

RURAL MIGRANT PARTICIPATION IN DECISION MAKING AND MALNUTRITION STATUS AMONG WOMEN IN NIGERIA

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Abstract

Nutritional status is crucial for both the mother's overall health and the outcome of the pregnancy. Everyone's health is dependent on proper nutrition and exercise, but women of childbearing age require these variables at an even larger rate. This study examined the rural migrant participation in decision making and malnutrition status among women in Nigeria. This study used women recode dataset from the 2018 Nigeria Demographic and Health Survey to analyze women's health (NDHS). The outcome variable was BMI that serves as a simple and inexpensive method of measuring body weight status for adult population. The explanatory variables of main interest were participation in making household decision whereby other confounders were women socio-demographic characteristics. The data were weighted before usage due to the cluster design sampling approach. Statistical analysis included descriptive analysis, Chi-square tests to ascertain significant association and Multinomial logistic regression model was employed in multivariate level to ascertain the relative risk associated with malnutrition at p-value less than 0.05 level of significant. The result shown that Rural-Urban migrant were more overweight/obese (36.5%) than Rural-Rural migrant (21.6%). Underweight is more common among the Rural-Rural migrant by 10.4% than Rural-Urban migrant (8.8%). Urban-Rural migrant women that participated in making decision on purchases were more at risk of been overweight/obese. Rural-Urban migrant women that participate in decision on health care were more at risk of been overweight/obese. Other factors were age, level of education, wealth status, ethnicity and mass media. This study enhanced evidence-based way to make Nigeria's migration health policy and programs about malnutrition. Health planners and policymakers should think about interventional measures when they come up with policies and programs for rural-urban migrant women who make household decisions about getting proper health care. There is also a need to teach women who live in rural areas and move between rural and urban areas about nutrition so that they have at least secondary education. more research is needed to find ways to help Igbo, Yoruba, and other ethnic Rural-Urban migrant women in Nigeria lose weight

Keywords: Overnutrition/Obesity, Undernutrition, Decision Making and Rural Migrant.

Introduction

Globally malnutrition is declining more in developed countries than developing ones whereby obesity is increasing in a few of countries. Malnutrition, as defined by the World Health Organization (WHO), is the cohabitation of malnutrition and obesity, which is a major public health issue on a global scale today (Gao et al., 2020). Malnutrition is a multidimensional and complicated issue in impoverished countries such as Nigeria (Adinma, Umeononihu, & Umeh, 2017; Lindsay, Gibney, & McAuliffe, 2012). Everyone's health is dependent on proper nutrition and exercise, but women of childbearing age require these variables at an even larger rate. Preventing and reducing disease, as well as promoting functional independence and hence long-term independent living, are just a few of the benefits of a nutritious diet (Leslie & Hankey, 2015). According to Delavari, Snderlund, Swinburn, Mellor, and Renzaho (2013), obesity and overweight are caused by a variety of variables.

Nutritional status is crucial for both the mother's overall health and the outcome of the pregnancy. Breastfeeding, recovering from pregnancy and labor-related stress, coping with child raising and care, and preparing for future pregnancies all require proper mother nutrition (Senbanjo, Olayiwola, Afolabi, & Senbanjo, 2013). If their mothers are malnourished, low-birth-weight children are more likely to die in infancy (Tebekaw, Teller, & Colón-Ramos, 2014). As part of the UN's Sustainable Development Goals, all countries are supposed to create programs to tackle poverty, hunger, and bad health (SDGs). The first three Sustainable Development Goals (SDGs) are poverty eradication, hunger eradication, and adequate health and well-being (Gao et al., 2020). Although these objectives are connected to malnutrition management, they are primarily concerned with undernutrition and infectious disease management. As a result, they may be inefficient in the prevention and treatment of noncommunicable disorders such as obesity. While many Asian countries' health programs continue to prioritize malnutrition and infectious diseases, they fall woefully short in combating the region's epidemic of chronic diseases and obesity. IOM and WHO are spearheading global efforts to urge member states to develop migrant-sensitive health systems and policies and practices that fully realize migrants' and mobile populations' rights to health. (Organisation Internationale de la Migration, 2013). The United Nations Committee on the Rights of the Child has advocated for children's rights, and the United Nations Children's Fund (UNICEF) has emphasized a dearth of research on the health and well-being of women and children globally as a result of migration (Bryant, 2005).

Frequently, women's socioeconomic status limits their potential for self-determination and decision-making in numerous aspects of their lives,

particularly in low-income communities (Osamor & Grady, 2016). In the majority of developing countries, their social status hinders their freedom to make personal decisions. Socio-cultural, religious, and tribal traditions that define gender roles frequently limit the circumstances in which women have the freedom to make health care decisions for themselves (Alemayehu & Meskele, 2017). In these countries, religious, tribal, and social traditions frequently define the roles of men and women, which are frequently reflected in their social structures. Constraints such as these influence the settings under which women have or lack the ability to make health-related decisions for themselves. Women's autonomy in health care decision-making is crucial as a proxy for women's empowerment and improved maternal and child health outcomes (Acharya, Bell, Simkhada, Van Teijlingen, & Regmi, 2010). Women's participation in decision-making improves women's lives by allowing them to live more completely as human beings (Nayak & Mahanta, 2012). Open communication between partners regarding reproductive health decisions and access to reproductive health care for women may be hampered by gender-based power imbalances. These factors may result in adverse health outcomes.

