International Journal of Innovative Healthcare Research 13(1):117-125, Jan.-Mar., 2025

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doi:10.5281/zenodo.15088544

Socio-Demographic Determinants of Low Back Pain (LBP) among Elderly Attending Healthcare Facilities in Port Harcourt Metropolis, Rivers State

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ABSTRACT
This study identify the socio-demographic determinants of low back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State. A health facility-based cross sectional design was adopted to determine the correlates of low back pain among elderly people. The sample size 314 was determine using Cochran formula. The instrument for collecting data for this study was a structured proforma. The title of the proforma was Correlates of Low Back Pain (CLBP). Collected data was analyzed using Statistical Product for Service Solution version 25.0. The result revealed there was a significant relationship ($p<0.05$) between gender and low back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State was rejected. The result revealed there was a significant relationship ($p<0.05$) between family history and low back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State was rejected. The result revealed there was a significant relationship ($p<0.05$) between bodyweight and low back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State was rejected. The result revealed there was a significant relationship ($p<0.05$) between previous occupation and back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State was rejected. The result revealed there was a significant relationship ($p<0.05$) between physical activity and low back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State was rejected. In conclusion, the result of this study found that the correlates of low back pain were gender, family history, previous occupation and physical activity. There is need to improve and promote good geriatric health of the older people in order for longevity of life. The following recommendations was made among other Government through ministries of social welfare and health should provide social support programme especially in finance to help older people take care of their health.
Keywords: low back pain, determinants, elderly

INTRODUCTION

Low back pain is a severe health concern among older adults, with various correlates that contribute to its occurrence. It is the condition where the greatest number of people may benefit from rehabilitation. Low back pain (LBP) is conventionally defined as pain, muscle tension or stiffness localized below the costal margin and above the inferior gluteal folds, with or without associated leg pain (World Health Organization, 2023). It is generally assumed that LBP is a very common condition worldwide, occurring with a relatively high frequency in the general population, so that up to 80% individuals will experience an episode at some point throughout the lifetime. Low-back pain (LBP) is one of the most common health

problems in primary care (Rapoport et al., 2004). Low-back pain can be defined as any pain between the last ribs and the lower gluteal folds, with or without pain in the lower limbs (Airaksinen, et al. 2006). In addition, the duration of pain is one criterion for LBP classification. Acute LBP has a sudden onset and lasts less than six weeks, subacute Low-back pain lasts from six to 12 weeks, and chronic Low-back pain presents for a period greater or equal to 12 weeks (Martins et al. 2010). It is estimated that 70% to 85% of the population will experience an episode of LBP at some point. Ninety percent of these individuals will have more than one episode (Silva et al., 2004).

One significant correlate is the aging process itself, as degenerative changes in the spine can lead to discomfort and pain in the lower back (Licciardone et al., 2014). Additionally, older adults often experience reduced muscle strength and flexibility, which can further exacerbate back pain (Ogura et al., 2018). Furthermore, lifestyle factors such as smoking, lack of physical activity, and obesity have been linked to an increased risk of low back pain in older adults (Shiri et al., 2014). For example, smoking can cause reduced blood flow to the spine, leading to impaired healing and increased pain perception (Licciardone et al., 2014). In contrast, regular physical activity and maintaining a healthy weight can help support spinal health and reduce the likelihood of experiencing back pain (Ogura et al., 2018). In addition, psychological factors such as stress, anxiety, and depression have also been associated with low back pain in older adults (Nijs et al., 2013). These emotional states can exacerbate pain symptoms and lead to a lower pain threshold, making individuals more susceptible to chronic back pain (Shiri et al., 2014). In conclusion, a combination of physical, lifestyle, and psychological factors contribute to the high prevalence of low back pain among older adults. Addressing these correlates through interventions such as exercise, stress management, and healthy lifestyle choices can help reduce the burden of back pain in this population.

