

Evaluation of Acute Cholecystitis Awareness Among Patient Attendants in a Tertiary Hospital in Dhaka.

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Abstract

Acute cholecystitis is an inflammation of the gallbladder, most commonly caused by obstruction of the cystic duct due to gallstones or biliary sludge. Without timely and appropriate treatment, this condition can progress to serious and potentially life-threatening complications such as gallbladder perforation, abscess formation, or sepsis. This descriptive cross-sectional study was conducted at BIRDEM General Hospital, Dhaka, from August 2023 to September 2024, with the objective of assessing the level of knowledge regarding acute cholecystitis among patients' attendants. A total of 100 respondents were selected using non-random convenience sampling. Data were collected using a structured questionnaire. Data analysis revealed that the majority of respondents were above 40 years old, 54% were females, and 82% were married. Most respondents (64%) knew about risk factors, while 83% were aware of signs and symptoms. However, knowledge about complications (38%) and preventive measures was limited. Physicians were the primary source of information. The findings highlight the importance of improved public health education strategies and early prevention measures to reduce the burden of acute cholecystitis.

Introduction

Acute cholecystitis refers to inflammation of the gallbladder. The pathophysiologic mechanism of acute cholecystitis is blockage of the cystic duct. Cholecystitis is a condition best treated with surgery; however, it can be treated conservatively if necessary. This condition can be associated with or without the presence of gallstones and can also be classified as acute or chronic. It is found both in men and women but may have a propensity for certain populations. It may also present with certain classic signs and symptoms. Acute cholecystitis may also be confused with other illnesses such as peptic ulcer disease, irritable bowel disease, and cardiac disease. Chronic and acute pancreatitis can also mimic gallbladder disease (Burmeister et al., 2018). Diabetes mellitus, pregnancy, cirrhosis, and hemolytic disease are considered key factors for the formation of gallstones. Risk factors for gallstones include family history and genetic predisposition. Obesity, rapid weight loss, and a high calorie diet are considered to be modifiable risk factors. In addition, certain drugs, such as estrogen replacement therapy and thiazide diuretics, can promote gallstone formation (Aune & Vatten, 2016). Children who are at a higher risk for developing cholecystitis include seriously ill children, those with sickle cell disease, those on prolonged total parenteral nutrition, those with hemolytic conditions, and those with congenital and biliary anomalies (McEvoy & Suchy, 1996). The most common presenting symptom of AC is upper abdominal pain. However, pediatric population may present without many of the classic findings. Signs of peritoneal irritation may be present, and in some patients, the pain may radiate to



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the right shoulder or scapula. Frequently, the pain begins in the epigastric region and then localizes to the RUQ. Although the pain may initially be described as colicky, it becomes constant virtually. Nausea and vomiting are generally present, and patients may report fever (Reda et al., 2015). It is a critical clinical problem representing up to 5% of emergency room visits. Traditionally, these patients were treated conservatively, followed by delayed surgery six weeks or longer after acute event has subsided. Recently, early emergency cholecystectomy at same admission is suggested (Ratan & Alam, 2017). About 95% of people with acute cholecystitis have gallstones (Halpin, 2014). However that does not mean incidental findings of gallstone should be treated, as it is estimated that only 20% of patients with asymptomatic stones will develop symptoms within 20 years and because approximately 1% of patients with asymptomatic stones develop complications of their stones before the onset of symptoms, prophylactic cholecystectomy is not warranted in asymptomatic patients (Behari & Kapoor, 2012).

Materials & Method

Study was a descriptive cross-sectional study. Attendants of patients aged 21–45 years visiting at BIRDEM General Hospital. 100 respondents were selected using a purposive sampling technique. Structured and pre-tested questionnaire. Data were entered and analyzed using SPSS version 20. Results were presented using descriptive statistics.

Results

Data was collected using structured Questionnaire. For knowledge, variables each right response was given a score of 1 while a wrong score 0.

Section-1: Socio-demographic characteristics information;

Section-2: Information on related variables and subject.

All the data were entered and analyzed by using statistical packages for social science (SPSS) software version 20.00 (Chicago).

Table-1: Distribution of the respondents by age

<i>Age Group (years)</i>	<i>No. Of Attendance</i>	<i>Percentage (%)</i>
21-25	18	18.0
26-30	7	7.0
31-35	17	17.0
36-40	13	13.0
40 - 45	45	45.0
<i>Total</i>	<i>100</i>	<i>100.0</i>

Table-1: The table shows that among 100 respondents, 45% (n=45) respondents were 41 - 45 years age group, 18% (n=18) were 21-25 years, 17% (n=17) were 31-35 years, 13% (n=13) were 36-40 years & 7% (n=7) were 26- 30 years.

