Inflation and the Demand for Healthcare in Nigeria: the implication of the coping strategies among fixed-income earners in Niger State

Muktar Bala, PhD
Senior Lecturer, IBB University, Lapai, Niger State, Nigeria
E-mail: muktarbala@yahoo.co.uk, muktarb@ibbu.edu.ng

Abstract
Nigeria has witnessed a growing trend of inflation in recent times. The inflation was aggravated by the removal of fuel subsidy during the second quarter of 2023. Prices of goods and services including food and healthcare skyrocketed. Niger state, being one of the states in the country with high number of fixed-income earners, notably civil servants, might be worst hit by the trend. However, despite having poor health insurance schemes, there is little knowledge about the derivers of demand for healthcare among fixed-income earners in the state and how the coping strategies adopted by the fixe-income earners during inflation might affect the health of their children. This study uses a sample of 1140 fixed income earners across the state and applied descriptive statistics, logistic regression and ordered logit models to analyze the data. The study categorized the inflationary period into three webs. The descriptive result shows that during the first web, most of the fixed-income earners borrowed, solicited for assistance from friends and relatives, or sold their assets to meet up with their health needs. During the second web, most of the respondents reported neglecting health for food, by skipping medications, patronizing quack medical centers or resorting to traditional medical options. In the third web, the result indicated that health behaviors in the previous web persist and in addition, a proximate determinant of health, such as food was undermined. The result of the logistic regression shows that demand for healthcare among the study group is influenced by medical cost, income, low cost of alternative medication, insurance cover, episode of sickness and inflationary web. The result of the ordered logit regression revealed that opting for alternative medication and reducing food quality reduce the quality of health of the children under study, but older children and those without history of poor physical health are absolved. The study suggests that government should provide emergency support to the affected families, strengthen the insurance industry and review the salaries of civil servants to enable them cope with the new economic realities.

Keywords: Inflation, Health, Fixed-Income Earners, Medical.

Introduction

Inflation is the persistent rise in the general prices of goods and services that consumers buy (Tamplin, 2023). Inflation generally erodes households' real income and undermines their ability to access the basic needs of life including healthcare (Claeys & Guetta-Jeanrenaud, 2022). Nigeria is currently experiencing serious inflationary crises. The headline inflation rate as at January, 2024, was as high as 29.90% which represents an 8.08% point increase from the 21.82% recorded in January, 2023 (National Bureau of Statistics—NBS, 2024). Policy measures, such as rising interest rate, that are designed to reduce the inflation have worsened the situation. Moreover, the minimum wage of the Nigerian workers has been N30,000 ($18.9) since 2019, although the federal government has recently increased the minimum wage to N70,000 ($42.91), this is just a 12.9% point increase as compared to the 18.5% point increase in inflation rate between 2019 and 2024 (Macrotrend, 2024). Consequently, fixed-income earners, specifically civil servants, might experience the greatest blow of the inflationary pressure.

Niger state has a sizeable number of civil servants (more than 47000 workforce) who depend mainly on monthly salaries and have little or no savings (Odewale, 2016). With little savings to dip into, civil servants are expected to be more financially strained and their health be more impacted by inflation (Black et al., 2024). Understanding the mechanisms through which inflation affect the health of fixed-income earners in Niger state may therefore help government in making policies that would tackle health related concerns.

Studies on the relationship between inflation and health mostly focused on the impacts of being exposed to inflationary conditions on the cognate determinants of health such as nutrition (Woldemichael et al., 2022; Gundersen & Ziliak, 2015). There is also a body of literature that focused on the coping strategies adopted by households during inflation (Gundersen & Ziliak, 2015; Seivwright et al., 2024; Woldemichael et al., 2022). However, most of these studies bypassed the determinants of healthcare demand during inflation and the effects of the coping strategies adopted by households during inflation on the health of the children, who are the vulnerable members of the family. Therefore, this study aims at two objectives. (1) To investigate the determinants of healthcare demand among fixed-income earners during the current inflationary period. (2) To examine the effects of the coping strategies adopted by households during the period on the health status of their children.

The remaining segments of this paper include section two, which reviews the extant literature. The description of sample and variables was made in section three and the methodology of the research was explained in section four. In section five, the empirical findings were discussed while the summary of the paper follows in section six.

