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Research Article

DETERMINANTS OF ACUTE ABDOMEN IN ADULT PATIENTS ADMITTED IN EMERGENCY DEPARTMENT OF MAYO HOSPITAL, LAHORE

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Abstract:

The terminology of acute abdomen refers to a sudden and severe abdominal pain of unclear etiology that is less than 24 hours in duration. It is the presentation of an undiagnosed previous abdominal pain prior to a clinical presentation in primary or secondary care.

***Objectives:** To determine the factors causing acute abdominal pain in the patients presented in the A&E department of Mayo Hospital, Lahore.*

***Design:** Cross sectional study design.*

***Place:** Lahore*

***Study period:** 6 months.*

***Subjects and methods:** A cross sectional study was conducted. Total 100 subjects were recruited in the study. Selection was made on laid down criteria after taking due consent from subjects. Interviews were conducted through a pretested questionnaire. The data was collected and compiled and then analyzed through SPSS 22 and described in the demographic characteristics using frequency tables.*

***Result:** Out of 100 subjects, acute abdomen was found to be more in people above 30 years of age (52%) [mean: 52 + .502SD]. It was more common among the females (57%) as compared to the males (42%). It was also seen that acute abdomen was more in uneducated (71%) as compared to educated (29%) people. It is also more common in married people (68%) as compared to unmarried people (32%). It is also more common in people living in urban area (92%) than in people living in rural area (8%). It is more frequently seen in people having income less than 15000/month (85%) than in people having income more than 15000/month. It was also found that the pain is more frequently found in right iliac fossa (18%), epigastric (36%) and umbilical (19%) region.*

***Keywords:** Acute abdomen, renal colic, gastric ulcers.*

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INTRODUCTION:

The terminology of acute abdomen refers to a sudden and severe abdominal pain of unclear etiology that is less than 24 hours in duration. It is the presentation of an undiagnosed previous abdominal pain prior to the clinical presentation in primary or secondary care. Abdominal pain is one of the most common conditions that require prompt diagnosis and treatment. Although other symptoms also accompany pain but in most of the cases of acute abdominal diseases pain is the most prominent symptom. Pain is an unpleasant sensory and emotional experience that is associated with actual or potential tissue damage, or described in terms of such damage.

Acute abdominal pain is a common problem in the secondary care. Although more than 1000 causes of acute abdominal pain exist, over almost 16% of cases in secondary care can be explained as acute appendicitis (26%), non-specific abdominal pain (NSAP) (50%) and acute cholecystitis (8%) alone.(1).The incidence of acute abdominal pain ranges almost between 5-10% of all visits at emergency department. Abdominal emergencies that present in hospital may include surgical and non-surgical emergencies. The most common causes of acute abdomen include appendicitis, renal colic, pancreatitis, biliary colic, diverticulitis, cholecystitis, visceral perforation, bowel obstruction, peritonitis, salpingitis, oophoritis and mesenteric adenitis. Perfect skills for early diagnosis require a keen knowledge of basic anatomy and physiology of abdominal viscera which are reflected during taking history from the patient and particularly the physical examination of the abdomen. Advanced diagnostic procedures like radiography and endoscopy help in better diagnosis and treatment for acute abdomen including pharmacological and surgical treatment. Therapeutic endoscopy, interventional radiology and adult laparoscopy are the common modalities for treating patients with acute abdomen.(2)Children frequently present with acute abdominal pains at emergency rooms but few of them require a pediatric surgeon. However it can be dangerous for the patient and physician to misdiagnose those cases. Children presenting with "classic" gastroenteritis may prove to have a perforated appendicitis, while those with tender abdomens may suffer pneumonia or streptococcal pharyngitis, and a comatous child may have an intussusception and not a metabolic disease. We have to review treatment and management of some common causes of surgical abdominal pains in children to help the physicians to avoid some misdiagnosis and to involve the pediatric surgeons at an early stage.(3)

This problem is very common and large number of mortalities can be prevented if causes are known. The purpose of this research is to determine the different factors causing acute abdominal pain that are presented in the A&E department, to find out the frequency of most common cause in our sample population. This will help us to manage the patients more effectively and efficiently. The patients presented can be managed easily if the common causes have been thoroughly researched and described.