Statement of Problem

Women who were undernourished as children or adolescents are more likely to become pregnant with children who are stunted and malnourished than women who were well-nourished as children or adolescents. Her malnutrition has a negative effect on the health and nutrition of her children. These intergenerational consequences can help maintain the tragic cycle of intergenerational famine (Senbanjo et al., 2013; Tebekaw et al., 2014). Most weight gain is a result of an imbalance in energy consumption and output. There is a lot of concern about this health issue because of the increasing portion sizes and sedentary lifestyles (Kanter & Caballero, 2012).

Greater economic opportunity is one of the primary drivers of people moving from rural to urban locations. Cities have been connected to poverty, overpopulation, and environmental damage in many circumstances. Due to this process, there has been a significant increase in malnutrition, which includes both undernutrition and obesity/overweight (Gao et al., 2020). Reduced brain development, decreased human capital, and even early mortality are all possible outcomes of malnutrition (Kimani-Murage et al., 2011). The main nutritional issues that women face are those related to maternal under- and overnutrition, as well as deficiencies in critical pregnancy micronutrients including iron, folate, calcium, vitamin D, and vitamin A. (Lindsay et al., 2012). In order to end the intergenerational cycle of starvation and the issues it causes, women's unhealthy BMI must be addressed (Ghose &

Yaya, 2018). Higher-income migrants are more likely to acquire weight than those from lower- and middle-income countries. 50 People in Sub-Saharan Africa who move from rural to urban regions have a higher risk of malnutrition (Dake, Thompson, Ng, Agyei-Mensah, & Codjoe, 2016).

Significant of Study

In context of migration enormity, it is critical to assess the influence of remittances or migration in general on economic growth (Antén, 2010). Malnutrition is also a major problem in Nigeria, which has seen an increase in poverty rates since 1990 as a result of the country's poor macroeconomic performance, as well as its low social spending and ill-conceived nutritional programs. Nutritional status can be defined in terms of access to adequate dietary intake and maintaining a healthy body mass index (BMI). Many researchers utilized study-specific measurements, while others relied on questions from their nations' national health surveys. As obesity rates continue to climb, the health care system must contend with the burden of obesity-related NCDs, which are expected to account for 46 percent of all fatalities by 2030, in addition to the burden of underweight issues caused by famine, food poverty, and infectious infections (Tebekaw et al., 2014). A nutritious diet during pregnancy is critical to the mother's wellbeing, the health of her unborn child, and the prevention of birth abnormalities, poor fetal development, and long-term health problems in children (Lindsay et al., 2012).

Ghose & Yaya, (2018) focused on nutrition in relation to women's sociodemographic traits rather than other aspects of home life. In most households, it is the women who are in charge of food preparation. As a result, the body mass index of rural and urban Nigerians was studied (Sola, Steven, Kayode, & Olayinka, 2011). As a result, their expertise or lack thereof in nutrition will have a significant impact on the overall health and nutritional status of the family. As a result, women's malnutrition must be addressed if they are to fulfill the many tasks they are expected to play in society, such as earning an income, raising healthy children and taking care of the home and family.

Research Methodology

Variables Description

Outcome variable: The outcome variable was BMI which is defined as the weight in kilograms divided by the height in metres squared (kg/m^2). BMI serves as a simple and inexpensive method of measuring body weight status for adult population. As defined by WHO, respondents were categorised as being underweight if $\text{BMI} < 18.5 \text{ kg}/\text{m}^2$, normal weight if $= 18.5 - 24.9 \text{ kg}/\text{m}^2$ and overweight/obese if $\geq 25 \text{ kg}/\text{m}^2$.

The explanatory variables of main interest were participation in making household decision is a categorical variable from: person that decided on healthcare, person that decided on household purchases and person that decided on visitation to family or relatives. Responses was coded as, women not participate and participate in decision making.

Researcher conducted a literature review to facilitate the selection of potential confounders. Based on the review and availability on the datasets, the covariates were considered for inclusion in the study— Rural Migration: Rural-Urban and Rural-Rural, Age of respondent: 15–19, 20–24, 25–29, 30–34, 35–39, 40–44, 45–49; Religious affiliation: Christian, Islam; Educational attainment: No formal education, Primary Secondary, Higher; Wealth index: Poorest, Poorer, Middle, Richer, Richest; Employment status: Not Working, Working; Husband level of educational: No formal education, Primary Secondary, Higher; Ethnicity: Hausa/Fulani, Igbo, Yoruba, Others; Family Type: Monogamous, Polygamous; Number of children ever born: 1-4 children, More than 4 children; Birth order: 1-2 children, 3-4 children, 5 children above; Modern contraceptive use: No, Yes; Mass Media: Not exposed, Exposed.

