



## Socio-demographic Characteristics of Acute Appendicitis Patients attended at a Tertiary Care Teaching Hospital in Bangladesh

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### Abstract

**Background:** Acute appendicitis can cause morbidity in a large number of people. **Objective:** The purpose of the present study was to see the socio-demographic characteristics of acute appendicitis patients. **Methodology:** This descriptive cross sectional study was conducted in the Department of Surgery at Rajshahi Medical College Hospital, Rajshahi, Bangladesh from July 2009 to June 2011 for a period of two years. Patients admitted with features of uncomplicated and complicated acute appendicitis (gangrenous or perforated) underwent emergency appendectomy by grid iron incision in all the units of surgery were selected as study population. All clinical information including history, physical findings and investigation reports were collected and recorded in a pre-designed data collection sheet. **Result:** A total number of 200 acute appendicitis patients were recruited for this study. Most of the study population were in the age group of 13 to 20 years of age group which was 84(42.0%) cases. The ratio of male and female was 1:1.04. Married were more than unmarried which was 114(57.0%) cases and 86(43.0%) cases respectively. Majority patients of this study was from middle class which was 160(80.0%) cases. Most of the acute appendicitis patients were presented with uncomplicated status which was 136(68.0%) cases and the rest 64(32.0%) cases were in complicated state. **Conclusion:** In conclusion most of the acute appendicitis patients are young age female coming from middle class family. [*Bangladesh Journal of Infectious Diseases, December 2019;6(2):44-47*]

**Keywords:** Socio-demographic characteristics; acute appendicitis; infection

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## Introduction

Acute appendicitis is a common surgical emergency especially in children<sup>1</sup>. Current studies have showed that the incidence of acute appendicitis has declined in western countries<sup>2</sup>. The incidence of acute appendicitis vary substantially by geographic region, race, sex, immigrant status and socioeconomic status<sup>3</sup>. Therefore, the surgical intervention for acute appendicitis has been reported to vary in different countries<sup>4</sup>.

The reasons for this variation are not fully understood. Most epidemiologic studies in appendicitis have focused in the role of age, sex, hereditary and dietary influence on the incidence of appendicitis; few have examined the intricacy of the interplay between population demographics and the access to health care on outcomes in children who are underwent appendectomies<sup>4</sup>.

Population-based data quantify the association of population demographic factors such as rural living and immigrant status with negative appendectomy and perforated appendicitis and has been reported a significant and striking relationships between these factors and outcomes of appendectomy in the patients especially children<sup>5</sup>. In addition rural living is significantly associated with higher rate of adverse outcomes of acute appendicitis. Furthermore, areas with a higher abdominal ultrasound use are associated with a lower risk of perforated appendectomy.

Researchers have hypothesized that environmental and genetic factors may account for some of the observed variations<sup>6</sup>. In a study<sup>7</sup> the inpatient data of children has been used who have appendicitis and have showed that children without or with insurance with had a higher odds of perforation compared to those with private insurance indicating a disparity in access to care by socioeconomic status.

However, in another study population<sup>8</sup>, socioeconomic status of the child or the family doesn't affect the outcomes of appendectomy. This may be attributed to the fact that children are universally covered by a public health insurance system for primary care visits, routine immunizations and medical or surgical hospitalizations; there may be fewer structural barriers to accessing health care. This present study was undertaken to see the socio-demographic characteristics of acute appendicitis patients.

## Methodology

This descriptive cross sectional study was conducted in the Department of Surgery at Rajshahi Medical College Hospital, Rajshahi, Bangladesh from July 2009 to June 2011 for a period of two years. Patients admitted with features of uncomplicated and complicated acute appendicitis (gangrenous or perforated) underwent emergency appendectomy by grid iron incision in all the units of surgery were selected as study population. Study population was first screened by Modified Alvarado score. Patients with appendectomies which was not done by grid iron incision, patients underwent interval or incidental appendectomy, histologically negative ones and patients below the age of 13 years or patients who had receiving steroid, cytotoxic or any immunosuppressive drugs were excluded from this study. All patients underwent appendectomy by Grid Iron incision were included. Approval from the Institutional Review Board (IRB) of Rajshahi Medical College was taken prior to the study. The purpose of study was explained to the patients and informed consent was taken. All clinical information including history, physical findings and investigation reports were collected and recorded in a pre-designed data collection sheet. Collected data were analyzed by appropriate statistical test and it was processed by Statistical Package for Social Science (SPSS) version 22.0 software. Qualitative data were expressed as frequency and percent. Quantitative data were expressed as mean with standard deviation.

## Result

A total number of 200 acute appendicitis patients were recruited for this study after fulfilling the inclusion and exclusion criteria. Most of the study population were in the age group of 13 to 20 years of age group which was 84(42.0%) cases followed by 21 to 30 years age group, 31 to 40 years age group which was 76(38.0%) cases and 34(17.0%) cases respectively. Only 6(3.0%) cases were in more than 40 years (Table 1).

