

CHAPTER TWENTY-TWO

Influence of Income Replacement on Management of Chronic Diseases among Retirees in Ilorin South Local Government, Kwara State

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Abstract

The study investigated the influence of income replacement on the management of chronic diseases among retirees in Ilorin South local government. Six (6) research questions were raised, and six (6) research hypotheses were formulated. A survey research design was adopted, and the population for the study included all the retirees in Ilorin South Local Government Area of Kwara State. The study adopted stratified and purposive sampling techniques to select Ilorin South from the sixteen (16) local governments in Kwara state. Three (3) wards were selected from the local government using a purposive sampling technique, and two hundred (200) respondents were selected from these wards. The Income Replacement and Chronic Diseases Management Questionnaire and scorecard (IRCDMQ) was the instrument used for data collection. The research questions were analysed using frequencies, percentages, means, and standard deviations. The hypothesis was tested with a t-test and linear regression at a 0.05 level of significance, and data visualisation was done using ggplot, gtsummary, stargazer packages, and LaTeX. The findings revealed most of the respondents were female, aged 65 – 69 years old, earning below ₦81,000-₦150,000, which is equivalent to \$120; and the most common disease among the respondents was arthritis. The hypothesis revealed a significant relationship between post-retirement income and retirees' perception of health management ($p < 0.05$), indicating that each additional decrease in post-retirement income is associated with a 0.09081 decrease in the chronic disease management score. Although the study revealed no relationship between post-retirement income and the number of reported diseases, likewise, the differences in pre- and post-retirement income do not influence the number of

reported diseases. Therefore, it is concluded that low-income replacement affects the management of chronic diseases. The researchers recommended that senior citizens, who have served the nation for 35 years or more, should be compensated for their sacrifices during their service years.

Keywords: Chronic disease management, Retirement, Retirees, Income replacement.

Introduction

Disease is the abnormal functioning of an organism (Adalberto & Edwin, 2018). It is a state of physical and anatomical abnormality or disorder that affects the normal functionality of an organism/human. (Howard and Bernell (2016) reported that chronic is commonly used when the root cause of a particular disease lasts for more than three months. Therefore, chronic disease is a physical or anatomical abnormality that last one year or more, limiting daily activities and requiring maximum medical attention and management (Sebelius & Thompson, 2019). Morbidity information of a particular population enables continuous evaluation of the effectiveness of a specific healthcare system or the success of the health policy implemented. Poor management of diseases can lead to multimorbidity, which is a condition of multiple diseases (Skou *et al*, 2022). Nigeria has some of the lowest quality health care in Africa and the world at large as the healthcare system is underdeveloped and lacks modern health equipment and facilities. These challenges have been attributed to poor infrastructure, low government budget, poor staff welfare, and high emigration of healthcare workers (International Trade Administration, 2023).

The income of workers implies the totality of benefits that are given to employees by the employer. This can be salaries, wages, bonuses, and allowances among others for the service offered (Hagedorn, 2023). The income replacement ratio is the percentage of preretirement income received during retirement by an elderly retired person (Schmied, 2023). It is a scheduled amount given to retiree (older person) by the employer during their retirement period, which is the percentage of income received during the pre-retirement period. In most countries, it implies the major monetary benefits received by an employee at the end of a working career. Income replacement is an important criterion embedded under the pension scheme as it ensures the retiree's continuous source of income after disengagement from service.

Retirees, who earn lower income during their pre-retirement days, need a higher replacement during their retirement period as they spend much of their income on food, housing, transportation, and medical care. However, retirees in some states in Nigeria earn as low as ₦500 (30 cents) as monthly pensions. In Kwara state, some retirees earn as low as ₦3000 (\$2) monthly (Purcell, 2012, Obiowo, 2024)

Retirement is the stage of total withdrawal from labour force (Dwyer & Hu, 2000). It is accompanied by a reduction in the physiological and psychological commitment of workers (Wang, 2013, Wang & Shi, 2014; Wang & Shultz, 2010). It is a later career development stage in life during which adults continue to grow to pursue different interests. The different types of retirement include phased retirement, deferred retirement, disability retirement, early retirement, and voluntary retirement. This study focused on voluntary retirement. Voluntary retirement is the most common type of retirement and it is primarily based on age or number of years of service. Retirees are paid a lump sum by the government or the employer upon final exit from service as provided by the Retirement Act of a nation. In Nigeria, the traditional retirement age is 65, (though it moved from 55 years to 60 years before now) (Patrick, 2023). Even though the retirement age also varies for some professional workers, retirement usually takes place in older adulthood. Retirees face numerous health challenges, and this is attributed to the diminishing state of physiological and anatomical function of the human body system at this stage of life (Akintunde *et al*, 2021).

