
**Knowledge Attitude and Practice of Mothers of Asthmatic Children in
Tabarak Pediatric Hospital 2026**

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Abstract

Background: Asthma, a common chronic airway disorder, presents challenges in diagnosis and management, particularly in children. The exacerbation of asthma in children can be prevented by proper medicine, parental knowledge and practices.

Aims: This study was conducted to assess knowledge attitude and practice of Mothers of asthmatic Children toward asthma in Tabarak pediatric hospital 2026.

Materials and Methods: This cross-sectional study. Mothers were selected with Conveniences sample (50) participants who had asthmatic children between less 5 years and more than 5 years of age. Questionnaire were constructed for knowledge, attitude and practice regard asthma only 3(6%) said asthma is an infectious disease. 42(84%) said Asthma is a chronic disease with acute exacerbations on exposure to allergens. Mean knowledge score is 49(98%). Regard their attitude 47(94%) accept the use of inhaler for their children and all of them know the role of health education enhance compliance and outcomes and all of them know also environmental cleanliness reduced asthma attack, their mean attitude score is 48(96%). All of the mothers 50(100%) has positive response towards best no one to smoke and not to allow anyone to smoke

near an asthmatic child, and they. Also they follow doctor's instructions carefully regarding medication doses and schedules. The severity of asthma was found to be significantly associated between educational level and knowledge practice. This suggests that education is a key determinant of how individuals manage and respond to asthma ($P < 0.001$).

Conclusion: This study highlights that mothers of asthmatic children in Tabarak Pediatric Hospital who possessed high levels of knowledge and positive attitudes, translating into good practices for asthma management. Maternal education and age significantly influence these parameters.

Recommendation: Continued educational efforts and supportive healthcare policies are essential to sustain and improve asthma control, reducing morbidity and enhancing quality of life for children.

Keywords: Knowledge attitude, practice, Mothers of asthmatic Children, Tabarak pediatric hospital,

Introduction:

Asthma, a common chronic airway disorder, presents challenges in diagnosis and management, particularly in children. It remains one of the most prevalent chronic respiratory diseases affecting children worldwide, with significant implications for their health, development, and quality of life. According to the Global Initiative for Asthma (GINA, 2023) report, asthma affects an estimated 262 million people globally, with children constituting a considerable proportion of affected individuals (GINA, 2023). Despite advances in management and treatment protocols, achieving optimal control of asthma symptoms remains challenging for many pediatric patients. A crucial factor influencing asthma control is the knowledge and awareness of the disease among caregivers, particularly mothers, who are often the primary caregivers for children with asthma.

Triggers include allergens and pollutants, necessitating lifestyle modifications and pharmacological treatments. Severe cases require tailored management. Mothers' understanding of asthma—its triggers, symptoms, medication adherence, and management strategies—plays a vital role in shaping the health outcomes of asthmatic children (Mishra et al., 2021).

Clinical manifestations of asthma can be controlled with appropriate treatment. There should be only occasional symptoms and no serious asthma attacks. (GINA.pdf (2016), and asthma cannot be cured, the aim of asthma management is to control the disease and allow patients to lead a normal and healthy life. To achieve this, patients need to use medications correctly and maintain control for a considerable period of time. This might be achieved if patients or caregivers of asthmatic children receive adequate guidance on how to use medications and receive sufficient knowledge about the disease. (GINA, 2017)

Insufficient knowledge or misconceptions about the disease can lead to poor adherence to prescribed therapies, delayed response to exacerbations, and ultimately, suboptimal control of asthma. Conversely, increased awareness and proper education can empower mothers to manage their child's condition effectively, reduce emergency visits, and improve the child's overall quality of life (Bachir et al., 2022).

Childhood asthma is a significant public health concern. The prevalence varies across regions, with urban areas generally exhibiting higher rates than rural settings. For instance, in North America, the prevalence among children ranges from 8% to 12%, whereas in certain developing countries, rates are increasing rapidly due to urbanization and environmental factors (Akinbami et al., 2020). The burden is not only health-related but also socio-economic, as frequent hospitalizations and missed school days affect both families and healthcare systems.