Literature Review

Determinants of healthcare demand during inflation

The relationship between inflation and demand for healthcare shows that individuals tend to forgo health services or medication for a small increase in out-of-pocket health expenditure (Chandra et al., 2024; Aron-Dine et al., 2013). Forgoing medication can lead to worse health outcomes (Decker & Lipton, 2015). Rising cost of medical care makes people resort to self-treatment, skip medication or opt for less expensive traditional medication (Seivwright et al., 2024; Logiel et al., 2021; Yunus et al., 2004; Nyamongo, 2002). However, people with life threatening health challenge are health price inelastic (Ghimire et al., 2019).

H_1: Demand for healthcare is not determined by any factor during inflation.

Inflationary coping strategies and children physical health status

Inflationary pressure has been reported to have aggravated food insecurity (Seivwright et al., 2024; Schonfeldt et al., 2009), energy poverty (Bentley et al., 2023) and housing insecurity (Black et al, 2024). Food insecurity leads to myriads of health problems, such as nutritional deficiency in children and obesity in adults (Gundersen & Kreider, 2009; Gundersen & Ziliak, 2015). Lack of regular access to energy makes households unable to afford heating during cold seasons, which can lead to cold related health problems (Churchill & Smyth, 2021). Housing insecurity is associated with poor mental health (Baker et al., 2020; Bentley et al., 2011). Individuals who suffer constant relocation to unfamiliar places due to inability to pay house rent are more likely to be mentally strained (Shi, 2022).

Inflation has also been associated with financial stress. The worry associated with inability to meet the essential needs of life such as food, housing and settlement of bills is referred to as the financial stress (Seivwright et al., 2024). Financial stress has been associated with anxiety and depression, which are symptoms of poor mental health (Butterworth et al., 2009; Kiely et al., 2015). Moreover, inflation can lead to strained relationships among spouses. Studies have shown that sudden income shock affects spousal relationships (Charles & Stephens, 2004; Schaller, 2013). Strained relationship is associated with poor mental health (Marcus, 2013).

Furthermore, to cope with inflationary crisis, households might seek to increase their incomes by increasing their labor hours. Increasing labor hours might reduce the number of leisure hours and hours of domestic chaos for female. In the event of increased work hours, the health of nursing mothers, who combine domestic chaos with official duty, tend to suffer most (Cygan-Rehm & Wunder, 2018).

H_2: The coping strategies adopted by households during inflation do not have effect on the physical health status of their children.

Data collection and variables measurement

Period of study and sample

This study was conducted between July, 2023 and April, 2024, which is categorised into three webs. Web 1 is between July, 2023 and September, 2023; web 2 is between September, 2023 and December, 2023; web 3 is the period after December, 2023.

The data for this study was collected in Niger state, Nigeria and from fixed-income earners (civil servants with no other income source) for the period between July, 2023 and April, 2024. The data cut across the three senatorial zones of the state (Zone A, B and C). Due to lack of sampling frame, multi-stage sampling technique was used in collecting the data. Three local governments were randomly selected in each senatorial zone and six towns were equally randomly selected in each local government. Twenty-two households were then interviewed in each town. Children and their parents were the respondents of this study and were 1,140 set of parent/child. Children's physical health was collected using scale and it covers children between the ages of 6 to 10 years. For children within the study age brackets, O'donnell et al. (2008) recommended that Weight-for-age Z-score be used and hence its application in this study.

Explained variable

Model 1: Demand for healthcare

Model 2: Children's physical health

Explanatory variable

Model 1: Cost of conventional medical care.

Model 2: The type of medical care utilised for the children in each household under study

Control variables

Model 1: Income, consumption of alternative medicine, insurance cover, web or inflationary period, age and gender

Model 2: Health stock, nutrition or quality of food, energy poverty, child labour, age and gender

Methodology and model specifications

The first model relating to objective one has a binary dependent variable. For models with binary dependent variables, binary logistic regression is recommended (Cameroon & Trivedi, 2005). Therefore, to determine the probability of demanding for conventional medical care or otherwise, the first model was estimated using logistic regression.