MATERIALS AND METHODS:

A cross sectional study was conducted in Lahore to find out the determinants of acute abdomen in adult patients coming to emergency department of Mayo Hospital Lahore. 100 adult patients were selected as subjects. They were willing to participate and fulfill the criteria laid down for the determination of the factors of acute abdomen in patients coming to emergency dept. Prior consent was obtained from all selected study subjects. The variables are defined as.

The terminology of acute abdomen refers to a sudden and severe abdominal pain of unclear etiology whose duration is less than 24 hours. Inflammation of the gallbladder that is a small organ near the liver that plays a part in digesting food, is called cholecystitis(4). Volvulus is obstruction of bowel where the loop of bowel has completely twisted around its area of mesenteric attachment. An intussusception is a serious medical condition in which a part of the loop of intestine is invaginated into another part of intestine(5). This can result in an obstruction. A sore on the skin or a mucous membrane, accompanied by the disintegration of tissue is called ulcer.

A Meckel's diverticulum which is a true congenital diverticulum, is a slight bulge in the small intestine present at birth and its a vestigial remnant of vitelline duct or yolk stalk.(6) An ovarian cyst is any collection of fluid, surrounded by a very thin wall present within an ovary.(8) Herniation is the protrusion of an organ or the fascia of an organ through the wall of the cavity containing it. Appendicitis is characterized by inflammation and infection of the appendix. Endometriosis is a gynecological medical condition in which cells from the lining of the uterus (endometrium) appear and flourish outside the uterine cavity, mostly on the membrane that lines the abdominal cavity. An aortic aneurysm is a swelling (dilation or aneurysm) of the aorta to greater than 1.5 times that usually represent an underlying weakness in the wall of the aorta at

that location.(7,8)

Acute pancreatitis or acute pancreatic necrosis is a sudden,severe inflammation of the pancreas(9). The terms

"sickle cell crisis" or "sickling crisis" is used to describe sudden, several acute conditions that occur in patients with sickle cell disease. Sickle cell disease results in anemia and the crises that could be of many types including the vaso-occlusive crisis, aplastic crisis, sequestration crisis, haemolytic crisis and others(10). Gastroenteritis is a medical condition that is characterized by inflammation of the gastrointestinal tract that involves both the stomach ("gastro"-) and the small intestine ("entero"-), resulting in combo of diarrhea, vomiting and cramping abdominal pain .(11)Diverticulitis is a common digestive disease that involves the formation

of pouches (diverticula) within the bowel wall. Ischemia is a restriction in blood supply to tissues, causing hindrance in the supply of oxygen and glucose needed for cellular metabolism in order to keep tissue alive.[12] . Socioeconomic status is measured as a combination of income and occupation. An ectopic pregnancy is a complication of pregnancy in which the embryo implants somewhere outside the uterine cavity.

RESULT:

Among the people who have acute abdomen and came to emergency department of mayo hospital Lahore they were females(57%) age above 30 years(52%)non working(71%)uneducated(71%)mostly coming from urban areas (92%).

Statistics

	gender of respondent	age of respondent	education of respondent	address of respondent	site of pain in abdomen
Valid	99	100	100	100	100
Missing	1	0	0	0	0
Mean	.42	.52	.29	.92	5.16
Median	.00	1.00	.00	1.00	6.00
Mode	0	1	0	1	6
Std. Deviation	.497	.502	.456	.273	2.205

gender of respondent

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid female	57	57.0	57.6	57.6
male	42	42.0	42.4	100.0
Total	99	99.0	100.0	
Missing System	1	1.0		
Total	100	100.0		

age of respondent

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid less than 30	48	48.0	48.0	48.0
more than 30	52	52.0	52.0	100.0
Total	100	100.0	100.0	