Statement of the Problem

Despite the vulnerability of older retirees to chronic diseases, retirees in Nigeria are saddled with the challenge of low-income replacement and poor health challenges among retirees. The National Union of Pensioners reported that some retirees earn as low as N500 (30 cent) pension monthly. Thus, it is observed that lower income among the retirees poses a challenge for managing chronic health conditions. Therefore, this study sought to evaluate the influence of retiree's income replacement on the management of chronic diseases among retirees in Ilorin South Local Government

Objectives of the Study

The study's main objective was to evaluate the influence of income replacement on chronic disease management morbidity management among

retirees in Ilorin South Local Government Area of Kwara State. The specific objectives of the study were to:

1. describe the socio-demographic characteristics of the respondent;
2. evaluate the differences in pre-retirement and post-retirement income among retirees in Ilorin South Local Government Area of Kwara State;
3. examine the relationship between post-retirement income and the number of reported diseases among retirees in Ilorin South Local Government Area of Kwara State;
4. determine the relationship between the number of reported diseases and the intensity of the diseases among retirees in Ilorin South Local Government Area of Kwara State;
5. determine the relationship between post-retirement income and retiree's perception on health management in Ilorin South Local Government Area of Kwara State;
6. evaluate the relationship between pre-retirement and post-retirement income differences and the number of reported diseases among retirees in Ilorin South Local Government Area of Kwara; and
7. evaluate the relationship between pre-retirement and post-retirement income differences and the intensity of diseases among retirees in Ilorin South Local Government Area of Kwara State.

Hypothesis

1. There is a significant difference in the pre-retirement and post-retirement income among the retirees in Ilorin South Local Government Area of Kwara State.
2. There is a significant relationship between post-retirement income and the number of reported diseases among retirees in Ilorin South Local Government Area of Kwara State.
3. There is a significant relationship between the number of reported diseases and intensity of diseases among retirees in Ilorin South Local Government Area of Kwara State.
4. There is a significant relationship between post-retirement income and retiree's perception on health management among retirees in Ilorin South

Local Government Area of Kwara.

5. There is a significant relationship between pre-retirement and post-retirement income differences and the number of reported diseases among retirees in Ilorin South Local Government Area of Kwara State.
6. There is a significant relationship between pre-retirement and post-retirement income differences and intensity of the diseases among retirees in Ilorin South Local Government Area of Kwara State.

Method

The study population comprised elderly persons in the Ilorin South Local Government Area of Kwara State, and the target population consisted of retired elderly persons from age 65 to 85 and above in selected wards of Ilorin South Local Government Area of Kwara State. A stratified and purposive sampling technique were adopted for this study. The first stage involved stratifying the state into 16 local government areas, and the second stage involved purposively selecting the Ilorin South Local Government Area. The third stage involved a homogeneous purposive sampling technique to choose three wards namely Akanbi IV, Akanbi V, and Balogun Fulani I from the eleven wards in the LGA, and the last stage involved the adoption of a snowball purposive sampling technique to select 200 retired elderly persons with the assistance of the chairman of the Ilorin South Retiree Association.