The second model has an ordinal dependent variable; therefore, ordered logistic regression model was used for its estimation. However, for the estimates to be valid, the condition of proportional odds must be fulfilled (Cameroon & Trivedi, 2005; Brant, 1990). Therefore, Brant test was conducted and the test was passed.

Model specifications

In the first model, it is hypothesized that demand for healthcare during inflation is not determined by any factor. In the second model, it is hypothesized that the physical health of the children is not affected by the coping strategies adopted by households during inflation. Based on theses hypotheses, the following empirical research models were developed.

$$D^*_{xi} = \beta_0 + \beta_1 C_{cmc_i} + \beta_2 I_i + \beta_3 C_{amc_i} + \beta_4 I_{c_i} + \beta_5 w_{x_i} + \beta_6 \text{age}_i + \beta_7 \text{gdr}_i + \varepsilon_i \text{…………..(i)}$$

Where: C_{cmc_i}, I_i, C_{amc_i}, I_{c_i}, w_{x_i}, age_i and gdr_i represent cost of conventional medication, Income, cost of alternative medicine, insurance cover, inflationary web, age and gender respectively.

 https://doi.org/10.59568/IJEBM-2024-1-1-03 Website: https://ijebm.kiu.ac.ug

$$PH_i^* = \beta_0 + \beta_1 H_{si} + \beta_2 NM_i + \beta_3 N_i + \beta_4 Ep_i + \beta_5 Cl_i + \beta_6 age_i + \beta_7 gdr_i + \varepsilon_i \ldots\ldots\ldots\ldots\ldots\ldots (ii)$$

Where: H_{si}, NM_i, N_i, Ep_i, Cl_i, age_i, gdr_i are health stock, nature of medication, nutrition, energy poverty, child labor, age and gender respectively.

Table 1 explains how the variables of this study were measured.

Table 1: Variables Definition

Variable	Measurement
Demand for health (D_x)	1 if demanded for conventional medical care and 0 otherwise
Cost of medical care (C_{cmc})	A continues variable
Cost of alternative medication (C_{amc})	1 if the price of alternative medicine is cheaper and 0 otherwise
Income (I)	A continues variable
Insurance cover (I_C)	1 if the respondent has insurance cover and 0 otherwise
Inflationary web (W_x)	web 1 = 1; web 2 = 2 & web 3 = 3
Sickness episode (S_e)	1 if respondent has permanent health issue and 0 otherwise
Gender (gdr)	Male = 1 & female = 0
Age (age)	A continues variable
Physical health (PH_i)	3, 2 & 1 are used for adequate, moderately and severely malnutrition
Health stock (Hs)	1 if the child has no ailment history and 0 otherwise
Nature of medication (NM_i)	1 if conventional medical care and 0 otherwise
Nutrition (N_i)	3, 2 & 1 for balanced nutrition, reduced food quality and quantity
Energy poverty (Ep_i)	1 if no difficulty having access to energy at all times, 0 otherwise
Child labor (Cl_i)	1 if child is engaged in any form of wage labor and 0 otherwise

(*Source: Author's compilation)*

Results

Summary statistics: The first part of the descriptive statistics is shown in Table 2(a). It is shown in Table 2(a) that majority of the respondents (73.16%) resorted to patronizing traditional medication during inflation. This might be because the price of alternative medical care is relatively cheaper (97.46%) and most of the respondents (99.47%) do not have insurance cover. Therefore, the children's physical health in most of the respondents' households is reported to be either in moderately malnourished (33.33%) or severely malnourished health category (49.30%) even though most of them (86.32%) were not known with any special health challenge before the period of the study.

Table 2a: ***Demographic characteristics***

 https://doi.org/10.59568/IJEBM-2024-1-1-03

Variables	Fre.	%
Demand for Healthcare		
Conventional Medical care	289	25.3
Traditional Medical care	834	73.1
Skipping Medication	17	1.49
Price of alternative		
Cheaper	1,1	97.4
Not cheaper	29	2.54
Insurance Cover		
Having active health insurance	6	0.53
Not having active health	1,1	99.4
Sickness Episode		
Having permanent health issue	156	13.6
Not having permanent health	984	86.3
Physical Health of the		
Nourished Adequately	198	17.3
Malnourished Moderately	380	33.3
Malnourished Severely	562	49.3

(Source: Author's compilation)

It is shown in Table 2(b) that the poor health status of the children might be compounded by the reduction in the quality of diet suffered by most of the households (59.47%) during inflation as well as the difficulty in accessing energy (51.32%). However, the coping strategy adopted by most of the respondents was the selling of their assets (86.63%), soliciting for assistance (7.39%), or borrowing (5.98%). For their health needs, most of the respondents (82.81%) resorted to using traditional medical options. About half of the respondents also had to reduce their food quantity (40.53%) or quality (59.47%) during the period of the inflation. Therefore, more than half (59.47%) of the children in the respondents' households were fed with low diet.