Sources of Data and Sampling

This study used secondary data from the 2018 Nigeria Demographic and Health Survey to analyze women's health (NDHS). The 2018 NDHS sample was stratified in two steps. Each of the 36 states and the FCT was stratified into urban and rural areas. 74 strata of sampling were discovered. Every stratum had its own two-stage selection of samples. At each of the lower administrative levels, implicit stratifications were established by sorting the sampling frame before sample selection and applying a probability proportional to size selection during the first sampling step. 1400 EAs were chosen at random in the first stage. The EA's size was measured in homes. The results of the household listing operation were used as a sampling frame for the second step. In the second stage, equal probability systematic sampling was used to choose 30 households each cluster, for a total sample size of 42,000 households (Nigeria Population Commission, 2019). The interviewees were either permanent residents or visitors to the households the night before the study. In the houses examined, 42,121 women aged 15-49 were chosen for individual interviews, with a 99 percent response rate (Nigeria Population Commission, 2019). This study used recoded 2018 Nigeria Demographic and Health Survey (NDHS) women dataset.

Data Analysis

The data was weighted before usage due to the cluster design method used to collect the data. To extrapolate and evaluate other places not included

in the survey clusters, you must apply the data weighting. The data must be processed before analysis can begin in order to accurately measure the variables and display the findings in a clear and understandable manner. This was done using STATA's data manipulation tools. Using sample weights and the STATA survey command (SVY), considered stratified sampling and the influence of over- or under-sampling certain regions or areas (Morakinyo, Adebowale, Obembe, & Oloruntopa, 2020).

In order to conduct the research, the researcher used STATA 16.0. Data on demographics and the frequency of exposure and outcome factors were analyzed using descriptive statistical methods. Chi-square tests were used to find a link between independent factors and BMI in Nigerian women who were part of the country's internal migrant population. Because the outcome variable (body mass index) has three categories, underweight, normal, and overweight/obese, a multinomial logistic regression model was used in the multivariable analysis.

To examine the strength of association and interaction across correlate variables, the Multinomial logistic regression models were run to compute the logit and odds effects. The following equations served as a reference for the models discussed. The general multinomial logistic regression model to be used for the multivariate analysis is:

$$\ln [\Pr(Y_i=1) \div \Pr(Y_i=0)] = \beta_0 + \beta_1j x_1 + \beta_2j x_2 + \dots + \beta njxn$$

Where p = probability of exposure to body mass index

x1-xn = predictor variables

$\beta_0, \beta_1 - \beta_n$ = regression coefficients

In this equation, the log of Pr (Y = 1) versus Pr (Y = 0), represents the probability of underweight and normal weight, and overweight/obese versus normal weight. Using this log transformation method in multinomial regression, the exponent of the regression constant (β_0) is added to the regression coefficients of independent variables. From this, the respective probabilities were calculated and the log of the proportion of the probability of Y = 1 versus Y = 0 will be computed. Log transformation allowed for the distribution of the categorical dependent variable to be normalized, facilitating interpretability.

Result of Analysis

Table 1: Distribution by Socio-Demographic Characteristics of Rural Migrant Women in Nigeria.

Characteristics	Rural-Urban		Rural-Rural	
	Frequency	Percent	Frequency	Percent
Body Mass Index				
Underweight	71	8.8	158	10.4
Normal	441	54.7	1038	68.0
Overweight/Obesity	294	36.5	330	21.6
Age				
15-19 years	17	2.1	68	4.4
20-24 years	91	11.3	242	15.9
25-29 years	198	24.5	367	24.0
30-34 years	173	21.5	278	18.2
35 years above	327	40.6	571	37.4
Religion				
Christianity	455	56.4	619	40.6
Muslim	348	43.2	895	58.6
Traditional	3	0.4	12	0.8
Level of Education				
No formal education	253	31.4	894	58.6
primary	165	20.4	259	17.0
secondary	307	38.1	333	21.8
higher	81	10.0	40	2.6
Wealth Status				
Poorest	118	14.6	493	32.3
Poorer	158	19.6	508	33.3
Middle	205	25.4	340	22.3
Richer	184	22.9	144	9.4
Richest	141	17.6	42	2.7
Currently Working				
No	152	18.9	458	30.0
Yes	654	81.1	1069	70.0
Husband Level of education				
No education	174	21.6	694	45.5
Primary	152	18.8	261	17.1
Secondary	354	43.9	459	30.1
Higher	126	15.7	112	7.3
Ethnicity				
Hausa/Fulani	214	26.5	692	45.3
Igbo	135	16.8	110	7.2
Yoruba	129	16.0	25	1.6
Others	328	40.7	700	45.8
Family Type				
Monogamous	588	73.0	943	61.8
Polygamous	218	27.0	583	38.2