People at any age can experience low-back pain, including children and adolescents. Most people experience LBP at some point in their lives. The peak in the number of cases occurs at 50–55 years, and women experience low-back pain more frequently than men (WHO, 2023). The prevalence and disability impact of low-back pain are greatest among older people aged 80–85 years. Recurrent low-back pain episodes are more common with ageing. Low back pain (LBP) describes pain between the lower edge of the ribs and the buttock. It can last for a short time (acute), a little longer (sub-acute) or a long time (chronic). It can affect anyone. LBP makes it hard to move and can affect quality of life and mental well-being. It can limit work activities and engagement with family and friends. LBP can be specific or non-specific. Specific LBP is pain that is caused by a certain disease or structural problem in the spine, or when the pain radiates from another part of the body. In 2020, low back pain (LBP) affected 619 million people globally and it is estimated that the number of cases will increase to 843 million cases by 2050, driven largely by population expansion and ageing (Global Burden of Diseases, 2021). LBP is the single leading cause of disability worldwide and the condition for which the greatest number of people may benefit from rehabilitation. Low-back pain can be experienced at any age, and most people experience low-back pain at least once in their life. Global Burden of Diseases, (2019) reported that the prevalence increases with age up to 80 years, while the highest number of LBP cases occurs at the age of 50–55 years. Low-back pain is more prevalent in women (Global Burden of Diseases, 2019). Non-specific low-back pain is the most common presentation of low-back pain (about 90% of cases) (WHO, 2023). In Nigeria, studies of Awosan et al. (2017) reported that the lifetime, annual, and point prevalence of low back pain among the participants were 56.2%, 39.1% and 17.2% respectively.

Occupation has been identified as a significant correlate of low back pain among adults. Several studies have explored the relationship between occupation and low back pain, highlighting the impact of physical demands, repetitive tasks, and awkward postures on the development of this common musculoskeletal condition. One study by Bevan et al. (2019) found that individuals working in occupations that require heavy lifting, prolonged sitting or standing, and repetitive bending are at a higher risk of developing low back pain. These physical demands can put excessive strain on the muscles and ligaments of the lower back, leading to pain and discomfort over time. Furthermore, a meta-analysis by da Costa et al. (2019) demonstrated that certain occupational factors such as job strain, high job demands, and low job control

are associated with an increased likelihood of experiencing low back pain. Job strain, for example, refers to the combination of high job demands and low job control, which can contribute to high levels of stress and musculoskeletal tension in the lower back region. Additionally, a study by Järvholm et al. (2020) examined the impact of work-related ergonomic exposures on the prevalence of low back pain among workers in various industries. The authors found that individuals who are exposed to awkward postures, repetitive motions, and heavy physical work are more likely to report symptoms of low back pain compared to those in less physically demanding occupations. To this extent, occupation plays a significant role in determining the likelihood of developing low back pain among adults. Physical demands, job strain, and ergonomic exposures can all contribute to the development of this common musculoskeletal condition. By addressing these occupational risk factors through proper ergonomics, job redesign, and workplace interventions, individuals can reduce their risk of experiencing low back pain and promote overall musculoskeletal health. Family history has been identified as a significant determinant of low back pain among adults. Several studies have shown a strong familial aggregation of low back pain, suggesting that genetic factors play a role in its development (Suri, 2013). In a study by Battie et al. (2007), the heritability of disc degeneration, which is a common cause of low back pain, was estimated to be 74% to 81%, indicating a strong genetic component. Poor quality of life due to prolong time of recovering from chronic bone, autoimmune diseases, arthritis following a fracture, stems from possible symptoms including chronic pain from fractures, limitation of basic activity of daily living, or reduced mobility and independence are impact of low back pain. Older people aged 50 years and above are the chief compliant of joint pain including low back pain and for decades, nothing has been to improve the health status of people who are expose to occupation that such pain. In Nigeria, there are dearth studies and interventions on the frequency, causes and management of low back pain. No governmental effort to promote geriatric health of old people including out of work class. Consequent upon this, the researchers seek to unravel the determinants of low back pain among older adults aged 50 years old and above in specialist health facilities in Port Harcourt metropolis, Rivers State.

Objectives of the Study

The objective of this study was identify the socio-demographic determinants of low back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State.

Hypotheses

The following hypotheses were postulated and tested at 0.05 level of significance.