Table 2b: *Demographic characteristics*

Variables	Fre	%
Respondents' health care coping strategy in web (1)		
Borrowing	68	5.98
Solicitation for assistance	84	7.39
Sale of asset	985	86.63
Respondents' health care coping strategy in web (2)		
Neglecting health for food or skipping medication	196	17.19
Patronizing non-conventional medication	944	82.81
Respondents' health care coping strategy in web (3)		
Reducing food quantity	462	40.53
Reducing food quality	678	59.47
Nature of medication used for the children		
Conventional Medical care	289	25.35
Traditional Medical care	834	73.16
Skipping Medication	17	1.49
Energy poverty		
Having difficulty getting energy	585	51.32
Not having difficulty getting energy	555	48.68
Child labor		
Child engaged in labor during the inflationary period	628	55.14
Child not engaged in labor during the inflationary period	511	44.86

 https://doi.org/10.59568/IJEBM-2024-1-1-03 Website: https://ijebm.kiu.ac.ug

Gender		
Male headed households	772	67.72
Female headed households	368	32.28

(Source: Author's compilation)

Also, more than half (55.14%) of the children in the respondents' households were engaged in child labor even though more than half of the households investigated (67.72%) were headed by male.

Regression result

Table 3 shows the result of the estimation for equation (i), which is for objective one. The result in column (2) shows that cost of conventional medical care is negative and significant at 1%, meaning that a one Naira increase in the cost of medical care decreases the probability of demanding for conventional medical care by 1.15%. This is in line with Seivwright et al (2024) who found that medical inflation increases the patronage of alternative medication. Income is positive and significant at 5%, meaning that increasing income of the people by one Naira can increase the demand for healthcare by 0.000064%. This corroborates the result of Dubey (2024) that wealthier people have higher demand elasticity for healthcare than the poor. Cost of alternative medical care is negative and significant at 1%, showing that when the price of alternative medicine is cheap, it decreases the probability of demanding for conventional medical care by 31.2%. This is in line with the findings of Grace et al. (2020) that affordability influences the patronage of traditional medicine in Timor-Leste.

Also in Table 3, Insurance cover was positive and significant at 1%, which implies that having insurance cover increases the probability of demanding for conventional medical care by 36.1%, which is in tandem with the findings of Murithi (2001). Having episode of sickness was positive and significant at 1%, which shows that compared to those who have no episode of sickness, those with life threatening ailment are 32.1% more likely to demand for healthcare. This finding supports that of Ghimire et al (2019) that sick individuals have higher demand for health care.

Table 3: Logistic Regression Result

	Dependent Variable: Demand for health care	
Independent Variables	(1) Full Model	(2) Average Marginal Effects
Cost of medical care	-0.137***	-0.0115***
	(0.0425)	(0.00349)
Income	7.62e-05**	6.40e-06**
	(3.83e-05)	(3.18e-06)
Alternative medical care	-3.719***	-0.312***
	(0.439)	(0.0315)
Insurance cover	1.633***	0.361***
	(0.577)	(0.102)

 https://doi.org/10.59568/IJEBM-2024-1-1-03 Website: https://ijebm.kiu.ac.ug

Sickness episode	3.719***	0.312***
	(0.439)	(0.0315)
Second web	-0.893*	-0.180*
	(0.492)	(0.0984)
Third web	-1.360**	-0.274**
	(0.688)	(0.138)
age	-0.0247	-0.00499
	(0.0529)	(0.0107)
gender	0.303**	0.0612**
	(0.133)	(0.0266)
constant	-0.697	
	(0.616)	
*** $p<0.01$	** $p<0.05$	* $p<0.1$

The second and third webs of the inflationary periods were found to be negative and significant at 10% and 5% respectively. It shows that compared to the first web (first three months into the period), the probability of demanding for healthcare in the second and third webs (six month later and beyond) was 18% and 27.4% respectively. This shows that increases in poverty associated with rising inflation undermines the ability of households to afford quality healthcare in consecutive terms as reported by Seivwright et al (2024). Gender was also significant at 1%, meaning that compared to males, females have higher probability of demanding for conventional medical care by 6.12%. This finding corroborates the result obtained by Murithi (2001).

