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Assessment of Quality of Life in Children with Bronchial Asthma and Their Parents

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Abstract

Background: Bronchial asthma is a common chronic disease among school-age children, causing significant health and social impacts. The prevalence varies due to factors like urbanization and pollution. Effective management and the role of nurses are crucial in improving the quality of life for affected children. **The aim of the study** assess the quality of life of school-age children with bronchial asthma and their parents. **Research design:** A descriptive design was used to conduct this study. **Sample:** A purposive sample will be used to achieve the aim of the study. **Setting** this study conducted in the center of chest disease in Omrania Giza. **Tools for data collection:** Three tools were used in this study, 1st tool: An interview questionnaire: containing Part 1: Characteristics of children, Part 2: Parent characteristics, Part 3: Child medical history, Part 4: Parents' knowledge about bronchial asthma 2nd tool Quality of Life of Children scale (PAQLQ) and 3rd tool Parents' Quality of Life scale. **Results:** The minor reported having one of the family members suffer from bronchial asthma. More than half of the studied children have bronchial asthma at ages 3 to 5 years. Furthermore, the majority were taking nebulizers, and less than half of the parents had satisfactory knowledge about bronchial asthma and adequate practice. Less than one-quarter of children have a high quality of life. **Conclusion:** More than one-third of parents had satisfactory knowledge about bronchial asthma and less than half of parents had practices. Children's quality of life was notably low, with only a minority reporting high quality of life. Significant associations were found between parents' asthma knowledge/practices and demographic factors like age, parental education, and family asthma history. **Recommendation:** educational programs for parents and children diagnosed with bronchial asthma.

Keywords: *Bronchial asthma, Family-centered empowerment School-age, Quality of life*

Introduction

The phase of school-age children starts from 6 to 12 years, the school-age years are crucial to establishing positive self-esteem, a sense of belonging, and a feeling of competence and being entrance into the school environment. During this time, the child moves from egocentric thoughts to experiencing the world through peers and the school environment (**Delemarre, 2019**). The general growth rate is slower when the weight increases from 1.5 kg to 3 kg per year which the weight becomes at 6 years 21 kg and at 12 years become 40 kg, the height increases from 5cm to 7cm per year to gain from 30cm to 60 cm in height. Average height at 6 years is 116 cm and 150 cm at 12 years at this period boys tend to be slightly taller and boys heavier than girls, at the end of the middle year, girls begin an adolescent growth spurt (as early as 10 years but on average 11 years) (Merrick, 2019). By the end of this period, both boy and girl doubled their strength and physical capability, decreased head circumference, and increased length of leg height can observe the degree of physical maturity (**Jelenkovic, 2021**).

Bronchial asthma is one of the most prevalent respiratory illnesses in the world. Bronchial asthma is a common chronic disorder of the lower airways that is complex, characterized by variable and recurring symptoms, airflow obstruction, bronchial hyperresponsiveness, and an underlying inflammation that frequently causes wheezing, shortness of breath, chest

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tightness, and coughing especially at night or in the morning (**Tony & Abdel Rahim, 2022**). Episodes are typically accompanied by widespread but varied airway obstruction is frequently treatable or reversible. The interaction of features of bronchial asthma determines the clinical manifestations, the severity of bronchial asthma, and the response to treatment (**Bentabol-Ramos, et al., 2022**).

Family-centered care is a ubiquitous term in pediatric health facilities, which means that some admitted children can never be treated as a single individual patient and that the family is the unit of care, as the parents and family are central to the child's well-being, especially during traumatic experiences (**Mohammed et al., 2021; Shields, 2022**). Family-centered care (FCC) is an approach to the planning, delivery, and evaluation of health care that is grounded in mutually beneficial partnerships among health care professionals, children, and parents. FCC redefines the relationships in health care by emphasizing collaborating with people of all ages, at all levels of care, and in all healthcare settings (**Aggarwal et al., 2019**).

However, bronchial asthma in pediatrics is not a different disease from bronchial asthma in adults, but children face unique challenges. According to children, this condition is a leading cause of emergency department visits, hospitalizations, and missed school days (Simões, et al., 2022). Unfortunately, bronchial asthma in children can't be cured and symptoms can continue into adulthood, but with the appropriate treatment, the symptoms can be kept under control and prevent damage to growing lungs (**Chou, et al., 2021**). Quality of Life is an extensive concept affected by physical health, mental status, independence, social relations, and communication with the environment. It is a broad concept that is influenced in a complex way by the physical health of the subject, his psychological state, level of independence, social relations, and relationship with the essential elements of his environment". **QoL** usually appears as a multidimensional construct that includes medical as well as psychological and socio-economic factors (**Offenbaecher, et al., 2021; Elfeky et al., 2023**).