In many cultures, mothers are predominantly responsible for managing their children's health. Their role encompasses administering medications, recognizing early signs of exacerbations, avoiding triggers, and seeking medical care when necessary (Sharma et al., 2021). Their knowledge and attitudes directly influence treatment adherence and disease outcomes. But there are several factors influence mothers' knowledge levels, including educational status, socioeconomic background, access to healthcare services, and cultural beliefs. In some settings, misconceptions are perpetuated by inadequate health education, leading to challenges in optimal disease management (Nguyen et al., 2020).

This study aims knowledge and Awareness of Mothers of asthmatic Children and Its Impact on Asthma Control in Tabarak pediatric hospital 2026.

Problem statement:

Asthma continues to be a major public health concern worldwide, particularly affecting children, with significant morbidity and healthcare costs associated with poorly controlled disease (GINA, 2023). Despite advances in pharmacological management and guidelines, a substantial proportion of pediatric asthma cases remain inadequately controlled, largely attributable to factors such as medication non-adherence, environmental triggers, and insufficient caregiver knowledge (Oguoma et al., 2022).

Mothers, as primary caregivers in many cultures, play a pivotal role in managing their children's asthma. Their understanding of the disease—covering aspects such as recognizing symptoms, avoiding triggers, and proper medication use—directly influences treatment adherence and disease outcomes (Sharma et al., 2021). However, numerous studies highlight significant gaps in caregiver knowledge and awareness, which contribute to poor asthma control and increased risk of exacerbations (Al-Harbi et al., 2019; Lee et al., 2021).

Inadequate knowledge among mothers can lead to misconceptions, such as believing that asthma is contagious or that medication should be discontinued when symptoms subside, ultimately

resulting in poorly managed asthma and preventable hospitalizations (Kumar et al., 2020). Furthermore, socio-economic factors, limited access to healthcare, and cultural beliefs exacerbate these knowledge gaps, especially in low-resource settings (Nguekam et al., 2020). Despite the recognized importance of caregiver education, there is a paucity of recent comprehensive data on the level of knowledge and awareness among mothers in various regions, and how these factors specifically impact asthma control. This knowledge gap hampers the development of targeted educational interventions aimed at improving disease management and reducing morbidity among children with asthma. (Alsalamah RM et al.(2024).

While the prevalence of childhood asthma is rising in Sudan, there is a paucity of comprehensive data on its magnitude, risk factors, and the level of awareness among caregivers, particularly mothers.(Mohammed et al. (2025).

Limited understanding of the role of Sudanese mothers in managing their children's asthma hampers effective intervention strategies. Cultural beliefs, health literacy, socio-economic status, and access to healthcare services influence maternal attitudes and practices toward their asthmatic children. (Noureddin, Ahmed Abdulgadir et al. (2019).

Significant of study:

Addressing childhood asthma in Sudan requires a multifaceted approach that includes understanding the epidemiology, environmental influences, and caregiver roles. This study aims to fill the gap by examining the prevalence of childhood asthma, exploring maternal knowledge, attitudes, and practices, and identifying factors that influence maternal involvement in asthma management.

The findings will inform healthcare providers, policymakers, and community health programs to develop targeted interventions that improve maternal awareness, promote effective asthma management, and ultimately reduce morbidity and mortality among asthmatic children in Sudan.

Objectives:

General objective:

- To assess knowledge attitude and practice of Mothers of asthmatic Children in Tabarak pediatric hospital 2026.
- To examine the level of mothers knowledge of children with asthma regarding the causes, triggers, and management of asthma of mothers of asthmatic children.
- To explore the level of mothers attitude of children of children with asthma regarding perceptions and beliefs of mothers regarding the severity of asthma and their confidence in managing their child's condition.:
- To determine the level of mothers practice of children with asthma regarding the o evaluate the consistency and appropriateness of mothers' practices in administering asthma medications, avoiding triggers, and following prescribed management plans.

- To evaluate the relationship between mothers' knowledge and the level of asthma control in their children.

Methods:

Study Design

This study will employ a **descriptive cross-sectional** design to assess the level of knowledge and awareness attitude and practice of mothers of children with asthma and examine its association with asthma control. The cross-sectional approach allows for data collection at a single point in time to identify prevalence and correlations.

Study Setting

The study was conducted in pediatric outpatient clinics at Tabarak pediatric hospital 2026 Omdurman locality

Study Population:

• **Inclusion Criteria:**

- Mothers of children aged less 5 years More than 5 years diagnosed with asthma.
- Mothers who have been responsible for the child's care for at least six months.
- Mothers willing to participate and provide informed consent.

