

## ***Prevalence and Management of Hernias among Residents of Jos Metropolis: Counselling Implications***

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### **Abstract**

*A survey research design is adopted to assess the prevalence and management of hernias among residents of Jos metropolis. Two research questions and one hypothesis were formulated to guide the study. The population of the study was residents in Jos metropolis. A sample of 169 participants was selected, using accidental sampling technique. The instrument used for data collection was validated, and the reliability was obtained as 0.74 via Cronbach's Alpha. Data obtained was analyzed using frequency counts and percentages to answer the research questions while t-test was used to test the hypothesis. The finding of the study revealed that the prevalence of hernias is high among residents of Jos metropolis with 31% and there is significant difference in the prevalence of hernias between male and female residents of Jos metropolis. Based on these findings, the study concluded that there is significant gender difference in the prevalence of hernias among residents of Jos metropolis. The study recommended that government, health practitioners and counsellors should organize programmes in communities to create awareness on the prevalence, and damaging health effects of hernias.*

**Keywords:** Hernias, inguinal, prevalence, management, epigastric

### **Introduction**

Hernia is a bulging of an organ or tissue through an abnormal opening. It involves the stomach or intestine. A hernia happens when an internal organ pushes through a weak spot in one's muscle or tissue. According to Goodwin (2021), a hernia occurs when an internal organ or other body part protrudes through the wall of muscle or tissue that normally contains it. Most hernias occur within the abdominal cavity, between the chest

and the hips. Hernias are not life threatening, but they do not go away on their own. A hernia can develop in many different areas, but the groin–area, specifically in the inguinal canal, is the most common. Treating a hernia involves surgically putting the tissue or organ back in the right place and repairing the weak part of the wall (Oberger et al. 2017).

Rockwall surgical specialists explained that inguinal hernias can happen to women, but they are far more common in men. This is because of men’s different anatomy in the groin muscles necessary for blood vessels to pass through to their testicles. Thus slight difference makes men more susceptible to inguinal hernias than women. Additionally, as men aged, the abdominal wall can weaken in the inguinal area, raising the chances of hernia even more. Obesity and constipation are known to increase the risk of developing hernia. The accumulation of excess fat tissue makes developing a hernia more likely. Also, straining during bowel movements boosts the risk of hernia. Other risk factors for hernia are regular heavy lifting, chronic cough and surgery.

Willis (2005) asserts that a hernia is an organ or tissue that protrudes through a weak spot in other surrounding tissue or muscle. The weak spot, as explained, may be congenital or result from damage to a particular tissue or muscle brought on by heavy lifting, coughing, or straining to open bowels. All hernias are caused by a combination of pressure and an opening or weakness of muscle or fascia; the pressure pushes an organ or tissue through the opening or weak spot. Sometimes the muscle weakness is present at birth; more often, it occurs later in life. Stress, both emotional and physical stress, has the biggest impact on hernias. Hernias develop when organs or tissue pushes through a weak spot in the muscle wall, and one’s risk of getting a hernia increases with strain.

While hernias can appear almost anywhere in the body, they usually occur on the epigastric region midway between the breastbone and navel. Hernias can also be found in the femoral region (especially in overweight women), part of the lower intestine passing into the thigh from the abdomen. Hernias can occur through surgical incisions; the inguinal region (where part of the intestine bulges into the scrotum); and the umbilical region where the intestine bulges into the area around the navel (Willis, 2005). A hernia is a tear in one’s muscle or tissue that allows part of one’s insides to bulge out. It can be a bulge of an internal organ or one’s intestines. Sometimes one can see the hernia, depending on its location and size. Certain activities can worsen the condition, like bending over or lifting heavy objects.

Uba et al. (2006) confirmed the prevalence of hernias in Nigeria when clinical evaluations of the umbilicus were conducted on 7,968 Nigerian children, attending interview into Nigeria Airforce Military Schools from across the country. The results showed that umbilical hernia was present in 102 (1.3%) out of 7,968 children, giving a prevalence of 12.8 per 1,000. In another study, Ashindoitang and Akinlolu (2012) investigated risk factors for inguinal hernia in adult male Nigerians at the General Hospital. Other researchers who are in agreement with the prevalence of hernias in Nigeria include Ajayi and Adebamowo (1999), Ibrahim et al. (2010), and Emeka and Okeke (2021) to mention

but a few. They all reported that there is prevalence of hernias among Nigerian males in particular.