Neonatal nurses play an important role in bronchial asthma care that can help and encourage parents to provide care for their children who have bronchial asthma by education in the primary care setting and in schools and other community settings, care of the child with bronchial asthma in the acute care setting, ambulatory care, care coordination, and intensive care. Also, nurses obtain information on how asthma affects the child's everyday activities and self-concept, the child's and family's adherence to the prescribed therapy, and their treatment goals (**Beemer, et al., 2022**).

Significance of the study

Bronchial Asthma affects approximately 14% of children worldwide. Furthermore, Bronchial asthma accounts for more than 14 million missed school days per year (**WHO, 2024).** Bronchial asthma-affected boys were more likely to die from bronchial asthma than girls (**CDC, 2020).** Globally, death rates from asthma in children range from 0 to 0.7 per 100,000 children, among children; Bronchial asthma ranks among the top 20 conditions worldwide for disability-adjusted life years in children (**Serebrisky & Wiznia, 2019).** In Egypt, many studies were done on the prevalence of asthma. It ranged from 6.2% to 46.1% in Upper Egypt in Cairo and 7.7% up to 15% in the Middle East (**Attia et al., 2020).** From the researcher's perspective, it is important to evaluate the quality of life of school children with bronchial asthma and their parents.

Aim of the study

The study aims to evaluate the quality of life of school-age children with bronchial asthma and their parents through the objective:

1. Assess the knowledge of parents and children regarding to care of their children with bronchial asthma.
2. Assess the quality of life of childrxf7ho7en with bronchial asthma.
3. Assess the quality of life of parents who have children with bronchial asthma.
4. Assess parents' practices and children regarding bronchial asthma.

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Research question.

1. What is the level of knowledge of parents and children regarding bronchial asthma?
2. What is the quality of life of children with bronchial asthma?
3. What is the quality of life of parents who have children with bronchial asthma?
4. What are the parents' practices and children regarding bronchial asthma?

Research design: A descriptive research design was used in the study.

Setting: This study has been conducted in the center of chest disease in Omrania Giza.

Type of Sample: A Purposive sample has been used to achieve the aim of the study.

Tools for data collection: Data collected through the following:

1st tool: An interview questionnaire: Data for this study has been collected by using a questionnaire designed by the researcher after reviewing related literature consisting of the following parts: **Part 1:** Characteristics data of children: Age, gender, birth order. **Part 2:** Parent's characteristics: age, level of education, employment, family size, and residence. **Part 3:** Child medical history: as the frequency of hospital admission for 6 months ago, receiving oxygen nebulizer and emergency visit during six months ago and assess the presence of trigger factors of asthma: as Fumes, Weather changes, Perfumes, Dusts. **Part 4:** Parents' knowledge about bronchial asthma as meaning, causes, signs, and symptoms, common types of treatment, diagnostic measures of asthma, and complications.

2nd tool: Assessment of parent-reported practices (Pre/Post empowerment program implementation): It was adapted from **Taminskiene et al. (2019).** It was used to assess parents' practice regarding the use of metered dose inhalers (16 items), breathing exercise technique (7 items), and a nebulizer machine (10 items).

3rd tool: Quality of Life of Parents: This tool was adopted from **Taminskiene et al., (2019)** to assess parents' quality of life. The tool included 13 items, for example feeling helpless or afraid when a child has a bronchial asthma attack, the family needs to change its plan because the child has bronchial asthma, feeling frustrated or impatient because the child has bronchial asthma, and possibly for a child with asthma to participate in household chores. This tool contains 39 statement points, it was ranged on three Likert scales as strongly agree (3), agree (2), and disagree (1) for positive items and vice versa for negative items.

Validity:

The tools of data collection were ascertained by three experts in pediatric nursing to assess the adherence of a measure to existing theory and knowledge of the concept being measured (construct) and the extent to which the measurement covers all aspects of the concept being measured (content).

Reliability:

Reliability is checking the consistency of results across time, across different observers, and across parts of the test itself. It was measured through the coronach alpha test. The knowledge tool scored 0.817, the practice tool 0.902, the quality of life for parents tool 0.870, and the quality of life for children tool 0.914. These scores indicate good to excellent internal consistency across all tools.