1. There is no significant relationship between gender and low back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State.
2. There is no significant relationship between family history and low back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State.
3. There is no significant relationship between bodyweight and low back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State.
4. There is no significant relationship between previous occupation and back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State.
5. There is no significant relationship between physical activity and low back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State.

METHODOLOGY

Study setting: The study was carried out in Port Harcourt, the capital of Rivers State. Rivers State is situated in the South –South geopolitical zone of Nigeria.

Design: A health facility-based cross sectional design was adopted to determine the prevalence and determinants of low back pain. Data are collected from medical record department from healthcare facilities were cases have treated and managed.

Population for the Study: And undergone treatment on low back pain was recruited for this study. Since it is a retrospective study.

Sample Size and Sampling Techniques: The sample size 314 was determine using Cochran formula method.

Formula:

$n=p(1-p)z^2/e^2$

n= sample size

p=the proportion of the population (0.80) and the proportion of severe back pain was 17.3% in Nigeria reported by Awosan et al. (2017).

e= acceptable sampling error (e=0.05)

z= value at reliability level or significance 95% for 1.96 at 0.05 level of significance

Instrument for Data Collection: The instrument for collecting data for this study was a structured proforma. The title of the proforma was Correlates of Low Back Pain (CLBP).

Method for Data Analysis: Collected data was analyzed using Statistical Product for Service Solution version 25.0. Descriptive statistical tools such as point biserial correlation was used to answer the research questions while point biserial correlation were used to test the hypotheses at 0.05 level of significance.

RESULTS

Test of Hypotheses

Hypothesis 1: There is no significant relationship between gender and low back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State.

Table 1: Point biserial Correlation showing relationship between gender and low back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State.

Variables		LBP	Gender	Decision
LBP	Correlation Coefficient	1	0.55	H_o Rejected
	Sig.		0.00*	
	N	314	314	
Gender	Correlation Coefficient	0.55	1	
	Sig.	0.00*		
	N	314	314	

*Significant; p<0.05

Table 1 showed the Point biserial Correlation between gender and low back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State. The result revealed there was a significant relationship (N = 314, r = 0.55, p<0.05). Thus, the null hypothesis which stated that there is no significant relationship between gender and low back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State was rejected.

Hypothesis 2: There is no significant relationship between family history and low back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State.

Table 2: Point biserial Correlation showing significant relationship between family history and low back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State

Variables		LBP	Family history	Decision
LBP	Correlation Coefficient	1	0.75	H_o Rejected
	Sig.		0.00*	
	N	314	314	
Family history	Correlation Coefficient	0.75	1	
	Sig.	0.00*		
	N	314	314	

*Significant; p<0.05

Table 2 showed the Point biserial Correlation between family history and low back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State. The result revealed there was a significant relationship (N = 314, r = 0.75, p<0.05). Thus, the null hypothesis which stated that there is no significant relationship between family history and low back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State was rejected.

Hypothesis 3: There is no significant relationship between bodyweight and low back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State.

Table 3: Point biserial Correlation showing significant relationship between bodyweight and low back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State

Variables		LBP	Bodyweight	Decision
Teenage pregnancy	Correlation Coefficient	1	0.48	H_o Rejected
	Sig.		0.00*	
	N	314	314	
Socio-economic status	Correlation Coefficient	0.48	1	
	Sig.	0.00*		
	N	314	314	

*Significant; p<0.05

Table 3 showed the Point biserial Correlation between bodyweight and low back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State. The result revealed there was a significant relationship (N = 314, r = 0.48, p<0.05). Thus, the null hypothesis which stated that there is no significant relationship between bodyweight and low back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State was rejected.

Hypothesis 4: There is no significant relationship between previous occupation and back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State.

Table 4: Point biserial Correlation showing significant relationship between previous occupation and back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State.