marrital status of respondant

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	unmarried	32	32.0	32.0	32.0
	1	68	68.0	68.0	100.0
	Total	100	100.0	100.0	

education of respondant

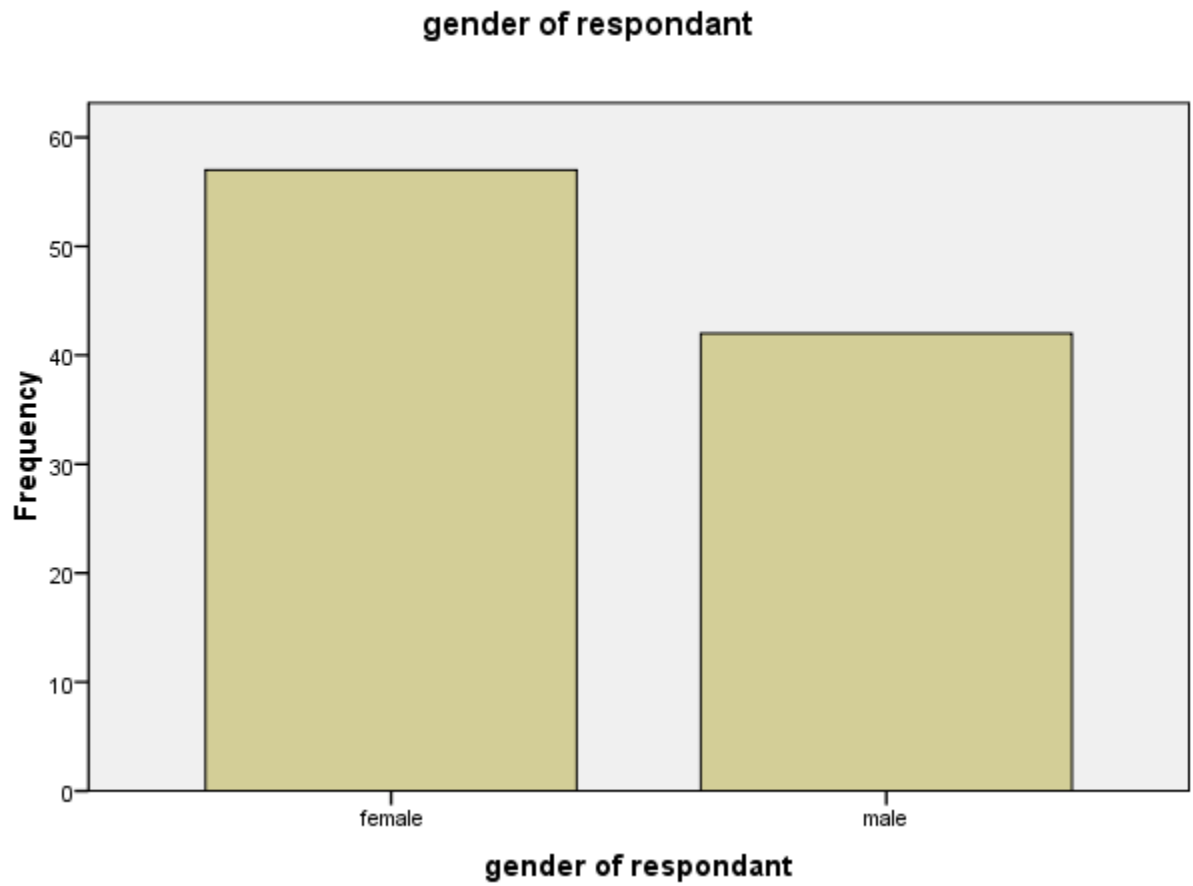
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	uneducated	71	71.0	71.0	71.0
	1	29	29.0	29.0	100.0
	Total	100	100.0	100.0	