Number of children ever born	477	59.2	791	51.9
1-4 children	329	40.8	735	48.1
More than 4 children				
Birth order				
1-2 children	119	14.8	208	13.7
3-4 children	358	44.4	583	38.2
5 children above	329	40.8	735	48.1
Modern contraceptive use	670	83.2	1,389	91.0
No	135	16.8	137	9.0
Yes				
Mass Media				
Not exposed	462	57.3	1,179	77.3
Exposed	344	42.7	347	22.7
Decision on women health care	390	48.3	1,032	67.6
Not participate	416	51.7	494	32.4
Participate				
Decision on household purchases	413	51.3	1,025	67.2
Not participate	393	48.7	501	32.9
Participate				
Decision on visitation to relatives	303	37.6	731	47.9
Not participate	503	62.4	795	52.1
Participate				
Total	806	100.0	1,526	100.0

Source: Author Construct, 2022 (NDHS, 2018)

Distribution by Socio-Demographic Characteristics of Rural Migrant Women in Nigeria

The table above shows the distribution of rural migrant women by socio-demographic characteristics. It can be ascertained that Rural-Urban migrant were more overweight/obese (36.5%) than Rural-Rural migrant (21.6%). Underweight is more common among the Rural-Rural migrant by 10.4% than Rural-Urban migrant (8.8%). Women age 25-29 years mostly participate in migration and this varies by Rural-Urban migrant (24.5%) and Rural-Rural migrant (24%). This is followed by women age 30-34 years and Rural-Urban migrants reported by 21.5% and Rural-Rural migrant were 18.2%. The least reported were women age 15-19 years that engaged in Rural-Rural migration (4.4%), and Rural-Urban migration (2.1%). Furthermore, Christian women engaged more in Rural-Urban migration (56.4%) whereby Muslim women engaged more in Rural-Rural migration (58.6%). Women with primary, secondary and higher education were Rural-Urban migrant (20.4%, 38.1% and

10% respectively) and women with no formal education mostly engaged in Rural-Rural migration (58.6%).

More so, it was ascertained that richer, richest women and those in middle wealth quantile were more of Rural-Urban migrant (22.9%, 17.6% and 25.4% respectively) and the poorer and poorest mostly engaged in Rural-Rural movement by 33.3% and 32.3% respectively. Women that are currently working participate more in Rural-Urban migration (81.1%) whereby those that are not currently working were Rural-Rural migrant (30%). Husband with primary, secondary and higher education were more Rural-Urban migrant (18.8%, 43.9% and 15.7% respectively) and Rural-Rural migrant mostly had no formal education (45.5%).

In addition, Hausa/Fulani women were more Rural-Rural migrant (45.3%), Igbo women were more Rural-Urban migrant (16.8%) and Yoruba women were more Rural-Rural migrant (16%). Women in polygamous family were more Rural-Rural migrant (38.2%) and Rural-Urban migrant were more monogamous family (73%). Women that ever gave birth to 1-4 children were more Rural-Urban migrant (59.2%) whereby women with 4 children above were more Rural-Rural migrant by 48.1%. Mostly women having 1-2 children were Rural-Urban migrant (14.8%), similarly those having 3-4 children were Rural-Urban (44.4%) and women having 5 children above were Rural-Rural Migrant (48.1%). Majority of women not using modern contraceptive were Rural-Rural migrant (91%) and those using were Rural-Urban migrant by 16.8%. Similarly, majority of women exposed to mass media were Rural-Urban migrant (42.7%) and those not exposed were Rural-Rural migrant (77.3%). Rural-Urban migrant women participate in decision on health care, purchases and visitation to relatives whereby Rural-Rural migrant not mostly participated (67.6%, 67.2% and 47.9% respectively).

Table 2: Distribution by Household Decision Making, Socio-Demographic Characteristics and Body Mass Index Among Rural Migrant Women in Nigeria

Characteristics	Rural-Urban			Rural-Rural		
	Underweight	Normal	Overweight/Obesity	Underweight	Normal	Overweight/Obesity
Decision on women health care	63.4	52.5	38.4	79.0	70.4	53.5
Not participate	36.6	47.5	61.6	21.0	29.6	46.5
Participate	$\chi^2=24.06$		P=0.0007	$\chi^2=47.14$		P=0.0000
Statistics						