Variables		LBP	Previous occupation	Decision
Teenage pregnancy	Correlation Coefficient	1	0.62	H_o Rejected
	Sig.		0.00*	
	N	314	314	
Peer pressure	Correlation Coefficient	0.62	1	
	Sig.	0.00*		
	N	314	314	

*Significant; p<0.05

Table 4 showed the Point biserial Correlation between previous occupation and back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State. The result revealed there was a significant relationship (N = 314, r = 0.62, p<0.05). Thus, the null hypothesis which stated that there is no significant relationship between previous occupation and back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State was rejected.

Hypothesis 5: There is no significant relationship between physical activity and low back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State.

Table 5: Point biserial Correlation showing significant relationship between physical activity and low back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State.

Variables		LBP	Previous occupation	Decision
Teenage pregnancy	Correlation Coefficient	1	0.60	H_o Rejected
	Sig.		0.00*	
	N	314	314	
Peer pressure	Correlation Coefficient	0.60	1	
	Sig.	0.00*		
	N	314	314	

*Significant; $p<0.05$

Table 5 showed the Point biserial Correlation between physical activity and low back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State. The result revealed there was a significant relationship ($N = 314$, $r = 0.60$, $p<0.05$). Thus, the null hypothesis which stated that there is no significant relationship between physical activity and low back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State was rejected.

DISCUSSION OF FINDINGS

The result of this study were discussed below:

The result revealed there was a significant relationship ($p<0.05$) between gender and low back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State was rejected. The result of this study is expected because there is variation in body response to degenerative ailment such as pain at the low back. The result of this study is in credence with findings of Uehara et al. (2021) which indicated that the prevalence of low back pain was significantly high among men than women. Wong et al. (2022) and Sakai et al. (2022) whose studies illustrated that there was a variation in the experience of low back pain among men and women in a given population. Tsuji et al. (2021) reported that sex was 3.4 times more likely to determine low back pain experience by older men and women. Studies of Chang et al. (2015) which found that the prevalence of low back pain was significantly higher in women (32.3%) compared to men (25.8%). Jensen et al. (2010) affirmed that women tend to have wider pelvises and a lower muscle mass compared to men, which can lead to increased stress on the lower back and a higher likelihood of developing back pain. Additionally, hormonal factors may also play a role in the gender differences in low back pain. Estrogen, a female sex hormone, has been shown to influence pain sensitivity and may contribute to increased pain perception in women. This could potentially explain why women are more likely to experience chronic and recurrent low back pain compared to men.

The result revealed there was a significant relationship ($p<0.05$) between family history and low back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State was rejected. The result of this study is in keeping with findings of Suri, (2013) which shown a strong familial aggregation of low back pain, suggesting that genetic factors play a role in its development. In a study by Battie et al. (2007), the heritability of disc degeneration, which is a common cause of low back pain, was estimated to be 74% to 81%, indicating a strong genetic component. Furthermore, familial clustering of low back pain has also been observed in twin studies. A study by Battie et al. (2009) found that the concordance rate for low back pain was higher in monozygotic twins (53%) compared to dizygotic twins (22%), suggesting a genetic influence on the development of low back pain. In addition to genetic factors, familial environmental factors may also contribute to the development of low back pain. Sitthipornvorakul et al., (2015) affirmed that lifestyle habits and behaviors that are learned within

families, such as poor posture, lack of physical activity, and smoking, can increase the risk of developing low back pain. Familial attitudes towards pain and coping strategies may also influence an individual's susceptibility to low back pain. It is plausible because family history has a complex determinant of low back pain among adults, involving both genetic and environmental influences. Understanding the familial factors that contribute to low back pain can help healthcare providers better assess and manage the condition in patients with a family history of the condition. As at the time of this study there was contradictory findings amongst the outcome of this present study. Hence, family history is a correlate of low back pain among older adults.