**Table 1: Age Group among the Study Population**

Age Group	Frequency	Percent
13 to 20 Years	84	42.0
21 to 30 Years	76	38.0
31 to 40 Years	34	17.0
More than 40 Years	6	3.0
<b>Total</b>	<b>200</b>	<b>100.0</b>

Out of 200 patients, female was predominant than male which was 102(51.0%) cases and 98(49.0%) cases respectively. The ratio of male and female was 1:1.04 (Table 2).

**Table 2: Gender Distribution of Study Population**

Gender	Frequency	Percent
Male	98	49.0
Female	102	51.0
Total	200	100.0

In this study married were more than unmarried which was 114(57.0%) cases and 86(43.0%) cases respectively (Table 3).

**Table 3: Marital Status of Study Population**

Marital Status	Frequency	Percent
Married	114	57.0
Unmarried	86	43.0
Total	200	100.0

Regarding socioeconomic condition majority patients of this study was from middle class which was 160(80.0%) cases followed by lower and upper class which was 34(17.0%) cases and 6(3.0%) cases respectively (Table 4).

**Table 4: Socio-Economic Condition among Study Population**

Socio-economic Condition	Frequency	Percent
Upper Class	6	3.0
Middle Class	160	80.0
Lower Class	34	17.0
Total	200	100.0

Most of the acute appendicitis patients were presented with uncomplicated status which was 136(68.0%) cases and the rest 64(32.0%) cases were in complicated state (Table 5).

**Table 5: Status of Acute Appendicitis among Study Population**

Status of Acute Appendicitis	Frequency	Percent
Uncomplicated	136	68.0
Complicated	64	32.0
Total	200	100.0

## Discussion

Until the close of the nineteenth century, appendicitis remained unrecognized<sup>9</sup>. Unquestionably, before this time it was a comparatively rare disease, however, there can be no doubt that it existed even in remote times, for an acutely inflamed, perforated appendix was found preserved in the mummy of a young royal princess of Egypt<sup>10</sup>.

The acute cause of appendicitis and its meteoric rise from an insignificant disease to the most common series of intra-abdominal inflammatory affection of western civilized races has been a matter for speculation<sup>11</sup>. Therefore, no satisfactory explanation has been forthcoming.

In this study most of the study population are in the age group of 13 to 20 years of age group which is 84(42.0%) cases followed by 21 to 30 years age group, 31 to 40 years age group which was 76(38.0%) cases and 34(17.0%) cases respectively. Only 6(3.0%) cases are in more than 40 years. This result is consistent with the other study. Similarly, the peak incidence of acute appendicitis is in childhood and diminishes progressively with increasing age<sup>11</sup>. Appendicitis is most common between the ages of 10 and 20 years, but no age is exempted from acquiring the disease<sup>12</sup>.

Out of 200 patients, male was predominant than female which was 98(49%) cases and 84(42%) cases respectively. The ratio of male and female was 1:1.04. Similar result has been reported by another study<sup>13</sup> and has mentioned that females are affected more commonly than males. However, in the contrary, a male preponderance exists, with a male to female ratio of 1.4:1; overall lifetime risk is 8.6% for males and 6.7% for females in the United States<sup>12</sup>.

Appendicitis is particularly common in the highly advanced European, American and Australia countries, while it is rare in Africans and Polynesians<sup>14</sup>. In another study<sup>15</sup> it has been reported that if individuals from the latter races to countries where appendicitis is common, they soon acquire the human liability to appendicitis. These significant facts satisfy many that the rise of appendicitis among the highly advanced is due to departure from a cellulose depleted diet not only slows faecal transit but also results in firmer and more tenacious stools which are considerably reduced in bulk and which in turn lead to high intraluminal pressure and altered bacterial content<sup>15</sup>.

Regarding socioeconomic condition majority patients of this study are from middle class which is 160(80.0%) cases followed by lower and upper class which was 34(17.0%) cases and 6(3.0%) cases respectively. In England, acute appendicitis is more common among the upper middle classes than in the working class. Thus the mortality from acute appendicitis is about 20 percent higher in men of social classes I and II like professional and managerial workers than it is in social class III and IV like unskilled labourers, register-general statistics<sup>16</sup>.

This unusual but generally accepted fact can be accounted for hereditary abnormality in the position of the organ, which predisposes to infection<sup>17</sup>. Thus the whole family may have long retrocaecal appendices with comparatively poor blood supply.

## Conclusion

In conclusion most of the acute appendicitis patients are young age and rest of the patients are adult age group. Female gender is more predominant than male. Most of the patients are coming from middle class family. Most of the acute appendicitis patients are presented with uncomplicated status. Large scale study should be carried out to get the real scenario.

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