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Decision on household purchases Not participate Participate Statistics	67.3 32.7 $\chi^2=39.35$	57.5 42.5	38.1 61.9 P=0.0000	77.9 22.1 $\chi^2=53.91$	70.4 29.6	51.7 48.3 P=0.0000
Decision on visitation to relatives Not participate Participate Statistics	55.3 44.7 $\chi^2=30.94$	41.9 58.1	27.0 73.0 P= 0.0000	54.5 45.5 $\chi^2=31.13$	51.0 49.0	35.1 64.9 P=0.0000
Age 15-19 20-24 25-29 30-34 35 years above Statistics	4.0 19.7 28.6 27.6 20.1 $\chi^2=58.04$	3.2 13.9 27.1 19.3 36.6	0.0 5.4 19.6 23.5 51.5 P=0.0000	2.8 18.8 24.9 22.9 30.6 $\chi^2=61.19$	5.8 17.6 25.3 17.4 34.0	0.9 9.1 19.7 18.7 51.6 P= 0.0000
Religion Christianity Muslim Traditional Statistics	29.1 70.9 0.0 $\chi^2=71.97$	49.8 49.8 0.4	72.9 26.6 0.5 P=0.0000	18.3 81.4 0.3 $\chi^2=114.95$	37.2 62.1 0.7	61.8 36.8 1.5 P=0.0000
Level of Education No formal education primary secondary higher Statistics	41.1 28.9 28.9 1.1 $\chi^2=36.85$	36.4 19.4 34.3 9.9	21.7 20.0 46.0 12.3 P=0.0024	78.8 10.4 10.6 0.2 $\chi^2=106.97$	61.6 16.9 19.8 1.8	39.3 20.5 0.338 0.064 P=0.0000
Wealth Status Poorest Poorer Middle Richer Richest Statistics	33.9 17.0 26.3 12.5 10.3 $\chi^2=101.39$	17.9 23.8 26.1 20.7 11.4	5.1 13.8 24.1 28.6 28.4 P=0.0000	46.8 35.4 14.1 3.1 0.6 $\chi^2=136.75$	34.8 34.5 21.6 7.5 1.5	17.3 28.3 28.4 18.5 7.5 P=0.0000
Currently Working No Yes Statistics	30.2 69.8 $\chi^2=10.40$	19.7 80.3	14.9 85.1 P=0.0385	34.2 65.8 $\chi^2=18.62$	32.2 67.8	20.9 79.1 P=0.0023

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Husband Level of education	37.3	27.8	8.7	63.5	47.5	30.6
No education	21.9	17.4	20.1	18.6	16.3	19.1
Primary	26.5	41.9	51.1	14.5	29.9	38.2
Secondary	14.3	12.9	20.1	3.4	6.4	12.1
Higher	$\chi^2=61.67$		P=0.0000	$\chi^2=70.77$		P=0.0000
Statistics						
Ethnicity						
Hausa/Fulani	52.1	32.2	11.9	68.5	47.7	26.6
Igbo	6.3	13.3	24.5	2.0	4.9	17.0
Yoruba	17.1	12.4	21.1	0.0	1.5	2.8
Others	24.4	42.2	42.5	29.5	45.9	53.7
Statistics	$\chi^2=89.45$		P=0.0000	$\chi^2=133.86$		P=0.0000
Family Type						
Monogamous	58.0	71.1	79.5	50.2	61.2	69.0
Polygamous	42.0	28.9	20.5	49.8	38.8	31.0
Statistics	$\chi^2=17.39$		P=0.0020	$\chi^2=17.87$		P=0.0066
Number of children ever born						
1-4 children	70.4	59.8	55.6	45.6	53.9	48.6
More than 4 children	29.6	40.2	44.4	54.4	46.1	51.4
Statistics	$\chi^2= 6.06$		P=0.0987	$\chi^2= 6.09$		P=0.1151
Birth order						
1-2 children	15.3	14.2	15.6	15.7	13.6	12.9
3-4 children	55.1	45.6	40.1	29.9	40.3	35.7
5 children above	29.6	40.2	44.3	54.4	46.2	51.4
Statistics	$\chi^2= 7.53$		P=0.2318	$\chi^2=8.81$		P=0.1521
Modern contraceptive use						
No	88.5	83.1	82.0	92.8	92.2	86.2
Yes	11.5	16.9	18.0	7.2	7.8	13.8
Statistics	$\chi^2=1.93$		P= 0.5210	$\chi^2=13.16$		P=0.0034
Mass Media						
Not exposed	47.3	61.3	53.6	76.6	78.6	73.4
Exposed	52.7	38.7	46.4	23.4	21.4	26.6
Statistics	$\chi^2=8.46$		P= 0.0654	$\chi^2=4.26$		P=0.2327

Source: Author Construct, 2022 (NDHS, 2018)

Table 2: Distribution by Household Decision Making, Socio-Demographic Characteristics and Body Mass Index Among Rural Migrant Women in Nigeria