A well-structured questionnaire titled “Income Replacement and Chronic Diseases Management Questionnaire and Score-card (IRCDMQ)” was used to collect data. The researcher developed the questionnaire based on the research objectives and research hypotheses that related to chronic diseases. It was segmented into A, B, and C sections. Section A contained the socio-demographic details of the respondent and was designed based on the respondent’s features. Section B part of the questionnaire focused on the management of chronic diseases of the respondent, specifically addressing common chronic conditions that affect retirees, such as heart disease, diabetes, arthritis, hypertension, chronic respiratory disease, cancer, depression, and anxiety. The severity of these conditions was measured using a visual analogue scale (VAS) for pain and the Patient Health Score Card (PHSC-4), which allowed respondents to rate the intensity of their conditions based on symptoms, and interference of the disease with the respondent's daily activities. Section C part of the questionnaire focused on the retirees'

perception of their health management during the pre-retirement and retirement period and this was done using a 4 points Likert scale to measure the perception level of the retirees on their health management based on their pre-retirement and retirement income respectively. The average mean was set at 2.50. By this, a mean rating of an item by the respondents equal to or above 2.50 was taken as agreed while less than 2.50 was taken as disagreed. An expert at the Department of Home Economics and Food Science, University of Ilorin Kwara State, Nigeria, validated the questionnaire.

Data were analysed using descriptive, and inferential statistics such as frequencies and percentages. Hypothesis one was tested using a paired sample t-test, while hypotheses two, three, four, five, and six were tested using a regression-based analysis. All null hypotheses were tested at a 0.05 level of significance, and descriptive, inferential statistics and figures were performed and created with R version 4.4.1, and R studio version 2024.4.2.0. Data visualization was done using base R studio statically application base r, ggplot package, gt summary package, stargazer package and latex.

Results

Table 1: Analysis of demographic characteristics of the respondents

Variables		Frequency	Percent%
Gender	Male	52	26
	Female	148	74
Age (in Years)	65-69	124	62
	70-74	40	20
	75-79	16	8
	80-84	16	8
	85 and above	3	2
Marital Status	Married	181	90
	Single	--	--
	Separated	4	2
	Divorced	6	3

	Widow	9	4
Level of education	Primary Education	5	2
	Secondary Education	35	18
	Bachelor's degree	106	53
	Master's degree	29	15
	PhD	25	12

Source: Field Survey (2024)

Table 1 represents the analysis of the demographic characteristics of the respondents, and the following details were revealed: About (26% (n = 52) of the respondents were male, 74% (n = 148) of the respondents were female; most of the respondents were between age 65 - 69 years old with 62% (n = 124). The marital status of the respondents showed that (about 90% (n = 181) were married. The data of the respondents based on level of education showed that (about 53% (n = 106) had bachelor's degrees. This indicated that a higher number of the respondents were female, most respondents were married, and the majority of the respondents were fresh retirees who were between 65 – 69 years of age.

Table 2: Analysis of Pre-retirement income and retirement income of the retirees

S N	Variable	Income in Naira	Frequenc y	Perce nt%
1	Pre-retirement income in (Naira)	Less than ₦50,000	7	4
		₦51,000 - ₦80,000	19	10
		₦81,000- ₦150,000	12	6
		₦151,000- ₦200,000	60	30
		₦201,000- ₦300,000	67	34
		₦301,000- ₦400,000	28	14
		₦401,000 – ₦600,000	7	4

		₦601,000 and Above	--	--
2	Post-retirement Income in (Naira)	Less than ₦50,000	47	24
		₦51,000 - ₦80,000	5	2
		₦81,000- ₦150,000	67	34
		₦151,000- ₦200,000	46	23
		₦201,000- ₦300,000	35	18
		₦301,000- ₦400,000	--	--
		₦401,000 -- ₦600,000	--	--
		₦601,000 and Above	--	--

Source: Field Survey (2024)

Table 2 represents the pre-retirement income and retirement income of the respondents. It is based on the pre-retirement income of the respondent majority earning ₦151,000 - ₦200,000,

₦201,000 - ₦300,000 at 30% (n = 60) and 34% (n = 67) and based on the post-retirement income majority earning ₦81,000 - ₦150,000 at 67 (n = 34). This indicates that a majority of the retirees earned below \$120 United States dollars monthly during retirement.