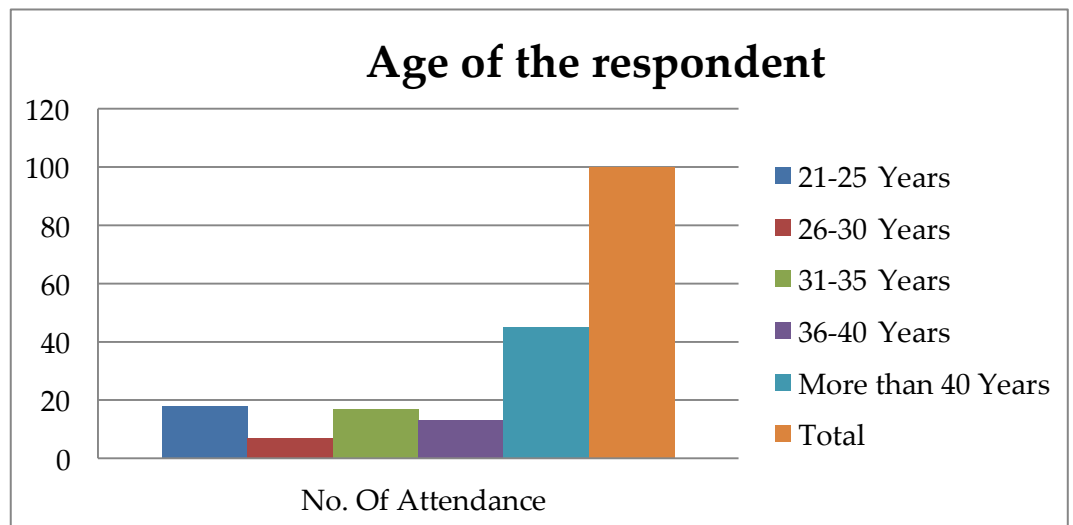


Figure-1: Bar diagram showing the age distribution of the study respondents

Table-2: Distribution of the respondents by sex (n=100)

Gender	No of attendance	Percentage (%)
Male	46	46.0
Female	54	54.0
Total	100	100.0

Table-2: The table shows that among 100 respondents, 54% (n=54) respondents were female & 46% (n=46) respondents were male.

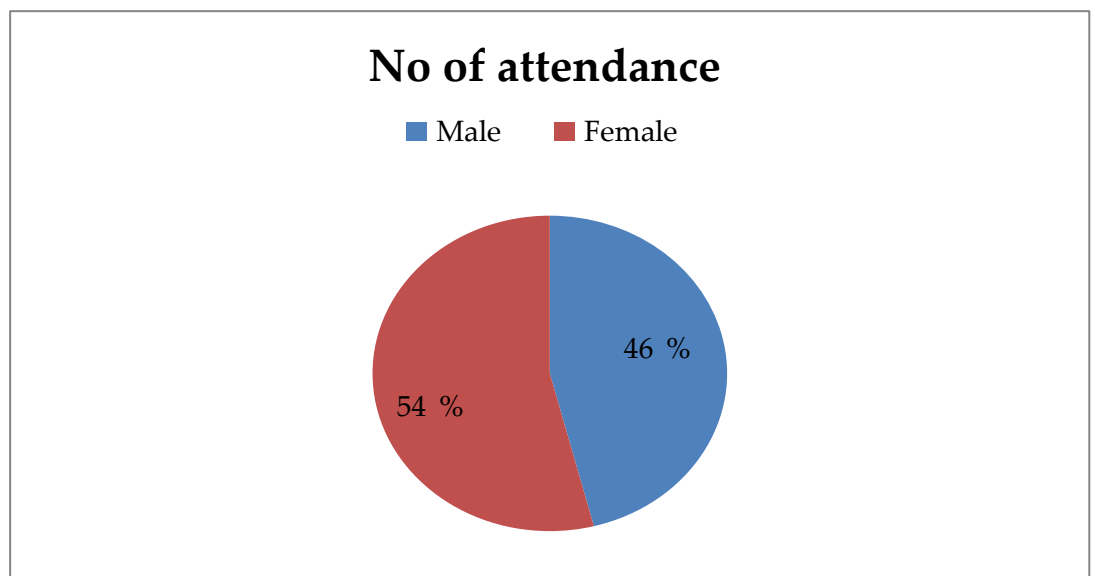


Figure-2: Pie diagram showing the gender distribution of the study respondents

Table-3: Distribution of the respondents by marital status (n=100)

<i>Marital Status</i>	<i>No of attendance</i>	<i>Percentage (%)</i>
<i>Married</i>	82	82.0
<i>Unmarried</i>	18	18.0
<i>Total</i>	100	100.0

Table-3: The table shows that among 100 respondents, 82% (n=82) respondents were married, & 18% (n=18) respondents were unmarried.