• **Exclusion Criteria:**

- Mothers of children with other chronic respiratory diseases or comorbidities that may confound asthma management.
- Mothers with cognitive impairments or language barriers preventing understanding of the questionnaire.

Sample Size Calculation:

Convenience sample was used (50 participants)

Data Collection Tools

- **Structured Questionnaire:** Developed based on literature review and adapted to the participants which covered
 - Sociodemographic data (age, education, occupation, number of children with asthma and their age)
 - Knowledge about asthma causes, triggers, symptoms, and management
 - Attitudes and beliefs regarding traditional remedies and misconceptions
 - Practice regard if they visited the emergency room because of asthma in the past year, use the inhaler correctly for their asthmatic child and if they follow doctor's instructions carefully regarding medication doses and schedules

Data Collection Procedure

- Trained research assistants will administer the questionnaires through face-to-face interviews in Arabic.
- The interviewer will explain the purpose of the study and obtain informed consent.
- The child's asthma control status will be assessed using the ACT, based on caregiver responses.

Data Analysis

- **Descriptive statistics** (means, frequencies, percentages) will summarize sociodemographic variables, knowledge levels, and asthma control.
- **Knowledge scoring:** There were (13) response was yes, no, I don't know every correct answer was given (1) and no, I don't know was given(0)total (13)and mean score level divided as good knowledge which between 80-90%, fair knowledge less than 80%-70% bad knowledge less than 70%.
- **Attitude scoring:** There were (12) response was agree, neutral and disagree every correct answer was given (1) and neutral and disagree was given(0)total (12)and mean score level divided as good attitude which between 80-90%, fair attitude e less than 80%-70% bad attitude less than 70%.
- **Practice scoring:** There were (12) response was yes, no, uncertain every correct answer was given (1) and no, uncertain was given(0) total (12) and mean score level divided as good Practice which between 80-90%, fair Practice less than 80%-70% bad Practice less than 70%.
- **Inferential statistics for** association between their knowledge, attitude and practice with their social data using chi square and 0.0001 consider as significant p value

Results:

Table (1) socio demographic data (n=50)

Variable	frequency	%	Mean	SD
Mother age				
30-35 years	26	52	1.4800	.50467
More than35	24	48		
Mothers Educational level				
Primary school	20	40	1.8600	.80837
Secondary School	17	34		
Higher graduation	13	26		
Mothers Occupation				
House wife	40	80	1.2000	.40406
Employee	10	20		
No. of children with asthma				
1 child	39	78.0	1.2200	.41845
≥ 2 children	11	22.0		
Age of the asthmatic child				
less 5 years	40	80	1.2000	.40406
More than5 years	10	20		
Duration of asthma				
3 month–1 year	23	46	1.7400	.77749
more than one year –5 years	17	34		
>5 years	10	20		
Severity of asthma				
Intermittent	23	46	1.8800	1.00285
Mild persistent	15	30		
Moderate persistent	7	14		
Severe persistent	5	10		

Table (2) knowledge of mothers regard asthma (m=50)

Statement	yes	no	I don't know
Asthma is an infectious disease	3(6%)	42(84%)	5(10%)
asthma is a chronic respiratory condition that can be managed effectively with proper treatment	39(78%)	7(14%)	4(8%)
Asthma is a chronic disease with acute exacerbations on exposure to allergens	42(84%)	6(12%)	2(4%)
The causes and irritants of asthma air pollution or dust	40(80%)	6(12%)	4(8%)
Exposure to smoke (cigarettes) directly or indirectly	39(78%)	9(18%)	2(4%)
Asthma is hereditary disease	50(100%)	0	0
regular follow-up visits to the doctor can help in better control of your child's asthma	44(88%)	4(8%)	2(4%)
dust could trigger asthma	50(100%)	0	0
Asthma can be prevented by immunization	6(12%)	40(80%)	4(8%)
exercise induced asthma	42(84%)	4(8%)	4(8%)
Some drugs effect in triggering asthma	39(78%)	4(8%)	7(14%)
Cough, wheezing and shortness of breathing are symptoms of asthma	50(100%)	0	0
proper nutrition and exercise in managing asthma	35(70%)	8(16%)	7(14%)
Mean score knowledge level	frequency		percent
Good knowledge 80-90%	49		98%
Fair knowledge less than 80%-70%	1		1(2%)
bad knowledge less than 70%	0		0