Most studies, such as Ruhl and Everhart (2007), affirmed the prevalence of inguinal hernia in men than women. Inguinal hernia is one of the most common surgical pathology. It is the most common form of abdominal wall hernia and occurs more frequently among adult men. Inguinal hernia is predominantly a male disease and the incidence increases with age. A national survey of general practices covering about 1% of the population of England and Wales in 1991-1992, found that about 95% of people presenting to primary-care settings with inguinal hernia were males. Men are significantly more likely than women to develop a hernia, specifically inguinal hernias; disparity comes down to small difference in anatomy that finds 25% of men developing an inguinal hernia at some point in their lifetime, while only 2% of women do (Ritter et al., 2018).

Hernias usually occur in one's groin. Inguinal hernias are in the groin and are mostly found in men. Femoral hernias are in the upper thigh near the groin. These are much less common and are mostly found in women. The abdomen is another frequent hernia location. If hernias occur in the midline of the abdomen, they are called ventral hernias. Umbilical hernias occur in association with the individual's belly button and are found more commonly in babies (familydoctor.org). Another type is hiatal hernias. In hiatal hernias, a part of the upper stomach comes through an opening in one's diaphragm, or chest wall. This hernia can cause acid to leak from the stomach into one's esophagus. According to familydoctor.org, hernias also can be birth defects. A congenital diaphragmatic hernia occurs when one's diaphragm does not form right. How then are hernias being managed among residents of Jos Metropolis? This forms part of the focus of the present study.

The symptoms of hernia include the following:

1. Swelling or bulge in the groin or scrotum (the pouch that contains the testicles).
2. Increased pain or a burning or aching sensation at the site of the bulge.
3. Pain or discomfort in one's groin, especially when bending over, cough or lifting.
4. Increase in the bulge size over time.
5. A dull aching sensation or a heavy or dragging sensation in one's groin.
6. Weakness or pressure in one's groin.
7. A sense of feeling full or signs of bowel obstruction.
8. Occasionally, pain and swelling around the testicles when the protruding intestine descends into the scrotum.
9. Heartburn, and difficulty swallowing.
10. Vomiting and constipation.
11. Sudden pain that quickly intensifies or shooting pain.
12. A hernia bulge that turns red, purple or dark.

According to specialists, hernia is usually possible to see or feel a bulge in the area where a hernia has occurred by physical examination. As part of a male's typical examination

for inguinal hernias, the doctor feels the area around the testicles and groin while the patient is asked to cough. Tests might also be conducted to further confirm the condition. An ultrasound test to scan one's body can be done. In some cases, soft-tissue imaging like a Computed Tomography (CT) scan will accurately diagnose the condition.

The various types of hernia can have different causes. In general, a hernia starts with pressure in an organ or intestines. A hernia forms when this pressure happens in the same area as a weakened muscle or tissue. Some hernias are due to weakened muscles that may have been present since birth; they are also associated with aging and repeated strains on the abdominal and groin areas. Such strain may come from:

1. Physical exertion, like picking up heavy objects.
- Overusing the same muscle (strenuous activity).
2. Straining during frequent coughing, sneezing, diarrhea, or constipation.
  3. Being overweight (obesity) or having poor nutrition.
  4. Pregnancy, and
  5. Using tobacco.

There are several types of hernia that an individual can experience. These include inguinal hernias, femoral hernias, umbilical hernias and hiatal hernias (Cleveland Clinic, 2018).

1. **Inguinal hernia:** An inguinal hernia is a bulging of the contents of the abdomen through a weak area in the lower abdominal wall. Inguinal hernias can occur at either of two passages through the lower abdominal wall, one on each side of the groin. These passages are called inguinal canals. Inguinal hernias can also occur through two deeper passages in the groin called the femoral canals. Hernias through these passages are also known as femoral hernias (Burcharth et al., 2013). Inguinal hernia is the most common type of hernia, and affects men more often than women because there is no need for an opening in the inguinal canal to allow for the migration and descent of testicles.

2. **Femoral hernia:** A femoral hernia may occur through the opening in the floor of the abdomen where there is space for the femoral artery and vein to pass from the abdomen into the upper leg. It is a fatty tissue or part of the intestine that protrudes into the groin at the top of the inner thigh. Femoral hernias are much less common than inguinal hernias and mainly affect older women because of their wider bone structure.