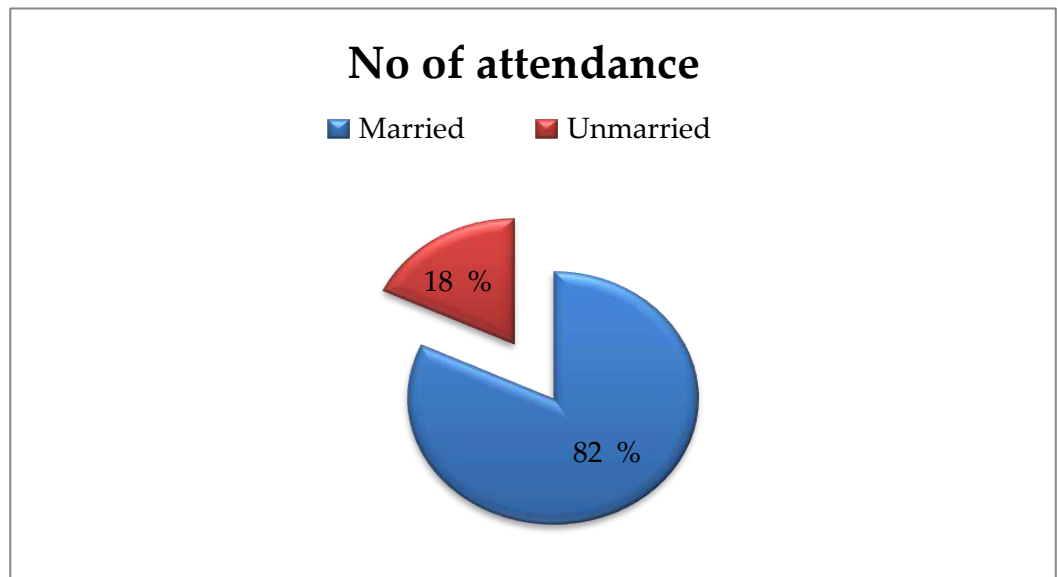


Figure-3: Pie diagram showing the marital distribution of the study respondents

Table-4: Distribution of the respondents by educational level (n=100).

<i>Educational level</i>	<i>No of attendance</i>	<i>Percentage (%)</i>
<i>Higher education</i>	25	25.0
<i>Secondary Education</i>	32	32.0
<i>Post Graduate</i>	16	16.0
<i>Primary Education</i>	17	17.0
<i>Writing & Reading</i>	10	10.0
<i>Total</i>	100	100.0

Table-4: The table shows that among 100 respondents, 32% (n=32) respondents were secondary level educated, 25% (n=25) respondents were Higher educated or graduated, 17% (n=17) respondents were primary level educated, 16% (n=16) respondents were post graduated passed, & 10% (n=10) respondents were only knows writing and reading.

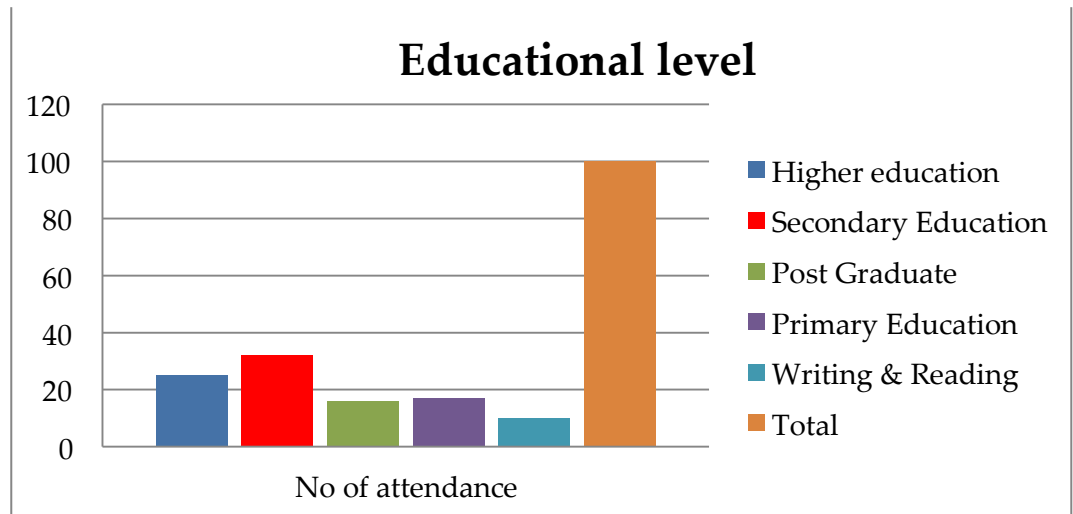


Figure-4: Bar diagram showing the educational level of the study respondents.

Table-5: Distribution of the respondents by their chronic disease (n=100).

<i>Participants suffering from any chronic diseases</i>	<i>No of attendance</i>	<i>Percentage (%)</i>
<i>Diabetes Mellitus</i>	33	33.0
<i>Hypertension</i>	21	21.0
<i>None</i>	46	46.0
<i>Total</i>	100	100.0

Table-5: The table shows that among 100 respondents, 46% (n=46) respondents were not suffering from any chronic disease, 33% (n=33) respondents were suffering from diabetes mellitus & 21% (n=21) respondents were suffering from hypertension.

