

**FACTORS ASSOCIATED WITH TIME TAKEN TO PRESENT TO THE HOSPITAL  
WITH ACUTE BOWEL OBSTRUCTION: PARIRENYATWA, ZIMBABWE.**

**1 Locadia Rutsito, 2 Gladys Mugadza, 3 Abigail Kapfunde, 4 Judith Rukweza, 5**

**Augustine Ndaimani**

1-5 University of Zimbabwe, Department of Nursing Science

College of Health Sciences, PO Box A178, Avondale

Corresponding Author: Gladys Mugadza

Email : [gladys.maryvincent.mugadza@gmail.com](mailto:gladys.maryvincent.mugadza@gmail.com)

**ABSTRACT**

**Title of the study:** Factors associated with time taken to present to the hospital among patients aged 20 to 40 years with acute bowel obstruction admitted in Parirenyatwa surgical wards.

**Introduction:** Acute small bowel obstruction is a common surgical emergency which constitutes a major cause of morbidity and financial expenditure in hospitals around the world and a significant cause of admissions to emergency surgical departments. The management method of bowel obstruction and success of the management is among other factors determined by the time taken to present to the hospital .It has been shown that those patients who present to the hospital within 24 hours from onset of symptoms have high management success rate.

**Aim:** This research study aimed at determining the factors associated with the time taken to present to hospital among patients aged 20 to 40 years with acute small bowel obstruction in Parirenyatwa General Surgical Wards

**Methodology:** This study utilized a quantitative, descriptive, non-experimental design. 30 participants were conveniently selected from an accessible population of men and women with acute small bowel obstruction aged 20 to 40 years admitted in PGH general surgical wards. Data was analysed using SPSS.

**Results:** A total of 30 patients with acute small bowel obstruction participated in this research. Two (6.7%) of the participants had prior knowledge about bowel obstruction a majority (93.3%) had no knowledge about the disease till they got sick. A larger number of the participants (70%) presented late between 2 to 10 days. Lack of finance was one of the contributing factor to late presentation as expressed by (20%) of the participants.

**Conclusion:** From this study, lack of knowledge, lack of finances and long distance to the health care facilities were the leading causes of delays in seeking medical care in acute small bowel obstruction.

Key words: Acute small bowel obstruction, Time taken, factors

## Introduction

Intestinal obstruction is partial or complete blockage of the intestine. Blockage occurs at any point of the small or large intestines and this results in food, liquid and gas build up above the blockage. It is known that acute small bowel obstruction is more common than large bowel obstruction. Intestinal obstruction can be mechanical or functional. Acute small bowel obstruction is a common surgical emergency which constitutes a major cause of morbidity and financial expenditure in hospitals around the world and a significant cause of admissions to emergency surgical departments. Acute small bowel obstruction belongs to highly severe conditions, requiring a quick and correct diagnosis as well as immediate, rational and effective management.

Intestinal obstruction creates a major financial burden due to its recurrent nature (N Halis et al, 2012). In Sweden it is estimated that \$13 million is used annually in the management of intestinal obstruction (JP Atterd, 2007). It is estimated that over 300,000 laparotomies per year are performed in the United States for adhesion-related obstructions (L Bordeainou et al, 2016). Acute surgical conditions are an important avoidable cause of premature death in low-income and middle income countries, but have received scant attention as a public health priority. In India, the national representative mortality survey found that acute abdominal conditions caused about 72 000 deaths in 2010, accounting for more deaths than maternal causes. In Africa, acute small bowel obstruction accounts for a great proportion of morbidity and mortality. Ethiopia is one of the countries where intestinal obstruction is a major cause of morbidity and mortality where the prevalence of acute small bowel obstruction was 21.8 % among patients admitted with the acute abdomen conditions (Soressa et al. BMC Surgery 2016). In Uganda 33% of surgical burden was due to acute abdomen with intestinal obstruction (Nakanwagi et al, 2016).

## Factors associated with presentation time

Several factors influence the time taken by individuals to present to the clinic after the onset of symptoms. Studies have identified financial resources, knowledge on diseases, traditional practices and transportation issues as the major factors contributing to the time taken to present to the hospital in emergency surgical conditions (G Ntakiyiruta et al, 2010). Other studies have noted that accessibility to health facilities, protocols in health referral systems and health seeking behaviour also affect presentation time in emergency surgical conditions. (Adhikari et al., 2010).