Table (3) Attitude of mothers regard asthma (m=50)

Statement	agree	neutral	disagree
I believe that managing my child's asthma is primarily my responsibility	47(94%)	2(4%)	1(2%)
Inhaler use may lead to addiction or dependence	6(12%)	4(8%)	40(80%)
The inhaler may affect or harm the heart	42(84%)	4(8%)	4(8%)
Do you accept the use of inhaler for your child	47(94%)	2(4%)	1(2%)
Using spray for children for long periods is not a good thing	38(76%)	6(12%)	6(12%)
I think that asthma can be controlled effectively with proper care and medication	50(100%)	0	0
taking medications to be necessary to prevent asthma attacks	40(80%)	6(12%)	4(8%)
steroid inhalers (preventers) and other prevention treatments can control asthma	44(88%)	4(8%)	2(4%)
When a child has asthma attack, it is best to take him to the emergency room even if the symptoms are mild	38(76%)	6(12%)	6(12%)
I think and believe herbal medicines are helpful in asthma treatment	40(80%)	12%)	4(8%)
Role of health education enhance compliance and outcomes	50(100%)	0	0
I think that taking my child to regular check-ups helps prevent severe asthma attacks	47(94%)	0	3(6%)
I think environmental cleanliness reduced asthma attack	50(100%)	0	0
Mean score attitude level	frequency	percent	
Good knowledge 80-90%	48	(96%)	
Fair attitude less than 80%-70%	2	4%)	
bad attitude less than 70%	0	0	

Table (4) practice of mothers regard control of asthma (m=50)

Statement	yes	no	uncertain
I administer my child's inhaler exactly as instructed by the healthcare provider.	34(68%)	8(16%)	8(16%)
Children with asthma should be prevented from participating in sports activities that require them to run a lot	40(80%)	8(16%)	2(4%)
It is best not to smoke and not to allow anyone to smoke near an asthmatic child	50(100%)	0	0
Has your child visited the emergency room because of asthma in the past year	36(72%)	11(22%)	3(6%)
Has your child been hospitalized because of asthma in the past year	33(66%)	17(34%)	0
Do use the inhaler correctly for your asthmatic child	44(88%)	4(8%)	2(4%)
I avoid exposing my child to cigarette smoke and other pollutants	50(100%)	0	0
I keep emergency medications ready in case of an asthma attack.	48(98%)	2(4%)	0
I attend all scheduled medical appointments for my child's asthma care.	32(64%)	16(32%)	2(4%)
I follow my doctor's instructions carefully regarding medication doses and schedules.	50(100%)	0	0
I keep track of my child's asthma episodes and share this information with their doctor.	48(96%)	2(4%)	0
I stay informed about new treatments or management strategies for asthma.	46(92%)	2(4%)	2(4%)
Mean score practice level	frequency		%
Good practice 80-90%	46		92%
Fair practice less than 80% -70%	0		0
bad practice less than 70%	0		0

variable	Demographic data	P value
knowledge	Age	.042
	Educational level	.003
	Occupation	.406
	No of children with asthma	.614
Attitude	Age	.213
	Educational level	.028
	Occupation	.383
	No of children with asthma	.611
Practice	Age	.009
	Educational level	.000
	Occupation	.130
	No of children with asthma	.601

Discussion:

Our study provides valuable insights into the profile of mothers of asthmatic children in Tabarak pediatric hospital in Omdurman locality. The predominance of mothers aged More than35 less 24(48%) which reflects the typical age range of parents with under school-aged children. and their children age less 5 years 40(80%) this came **inconsistent** with study done in Saudi Arabia where mothers their children with asthma in school age(Alsalamah RM, Sulaiman (2024)

Furthermore, nearly of half of our participants at Primary school (40%) while study done in Saudi Arabia their participants level of education were at university level (39.2%) . (Alsalamah RM, Sulaiman (2024)