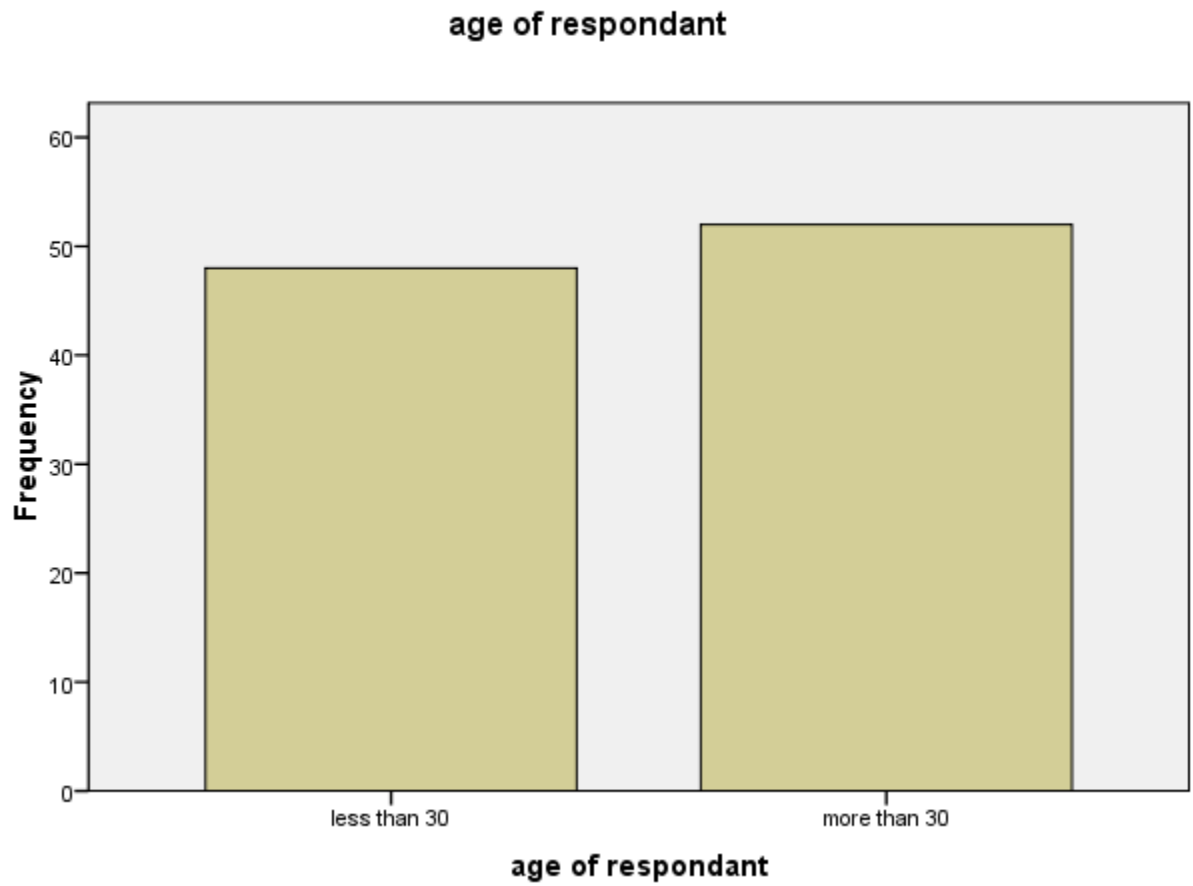
income of respondant

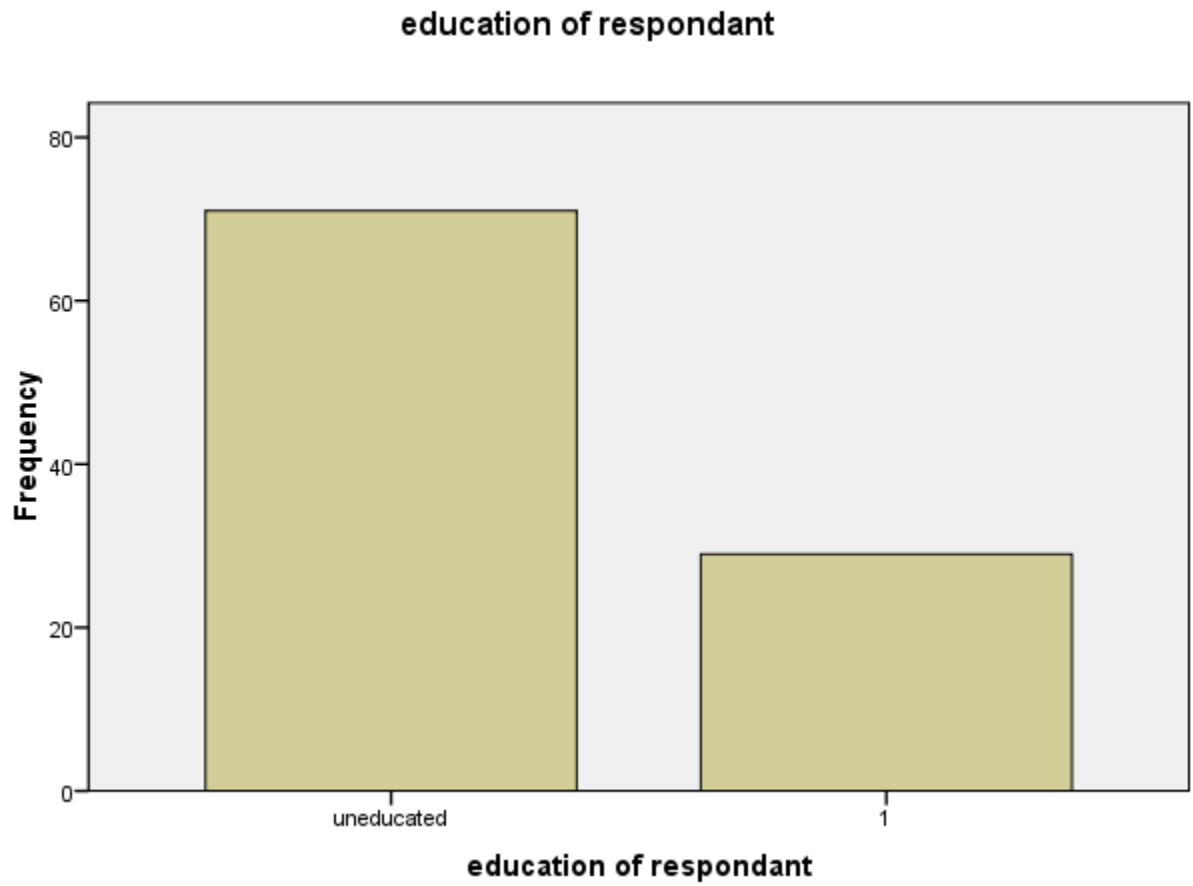
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than 15000	85	85.0	85.0	85.0
	more than 15000	15	15.0	15.0	100.0
	Total	100	100.0	100.0	