Table 3: Analysis of the health condition of the respondents

Arthritis	1	57	29
Hypertension	1	25	13
Arthritis, Hypertension	2	20	10
Depression	1	13	7
Diabetes, Heart disease	2	13	7
Cancer, Anxiety	2	12	6
Hypertension, Arthritis	2	9	5

Chronic respiratory disease	2	9	5
Diabetes	1	8	4
Arthritis, Depression, Hypertension	3	6	3
Diabetes, Anxiety, Hypertension	3	5	3
Depression, Heart disease	2	5	3
Diabetes, Depression	2	4	2
Depression, Arthritis	2	3	2
Cancer, Depression	2	3	2
Arthritis, Cancer	2	1	1
Chronic respiratory disease, Arthritis	2	1	1
Depression, Diabetes	2	1	1
Heart disease	1	1	1
Others	--	3	2
NA	--	1	1

Source: Field Survey (2024)

Table 3 represents the health condition of the respondents and it reveals that (about 29% (n = 57) had arthritis; and the more common multimorbidity combinations were arthritis and hypertension 10% (n = 20). This result indicates that arthritis was the common chronic condition experienced by older retirees in Ilorin South Local Government Area of Kwara State.

Table 4: Analysis of the Intensity of the Health Condition of the respondents

Intensity of the diseases		
Variable	Frequency	Percent %
Minor	41	20
Moderate	53	26

Major	62	31
Severe	44	22

Source: Field Survey (2024)

Table 4 shows the intensity of the diseases of the respondents, and it reveals that 62 (31%) had major, 53 (26%) had moderate, 44 (22%) had severe, and 41 (20%) had minor state of health condition.

Table 5: Frequency, Percentage, Mean Rating, and Standard Deviation on the retiree's perception on the relationship between health management during pre-retirement and post-retirement income

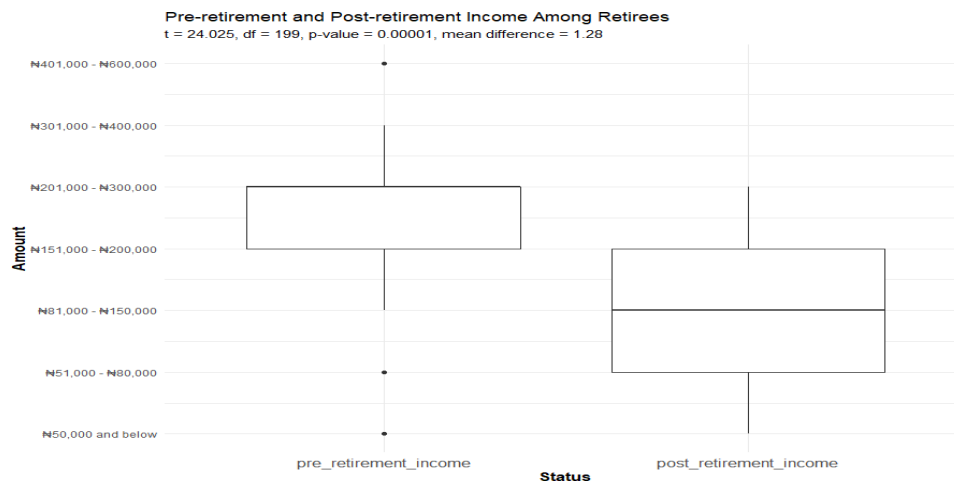
Items	S D	D f ((%)	A f (%)	S A f (%)	Me an x	St d	Remarks
My financial situation during pre-retirement allows me to effectively manage my health challenge	24 (1 2)	85 (4 2)	88 (0)4 4	03 (0 2)	2.3 5	0.7 1	Disagree d
My financial situation during retirement allows me to effectively manage my health challenge	85 (4 5)	66 (4 2)	32 (10)	17 (0 4)	1.9 1	0.9 6	Disagree d

Source: Field Survey (2024) Key SA – Strongly disagreed; D - Disagreed; A Agreed; SA - Strongly agreed; F - Frequency

Table 5 represents the frequency, percentage, mean rating, and standard deviation of the retiree's perception of health management during the pre-retirement and retirement periods. A mean value of 2.35 was obtained for pre-retirement while a mean value of 1.91 was obtained for the retirement income.