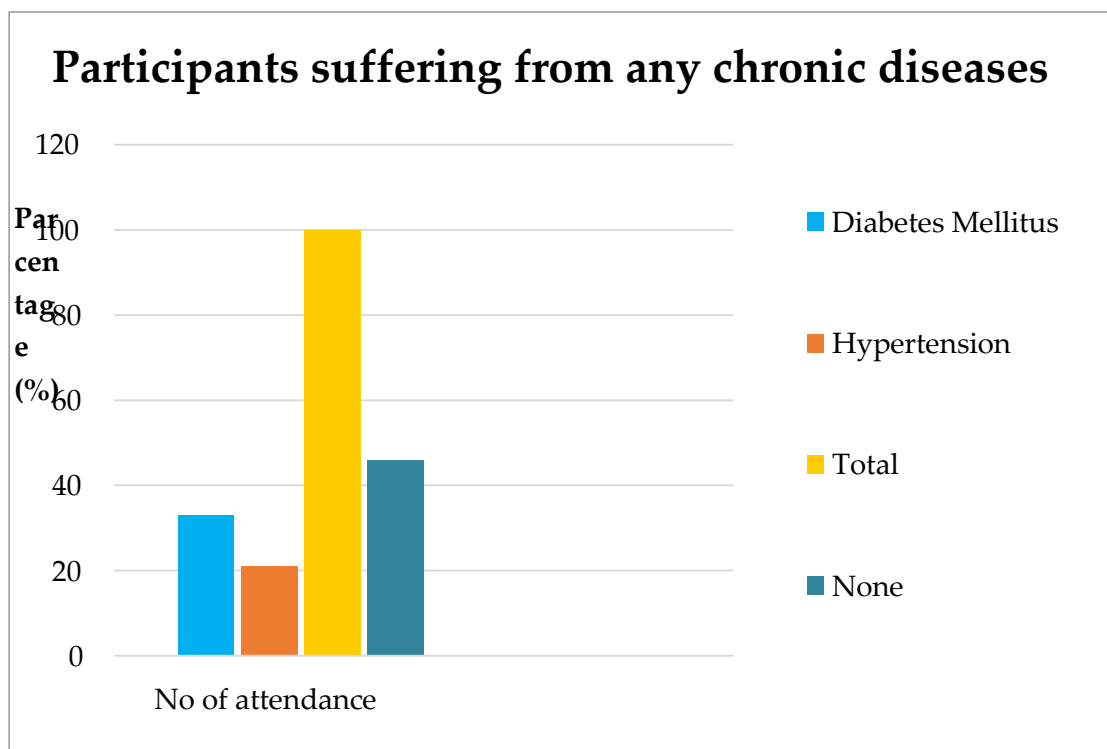


Figure-5: Bar diagram showing the sufferings from chronic of the study respondents.

Table-06: Distribution of the respondents according to their knowledge about the term cholecystitis (n=100)

Knew about the term cholecystitis	No of respondents	Percentage (%)
Yes	87	87.0
No	13	13.0
Total	100	100.0

Table-6: The table shows that among 100 respondents, 87% (n=87) respondents knew about the term cholecystitis & 13% (n=13) respondents didn't know about cholecystitis.

Table-07: Distribution of the respondents according to their knowledge about the term acute cholecystitis (n=100)

Know about the term acute cholecystitis	No of respondents	Percentage (%)
Yes	75	75.0
No	25	25.0

Total	100	100.0
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Table-7: The table shows that among 100 respondents, 87% (n=87) respondents knew about the term cholecystitis & 13% (n=13) respondents didn't know about cholecystitis.

Table-08: Distribution of the respondents according to their knowledge about the risk factors of acute cholecystitis (n=100)

Know about the risk factors of acute cholecystitis	No of respondents	Percentage (%)
Yes	64	64.0
No	36	36.0
Total	100	100.0

Table-8: The table shows that among 100 respondents, 64% (n=64) respondents knew about the risk factors of acute cholecystitis & 36% (n=36) respondents didn't know about the risk factors of acute cholecystitis.

Table-09: Distribution of the respondents by knowing about risk factors of acute cholecystitis. (n=100)

Risk factors of acute cholecystitis	No of respondents	Percentage (%)
Age	15	15.0
Obesity	18	18.0
Diabetes Mellitus	14	14.0
Smoking	5	5.0
History Of Acute Cholecystitis in your Direct Relatives	12	12.0
Don't know	36	36.0

Table-9: The table shows that among 100 respondents, 18% (n=18) respondents said obesity was kind of risk factors of acute cholecystitis, 15% (n=15) respondents said age, 14 % (n=14) respondents said diabetes mellitus, 12% (n=12) respondents said history of AC in direct relatives, 5% (n=5) respondents said smoking & 36% (n=36) respondents said don't know about it.