Moreover, children that are one year older than their peers have 0.603% likelihood of being healthier and are 0.4% and 0.195% less likely of being moderately and severely malnourished respectively. Chen et al (2002) found that younger children are at higher risks of being exposed to many physical health issues.

Table 4: Average Marginal Effects of the ologit estmates

Independent Variables	**(1) Nourished Adequately**	**(2) Malnourished Moderately**	**(3) Malnourished Severely**
Health Stock	-0.147***	0.0996***	0.0478***
	(0.0326)	(0.0232)	(0.0121)
Nature of med. care	0.0362***	-0.0245***	-0.0117***
	(0.00735)	(0.00569)	(0.00237)
Reduced food quality	-0.133***	0.0900***	0.0432***
	(0.0187)	(0.0167)	(0.00527)
Reduced food quantity	0.0112	-0.00756	-0.00363

 https://doi.org/10.59568/IJEBM-2024-1-1-03 Website: https://ijebm.kiu.ac.ug

	(0.0131)	(0.00900)	(0.00413)
Energy poverty	6.34e-08	4.28e-08	2.06e-08
	(1.41e-06)	(9.51e-07)	(4.57e-07)
Child labor	-0.0490	0.0331	0.0159
	(0.0205)	(0.0145)	(0.00652)
Age of the Child	0.00603***	-0.00407***	-0.00195***
	(0.00203)	(0.00143)	(0.00067)
Gender of the child	0.0136	0.0092	0.00441
	(0.0103)	(0.007050	(0.00329)

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

The estimation result for equation (ii), which is for objective two, was presented in Table 4. The result shows that children who have history of ailment are 14.7% less likely to be unhealthy, 9.96% and 4.78% more likely to be moderately and severely malnourished respectively, during inflation. This finding supports that of Nogueira et al (2015) who reported that higher prevalence of malnutrition is common among children that were born sick.

Furthermore, children that are provided with conventional medical care tend to be 3.62% healthier than their peers without such type of healthcare. They are also 2.45% and 1.17% less likely to be moderately and severely malnourished respectively. Having good healthcare has been reported to be associated with good health status of the children (Minkovitz et al., 2002). The result also shows that children in households whose food quality is reduced are 13.3% less likely to be healthy, but 9% and 4.32% more likely to be moderately and severely malnourished respectively. This corroborates the finding that nutritious intake enhances children health status (Imbumi, 2014).

Moreover, a one-year increase in age increases the likelihood of the children being healthy by about 0.603% and reduces their likelihood of being moderately and severely malnourished by 0.4% and 0.195% respectively. Chen et al (2002) found that younger children are at higher risks of being exposed to many physical health problems than the elderly ones.

Conclusion

This study has pursued two broad objectives. The first objective sought to find the derivers of healthcare demand during inflation among fixed-income earners in Niger state and the second was to examine how the coping strategies adopted by fixed-income households during inflation affect the health of their children. The study found that demand for healthcare among fixed-income earners in the state during inflation is affected

by the cost of conventional healthcare, income, low cost of alternative medicine, insurance cover, episode of sickness and

inflationary web. The result implies that increase in the cost of conventional medicine during inflation makes people to opt for a relatively cheaper alternative medical care,

particularly if the inflation persists over a long period of time. However, having higher income, insurance cover or having frequent episode of sickness tend to make fixed-income households be demand inelastic. The second objective found that opting for alternative medication and reducing food quality reduces the quality of the health of children, but older children and those that were born healthy are more resistant to these effects. The study suggests the need for increasing the wage rate of the fixed-income earners in the state and providing them with access to an efficient health insurance scheme.