The result of the hypothesis

A t-test result on the significant difference between the pre-retirement and post-retirement income among the retirees in Ilorin South Local Government

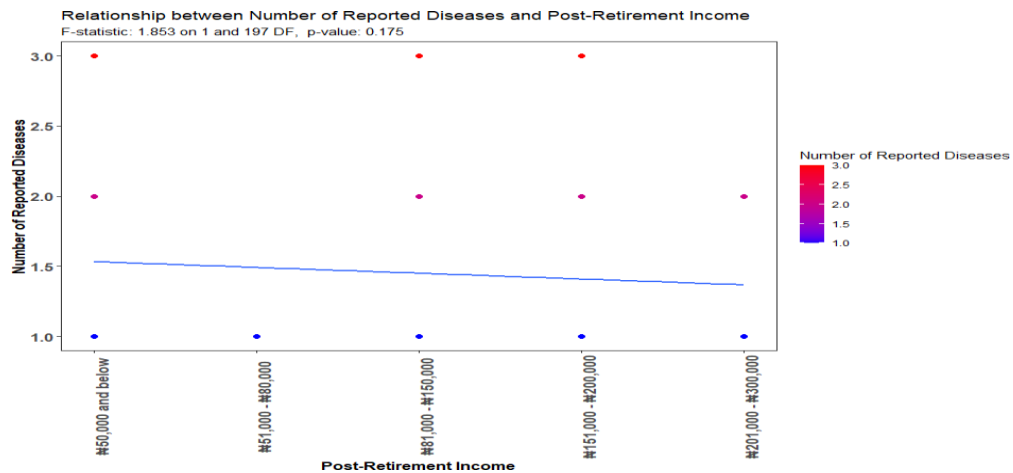


Area of Kwara State

Source: Field Survey (2024)

Figure 1 above reveals the paired t-test analysis to compare the mean of pre-retirement and post-retirement incomes. It shows that a t-value of 24.025 with a degree of freedom of 199, a p-value of 0.00001, and a mean difference of 1.28 was obtained. This indicates a significant difference in pre-retirement and post-retirement incomes of the retirees in Ilorin South Local Government Area of Kwara. Since the p-value of 0.00001 was less than 0.05, with a mean difference of 1.28, it shows that the income replacement is significantly low.

The Relationship between the Post-retirement Income and the Number of Reported Diseases among the Retirees in Ilorin South Local Government Area of Kwara State



Source: Field Survey (2024)

Figure 2 shows the linear regression analysis on the relationship between the post-retirement incomes and the number of reported diseases among retirees in Ilorin South Local Government Area of Kwara State. A t-value of -1.36 with a degree of freedom of 197 and a p-value of 0.175 was obtained. This indicates no significant relationship between the retiree's income and the number of reported diseases among retirees in the Ilorin South Local Government Area of Kwara State as the p-value of 0.175 is more than 0.05. Furthermore, the post-retirement income coefficient value of -0.04133 was obtained, and this indicates that for every ₦1 increase in post-retirement income, it will result to a -0.04133 decrease in the number of diseases among retirees.

Relationship between the Number of Reported Diseases and Intensity of Diseases among Retirees in Ilorin South Local Government Area of Kwara State

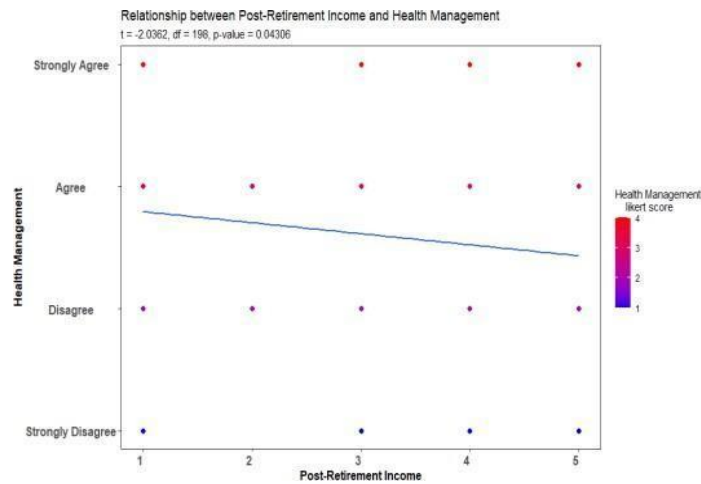


Source: Field Survey (2024)

Figure 3 represents the relationship between the number of reported diseases and intensity among the retirees in Ilorin South Local Government Area of Kwara State. A t-value of

1.358 was obtained with 197 degrees of freedom and a p-value of 0.1761. This indicates no significant relationship between the number of reported diseases and intensity of the diseases among the retirees in Ilorin South Local Government Area of Kwara State, as the p-value of 0.1761 is more than 0.05. The coefficient for the number of reported diseases is 0.171. This suggests that for each additional reported number of diseases, the intensity of the diseases is expected to increase by 0.171.