Regard knowledge our results revealed that 39(78%) said that asthma is a chronic respiratory condition that can be managed effectively with proper treatment, which came inconsistently with Bangladesh study 22 (22%) (Sadique Z, et al 2021) who said asthma is a communicable disease and (P. Ravindranath Reddy)(47.62%) (D. Van Sickle, et al 2001),

Moreover, the findings of this study on knowledge of asthma they know asthma is hereditary and dust could trigger for asthma this corroborate with study in a Saudi population which revealed that 53.5% of parents of asthmatic children believed that asthma is solely a hereditary disease and interestingly 77% reported the dust or allergen a potent trigger factor (. (Alsalamah RM, Sulaiman (2024).In support to our results, other studies conducted in the USA and India indicated that asthma was perceived as a hereditary disease(S. Shivbalan, S.et al(2005)

Regard symptoms of asthma our participants responses are Cough, wheezing and shortness of breathing are symptoms of asthma,while only (28%), breathing difficulty (18%) can be symptoms of asthma in (Sadique Z, et al 2021)

In terms of acute asthma attack knowledge, almost mothers (100%) identify dust could trigger asthma which is discrepancy with Nouredin et al(2018). found this number to be 11% When asked them if they regularly follow-up visits to the doctor can help in better control of child's

Which discrepancy seen in Nouredin study It is noted in the results that 44(88%)regularly visit a physician to monitor their children's condition Nouredin et al(2018).

Additionally in(Sadique Z, et al 2021), it is noted in their results 54% of parents regularly visit a physician to monitor their children's condition this came in consistently with our participants results.

Regard attitude our study our participants disagree that Inhaler use may lead to addiction or dependence which came in consistency with the study conducted by Naveen et al (2018), more than half of the parents were concerned about the inhaler's addictiveness. The majority of the parents were concerned about the inhaled steroid's side effects. In the Rola Zaraket et al. (2018), while (Sadique Z, et al 2021), reported that 35.1% of asthmatics children are addicted to asthma medications .

According to Zhao et al. 40% of parents were concerned about the addictive effects of inhalers. Mohammad et al.(2025) also found a similar result in their study

Attitudinal studies (e.g., Sultana et al, 2021) have shown that positive maternal attitudes are associated with improved adherence to treatment and better disease control this came in consistent with response of our participants in term of taking their children to regular check-ups helps prevent severe asthma attacks 50(100%) of our participants agree that asthma can be controlled effectively with proper care and medication. The high acceptance of inhaler use is encouraging, countering common misconceptions about dependence and adverse effects. Emphasizing the role of health education in shaping these attitudes can enhance compliance and out comes, in our study results participants has neutral response that Inhaler use may lead to addiction or dependence 40(80%)

Regard practical knowledge:

In our study, more than half of the mothers in the study know the right way to use the inhalers which is inhaler exactly as instructed by the healthcare provider. This came inconsistent with in Khartoum asthma clinics patients were using inhaler incorrectly(Ahmed Abdulgadir Nouredin et al, (2019). Moreover, our study revealed a significant proportion of asthmatic children visiting the ER 33(66%) and being hospitalized due to asthma exacerbations. Similarly, Alfurayh et al. showed that the frequency of hospital admissions and pediatric ER visits due to asthma exacerbation is increasing. (Alfurayh MA et al, (2023). Alsalamah RM, Sulaiman (2024).

All of participants avoid exposing their children to cigarette smoke and other pollutants, this similarly to study done in Bangladesh 62 (62%) (Sadique Z, et al 2021),

The most striking finding is the very significant association ($p = 0.0001$) between educational level and knowledge practice. This suggests that education is a key determinant of how individuals manage and respond to asthma. Higher educational attainment likely correlates with better understanding of asthma management strategies, leading to improved health practices. Similarly, age influences both knowledge and practice, indicating that interventions may need to be tailored to different age groups to enhance asthma care behaviors.

The lack of significant associations with occupation and the number of children with asthma suggests these factors are less influential in shaping knowledge, attitude, or practice within this population.

Conclusion:

This study highlights that mothers of asthmatic children in Tabarak Pediatric Hospital who possessed high levels of knowledge and positive attitudes, translating into good practices for asthma management. Maternal education and age significantly influence these parameters.

Recommendation:

Continued educational efforts and supportive healthcare policies are essential to sustain and improve asthma control, reducing morbidity and enhancing quality of life for children.

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