References

Aron-Dine, A., Einav, L., & Finkelstein, A. (2013). The RAND health insurance experiment, three decades later. Journal of Economic Perspectives, 27(1), 197-222.

Baker, E., Lester, L., Mason, K., & Bentley, R. (2020). Mental health and prolonged exposure to unaffordable housing: a longitudinal analysis. Social psychiatry and psychiatric epidemiology, 55, 715-721.

Bentley, R., Baker, E., Mason, K., Subramanian, S. V., & Kavanagh, A. M. (2011). Association between housing affordability and mental health: a longitudinal analysis of a nationally representative household survey in Australia. American journal of epidemiology, 174(7), 753-760.

Bentley, R., Daniel, L., Li, Y., Baker, E., & Li, A. (2023). The effect of energy poverty on mental health, cardiovascular disease and respiratory health: a longitudinal analysis. The Lancet Regional Health–Western Pacific, 35.

Black, N., Harris, A., Jayawardana, D., & Johnston, D. (2024). High inflation and implications for health: a framework to examine the potential pathways through which high inflation may impact on health.

Blunch, N. H., & Verner, D. (2001). Revisiting the link between poverty and child labor: the Ghanaian experience.

Brant, R. (1990). Assessing proportionality in the proportional odds model for ordinal logistic regression. Biometrics, 46(4), 1171-1178.

Butterworth, P., Rodgers, B., & Windsor, T. D. (2009). Financial hardship, socio-economic position and depression: Results from the PATH Through Life Survey. Social science & medicine, 69(2), 229-237.

Cameron, A. C., & Trivedi, P. K. (2005). Microeconometrics: methods and applications. Cambridge: Cambridge University press.

Chandra, A., Flack, E., & Obermeyer, Z. (2024). The health costs of cost-sharing. The Quarterly Journal of Economics, qjae015.

Charles, K. K., & Stephens, Jr, M. (2004). Job displacement, disability, and divorce. Journal of Labor Economics, 22(2), 489-522.

Chen, E., Matthews, K. A., & Boyce, W. T. (2002). Socioeconomic differences in children's health: how and why do these relationships change with age?. Psychological Bulletin, 128(2), 295-329.

Churchill, S. A., & Smyth, R. (2021). Energy poverty and health: Panel data evidence from Australia. Energy economics, 97, 105219.

Claeys, G., & Guetta-Jeanrenaud, L. (2022). Who is suffering most from rising inflation?. Bruegel-Blogs, NA-NA.

Cygan-Rehm, K., & Wunder, C. (2018). Do working hours affect health? Evidence from statutory workweek regulations in Germany. Labour Economics, 53, 162-171.

Decker, S. L., & Lipton, B. J. (2015). Do Medicaid benefit expansions have teeth? The effect of Medicaid adult dental coverage on the use of dental services and oral health. Journal of health economics, 44, 212-225.

Dubey, J. D. (2024). Income Elasticity of Demand for Healthcare and Change Over Time: Across the Income Groups in India. Journal of Health Management, 09720634241263392.

Ghimire, P., Sapkota, V. P., & Poudyal, A. K. (2019). Factors associated with enrolment of households in Nepal's national health insurance program. International Journal of Health Policy and Management, 8(11), 636.

Grace, R., Vaz, J., & Da Costa, J. (2020). Traditional medicine use in Timor-Leste. BMC Complementary Medicine and Therapies, 20, 1-6.Stuart, J. S. (1713-1780).The history of economic thought. //scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=The+History+of+Economic+Thought.+"Sir+James+Steuart%2C+1713-1780."&btnG=

Grossman, M. (1972). On the concept of health capital and the demand for health. Journal of Political Economy, 80(2), 223-255.

Gundersen, C., & Kreider, B. (2009). Bounding the effects of food insecurity on children's health outcomes. Journal of health economics, 28(5), 971-983.

Gundersen, C., & Ziliak, J. P. (2015). Food insecurity and health outcomes. Health affairs, 34(11), 1830-1839.

Gundersen, C., & Ziliak, J. P. (2015). Food insecurity and health outcomes. Health affairs, 34(11), 1830-1839.

Gundersen, C., & Ziliak, J. P. (2015). Food insecurity and health outcomes. Health affairs, 34(11), 1830-1839.