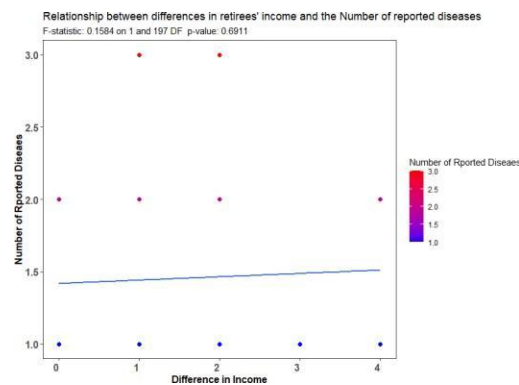
Relationship between the Post-retirement Income and Retiree's Perception on Health Management in Ilorin South Local Government Area of Kwara State



Source: Field Survey (2024)

Figure 4 represents the linear regression on the relationship between post-retirement income and health management among retirees in the Ilorin South Local Government Area of Kwara State. A t-value of -2.0362 was obtained with 198 degrees of freedom and a p-value of 0.04306. This indicates a significant relationship between post-retirement income and health management among retirees in the Ilorin South Local Government Area of Kwara State since the p-value of 0.04306 is less than 0.05. Furthermore, the result revealed that the health management score tends to decrease by 0.09081 for each additional decrease in post-retirement income.

Relationship between Pre-retirement and Post-retirement Income Differences and the Number of Reported Diseases



Source: Field survey 2024

Figure 5 shows the relationship between pre-retirement and post-retirement income differences and the number of reported diseases among retirees in Ilorin South Local Government Area of Kwara. It was revealed that a t-value of 0.398, 197 degrees of freedom, and a p-value of 0.6911 were obtained. This indicates no significant relationship between pre-retirement and post-retirement income differences and the number of reported diseases among the retiree since the p-value of 0.6911 was more than 0.05. It revealed that for every one-unit increase in income difference (pre-retirement and post-retirement income), there is a non-significant 0.023 decrease in the number of reported diseases.

Relationship between Pre-retirement and Post-retirement Income Differences and Intensity of the Diseases among Retirees in Ilorin South Local Government Area of Kwara

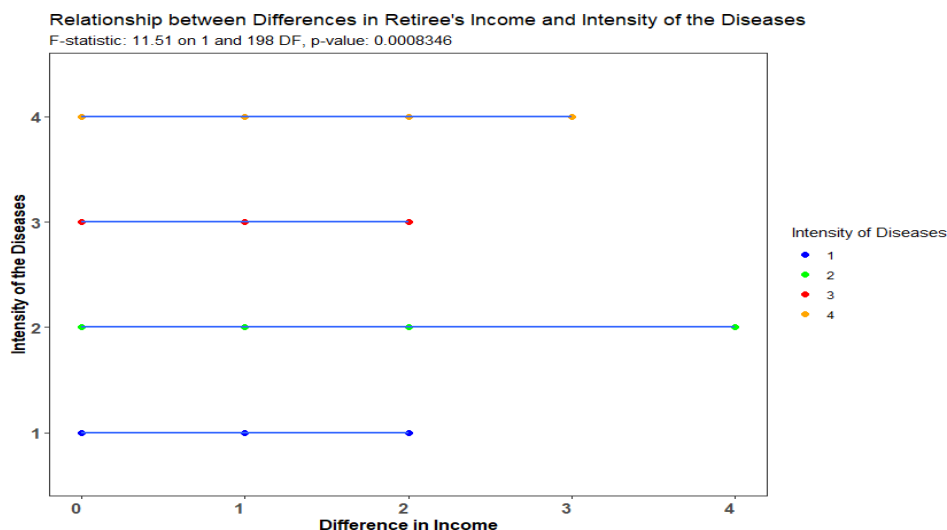


Figure 6 shows the relationship between pre-retirement and post-retirement income differences and the intensity of the diseases among retirees in Ilorin South Local Government Area of Kwara. Fionding revealed that a t-value of 3.393, 198 degrees of freedom, and a p-value of 0.00083 were obtained. This indicates a significant relationship between pre-retirement and post-retirement income differences and the intensity of the diseases among retirees in Ilorin South Local Government Area of Kwara since the p-value of 0.00083 was less than 0.05. Additionally, it was revealed that for every one-unit increase in