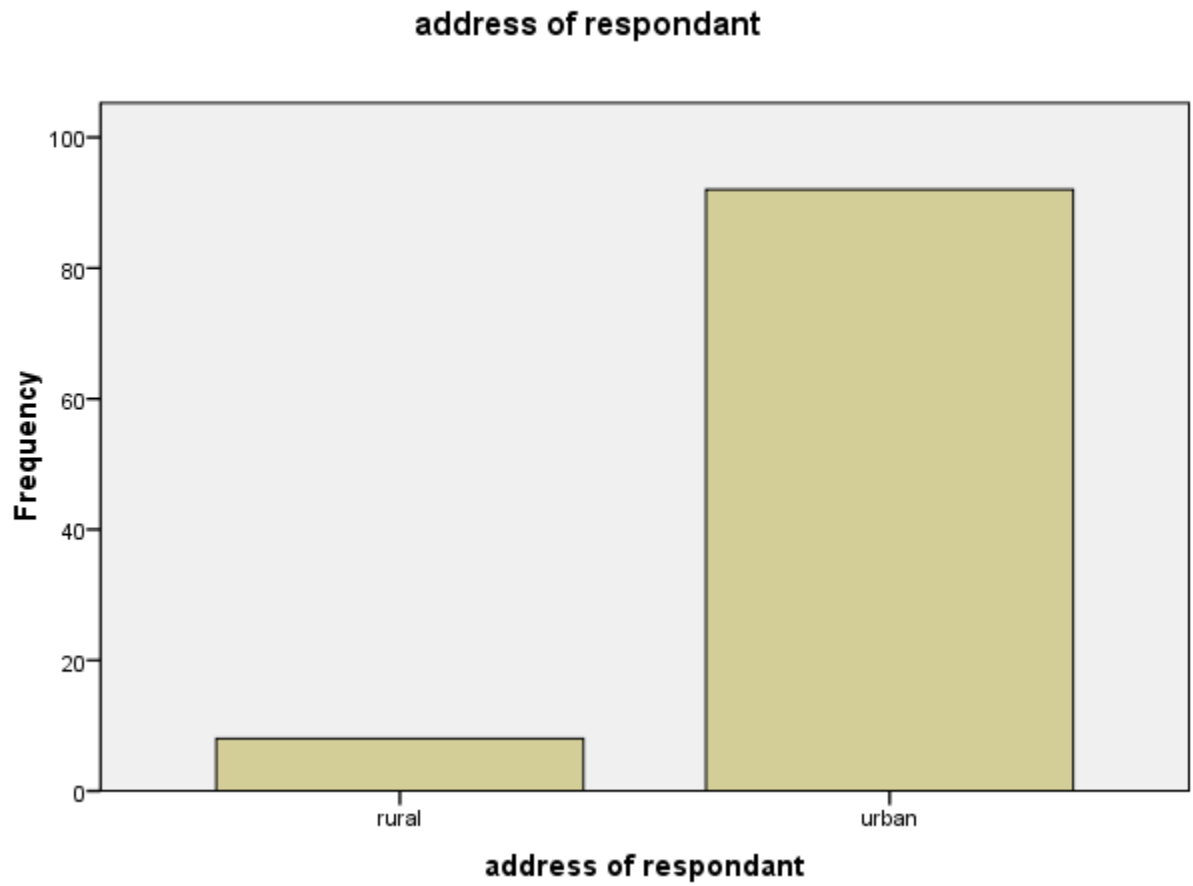
site of pain in abdomen

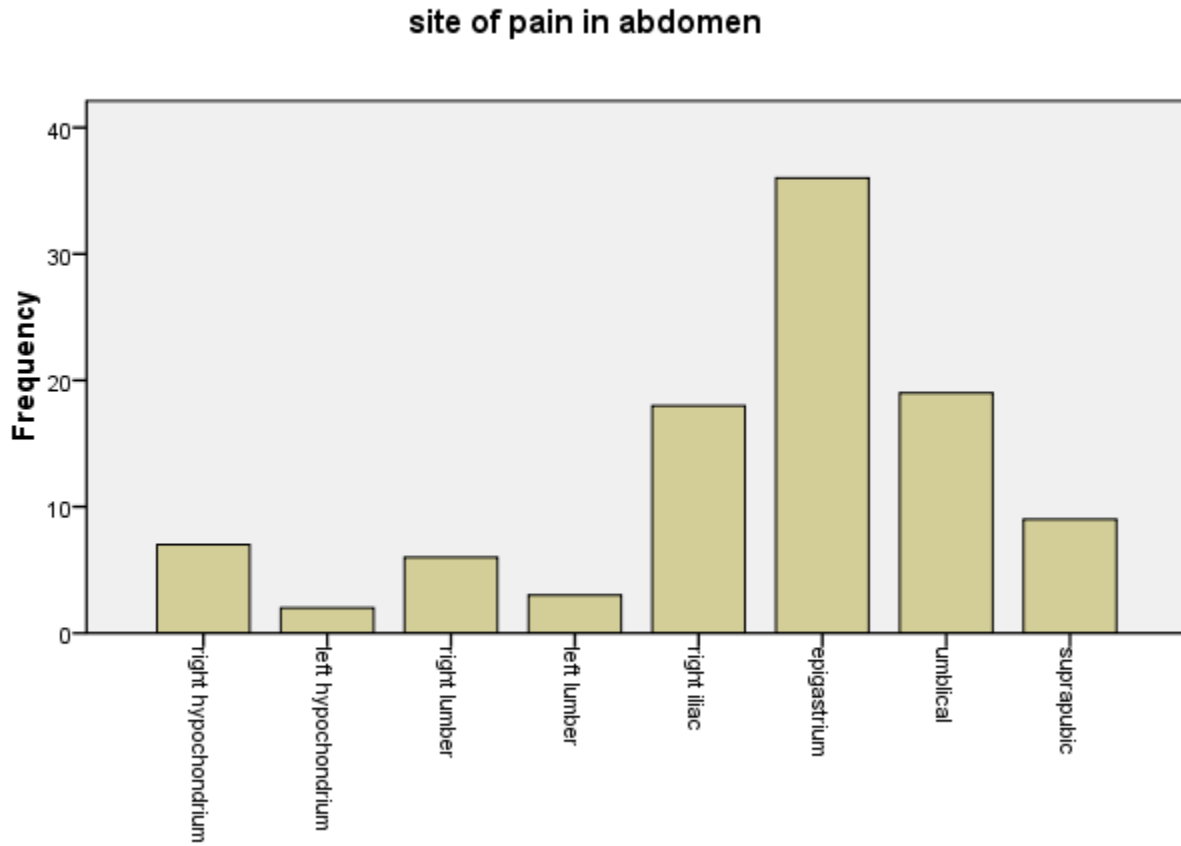
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	right hypochondrium	7	7.0	7.0	7.0
	left hypochondrium	2	2.0	2.0	9.0
	right lumber	6	6.0	6.0	15.0
	left lumber	3	3.0	3.0	18.0
	right iliac	18	18.0	18.0	36.0
	epigastrium	36	36.0	36.0	72.0
	umblical	19	19.0	19.0	91.0
	suprapubic	9	9.0	9.0	100.0
	Total	100	100.0	100.0	











site of pain in abdomen

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
gender of respondant	99	0	1	.42	.497
age of respondant	100	0	1	.52	.502
occupation of respondant	100	0	1	.29	.456
marrital status of respondant	100	0	1	.68	.469
education of respondant	100	0	1	.29	.456
income of respondant	100	0	1	.15	.359
address of respondant	100	0	1	.92	.273
site of pain in abdomen	100	0	8	5.16	2.205
onset of pain in abdomen	100	0	3	2.32	.984
severity of pain on onset	100	0	3	1.17	.853
nature of pain	100	0	3	1.18	1.209
swelling in abdomen	100	0	2	.30	.503
aggravating factors of pain	99	0	3	1.08	.997
relieving factors of pain	100	0	3	1.07	.977

recent surgery of respondent	100	0	2	.16	.420
intravenous drug administered to resp.	100	0	3	.52	.577
radiation of pain to other parts of body	100	0	3	1.03	1.159