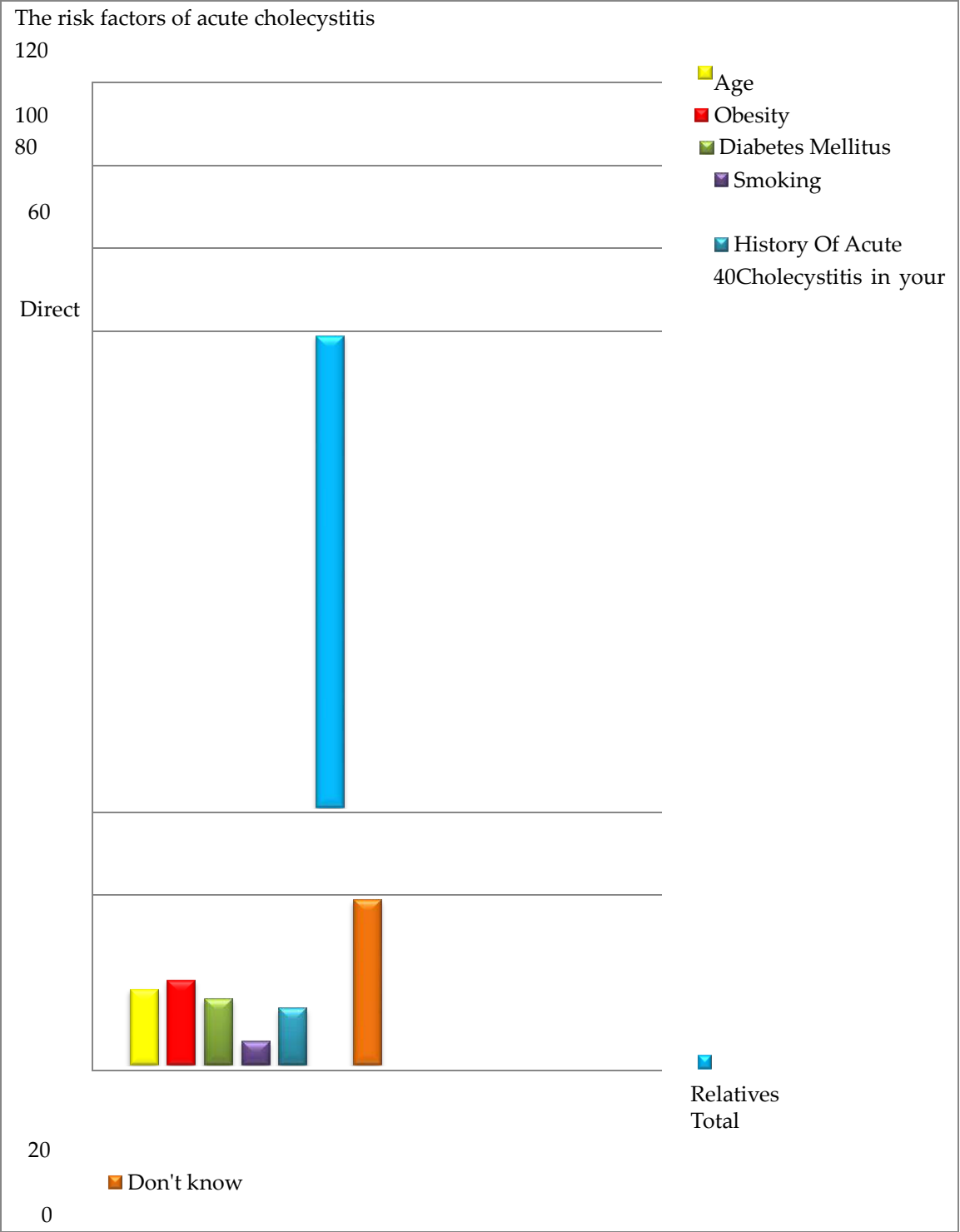


Figure-6: Bar diagram showing the risk factors of acute cholecystitis.

Table-10: Distribution of the respondents according to their knowledge about the sign & symptoms of acute cholecystitis (n=100)

Know about the sign & symptoms of acute cholecystitis	No of respondents	Percentage (%)

Yes	83	83.0
No	17	17.0
Total	100	100.0

Table-10: The table shows that among 100 respondents, 83% (n=83) respondents knew about the sign & symptoms of acute cholecystitis & 17% (n=17) respondents didn't know about the sign & symptoms of acute cholecystitis.

Table-11: Distribution of the respondents by knowing about sign & symptoms of acute cholecystitis. (n=100)

Sign & symptoms of acute cholecystitis	No of respondents	Percentage (%)
Heart burn	4	4.0
Nausea	6	6.0
Vomiting	20	20.0
Abdominal Pain	40	40.0
Abnormalities in Digestion	13	13.0
Don't know	17	17.0
Total	100	100.0

Table-11: The table shows that among 100 respondents, 40% (n=40) respondents said abdominal pain was kind of sign & symptoms of acute cholecystitis, 20% (n=20) respondents said vomiting, 13 % (n=13) respondents said abnormalities in digestion, 6% (n=6) respondents said nausea, 4% (n=4) respondents said heart burn & 17% (n=17) respondents said don't know about it.

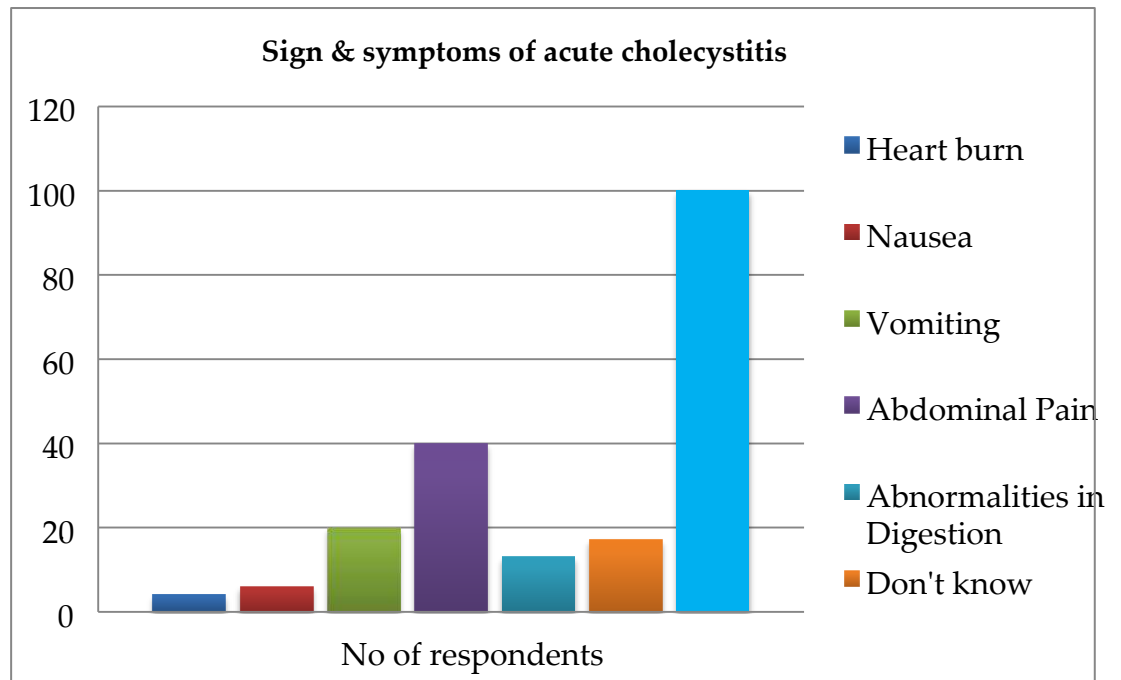


Figure-7: Bar diagram showing the sign & symptoms of acute cholecystitis.