3. **Umbilical hernia:** This occurs when fatty tissue or part of the intestine pushes through the abdomen near the belly button (navel). Umbilical hernias are very common in newborn babies and often do not need treatment unless complication occurs. Some umbilical hernias enlarge and may require repair later in life (The Hernia Surge Group, 2018).

4. **Hiatal (hiatus) hernia:** It occurs when part of the stomach slides through the opening in the diaphragm where the esophagus (the horizontal sheet of muscle that separates the chest from the abdomen) passes from the chest into the abdomen. A sliding hiatal hernia is the most common type and occurs when the lower esophagus and portions of the stomach slide through the diaphragm into the chest.

5. **Incisional hernias:** These occur as a complication of abdominal surgery, where the abdominal muscles are cut to allow the surgeon to enter the abdominal cavity to

operate. Although the muscle is usually repaired, it becomes a relative area of weakness, potentially allowing abdominal organs to herniate through the incision. That is, when tissue protrudes through the site of an abdominal scar from a remote abdominal or pelvic operation.

6. **Epigastric hernias:** They occur because of a weakness in the midline of the abdominal wall where the two rectus muscles join together between the breast bone and belly button. Sometimes this weakness does not become evident until later in adult life as it appears as a bulge in the upper abdomen. Pieces of bowel, fat, or omentum can become trapped in this type of hernia that occurs in infants.

7. **Spigelian hernia:** It occurs when the intestine pushes through the abdomen at the side of the abdominal muscle below the navel. This is on the outside edges of the rectus abdomens muscle and are rare.

8. **Diaphragmatic hernia:** Organs in the abdomen move into the chest through an opening in the diaphragm. There are two types of this type of hernia: Traumatic diaphragmatic hernia which occurs due to major injury where blunt trauma weakens or tears the diaphragm muscle, allowing immediate or delayed herniation of abdominal organs into the chest cavity. This may also occur after penetrating trauma from a stab or gunshot wound. Another is congenital diaphragmatic hernias which are rare and are caused by failure of the diaphragm to completely form and close during fetal development. This can lead to failure of the lungs to fully mature, and it leads to decreased lung function if abdominal organs migrate into the chest.

9. **Obturator Hernia:** This is the least common hernia of the pelvic floor. It is mostly found in women who have had multiple pregnancies or who have lost significant weight. The hernia occurs through the obturator canal, another connection of the abdominal cavity to the leg, and contains the obturator artery, vein, and nerve.

10. **Paraesophageal hernias:** These occur when only the stomach herniates into the chest alongside the esophagus. This can lead to serious complication of obstruction or the stomach twisting upon itself (volvulus)

Some risk factors associated with hernia include:

- i. Chronic constipation
- ii. Chronic cough
- iii. Family history
- iv. Pregnancy
- v. Being male
- vi. Being older
- vii. Obesity
- viii. Abdominal surgeries
- ix. Premature birth and low birth weight
- x. Lifting heavy objects

Hernia can be prevented. This can be achieved by reducing strain on the abdominal muscles and tissues by the following strategies:

1. Maintaining a healthy weight by eating a healthy diet and exercising.

2. Emphasizing on high-fibre foods, such as fruits, vegetables and whole grains to avoid constipation.
3. Lifting heavy objects carefully or avoiding heavy lifting. Using proper lifting techniques, like bending one's knees instead of waist is advised.
4. Avoiding smoking to decrease recurrent coughing.
5. If a hernia develops, the patient should seek medical care to have it evaluated and potentially treated before it gets too large or become incarcerated.

Hernias can be managed through the following:

- i. A watchful waiting approach may be reasonable
- ii. Routine follow-up may be needed.
- iii. Surgery may be recommended if hernia grows in size.
- iv. A watch and wait approach can also be applied.
- v. Trusses, corsets, or binders can hold hernias in place by placing pressure on the skin and abdominal wall.

The present study is designed to bridge the gap of scanty empirical work on hernia in Nigeria by extending investigation on hernias to Jos metropolis. Therefore the thrust of the study is to investigate the prevalence and management of hernias among residents of Jos metropolis. To achieve this purpose, three objectives, two research questions and one hypothesis were developed.

### **Objectives of the study**

The objectives of the study are to:

1. Establish the prevalence of hernias among residents of Jos metropolis.
2. Determine the difference in the prevalence of hernias between male and female residents of Jos metropolis.
3. Find out how hernias are managed by residents of Jos metropolis.