## Management of bowel obstruction

Success in the treatment of acute intestinal obstruction depends largely upon early diagnosis, and skilful management. (Goyal SK et al 2016). Early diagnosis and timely definitive surgical procedure is of paramount importance in order to improve the chances of survival of patients with this condition. Intestinal obstruction management is based on the etiology, the stage of obstruction and the time of presentation of the patient. Decompression of the bowel through a nasogastric tube is successful in most cases. When the bowel is completely obstructed, the possibility of strangulation and tissue necrosis (i.e. tissue death) warrants surgical intervention. With non-operative treatment, complete obstruction resolves far less frequently than partial SBO, 15–36% vs. 55–75%. Surgical intervention is indicated when strangulation is suspected to develop during non-operative treatment, or when conservative treatment fails. (M. N Kulaylat and R. J Doerr 2014).

### **The health belief model**

This research was guided by the Health Belief Model (HBM) which was developed in the 1950's by three US Public Health Service psychologists after health administrators were frustrated by the general public's lack of participation in free disease prevention programs (Brannon & Feist, 2009). This model is used to comprehend human behaviour and some explanation on why people fail to follow recommended preventative actions. This model is divided into three main categories, which include: Individual perceptions, Modifying factors and Likelihood of action. (Glanz et al, 2008).

### **Methodology**

In this research, the aim was to determine the factors associated with time taken to present to the hospital among patients aged 20-40 years with acute small bowel obstruction admitted in Parirenyatwa General Surgical wards and to improve the management outcomes.

### **Research Design**

In this study, a quantitative, descriptive design was used. This design allowed data to be collected passively, thus the researcher did not manipulate the variables under investigation (Polit & Beck, 2004).

### **Participants and recruitment**

The participants in this study were invited using a non-probability sampling method. According to Polit and Hungler (2008), non-probability sampling refers to selection of sampling units (participants) from a population using nonrandom procedures. The sampling procedure was conducted at Parirenyatwa Hospital in Harare, Zimbabwe. Those people aged 20-40 and were admitted in the surgical wards of Parirenyatwa Hospital with the diagnosis of acute small bowel obstruction during the time of data collection were eligible for invitation into the study sample for this research study. The researcher sort permission from the in-charge personnel to go through the admissions records of the surgical wards, and then conveniently select the subjects suitable to be in the study sample. A total of 30 participants were used in this research.

### **Research instrument**

A structured questionnaire was used. It was developed from the set objectives, literature review and the theoretical framework concepts. Close ended questions were used. The instrument was divided into two sections, section A which looked at socio-demographic information, including age, sex, and marital status, level of education, occupation, household income, residential area, and religion.

Section B consisted of questions on factors associated with the time taken to present to the hospital in people with intestinal obstruction and it also looked at the aspects of the HBM including perceived susceptibility, perceived severity and the perceived benefits.

The instrument was in English and Shona so that respondents were interviewed and they answered questions in a language that they could comprehend.

To ensure reliability, questionnaires were used so that all participants were asked the same questions in the same order. Pretesting was also done in the out patients department. To address validity issues, a copy of the questionnaire was submitted to the supervisor who with the help of other experts examined it. Representatives from the Joint Research and Ethics Committee also reviewed the instrument.

### **Data collection**

The researcher collected the data herself by administering the questionnaire to the respondents. Data was collected in 5 days from the 6<sup>th</sup> to the 10<sup>th</sup> of March 2017. Data was collected from 10:00hrs to avoid destructing the ward morning routines. The researcher explained the study individually to each patient with acute small bowel obstruction. Those who were willing to participate were given the consent forms for signing. The researcher then administered the questionnaire and collected it soon after the participant completed it.

### **Ethical considerations**

In order to carry out and complete this study, permission was sought from the Joint Research Ethics Committee (JREC), the heads of respective departments, sisters in charge of the surgical wards and the director of the hospital. Informed consent

Participants were informed about the nature of the study and their role in the study before they could participate. Verbal and written informed consent was sought from the participants to gain their approval for participation. Participation in this study was made voluntarily without any coercion or remuneration. The respondents were free to terminate the interview or to refuse to answer any question and they were assured of no effects.

### **Confidentiality**

To ensure privacy, the researcher screened the patient during the whole process of the interview. No names were required instead codes were used for identification of the data. Data collected was kept safe where only the researcher had access. No information was released to any other person in any way that could lead to identification of the source, in order to safeguard the participants.

### **Data analysis**

Data was analyzed using the quantitative method. The numerical data was analyzed using the computerized Statistical Package for Social Sciences (SPSS) and Microsoft Excel to yield averages, modes, means, frequencies and percentages. Demographics were described using frequencies. Descriptive statistics were examined for responses to section B questions.