Ibrahim, A., Abdalla, S. M., Jafer, M., Abdelgadir, J., & De Vries, N. (2019). Child labor and health: a systematic literature review of the impacts of child labor on child's health in low-and middle-income countries. Journal of public health, 41(1), 18-26.

Imbumi, M. (2014). Fruit consumption in relation to health and nutritional status fo children below 5 years and their mothers/caregivers in farming households of Western Kenya (Doctoral dissertation, University of the Free State).

Kiely, K. M., Leach, L. S., Olesen, S. C., & Butterworth, P. (2015). How financial hardship is associated with the onset of mental health problems over time. Social psychiatry and psychiatric epidemiology, 50, 909-918.

Logiel, A., Jørs, E., Akugizibwe, P., & Ahnfeldt-Mollerup, P. (2021). Prevalence and socio-economic factors affecting the use of traditional medicine among adults of Katikekile Subcounty, Moroto District, Uganda. African Health Sciences, 21(3), 1410-1417.

Macrotrend (2024). Nigeria Inflation Rate 1960-2024. Nigeria Inflation Rate 1960-2024 | MacroTrends

Marcus, J. (2013). The effect of unemployment on the mental health of spouses–Evidence from plant closures in Germany. Journal of health economics, 32(3), 546-558.

Minkovitz, C. S., O'Campo, P. J., Chen, Y. H., & Grason, H. A. (2002). Associations between maternal and child health status and patterns of medical care use. Ambulatory pediatrics, 2(2), 85-92.Murithi, R. (2001). Health insurance and demand for medical care (Doctoral dissertation, University of Nairobi).

National Bureau of Statistics—NBS (2024). Consumer price index and inflation report. Reports | National Bureau of Statistics (nigerianstat.gov.ng)

Nyamongo, I. K. (2002). Health care switching behaviour of malaria patients in a Kenyan rural community. Social science & medicine, 54(3), 377-386.

Odewale, T. (2016, July 7). Niger state: Civil servants and the rest of us. Blueprint. https://blueprint.ng/niger-state-civil-servants-and-the-rest-of-us/

O'donnell, O., Van Doorslaer, E., Wagstaff, A., & Lindelow, M. (2008). Analyzing health equity using household survey data. Washington, DC: World Bank.

Schaller, J. (2013). For richer, if not for poorer? Marriage and divorce over the business cycle. Journal of Population Economics, 26, 1007-1033.

Schonfeldt, H. C., Gibson, N., & Vermeulen, H. (2009, January). The Possible Impact of Inflation on Nutritionally Vulnerable Households in a Developing Country with South Africa as the Case Study. In Annals of Nutrition and Metabolism (Vol. 55, pp. 663-663). ALLSCHWILERSTRASSE 10, CH-4009 BASEL, SWITZERLAND: KARGER.

Seivwright, A., Kocar, S., Visentin, D., & Kent, K. (2024). Cutting more than meals: increasing severity of food insecurity is associated with the number and types of household financial strategies used to cope with inflation. Australian Journal of Social Issues, 59(1), 65-86.

Shi, X. (2022). Moving out but not for the better: Health consequences of interprovincial rural-urban migration in China. Health Economics, 31(4), 555-573.

Tamplin, T. (2023, March 7). Inflation accounting. Finance strategists Retrieved from https: //www.financestrategists.com/accounting/cost-accounting/inflation-accounting/

Tsiaplias, S., & Wang, J. (2023). The Australian Economy in 2022–23: Inflation and Higher Interest Rates in a Post-COVID-19 World. Australian Economic Review, 56(1), 5-19.

Woldemichael, A., Kidane, D., & Shimeles, A. (2022). Food inflation and child health. The World Bank Economic Review, 36(3), 757-773.

World Bank (2024). Nigeria Inflation Rate — 1960-2024: Nigeria Inflation Rate 1960-2024. www.macrotrends.net. Retrieved 2024-07-09.

Yunus, M. A., Nasir, M. M. T., MZ, N. A., Sherina, M. S., & Leong, C. S. (2004). Prevalence of self-medication and traditional medication among residents in a village in sepang, selangor. Malaysian Journal of Public Health Medicine, 4(2), 30-33.