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Original article

Assessment of Knowledge and Attitude of Asthmatic Patients towards Their Disease

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Asthma remains a significant global health challenge, which often results in life-threatening Complications. Effective management, a proactive mindset, and adequate awareness are essential to prevent the worsening of asthma and its complications. This is a descriptive cross-sectional study, consisting of 240 patients who were admitted to Almanagil Teaching Hospital during the period from October to December 2022. The data was gathered through a questionnaire, and then was analyzed using the descriptive statistical package for Social Sciences (SPSS). The study included a predominantly female (63%) population, with the majority aged 26–45 years (70.4%). Despite (44.3%) holding university degrees, patients' knowledge was poor, especially towards understanding of causes, disease mechanisms, and aggravating factors (19.6%, 14.6%, and 14.4%), respectively. Also included low awareness of asthma's life-threatening potential (12.5%) and incorrect beliefs about discontinuing medication after symptom relief (17.5%). Attitudes of patients toward their disease were weak, only 20.7% recognizing asthma as incurable, 19.3% incorrectly viewing it as non-chronic, and 23.5% believing inhalers cause addiction. There was a statistically significant relation between the patients' knowledge and educational level and duration of illness, P-value < .05. The findings reveal substantial gaps in asthma knowledge and attitude, despite long-term illness in many participants. There is an urgent need for targeted educational interventions to improve disease understanding, correct attitudes, and enhance treatment adherence.

Introduction

Asthma is a long-term inflammatory condition affecting the airways, marked by recurring symptoms such as wheezing, shortness of breath, chest tightness, and coughing, often worsening at night or in the early morning [1]. It affects an estimated 262 million people globally and is responsible for over 455,000 deaths annually, many of which are preventable with proper disease management [2]. Despite significant advancements in pharmacological treatments, including inhaled corticosteroids (ICS) and long-acting beta-agonists (LABA), asthma remains poorly controlled in a substantial proportion of patients [3]. Poor disease control leads to frequent hospitalizations, emergency department visits, and a diminished quality of life, imposing a heavy economic burden on healthcare systems [4].

A critical factor influencing asthma outcomes is the patient's level of knowledge and self-management behavior [5]. Studies have demonstrated that patients with a better understanding of their condition, including recognition of triggers, proper inhaler technique, and adherence to prescribed medications, experience fewer exacerbations and improved symptom control [6,7]. However, evidence suggests that many asthmatic patients lack essential knowledge about their disease. research from low- and middle-income countries (LMICs) highlights widespread misconceptions about asthma, with some patients relying on traditional remedies instead of evidence-based treatments [8]. Behavioral factors also play a crucial role in asthma management. Non-adherence to medication regimens remains a major challenge, with studies reporting adherence rates as low as 30–50% among asthmatic patients [9]. Reasons for poor adherence include forgetfulness, fear of side effects, cost of medications, and underestimation of disease severity [10]. Additionally, improper inhaler technique reported in up to 70% of patients significantly reduces drug delivery to the lungs, compromising treatment efficacy [11]. These knowledge and behavioral gaps contribute to preventable asthma exacerbations, increased healthcare utilization, and avoidable mortality [12]. Given these challenges, assessing the knowledge and attitude of asthmatic patients is essential for designing targeted educational interventions if needed. This study aimed to assess the Knowledge and attitudes of Asthmatic Patients towards Their Disease.

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Methods

Study design

This is a cross-sectional study conducted at Almanagil Teaching Hospital, Sudan. During the period from October to December 2022.

Study population

Asthmatic patients admitted to Almanagil teaching hospital, the study included adult asthmatic patients and excluded children below the age of 18 years and patients who refused to participate in the study.

Sample size

The sample consisted of 240 asthmatic patients admitted to the hospital during the period from October to December 2022.

Data collection

A structured questionnaire, developed by the researchers, was used to collect the data. The questionnaire consisted of three parts (socio-demographic data, Knowledge, and attitude). The questionnaires were filled out by participants, read and filled out by researchers, with answers from illiterate patients.