Table-12: Distribution of the respondents according to if they Knew about the complication of acute cholecystitis (n=100)

Know about the complication of acute cholecystitis	No of respondents	Percentage (%)
Yes	38	38.0
No	62	62.0
Total	100	100.0

Table-12: The table shows that among 100 respondents, 38% (n=38) respondents knew about the complication of acute cholecystitis & 62% (n=62) respondents didn't knew about the complication of acute cholecystitis.

Table-13: Distribution of the respondents by knowing about complications of acute cholecystitis. (n=100)

Complications of acute cholecystitis	No of respondents	Percentage (%)
Biliary obstruction	12	12.0

Perforation	7	7.0
Acute pancreatitis	6	6.0
Jaundice	14	14.0
Don't know	61	61.0
Total	100	100.0

Table-13: The table shows that among 100 respondents, 14% (n=14) respondents said jaundice was kind of complications of acute cholecystitis, 12% (n=12) respondents said biliary obstruction, 7 % (n=07) respondents said perforation, 6% (n=06) respondents said acute pancreatitis, & 61% (n=61) respondents said don't know about it.

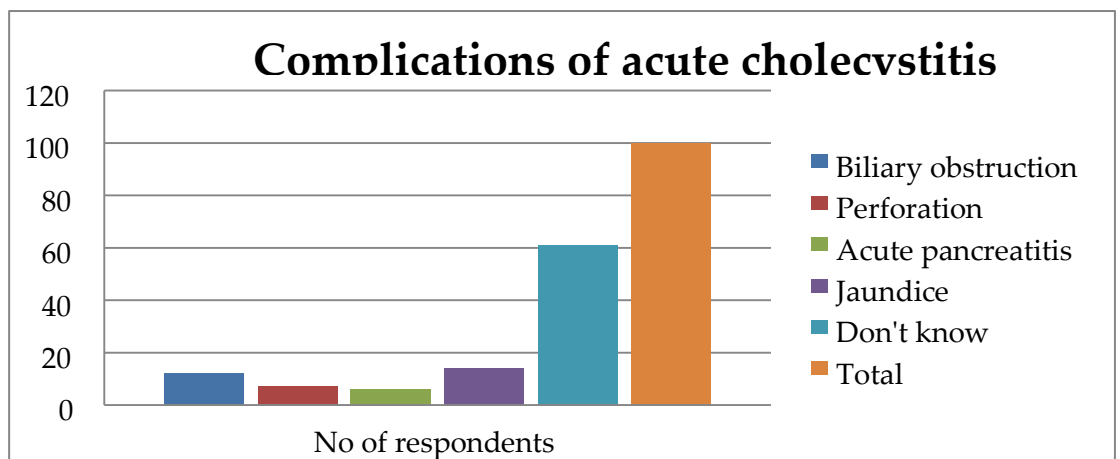


Figure-8: Bar diagram showing the complications of acute cholecystitis.

Table-14: Distribution of the respondents according to if they Knew about the treatment of acute cholecystitis (n=100)

Know about acute cholecystitis treatment	No of respondents	Percentage (%)
Yes	74	74.0
No	27	27.0
Total	100	100.0

Table-14: The table shows that among 100 respondents, 74% (n=74) respondents knew about the treatment of acute cholecystitis & 27% (n=27) respondents didn't knew about the treatment of acute cholecystitis.

Table-15: Distribution of the respondents by knowing about treatments of acute cholecystitis. (n=100)

Kind of treatment is necessary for acute cholecystitis	No of respondents	Percentage (%)
Drugs	24	24.0
Herbs	6	6.0
Frequent check-up and life style modification	3	3.0
Open surgery	40	40.0
Don't know	27	27.0
Total	100	100.0

Table-15: The table shows that among 100 respondents, 40% (n=40) respondents said open surgery was kind of treatment of acute cholecystitis, 24% (n=12) respondents said drugs, 6 % (n=06) respondents said herbs, 3% (n=03) respondents said frequent check-up and life style modification, & 27% (n=27) respondents said don't know about it.

