but time constraint for child care has become a hindrance to good nutritional status. Mothers mostly left their children in day care and primary schools since morning up to evening time of which by then they are seriously tired and exhausted and have little time to concern about wellbeing of the children. Furthermore children are left with a female housekeeper' while the mother is not around the food left for the child is been eaten by the housekeeper or the proteinous part of the food leaving little or less nutritious part of the food for the child. Sometimes when the child is crying for food or maternal care, the caregiver tends to put her finger to baby's mouth to stop him from crying out, which reduces the child's immunity. At times the children were taken to family house in which they are fed with unhygienic food and contaminated water which makes them susceptible to

water-borne diseases such as cholera and non-communicable diseases. Similarly, in this study, the stunting level in the urban community was 3 times higher than in the rural community, where stunting level was lowest. This is contrary to the general notion that rural children are more disadvantaged than their urban counterparts in terms of nutritional status. Generally stunting is a serious problem that has been affected by under five children in both study areas.

#### 4.0 CONCLUSION

Conclusively, the findings from this study shows that maternal Age is a significant factor that affect the nutritional status of the children in both local governments. this is because, at the relative youthful age, the mothers gets to engaged in work to be seen as responsible, unfortunately their earnings are not enough to reflect on the nutritional status of the children even though from their perspective the job is giving them adequate earnings. But maternal Occupation has less impact on nutritional status of the children, probably due to variations in age of mothers and proximity to the market. On the other hand, some mothers were inhibited from getting involved with income generating activities by proximity to a market Ovenue.

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#### ETHICAL APPROVAL AND CONSENT

The permission to conduct the research was obtained from primary health care management board Kano. The participants were enlightened on the purpose of the study and their consent was required before data collection commenced.

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