The questionnaires were divided into three parts: the first part contained demographic data, including seven questions: gender, age, educational level, occupation, marital status, duration of illness, and family history. The second part continues quires to assess the knowledge, such as: definition, symptoms, aggravating factors of asthma, medications, patient beliefs about etiology, complications, and symptoms of severe attack of asthma. The questions were answered with two options: "yes" or "no." Correct responses received a score of 1, while incorrect answers were scored 0. The level of patients' knowledge was classified as poor (scores 0–3), intermediate (scores 4–6), or ideal (scores 7–10). While the third part compromise questions to assess the attitude of patients through a 10-item questionnaire, 4 questions about asthma diseases, and 6 questions about medications, the answers are assigned a value between 1 and 5. Scoring depended on whether the phrasing was positive or negative; for positive statements, 'strongly agree' and 'agree' received 5 and 4 points, respectively, while 'disagree' and 'strongly disagree' were scored 1 and 2. For negatively worded statements, this scoring was reversed. The option 'I don't know' was consistently given a neutral score of 3 for all statements. The total scores ranged from 10 to 50, and participants were categorized into three groups based on their attitudes: Group A (scores 10–16) reflected a negative attitude, Group B (scores 17–33) indicated a neutral attitude, and Group C (scores 34–50) represented a positive attitude.

The questionnaire's reliability was measured using Cronbach's Alpha test. The value of Cronbach's Alpha coefficient is equal to 0.877. ($P < 0.001$). A team of experts evaluated the questionnaire to ensure the questions aligned with the study's objectives. Based on their input, adjustments were made to improve its validity.

Data analysis

Statistical Package for Social Sciences (SPSS) was used for statistical data analysis, and descriptive analytical methods such as graphs, tables, were used. The relationship between variables was investigated using the Pearson test; less than 0.05 was considered significant.

Ethical consideration

Ethical clearance from the research committee of the College of Graduate Studies, University of Al-Butana. Official letters to the Almanagil teaching hospital manager, the medical director, and the head of the asthma unit are required to obtain permission. Verbal Consent from all patients who participate in this study.

Results

The results revealed that the majority of the study sample were female (63%). In terms of age distribution, 14.6% of participants were between 16 and 25 years old, 39.6% were aged 26–35, and 30.8% fell within the 36–45 age range. 12.9% were 46–55 years old, while only 2.1% were above 56 years of age. Regarding marital status, the majority of participants were married (61.7%), followed by single individuals (27.9%). A smaller proportion reported being divorced (6.2%) or widowed (4.2%). The results also revealed that 56.2% of participants were employed.

Regarding educational attainment, the largest proportion of participants held university degrees (44.3%), followed by secondary school education (26.2%), primary school level (21.2%), while 5.4% had no formal education and 2.9% held postgraduate qualifications.

Duration of illness was: 20.4% had been affected for <1 year, 61.3% for 2-5 years, 15.4% for 6-10 years, and 2.9% for >10 years. A family history of asthma was reported by 43% of participants. The study results

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revealed that just (19.6%, 14.6% & 14.4%) of the study participants had good knowledge regarding the causes, mechanisms of disease, and aggravating factors. The results revealed that the weakest correct rates (12.5% &17.5%) were for the following questions: can asthma be life-threatening?, and can the asthma medication be discontinued once symptoms subside? Respectively. Week Participants' responses to the correct answers of the questionnaire showed weak knowledge of patients regarding their disease. The results of Attitude of participants towards their disease revealed that the weakest correct rates (20.7%, 19.3% &23.5%) were for the following items, Asthma cannot be cured, Asthma is not a chronic disease; it is an allergy in the chest, and Asthma inhalers can cause addiction respectively. which showed a poor attitude of participants towards their disease. There was a statistically significant relation between the patients' knowledge and educational level, and duration of illness, P-value < .05.

Table 1. Distribution of Frequency of Asthmatic Patients' Knowledge towards Their Disease (No = 240)

knowledge	Frequency	Percentage
Good	43	17.91%
Satisfied	129	53.76%
Poor	68	28.33%
Total	240	100.0%

Table 2. Distribution of Frequency of Asthmatic Patients' Attitude towards Their Disease (No = 240)

Attitude	Frequency	Percentage
Good	78	32.5%
Satisfied	136	56.7%
Poor	26	10.8%
Total	240	100.0%

Table 3. Association between the level of knowledge with educational level and duration of illness. (No = 240)