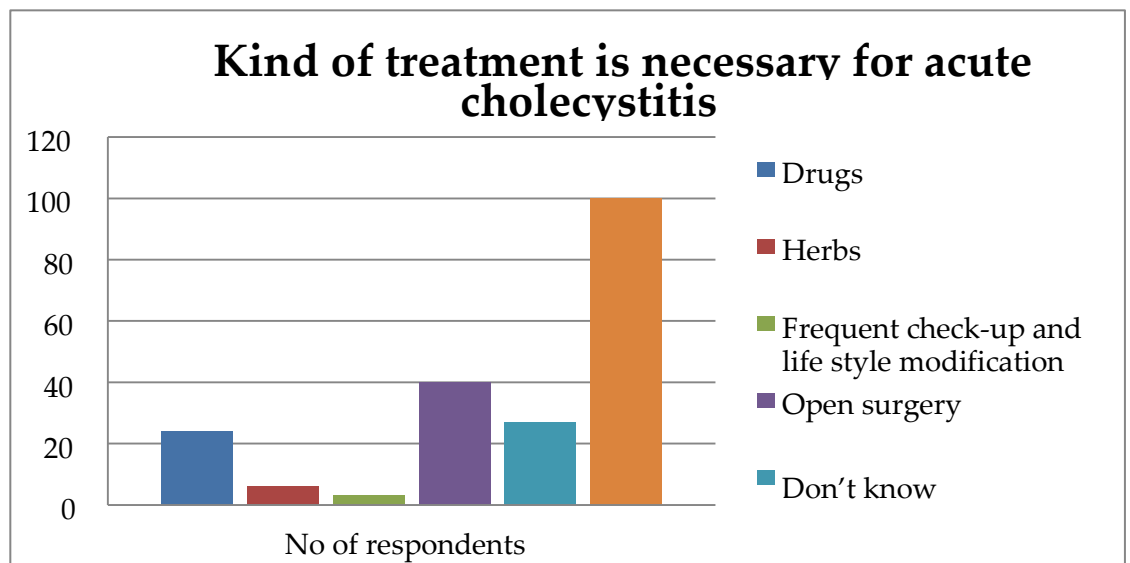


Figure-9: Bar diagram showing the treatment of acute cholecystitis.

Table-16: Distribution of the respondents according to their source of information about acute cholecystitis (n=100)

Source of information	No of respondents	Percentage (%)
Physicians	69	69.0
Internet	20	20.0
None	11	11.0
Total	100	100.0

Table-16: The table shows that among 100 respondents, 69% (n=69) respondents said physicians were the sources of information on acute cholecystitis, 20% (n=20) respondents said internet & 11 % (n=11) respondents said they didn't received any information from following sources.

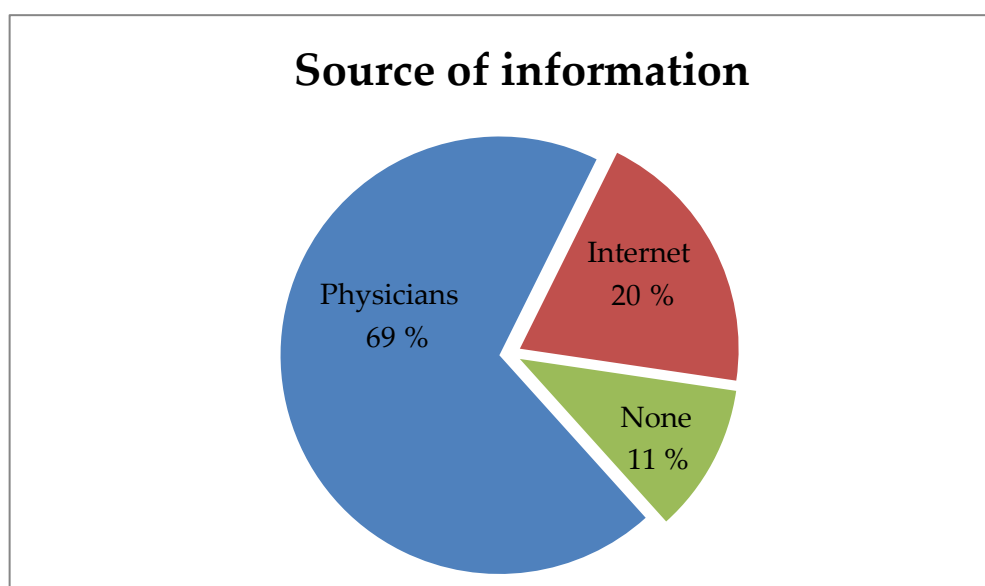


Figure-10: Pie diagram showing the source of information of acute cholecystitis.

Table-17: Distribution of the respondents according they feel they have benefited from the study about acute cholecystitis (n=100)

Information is helpful	No of respondents	Percentage (%)
Yes	92	92.0
No	8	8.0
Total	100	100.0

Table-17: The table shows that among 100 respondents, 92% (n=92) respondents were benefited from the information and study about acute cholecystitis & 8% (n=8) respondents were not benefited from the information about acute cholecystitis.

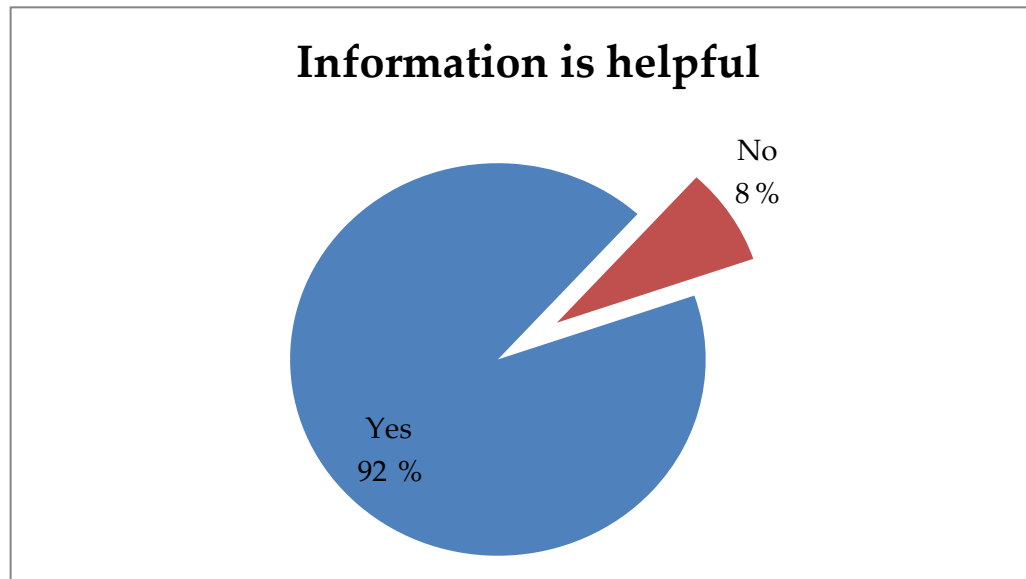


Figure-11: Pie diagram showing the respondents benefited from the information about acute cholecystitis.