The table above showed the association between socio-demographic characteristics and body mass index of rural migrant women in Nigeria at p-value less than 0.05 level of significant. The distribution of household decision making and body mass index revealed that there is significant association between decision making on health care and body mass index among Rural-Urban, and Rural-Rural migrants ($\chi^2= 24.06$, $P= 0.0007$; $\chi^2= 47.14$, $P= 0.0000$), migrants women that do not participate in decision on health care are more underweight (63.4% and 79% respectively) whereby those that participate in health care decision are more overweight/obese (61.6% and 46.5% respectively). There is significant association between decision on household purchases and body mass index among migrant women ($\chi^2= 39.35$, $P= 0.0000$; $\chi^2= 53.91$, $P= 0.0000$), likewise migrant women (Rural-Urban and Rural-Rural) that do not participate in household purchases were more underweight by 67.3% and 77.9% respectively, also those that participated were more overweight/obese by 61.9% and 48.3% respectively. There is significant association between decision on visitation to relatives and body mass index among Rural-Urban and Rural-Rural migrants' women ($\chi^2= 30.94$, $P= 0.0000$, $\chi^2= 31.13$, $P= 0.0000$), migrant women that do that participate in decisions related to visitation to relatives are more underweight (55.3% and 54.5% respectively) whereby those that participated were more overweight/obese (73% and 64.9% respectively).

More so, there is significant association across other socio-demographic characteristics and body mass index among Rural-Urban and Rural-Rural migrant women, this include age of respondents ($\chi^2=58.04$, $P=0.0000$; $\chi^2= 61.19$, $P= 0.0000$) respectively, religion ($\chi^2=71.97$, $P=0.0000$; $\chi^2= 114.95$, $P= 0.0000$) respectively, level of education ($\chi^2=36.85$, $P=0.0024$; $\chi^2= 106.97$, $P=0.0000$) respectively, wealth status ($\chi^2=101.39$, $P=0.0000$; $\chi^2= 136.75$, $P=0.0000$) respectively, husband education ($\chi^2=61.67$, $P=0.0000$; $\chi^2= 70.77$, $P= 0.0000$) respectively, ethnicity ($\chi^2=89.45$, $P=0.0000$; $\chi^2= 133.86$, $P=0.0000$) respectively, family type ($\chi^2=17.39$, $P=0.0020$; $\chi^2= 17.87$, $P= 0.0066$) respectively.

Table 3: Relative Risk Ratio by Multinomial Logistic Regression of Household Decision Making, Socio-Demographic Characteristics among Rural Migrant Women in Nigeria

Normal	Rural-Urban				Rural-Rural			
	Underweight		Overweight/ Obesity		Underweight		Overweight/ Obesity	
	RRR	Lower- Upper Confident Interval	RRR	Lower- Upper Confident Interval	RRR	Lower- Upper Confident Interval	RRR	Lower- Upper Confident Interval
Decision on women health care Not participate Participate	1.00 0.95	0.38-2.37	1.00 0.71	0.43-1.19	1.00 0.89	0.44-1.80	1.00 0.84	0.53-1.33
Decision on household purchases Not participate Participate	1.00 1.10	0.45-2.71	1.00 1.66*	1.03-2.69	1.00 0.93	0.45-1.91	1.00 1.40	0.94-2.07
Decision on visitation to relatives Not participate Participate	1.00 0.96	0.35-2.67	1.00 0.99	0.59-1.64	1.00 1.32	0.81-2.17	1.00 1.20	0.80-1.80
Age 15-19 years 20-24 years 25-29 years 30-34 years 35 years above	1.00 0.95 0.93 1.56 0.64	0.20-4.54 0.20-4.33 0.33-7.38 0.14-3.01	1.00 25251 34 38421 82 63997 34 71446 73	1294156- 4926997 2232430- 6612690 3402421- 12000000 4814412- 10600000	1.00 2.18 1.95 2.48 1.46	0.84-5.64 0.77-4.91 0.90-6.88 0.53-4.03	1.00 2.57 4.01 5.13* 7.99* *	0.58-11.32 0.97-16.55 1.23-21.45 1.98-32.28
Religion Christianity Muslim Traditional	1.00 1.55 0.00	0.71-3.38 0.00-0.00	1.00 0.76 0.69	0.43-1.35 0.17-2.91	1.00 1.45 1.07	0.69-3.03 0.12-9.11	1.00 0.70 1.70	0.38-1.30 0.62-4.67
Level of Education No formal education primary secondary higher	1.00 1.94 1.03 0.09*	0.80-4.67 0.42-2.50 0.01-0.86	1.00 0.53 0.50* 0.24** *	0.28-1.00 0.28-0.92 0.10-0.58	1.00 0.78 0.99 0.31	0.42-1.45 0.43-2.27 0.03-3.04	1.00 1.13 1.32 1.70	0.72-1.80 0.81-2.15 0.73-3.93
Wealth Status Poorest Poorer Middle Richer Richest	1.00 0.42* 0.49 0.39* 0.81	0.19-0.92 0.24-1.01 0.15-0.98 0.28-2.36	1.00 1.33 2.04 2.90** 5.37**	0.66-2.65 0.99-4.21 1.31-6.41 2.28-12.63	1.00 0.77 0.62 0.51 0.60	0.48-1.23 0.32-1.22 0.20-1.32 0.08-4.79	1.00 1.48 1.91* * 3.12*	0.94-2.32 1.21-3.03 1.83-5.31 2.04-7.93