Items		Respond	
		Frequency	Percentage
Educational level	Uneducated	13	5.4%
	Primary school	51	21.2%
	Secondary school	63	26.2%
	Graduate	106	44.3%
	Post graduate	7	2.9%
	Total	240	100.0%
Correlation	P – value: .000		
Duration of illness	Less than 1years	49	20.4%
	2 - 5 years	147	61.3%
	6 - 10 years	37	15.4%
	Above than 10 years	7	2.9%
	Total	**240**	**100.0%**
Correlation	P – value: .000		

** A significant correlation was observed (p < 0.01).*

Discussion

Asthma is a major chronic noncommunicable illness with considerable clinical importance. It leads to substantial health issues globally. This study aimed to assess asthmatic patients' knowledge towards their diseases, Clinical characteristics of the study participants: The study population was predominantly female (63%), which aligns with previous research indicating a higher prevalence of asthma in women, possibly due to hormonal influences and greater healthcare-seeking behavior [13]. Age distribution showed that most participants (39.6%) were between 26–35 years, followed by those aged 36–45 (30.8%), suggesting that asthma affects a substantial proportion of young and middle-aged adults, consistent with global asthma epidemiology [14]. Educational attainment varied, with 44.3% holding university degrees, yet asthma knowledge remained poor, indicating that formal education does not necessarily translate into better disease understanding. This finding is consistent with studies showing that asthma knowledge gaps persist even

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among highly educated populations [15]. A concerning proportion (5.4%) had no formal education, which may further exacerbate poor health literacy and self-management skills.
The duration of illness revealed that most participants (61.3%) had asthma for 2–5 years, yet knowledge remained inadequate, suggesting that disease chronicity does not inherently improve patient understanding without structured education. A family history of asthma was reported by 43% of participants, which is significant given the hereditary component of asthma [16]. However, familial predisposition did not appear to enhance knowledge, indicating a need for targeted family-based education interventions.
Knowledge and Attitudes toward Asthma: The study revealed critical deficiencies in asthma knowledge, with only 19.6%, 14.6%, and 14.4% of participants demonstrating good understanding of causes, disease mechanisms, and aggravating factors, respectively. Alarmingly, misconceptions were prevalent, with only 12.5% recognizing asthma as potentially life-threatening and 17.5% incorrectly believing that medication should be discontinued upon symptom relief. These findings align with a previous study stated that since asthma requires ongoing management, it is crucial to educate patients on adhering to their prescribed medication regimen. The intermittent nature of asthma symptoms may contribute to poor compliance [17].
Attitudes toward asthma were also suboptimal, with only 20.7% acknowledging that asthma is incurable, 19.3% incorrectly perceiving it as a non-chronic condition, and 23.5% believing inhalers cause addiction. Such misconceptions may stem from cultural beliefs, lack of physician communication, or misinformation [18]. These enduring false beliefs can contribute to suboptimal inhaler use, as anxiety about becoming dependent or addicted remains a documented barrier to treatment compliance.
The findings underscore the urgent need for structured asthma education programs that address knowledge gaps and false beliefs, and attitudes. Educational interventions for asthma patients should stress very important points, the condition's long-term nature, underscore the value of sustained controller medication compliance, and teach identification of potentially fatal flare-ups. Healthcare providers must adopt clear, culturally sensitive communication strategies to improve patient understanding [18]. Future interventions should incorporate community-based awareness campaigns and leverage digital health tools to reinforce asthma education. Given the high proportion of employed participants, workplace asthma programs may also be beneficial. Addressing these gaps can enhance self-management, reduce exacerbations, and improve quality of life for asthma patients.

Conclusion

Based on the findings, the study concluded that there is a gap in asthma knowledge and attitudes among asthmatic patients, despite a substantial proportion having lived with the condition for several years. The majority of respondents demonstrated poor understanding of asthma's chronic nature, its potential severity, and proper medication use. Misconceptions—such as the belief that asthma is merely an "allergy in the chest" or that inhalers cause addiction—were prevalent, indicating a critical need for improved patient education. To improve asthma management, healthcare providers should prioritize clear communication, dispel myths, and reinforce the importance of treatment adherence. Public health initiatives, including community awareness campaigns and workplace-based interventions, could also play a vital role in enhancing patient knowledge and attitudes. Addressing these gaps is essential to reducing hospital admissions and improving the overall quality of life for affected individuals. Future research should explore the effectiveness of targeted educational interventions in improving asthma outcomes within similar populations.

Conflict of interest

The authors confirm that there are no conflicts of interest associated with this study.

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