The result revealed there was a significant relationship ($p<0.05$) bodyweight and low back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State was rejected. The result of this study is expected because increase in body weight cases more pressure on the bones and muscles of the body which may likely leads to pain at any part. The result of this study is in line with findings of Tsuji et al. (2021) which indicated that body mass index is significantly correlated with high prevalence of low back pain among older adults. Samartzis et al. (2012) which revealed that overweight and obesity have long been recognized as risk factors for the development of low back pain among adults. Shiri et al. (2010) reiterated that being overweight can lead to an increase in mechanical stress on the lower back, resulting in strain on the muscles and ligaments, ultimately leading to pain. Additionally, excess weight can alter the curvature of the spine and increase the risk of disc degeneration and herniation (Hershkovich et al., 2013). One study Shiri et al. (2010) found that individuals with a higher body mass index (BMI) were more likely to report chronic low back pain compared to those with a lower BMI. Another study Cheung et al. (2009) reported that overweight and obese individuals were at an increased risk of developing sciatica, a common form of low back pain caused by pressure on the sciatic nerve. Furthermore, Samartzis et al. (2012) revealed that overweight can also contribute to the development of other health conditions such as diabetes and cardiovascular disease, which can indirectly increase the risk of low back pain. It is essential to address weight management as part of a comprehensive treatment approach for individuals with low back pain to help reduce symptoms and improve overall health and quality of life (Hershkovich et al., 2013). However, being overweight is a significant determinant of low back pain among adults due to the increased mechanical stress on the spine, alteration of spinal curvature, and increased risk of disc degeneration and herniation.

The result revealed there was a significant relationship ($p<0.05$) between previous occupation and low back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State was rejected. The result of this study is expected because occupation has been identified as a significant correlate of low back pain among adults. The result of this study is in credence with findings of Bevan et al. (2019) which found that individuals working in occupations that require heavy lifting, prolonged sitting or standing, and repetitive bending are at a higher risk of developing low back pain. These physical demands can put excessive strain on the muscles and ligaments of the lower back, leading to pain and discomfort over time. Furthermore, a meta-analysis by da Costa et al. (2019) demonstrated that certain occupational factors such as job strain, high job demands, and low job control are associated with an increased likelihood of experiencing low back pain. Job strain, for example, refers to the combination of high job demands and low job control, which can contribute to high levels of stress and musculoskeletal tension in the lower back region. Recently, a study by Järvholm et al. (2020) examined the impact of work-related ergonomic exposures on the prevalence of low back pain among workers in various industries. Several studies have explored the relationship between occupation and low back pain, highlighting the impact of physical demands, repetitive tasks, and awkward postures on the development of this common musculoskeletal condition. As at the time of this study there was no contrary findings against the outcome of the present study.

The result revealed there was a significant relationship ($p<0.05$) physical activity and low back pain among elderly attending specialist health facilities in Port Harcourt metropolis, Rivers State was rejected. The result of this study is required because physical activity is a self-related care to improve and maintain good health status. The result of this study is in agreement with findings of Bokermann et al. (2024)

which indicated physically active adults are 3.2 times more likely to determine pain as compared with inactive person. Wong et al. (2022) buttressed that the prevalence of low back pain was significantly higher among physically disable or challenged people more severely than physical active persons. Sakai et al. (2022) illustrated that there was a correlation between people with postural defects, lower extremity, misalignment and low back pain especially in the elderly age. Mattiuzzi et al. (2020) and De Souza et al. (2019) whose studies indicated that people with disabilities are 2.4 times more likely to determine experience low back pain. Awosan et al. (2017) added that good proportion of older adults experience awkward posture during old age which is significantly associated with low back pain. As at the time of this study, there was converse studies that contradict with the outcome of this present findings. Hence, physical activity is a correlate of low back pain among older adults.

CONCLUSION

In conclusion, the result of this study found that the correlates of low back pain were gender, family history, previous occupation and physical activity. There is need to improve and promote good geriatric health of the older people in order for longevity of life.

RECOMMENDATIONS

In regards to the outcome of this study, the following recommendations were made:

1. Individuals should prioritize their health status by complying with planned physical activity or exercise in order to renew body tissues and muscles.
2. Government through ministries of social welfare and health should provide social support programme especially in finance to help older people take care of their health.
3. Government should established elderly healthcare homes to enable them have access to quality healthcare services at the community or grassroot.
4. Government should give free medical services to older adults as they bare unproductive to hustle for money to improve and promote good socioeconomic status.
5. Families and relatives should provide support to older adults at home so as to control physical demand and psychological stress.

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