### **Research questions**

The following research questions guided the study:

1. What is the rate of prevalence of hernias among residents of Jos metropolis?
2. How are hernias managed by the residents of Jos metropolis?

### **Hypothesis**

One hypothesis was formulated to be tested in this study thus:

**H<sub>01</sub>**: There is no significant difference in the prevalence of hernias between male and female residents of Jos metropolis.

### **Methodology**

A descriptive survey research design was employed in order to achieve the objectives of the study. Data was collected from the representative sample of the study population. The population of the study was residents of Jos metropolis. A sample size of 169 residents

was used. The sample comprised 93 male and 76 female residents selected using accidental sampling technique.

The instrument used for data collection was self-structured questionnaire developed by the researchers titled “Prevalence and Management of Hernias Questionnaire (PMHQ)”. The instrument was subjected to validation process, and the reliability of internal consistency was obtained as 0.74 via Cronbach’s Alpha. Also, content validity was ensured by experts in Educational Psychology and Research, Measurement and Evaluation Units of Educational Foundations Department, Faculty of Education, University of Jos. All the 40 items in the instrument were used to measure presence of symptoms, and management of hernias among residents of Jos. Data obtained was analyzed using frequency count and percentages, mean, standard deviation and t-test. While frequency count and percentages were used to answer the research questions, t-test for independence sample was used to test the lone hypothesis of the study.

### **Presentation of results**

**Research question one:** What is the prevalence of Hernias among residents of Jos Metropolis?

**Table 1:** Prevalence of Hernias among residents of Jos Metropolis

<b>Gender</b>	<b>Total number of residents</b>	<b>Residents identified with hernias</b>	<b>Residents without hernias</b>
Male	93 (55%)	24 (26%)	69 (74%)
Female	76 (45%)	29 (38%)	47 (62%)
Total	169 (100%)	53 (31%)	116 (69%)

Table 1 above shows prevalence of hernias among residents of Jos metropolis. The table shows that 93 (55%) male residents and 76 (45%) female residents took part in this study. Out of the total number of 93 male residents, 24 (26%) were identified with symptoms of hernias while 69 (74%) were without hernias. Out of 76 (45%) female residents, 29 (38%) were identified with the symptoms of hernias while 47 (62%) were identified without symptoms of hernias. Out of the total number of 169 residents that took part in this study, 53(31%) were identified with the symptoms of hernias while 116 (69%) were identified without symptoms of hernias. Therefore, the above analysis presents that the prevalence of hernias is high among residents of Jos metropolis as 31% could be considered as a high prevalence.

**Research question two:** How are hernias managed by the residents of hernias?

**Table 2:** Management of hernia

S/No	Items	Agree (A)	Disagree (D)
1.	Watchful waiting approach	48 (91%)	5 (9%)
2.	Routine follow-up	35 (66%)	18 (34%)
3.	Watch and wait approach	48 (91%)	5 (9%)
4.	Trusses, corsets, or binders	28 (53%)	25 (47%)
5.	Surgery	43 (81%)	10 (19%)

Table 2 reveals that 48 (91%) of residents of Jos metropolis with symptoms of hernias believed that one way to manage hernias is watchful waiting approach, while 5 (9%) of the residents disagreed with that; 35 (66%) of the residents agreed with routine follow-up as a measure to manage hernias, while 18 (34%) disagreed with that. Another approach highly rated by the residents in the management of hernias is watch and wait with 48 (91%), while 5(9%) did not agree with that. However, 25 (47%) of the respondents did not accept trusses, corsets, or binders as a means of managing hernias while 28 (53%) accepted. More so, 43 (81%) agreed to surgery as a way of managing hernias, while 10 (19%) disagreed with that. From the above analysis, it is discovered that approaches such as watchful waiting, surgery and routine follow-up are the major means of managing hernias by residents of Jos metropolis.

**Ho1:** There is no significant difference in the prevalence of hernias between male and female residents of Jos metropolis.