## **Results**

### **SAMPLE DEMOGRAPHICS**

Demographic characteristics like age, gender, marital status, type of employment level of education, religion, monthly income and place of residence were described using descriptive statistics (SPSS). The sample size was 30 with an age range of 20 to 40 years, mean age 29years and median age 33years. Twelve respondents (40%) were aged 20 to 30 years, eighteen respondents (60%) were aged 31 to 40 years. Nineteen (63%) of the respondents were male, while the remaining eleven (37%) were females. Five (16, 7%) respondents were single, fifteen (50%) married, (16, 7%) widowed and (16, 7) living in with their partners. Three (10%) of the respondents were students, six (20%) employed fulltime, five (16, 7%) employed part time, eight (26, 7%) unemployed, five (16, 7%) house wives and three (10%) were self-employed. None of the participants were retired. Four (13, 3%) participants had gone to school up to primary level, ten (33, 3%) attained secondary education and the remaining sixteen (53, 3%) attained tertiary education.

Twenty one (70%) of the participants earned less than \$100 every month, eight (26, 7%) earned between \$100 and \$300, one (3, 3%) earned between \$301 and \$500 .No participant earned any amount above \$501. Twenty two (73.3%) participants were Christians and eight (26, 7%) were not affiliated to any religion. There were no Muslims or Traditionalists. Fourteen (46, 7%) lived in the urban area, six (20%) in Peri urban and ten (33, 3%) in the rural area.

### **The Health Belief Model**

On perceived susceptibility the following results were found ,two (6,7%) participants had previous abdominal surgery done and twenty eight (93.3%) had never had any abdominal surgery done .One (3.3%) had a history of hernia ,twenty six (86.7%) had no history of hernias and three (10%) did not know if they had a history of hernias .Four (13.3%) participants believed that only people with predisposing factors would suffer from the disease ,nine (30%) did not believe that only people with predisposing factors would suffer from the disease and seventeen participants (56.7%) did not have an answer to this question .Seven (23.3%) participants agreed that woman were affected more than man ,eight (26.7%) disagreed and fifteen (50%) did not know the answer to this question .Five (16.7%) participants agreed that bowel obstruction is hereditary ,two (6.7%) disagreed and twenty three (76,7%) did not know the answer .Twelve (40%) of the participants agreed that bowel obstruction is a disease for the old ,four (13.3%) did not agree and fourteen did not know the answer to this question .

### **Perceived severity**

On perceived severity ,nine (30%) participants agreed that bowel obstruction is bewitchment ,seven (23.3%) did not agreed and fourteen (46.7%) did not know the answer .Nineteen (63.3 %) of the participants agreed that the symptoms of bowel obstruction can resolve on their own ,five (16.7%) did not agree whilst six (20%) did not know the answer .Seven (23.3%) participants agreed that bowel obstruction is not a disease to worry about ,twenty (66.7 %) disagreed and three (10%) did not know the answer .All the thirty(100%) participants agreed that the hospital can treat bowel obstruction. Two (6.7%) participants agreed that bowel obstruction can result in resection of their intestines, twelve (40%) disagreed and sixteen (53.3 %) did not know the answer .Two (6.7%) of the participants had seen someone suffering from bowel obstruction before, twenty six (86.7 %) had never seen anyone suffering from bowel obstruction before and two (6, 7%) did not know if they had seen someone suffering from bowel obstruction before.

### **Perceived benefits**

On perceived benefits ,fifteen (50%) of the participants agreed that reporting early to the hospital can save lives ,eight (26.7%) disagreed and seven (23.3%) did not know the answer .Eight (26.7%) participants agreed that reporting early to the hospital reduces complications ,seven (23,3%) disagreed and fifteen (50%) did not know the answer .Two (6.7%) participants agreed that time taken to report to the hospital is not important ,six (20%) disagreed and twenty two (63.3%) did not know the answer .Five (16.7%) participants agreed that reporting early to the hospital reduces costs ,six (20%) disagreed and nineteen (63.3%) did not know the answer.

### **Traditional practices**

On traditional practices ,five (16.7%) of the participants agreed that bowel obstruction is caused by evil spirits ,ten (33.3%) disagreed and fifteen (50%) did not know the answer .Five



(16.7%) participants agreed that the evil spirits have to be dealt with first, before going to the hospital, ten (33.3%) disagreed and fifteen (50%) did not know the answer. Nine (30%) participants agreed that they would trust traditional healers to treat bowel obstruction, seventeen (56.7%) did not agree and four (13.3%) did not know the answer. Nine (30%) participants agreed that they would prefer consulting a traditional healer rather than a doctor when they vomit faecal matter, twenty (66.7%) disagreed and one (3.3%) did not know the answer. Table 4.6 outlines traditional practices