income difference (the difference between the pre-retirement and post-retirement income) the intensity of the reported diseases increases by 0.3401 units.

Discussion

The study evaluated the influence of income replacement on chronic disease management among retirees in Ilorin South Local Government Area of Kwara State. Descriptive and inferential statistics were adopted for analysing the data that were collected from the sampled respondents.

From the socio-demographic characteristic table, the majority of the respondents were female, new cohort, married, and had at least a bachelor's degree qualification.

The analysed data on morbidity and multimorbidity status of the respondents shows that arthritis was the common chronic condition experienced by older retirees in Ilorin South Local Government Area of Kwara State, and the more common multimorbidity combinations were arthritis and hypertension. Anderson and Loeser (2010) reported something similar that increases in age result in osteoarthritis but joint injury increases the intensity.

It was revealed that the financial situation of the respondents in both pre-retirement and post-retirement did not allow proper management of their health. Ugwu and Idemudia (2023) also reported that retirees are often bothered by financial insecurity for their health care management during retirement.

The result of hypothesis 1 revealed a significant difference between the pre-retirement and post-retirement incomes of the retirees with a mean difference of 1.29. This indicates a substantial reduction in the post-retirement income of the retiree. A similar conclusion drawn by Afolabi (2022) was that retirees in Nigeria are experiencing abject poverty, receiving only N4,000-N10,000 (\$2-\$8) monthly that are unpaid or partly paid, thereby making it difficult for retirees to have proper health management.

The result of hypothesis 2 revealed no relationship between post-retirement income and the number of reported diseases among the retirees in Ilorin South Local Government Area of Kwara State, and it indicates no connection between low-income earnings among retirees and the level of vulnerability to diseases in older age. Dataphyte (2019) provided contradictory evidence that

revealed the described different findings on the high mortality rate among retirees due to vulnerability to terminal diseases like cancer, and diabetes as a result of low pension income during retirement for proper health management.

The results of hypothesis 3 revealed no significant relationship between the number of reported diseases and the intensity of the diseases among the retirees in Ilorin South Local Government Area of Kwara State. It showed that the number of reported diseases is not connected with the number intensity of the diseases. It was, however, revealed that for each additional reported number of diseases, the intensity of the diseases is expected to increase by 0.171.

The result of hypothesis 4 revealed a relationship between post-retirement income and health management among retirees in the Ilorin South Local Government Area of Kwara State. The result indicated that health management score tends to decrease by 0.09081 for each additional decrease in post-retirement income. Similarly, Ajayi and Ojo (2020) found that a lack of financial stability poses difficulty in retirees' adjustment to health management.

Hypothesis 5 revealed no significant relationship between pre-retirement and post-retirement income differences and the number of reported diseases among retirees. Additionally, for every one-unit increase in income difference (pre-retirement and post-retirement income), there is a non-significant 0.023 increase in the number of reported diseases.

The result of hypothesis 6 revealed a relationship between pre-retirement and post-retirement income differences and the intensity of the diseases among retirees in Ilorin South Local Government Area of Kwara, indicating the influence of income replacement on the well-being of retirees. Gaspar, Rossi, Hone and Dornelles (2021) provided the same evidence that revealed the impact of income inequality and low income on the intensity of diseases.

Conclusion

Based on the findings of this study, it was concluded that low-income replacement (monthly pension) payment of retirees by the government is related to the high susceptibility and management of chronic conditions. Nevertheless, the study revealed no relationship between post-retirement income and the number of reported diseases. Likewise the difference in income does not influence the number of reported diseases. Therefore, the researcher recommended that senior citizens, who had served the nation for 35 years or

more, should be compensated for their sacrifices during service years.

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