Discussion

The present study assessed the level of knowledge regarding acute cholecystitis among patient attendants in a tertiary hospital in Dhaka and revealed several important insights into public awareness of this common biliary condition. Overall, although a majority of participants had heard of cholecystitis (87%) and acute cholecystitis (75%), substantial gaps were observed in their understanding of risk factors, clinical features, complications, and preventive measures. These findings highlight a discrepancy between basic awareness and comprehensive health literacy, a trend also documented in similar studies conducted in Middle Eastern and Asian populations. One of the notable findings of the current study was that only 64% of respondents could identify risk factors associated with acute cholecystitis, and their recognition was uneven across categories. Obesity, age, family history, and diabetes mellitus were commonly mentioned, yet up to 36% of participants could not identify any risk factor. This mirrors the findings reported by Alghamdi et al. in Albaha, Saudi Arabia, where a large proportion of the general population lacked knowledge of modifiable biliary disease risks. Limited awareness of these risk factors is a public health concern, as early modification of obesity, dyslipidemia, and glycemic control plays a significant role in preventing gallstone formation and inflammation. Knowledge regarding signs and symptoms of acute cholecystitis was relatively higher in comparison to other domains, with 83% of participants able to identify at least one symptom. Abdominal pain was the most frequently recognized symptom, followed by vomiting and digestive abnormalities. These findings are consistent with the classical symptom profile described in clinical literature, such as upper abdominal pain, fever, and nausea. However, 17% of participants did not know any symptoms, suggesting that a considerable portion of the community may fail to recognize early warning signs, delaying hospital consultation and increasing the risk of complications. The most concerning knowledge gap observed in the present study relates to complications of acute cholecystitis. Only 38% of respondents demonstrated familiarity with the potential complications, while 61% could not identify any complication. This is clinically significant, as the progression from simple inflammation to more severe outcomes such as perforation, acute pancreatitis, biliary obstruction, or sepsis can be

rapid and life-threatening. Similarly low levels of awareness regarding complications have been reported in studies from Jeddah and Riyadh, where public knowledge about advanced biliary disease remains limited. The poor level of awareness in the current study may also reflect the lack of structured health education initiatives in Bangladesh targeting gastrointestinal diseases.

With regard to treatment knowledge, although 74% of respondents indicated awareness of available treatments, their understanding was inconsistent. Open surgery was the most frequently mentioned option, while fewer respondents recognized medication or lifestyle modification as part of management. In recent years, early laparoscopic cholecystectomy has become the gold-standard treatment for acute cholecystitis, offering reduced postoperative pain, shorter hospital stays, and fewer complications. The emphasis on “open surgery” by respondents suggests that the public may not be adequately informed about advances in minimally invasive surgery. Strengthening patient education in hospital settings may correct misconceptions and improve decision-making regarding timely surgical intervention. Interestingly, the present study found that physicians were the primary source of information for most participants (69%), while only 20% relied on the internet. This differs from trends observed in high-income countries, where digital health platforms and online medical websites constitute major sources of health information. The reliance on healthcare professionals in Bangladesh underscores both an opportunity and a challenge. Physicians are well-positioned to provide accurate education, but the limited consultation time in busy tertiary hospitals may restrict their ability to offer comprehensive disease information. The socio-demographic profile of respondents, particularly the high prevalence of diabetes mellitus (33%) and hypertension (21%), is particularly noteworthy. These conditions are established risk factors for gallstone disease. Yet despite being personally at risk, many participants showed low awareness of potential complications. This disconnect highlights the need for tailored health promotion targeting high-risk groups. Overall, the findings indicate that while general awareness about acute cholecystitis exists, deeper knowledge is lacking. This is consistent with regional and global evidence suggesting that gastrointestinal conditions remain underrecognized compared to other chronic diseases such as diabetes or hypertension. Community-level health education, inclusion of gallbladder disease awareness in primary care counseling, and multimedia-based public health campaigns can substantially improve understanding. Additionally, integrating simplified educational materials in waiting areas of tertiary hospitals may effectively enhance knowledge among patient attendants. The study’s strengths include its direct engagement with attendants of hospitalized patients a population likely to benefit from targeted education and the use of structured, pretested questionnaires. However, the study is limited by its non-random sampling technique and single-center design, which may restrict generalizability. Future research should include comparative analyses across multiple hospitals and socio-economic groups to better identify determinants of health literacy related to gallbladder diseases.

Conclusion

The study demonstrates a significant gap in knowledge regarding acute cholecystitis among patient attendants despite relatively high familiarity with the term. Improved educational interventions, health promotion strategies, and awareness programs are essential to reduce the risk and improve early detection and treatment.

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