ASPROAEDU

			*				** 4.02* **	
Currently Working	1.00		1.00		1.00		1.00	
No	0.65	0.34-1.24	0.72	0.39-1.33	1.20	0.81-1.77	1.23	0.83-1.82
Yes								
Husband Level of education	1.00		1.00		1.00		1.00	
No education	1.25	0.53-2.98	2.66**	1.29-5.51	1.16	0.67-2.01	0.94	0.58-1.51
Primary	0.80	0.33-1.94	2.53*	1.21-5.29	0.63	0.35-1.12	0.82	0.48-1.40
Secondary	1.56	0.51-4.76	3.30**	1.46-7.45	0.73	0.29-1.82	1.00	0.50-2.02
Higher								
Ethnicity	1.00		1.00		1.00		1.00	
Hausa/Fulani	0.79	0.20-3.19	2.51*	1.18-5.37	0.66	0.17-2.58	1.75	0.82-3.77
Igbo	1.56	0.62-3.90	3.05**	1.47-6.35	0.00	0.00-0.00	1.24	0.42-3.66
Yoruba	0.68	0.28-1.66	1.97*	1.03-3.77	0.68	0.38-1.22	0.99	0.55-1.76
Others								
Family Type	1.00		1.00		1.00		1.00	
Monogamous	1.36	0.71-2.61	0.87	0.56-1.36	1.18	0.81-1.71	0.99	0.66-1.48
Polygamous								
Number of children ever born	1.00		1.00		1.00		1.00	
1-4 children	0.41	0.15-1.10	1.12	0.61-2.06	0.80	0.40-1.59	0.81	0.49-1.33
More than 4 children								
Birth order	1.00		1.00		1.00		1.00	
1-2 children	0.83	0.36-1.93	0.87	0.50-1.52	0.58	0.32-1.04	0.83	0.53-1.31
3-4 children	1.00		1.00	-----	1.00	-----	1.00	
5 children above						-		
Modern contraceptive use	1.00		1.00		1.00		1.00	
No	0.94	0.36-2.43	0.68	0.43-1.10	1.53	0.76-3.10	1.15	0.74-1.78
Yes								
Mass Media	1.00		1.00		1.00		1.00	
Not exposed	1.81*	1.04-3.16	1.10	0.75-1.60	1.20	0.71-2.03	0.90	0.64-1.29
Exposed								

*** p < 0.001; ** p < 0.01; * p < 0.05.

Source: Author Construct, 2022 (NDHS, 2018)

Table 3: Relative Risk Ratio Using Multinomial Logistic Regression of Household Decision Making, Socio-Demographic Characteristics and Body Mass Index Among Rural Migrant Women in Nigeria.

The table 3 above showed the distribution by relative risk ratio using multinomial logistic regression of household decision making, Socio-demographic characteristics and body mass index among rural migrant women in Nigeria at p-value less than 0.05 level of significant. Rural-Urban migrant women that participate in decision on health care were 1.66 more at risk of been overweight/obese than women that do not participate (RC). Rural-Rural migrant women age 30-34 years and age 35 years above were 5.13 and 7.99 respectively more at risk of overweight/obese than women age 15-19 years (RC). Rural-Urban migrant women with secondary education were 50% less likely at risk of been overweight/obese to those with no formal education (RC). Rural-Urban and Rural-Rural migrant women with higher education were 0.09 and 0.24 less likely to be underweight and overweight/obese respectively to women with no formal education (RC). Poorer and richer Rural-Urban migrant women were 58% and 61% less likely at risk of been underweight to poorest women (RC). Richer and richest Rural-Urban migrant women were 2.90 and 5.37 more likely at risk of overweight/obese than poorest women (RC). Rural-Rural migrant women in the middle wealth quantile, richer and richest were 1.91, 3.12 and 4.02 more at risk of been overweight/obese than poorest women (RC).

In addition, Igbo, Yoruba and other ethnics Rural-Urban migrant women were 2.51, 3.05 and 1.97 respectively more at risk of been overweight/Obese than Hausa/Fulani women (RC). Rural-Urban migrant women that exposed to mass media were 81% more at risk of been underweight than not exposed women (RC).

Discussion of Findings

Both developed and developing countries face severe public health challenges due to rising rates of malnutrition and a lack of physical activity, which are becoming more prevalent. When it comes to underweight and obesity, nations like Nigeria face significant challenges because of the widespread incidence of undernutrition (Ghose & Yaya, 2018). This necessitates research into this rapidly spreading disease, particularly from the standpoint of behavioral health. This paper, along with others from emerging countries, supports the idea that malnutrition prevalence rates are rapidly shifting between urban and rural areas in developing countries (Iloh, Amadi, Nwankwo, &Ugwu, 2011).

The present study, we have shown the prevalence of underweight and overweight/obesity among rural migrant women in Nigeria, as well as

investigated whether or not household decision making, increases the likelihood of having below or higher than normal body weight among the participants. Results showed that Rural-Urban migrant were more overweight/obese (36.5%) than Rural-Rural migrant (21.6%). Underweight is more common among the Rural-Rural migrant by 10.4% than Rural-Urban migrant (8.8%).