history of similar pain in abdomen in respondent	100	0	3	.36	.542
effect on bowel habit	99	0	3	1.43	1.349
recent history of trauma in respondent	100	0	2	.05	.261
history of normal menstruation and suspicion of pregnancy in resp.	58	0	3	.53	.863
gastric ulcers in respondent	99	0	3	.19	.467
alcohol ingestion by respondent	100	0	2	.07	.293
history of gallstone in respondent	100	0	2	.09	.321
effect of taking meals on pain in respondent	100	0	3	.42	.606
fever or chills in respondent	100	0	1	.41	.494
medicine taken by respondent for pain	100	0	1	.58	.496
immunization history in respondent	100	0	1	.68	.469
increase serum cholesterol level in respondent	100	0	1	.14	.349
renal stones or history of renal colic in resp.	100	0	1	.18	.386
nausea\vomiting in respondent	100	0	1	.62	.488
color of vomit	84	0	3	.54	.857
history of heart attack or angina in respondent	100	0	1	.08	.273
appetite change in respondent due to pain	100	0	2	1.30	.560
diarrhoea\constipation in respondent	100	0	2	1.10	.785
abnormal vaginal bleeding in female respondent	57	0	1	.05	.225
jaundice\hyperbilirubinemia in respondent	100	0	1	.13	.338
difficulty in swallowing in respondent	100	0	1	.19	.394
Valid N (listwise)	48				