## DISCUSSION

### SAMPLE DEMOGRAPHICS

A total of 30 patients with acute small bowel obstruction participated in this research. 36.7% were women and 63.3% were males. This is in line with Phillippo et al (2014), Goyal et al (2016) and many other authors who found out that acute small bowel obstruction affects more males than females. The study sample age ranged from 20 to 40 years with a median age of 32.5 years. Twelve (40%) participants were aged between 20 and 30 years whilst 60% were aged 31 to 40 years this is in contrast with the results found by Okeny et al (2009) where the peak age was 31.5 years and more participants were within the age range of 20 to 30 years. Five (16.7%) of the participants were single fifteen (50%) were married, five (16.7%) were widowed and five (16.7%) were cohabiting. This could be explained by the age range of 20 to 40 years where most people will be married and a few will be divorced and single. A larger number of the participants (53.3%) attained tertiary education, (33.3%) attained secondary education and only (13.3%) attained primary education. There was no correlation between level of education and time taken to present to the hospital since majority of the participants were learned and majority presented late. This is contrasted by Chauke (2015) who found that people with lower levels of education have poor health seeking behaviours. None of the participants were retired this is because of the age range. In Zimbabwe people retire from 65 years and above. Thirteen (43.4%) of the participants were not employed and some were housewives. Three (10%) were students, 11 (36.7%) were employed fulltime and part time. Twenty one (70%) of the participants earned less than \$100 per month, eight (26.7%) earned between \$101 and \$300 whilst one (3.3%) earned between \$301 and \$500. None of the participants earned more than \$500. This is in line with the research by Ntakiyiruta et al (2012) who found out that poverty causes people to take a long time before reporting to the hospital. Currently the economic situation is not favourable for many people in the country hence people will choose to wait and see if the symptoms will resolve on their own in order to save money.

A larger number (73.3%) were Christians and the rest (26.7%) had no specific religion. This can be because Zimbabwe is a Christian dominated country and most people want to be associated with Christianity. According to Abubakar et al (2013), religion has a great impact on the health seeking behaviour of human beings. He cited that a significant amount of patients still maintain their traditional practices when they get ill despite their religious affiliation. Some Christians admitted that they have health talks at their churches but the talks are mostly on HIV and AIDS, hypertension and diabetes. This implies that despite religious beliefs people lack knowledge on acute small bowel obstruction hence the delays in seeking health care. Fourteen (46.7%) of the participants lived in the urban areas, whilst six (20%) lived in the Peri-urban and ten (33.3%) lived in the rural areas. This is contrasted by Haridimos et al (2007) who found out that most patients who report late to the hospital were from the rural areas where delays can be caused by poor referral systems. In this study more participants were from the urban areas but they still reported late. This could be due to lack of awareness on the disease or financial constraints.

Two (6.7%) of the participants had prior knowledge about bowel obstruction a majority (93.3%) had no knowledge about the disease till they got sick .This is supported by many other authors Chalya et al (2014) and Salamah Al et al (2012) who found that lack of awareness on the disease cause people to report late in bowel obstruction. Despite the place of residence, patients still presented late to the hospital because of lack of awareness on the disease. Another assumption could be that the experienced symptoms are dietary associated which usually resolve on their own. In this study 63.3% believed that the symptoms would resolved on their own hence the delay in seeking health care. This is in agreement with Chai et al (2016) who found that 78% of his participants believed the symptoms would resolve on their own.

The common symptom among all participants was abdominal pain (100%). This tallies well with Kenyatta et al who found out that 96.1% of patients experienced abdominal pain. Despite this proven fact, it is also important to note that other participants may present with other symptoms, hence the need to thoroughly examine them for such symptoms like nausea, vomiting and constipation. In a study conducted by Kenyatta et al., (2012), (67.7%) experienced nausea, (76.7%) experienced vomiting, (80%) of the participants experienced constipation. In the same study, none of the participants had diarrhoea and lack of flatus, however some patients may present either these symptoms as reflected in this study 20% had diarrhoea and 6(20%) had lack of flatus.

A larger number of the participants (70%) presented late between 2 to 10 days. The delay in presenting to the hospital was greatly determined lack of knowledge on the gravity of the condition. Participants thought the symptoms could resolve on their own without need for hospital care. Eleven (36.7%) participants took over the counter medications as the initial treatment plan. This is in line with Philipo et al., (2014) who found that most patients resort to self-medication using over the counter drugs. In their study (16.7%) consulted the hospital due to severity of the pain. Three (10%) participants did nothing about the symptoms they had as they were hoping that the symptoms would subside on their own .This is in line with Akbar et al (2010) who also found that people wait a long time hoping that the symptoms will subside .