The predictors of body mass index among rural migrant women shows that Rural-Urban migrant women that participate in decision on health care were more at risk of been overweight/obese. Even though every woman has the right to participate in making decisions about her own health care there is needs for check and balance to reduce the rate of overweight/obesity. (Alemayehu&Meskele, 2017) stated that empowering women is crucial for the achievement of sustainable development, full participation of is required in health care decision making. Also, Rural-Rural migrant women age 30-34 years and age 35 years above were 5.13 and 7.99 respectively more at risk of overweigh/obese than women age 15-19 years (RC). Amugsi, Dimbuene, &Kyobutungi, (2019) demonstrated that as women grow older, they are more likely to suffer from malnutrition. As a result, women may experience poor health outcomes as a result of this, as they are exposed to higher risks of morbidity and death during pregnancy and childbirth.

This finding thus corroborates earlier studies that that examined a multi-country study among women of same age range (15–49 years) in Africa reported a combined prevalence of overweight and obesity to be 22.6%, which indicates that the prevalence of women with higher-than-normal BMI in Nigeria is slightly higher than that of African country average (Neupane, Prakash and Doku, 2016). The reported underweight falls within the range of 5 to 20% of African women who are considered overweight (Senbanjo et al., 2013). Although lower than the 25 percent reported for Ethiopian women (Woldemariam&Genebo, 2000), the over 60 percent reported for Indian women (Bamji, Murthy, Williams & Rao, 2008), and the 43.7 percent reported for women in Bangladesh (Bamji, Murthy, Williams & Rao, 2008), (Rahman & Nasrin, 2009). On the contrary, it has been found that the prevalence of obesity is higher in urban communities than it is in rural communities (Iloh et al., 2011). In addition, Adediran et al. discovered that all anthropometric indices of overweight and obesity considered in their study were significantly higher in the urban population than in the rural population in their recent study of anthropometric differences among natives of Abuja, Nigeria living in urban and rural communities (Adediran, Adebayo &Akintunde, 2013).

Rural-Urban and Rural-Rural migrant women with higher education were 0.09 and 0.24 less likely to be underweight and overweight/obese and Rural-Urban migrant women with secondary education were 50% less likely at

risk of been overweight/obese. Rural-Rural migrant women in the middle wealth quantile, richer and richest were more at risk of been overweight/obese than poorest women (RC). Because of the obesogenic impacts of greater household wealth as insignificant dietary pattern shifts, and because there is a confirmed positive link between household wealth and unhealthy body weight, this may be the reason (Bishwajit, 2017).

Rural-Urban migrant women that are Poorer and richer were less likely at risk of been underweight than poorest women (RC). This inverse relationship may be due to the fact that most Rural-Urban migrant have more access to nutritious foods in the urban centre and likewise having access to urban social amenities. Richer and richest Rural-Urban migrant women were 2.90 and 5.37 more likely at risk of overweight/obese than poorest women (RC). Those who live in urban regions tend to lead a separate lifestyle from those who live in rural areas where great distances are walked, active activities are carried out in farming and other means of living, and food is bought locally (Ekezie, Anyanwu, Danborno, & Anthony, 2011).

Rural-Urban migrant women that exposed to mass media were 81% more at risk of been underweight than not exposed women (RC). Igbo, Yoruba and other ethnics Rural-Urban migrant women were 2.51, 3.05 and 1.97 respectively more at risk of been overweight/Obese than Hausa/Fulani women (RC). Rural-Urban migrant women that exposed to mass media were 81% more at risk of been underweight than not exposed women (RC).

Conclusion

In the end, this study found that Rural-Urban migrants were more likely to be overweight or obese than Rural-Rural migrants (21.6%). Rural-Rural migrants are 10.4% more likely to be underweight than Rural-Rural migrants (8.8%). It also shows that women who make decisions about health care at home are more likely to be overweight or obese than women who don't make decisions. Women who are malnourished or die from it must be kept to a minimum, so the government must do everything it can to improve the nutritional status of older women over the age of 30 who are well-educated, both poor and rich, and who are exposed to the media. This is a more evidence-based way to make Nigeria's migration health policy and programs about malnutrition. Also, health planners and policymakers should think about interventional measures when they come up with policies and programs for reducing the number of women who are malnourished in Nigeria by providing interventions that will help rural-urban migrant women who make household decisions about where to get health care. There is also a need to teach women who live in rural areas and move between rural and urban areas about nutrition so that they have at least secondary education. Similarly, rural migrants in the

middle and upper-middle classes need to lose weight or become slimmer, which means they'll be open to health care and eat better food. There is a need for more nutrition-based programs and less money spent on media that doesn't give us enough food. Finally, more research is needed to find ways to help Igbo, Yoruba, and other ethnic Rural-Urban migrant women in Nigeria lose weight.

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