**Table 3:** Prevalence of hernias between male and female residents

Variables	N	Mean	SD	Df	t-value	p-value
Male residents	93	1.28	0.45	167	2.289	0.023
Female residents	76	1.45	0.50			

p-value  $0.023 < 0.005 =$  significant

Table 3 indicates t-test analysis in the prevalence of hernias mean scores of male and female residents of Jos metropolis. It shows that at t-value of 2.289, the test is significant at 0.05 level of significance and 167 degree of freedom. This is as the p-value of 0.023 is less than alpha. As such, the null hypothesis which states that there is no significant difference in the prevalence of hernia between the male and female residents of Jos metropolis is rejected. Therefore, this reveals that there is significant difference in the prevalence of hernias between male and female residents of Jos metropolis.

### **Discussion of the findings**

The first finding of the study reveals the prevalence of hernias among residents of Jos metropolis with 31%. This shows that the prevalence of the disease is higher compared to some other countries in the world. This finding is in line with the report by a national survey of general practices covering about 1% of the population of England and Wales in 1991-1992. It found that about 95% of people presenting to primary care setting with inguinal hernia were males.

In line with the prevalence of hernias in Nigeria, Uba *et al.* (2006) confirmed the prevalence of hernias when clinical evaluations of the umbilicus were conducted on 7,968 Nigerian children attending interview into Nigerian Airforce Military schools across the country. The results showed that umbilical hernia was present in 102 (1.3%) out of 7,968 children, giving a prevalence of 12.8 per 1,000. Other studies by Ajayi and Adebamowo (1999), Ibrahim *et al.* (2010), and Emeka and Okeke (2021) affirmed the prevalence of hernias in Nigeria. The finding of the present study therefore affirms the findings of these studies with respect to prevalence of hernia in Nigeria.

Another finding of the study indicated that there is significant difference in the prevalence of hernias between male and female residents of Jos metropolis. This finding is in line with that of Ritter *et al.* (2018) that found out that in anatomy 25% of men develop an inguinal hernia at some point in their lifetime, while only 2% of women do. Ruhl and Everhart (2007) also affirmed that the prevalence of inguinal hernias is pre-dominantly a male disease that increases with age. This was also confirmed in Nigeria by a study conducted by Ashindoitiang and Akinlolu (2012) at the General Surgical Clinic of Ikorodu, Lagos General Hospital.

### **Counselling implications**

Considering the findings of the study on prevalence and management of hernias among residents of Jos metropolis, there is a need to call the attentions of all stakeholders especially the counselling psychologists, government and the society that everybody especially males should be protected from hernias and its manifestations. There is need for early identification and proper treatment to be given at the onset of the disease. This can be done in collaboration with non-governmental organizations through visitation to sensitize people on the prevalence and ills of hernias. Counsellors should re-orientate the general public on the need to develop positive self-efficacy towards mental health and seeking of proper health care services. Such services could also be provided to various communities so as to create awareness among the people to recognize the value of seeking health care services in the hospital.

By the findings of this study, the general public should know that hernia is no respecter of anybody, as such they should guard against it. All hands must be on deck to see that hernia is reduced to the barest minimum by being encouraged to seek help from primary care provider since a neglected hernia can grow larger and more painful, which can lead to complications and possibly emergency surgery. Counsellors and healthcare personnel

should re-educate the public on early repair of a hernia which is more successful, less risky and offer a better recovery and outcome. The truth should be told to the public that hernias usually do not get better on their own, and surgery may be the only way to repair them.

### **Conclusion**

Based on analysis and findings of the study, it was concluded that the rate of prevalence of hernias is high among residents of Jos metropolis compared with other countries in the world. There is also significant gender difference in the prevalence of hernias among residents of Jos metropolis. Treatment options depend in the type of hernia the individual has and the state of health. A doctor may suggest monitoring of one's condition for change in diet, activity, and habits at the initial time. This approach is called watchful waiting. Medicines may help lessen hernia symptoms. Hernia itself can be avoided if one learns to eat smaller meals, lose weight if obese, limiting alcohol and tobacco intake, using proper lifting techniques to prevent strains, among others. Temporary approaches for managing hernias include routine follow-up, trusses, corsets or binders. To successfully repair a hernia, surgery is the best option.

### **Recommendations**

Based on the findings of the study, it is recommended that:

1. The government, non-governmental organizations and community leaders should provide professional counsellors with all the enabling environments needed for the promotion of effective guidance and counselling services delivery in the community.
2. Healthcare practitioners and counsellors should organize programmes in communities to sensitize the residents of Jos metropolis on the prevalence and damaging health effects of hernias.
3. Government, health personnel and counsellors should collaborate and sensitize the residents of Jos metropolis on the health and psychological implications of hernias.

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