A larger number of the participants (60%) said they had severe abdominal pain, (26.7%) had moderate pain and (13.3%) had mild pain. Severe abdominal pain was the most compelling factor for the participants to seek hospital care. However some participants despite of the excruciating pain they resorted to traditional healers before seeking hospital advice. This could pose a challenge to those patients who might not experience such pain to present very late when damage has already been done.30 % of the participants presented between 1- 2 days. This tallies well with Obaida (2014) who found 22.5% of patients presenting between 1 and 2 days.

Lack of finance was one of the contributing factor to late presentation as expressed by (20%) of the participants. This is in synch with Chalya et al (2013) who found that financial constraints made acute small bowel obstruction patients report late to the hospital. Lack of decision making skills, lack of empowerment and distance to the health facility were among factors for late presentation. This is also supported by Raghaddosi et al (2010) who found that poor health seeking behaviour affecting presentation time in bowel obstruction patients According to Phillipop et al., (2014) lack of accessibility to health care facilities affected presentation time in bowel obstruction. Nevertheless, lack of knowledge on the disease progression and outcomes made patients report late to the hospital .This is in line with Chalya et al., (2013) and Phillipop et al., (2014) who reported that lack of awareness on the disease is the greatest reason why people with bowel obstruction report late to the hospital .

## HEALTH BELIEF MODEL

The theoretical framework which guided this study was the Health Belief Model (HBM). The basic concept of this model is that health-seeking behaviour is influenced by individual beliefs, ideas or perceptions about health and diseases and means of reducing disease-occurrence and promoting health (Hochbaum, 1958). Perceived susceptibility, perceived severity, modifying factors and likelihood of action were the concepts studied in this research

Modifying factors include age, gender, and duration of illness, monthly income, and social factors like place of residence. Mostly those in their second, third, fourth and fifth decade of life are the most affected. Majority of previous studies revealed that more males are affected by acute small bowel obstruction more than women (Goyal et al 2016). The duration of illness from onset of symptoms to the time presentation at the hospital is also crucial as it affects prognosis, management and outcome of the disease Oladele et al (2008). The impact of the place of residence varies from place to place. In this study all the participants had an African (Zimbabwean) background though some were from the rural, urban and Peri urban areas. This affects how they respond to illness some consulted traditional healers first though the disease is an emergency. All the modifying factors were addressed in the demographic section of the questionnaire.

Perceived susceptibility was very low as evidenced by the participants having little or no knowledge on the risk factors for developing bowel obstruction. Perceived severity was low as majority of the participants hoped that the symptoms will resolve on their own. Some even did nothing about all the symptoms they experienced and most of them didn't have the knowledge on the complications of bowel obstruction. Cues to action include mass media campaigns, advice from others, and illness of a family member, health education and promotion from nurses. However, there is evidence that cues to action in the manner of health education were lacking, evidenced by the generally poor health seeking behavior by the respondents. Majority of the participants related that they never knew about this disease until they got ill.

The likelihood of action was largely affected by low perceived severity, lack of cues to action the perceived benefits of reporting early to hospital and the barriers to action like inadequate income and lack of awareness on the disease. For 73.3% of the respondents, the barriers to action out-weighed the perceived benefits, cues to action and the perceived severity. This led to a reduced likelihood of action, evidenced by taking more than 24 hours to report to the hospital. However 6.7% of the respondents reported within 24 hours and their perceived benefits, perceived severity and cues to action out-weighed their barriers to action. This led to an increased likelihood of action evidenced by early presentation to the hospital.

## IMPLICATIONS

### To Nursing Practice

This study revealed that lack of awareness is the major factor affecting time taken to present to the hospital in acute small bowel obstruction with 28(93.3%) of the patients indicating that they never knew about this disease until they got ill. This study also revealed that 26(86.7%) reported to the hospital after 24 hours which is considered to be a delay in acute small bowel obstruction. Other factors which were found to be associated with the delay in presentation were financial constraints and lack of accessibility to health care facilities. It is therefore



necessary for the nursing staff and other allied health practitioners to initiate health education efforts and campaigns on this disease. There is need for extensive health talks in the outpatient department, in the EPI and everywhere we can reach to shout about this disease and the importance of early presentation to the hospital

#### Study limitations

1. The study was done on a small scale which may make it inappropriate to generalise it on a larger scale.
2. This study used convenience sampling which is usually prone to biases and is associated with difficulties in generalisation to the larger population that was represented.
3. Self-administered questionnaires can produce respondent bias where the participant gives those answers which seem to be socially acceptable.

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