DISCUSSION:

The terminology acute abdomen refers to a sudden and severe abdominal pain of unclear etiology whose duration is less than 24 hours. It is the presentation of an undiagnosed previously presented abdominal pain before a clinical encounter in primary or secondary care. Abdominal pain is one of the most common conditions that require prompt diagnosis and treatment. The research topic was selected since acute abdomen is one of the most common and major symptoms of a large number of diseases with which patients usually present in the emergency department of Mayo Hospital Lahore. Hence, there was a need to carry out a research to find out the determinants of acute abdomen in patients coming to emergency department of Mayo Hospital so that prompt diagnosis can be made and consequently appropriate treatment can be provided. The determinants of acute abdomen are many and vary from country to country and even from community to community. They are also different in rural and urban areas. Our research showed that following determinants are worth mentioning.

In our research it was found that acute abdomen in adult patients coming to emergency department of Mayo Hospital Lahore was more common among females (57%). It was also more common among people of age above 30 years (52%). Most of the patients coming to emergency department are from urban areas. They mainly belong to lower middle socioeconomic status, are non-working and uneducated.

In another research made in Pakistan Ordinance Factory Hospital Wah Cantt it was found that out of 75 patients of acute abdomen 36 were diagnosed of acute appendicitis out of which 56%-20 were men and 44%-16 were women and age range is 60-78 years and a total of ten developed complications. In another similar research it was found that acute abdomen due to appendicitis is more in females 74% than males. (13,14,15)

According to a research made by ROLAND ANDERSON in INTERNATIONAL JOURNAL OF EPIDEMIOLOGY infectious appendicitis is the commonest cause of acute abdomen among females (O/E ratio=2.28 P:0.004) and in patients younger than 15 years and is associated with vomiting. (16)

According to CANADIAN JOURNAL OF SURGERY the epidemiological features of the patient with acute appendicitis during the period 1991-1998 in all the acute care hospitals in Ontario Canada were noted. According to which out of 675

cases of acute appendicitis occurred in Ontario of these 58% cases were male and 35.5% had perforation. The mean and standard deviation for patient with perforation was 6.2 days versus 3(1.8) days for patients with no perforation. Males also had higher rates in all age groups. Incidence was highest in age 10-19 years and acute appendicitis is higher in summer months.

Our research also showed that sudden, severe, non-radiating, constant pain with no abdominal swelling, no history of trauma, gallstone, gastric ulcer, alcohol ingestion, no history of high serum cholesterol; renal colic or heart attack, self-medication to relieve pain, no jaundice and no abnormal vaginal bleeding are associated with acute abdomen in patients coming to emergency department of Mayo Hospital Lahore. That is similar to another research according to which the acute abdomen is not associated with gastric ulcer, alcohol ingestion, jaundice, abnormal vaginal bleeding and abdominal swelling. (17)

CONCLUSION:

Acute abdomen was found more in married females, age above 30 years, non-working, uneducated and those living in urban areas. Our research also showed that sudden, severe, non-radiating, constant pain with no abdominal swelling, no history of trauma; gallstone; gastric ulcer; alcohol ingestion, no history of high serum cholesterol; renal colic or heart attack, self-medication to relieve pain, no jaundice and no abnormal vaginal bleeding are associated with acute abdomen in patients coming to emergency department of Mayo Hospital Lahore.

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