II. Operational Design:

The operational design for this study consisted of four phases, namely the preparatory phase, ethical considerations, pilot study, and fieldwork.

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Preparatory Phase:

This phase included reviewing literature related to the bronchial asthma crisis. This served to develop study tools for data collection. During this phase, the researcher also visited the selected places to be acquainted with the staff and the study settings. The study of data collection tools was under supervisors' guidance and experts' opinions were considered.

Ethical Considerations

The study was approved by the Research Ethical Committee of the Faculty of Nursing, Helwan University. The researcher clarified the aim and objectives of the study to studied parents included in the study before starting. Verbal approval was obtained from the parents before inclusion in the study. They ensured that all the gathered data was confidential and used for research purposes only. The researcher assures maintaining anonymity and confidentiality of parents' data included in the study. The researcher ensured that no harm to parents and children was included in the study. The parents were informed that they were allowed to withdraw from the study at any time.

Pilot Study

The pilot study was carried out on seven children and parents who represent 10% of the estimated sample size to test the applicability of the constructed tools. The pilot also served to estimate the time needed for each subject to fill in the questionnaire. According to the results of the pilot, neither corrections nor omissions of items were performed, so the nurses were included in the pilot study.

Fieldwork

After attaining the approval to conduct the study, samples were collected during the day at the hospital. Two days/week on Tuesday and Wednesday of each week from 9 Am to 12:30 P.m. After establishing a trustful relationship, every parent and child was interviewed individually during the assessment phase by the researcher to explain the study purpose then study tools were completed by parents and their children. The tool took 30 minutes to fill out. The researcher took 4-6 parents and their children from the center every day where the data was collected through an interview questionnaire. Data for the current study was collected during the previous time for 6 months from the 15 of May 2023 to the 15 of November 2024.

III- Administrative design:

After an explanation of the study's aim and objectives, official permission was obtained from the Dean of the faculty of nursing to the general manager Center of Chest Disease in Omrania in Giza asking for cooperation and permission to conduct the study.

IV-Statistical design:

The collected data was scored, tabulated, and analyzed using the Statistical Package for the Social Sciences (SPSS) program, version 25. Descriptive and inferential statistics were utilized to analyze data pertinent to the study.

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Result

Table (1): Distribution of the studied parents according to their characteristics (n=70).

Items	N	%
Age (Year)		
25< 35	18	25.7
35< 45	42	**60.0**
45≤ 55	10	14.3
$\bar{x}$ S.D 38.85±4.61		
Father's educational level		
Not read and write	2	2.9
Read and write	2	2.9
Intermediate education	38	**54.3**
Bachelor's degree	25	35.6
Postgraduate	3	4.3
Mother's educational level		
Not read and write	3	4.3
Read and write	5	7.1
Intermediate education	41	**58.6**
Bachelor's degree	20	28.6
Postgraduate	1	1.4
Mother's job		
Work	31	44.3
Not work	39	**55.7**
Father 's job		
Employee	38	**54.3**
Free business	24	34.3
Literal	8	11.4
One of the family members suffers from bronchial asthma		
Yes	7	10.0
No	63	**90.0**
If the answer is yes, mention the relationship n=70		
Brother-sister	40	57.1
Father- mother	20	28.6
Grandfather-grandmother	10	14.3
Uncle	0	0
Are there sources of pollution near the house		
Yes	18	25.7
No	52	**74.3**
If the answer is yes, what are n=18		
Open-air waste-burning	6	33.3
Car's exhaust	7	**38.9**
Factories pollutants	5	27.8

Table (1) This table shows that more than half of the studied parents were aged between 35 to less than 45 years and the mean age of them was 38.85±4.61 years. Regarding education, more than half (54.3% & 58.6%) of fathers and mothers have intermediate educational levels respectively. Moreover, more than half of mothers (55.7%) did not work, while more than half of fathers (54.3%) were employed. Additionally, less than one-fifth (10%) reported having one of the family members suffer from bronchial asthma. Also, slightly more than a quarter (25.7%) of them reported that there were sources of pollution near the house.

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Table (2) Distribution of the studied children according to their data (n=70).

Items	No	%
Age (Year)		
6< 10	47	**67.1**
10≤ 12	23	23.9
$\bar{x}$ S.D 8.31±1.06		
Gender		
Male	45	**64.3**
Female	25	35.7
Educational level		
First to third grade	47	**64.1**
Fourth to sixth grade	23	32.9
The number of children in the room		
One child	6	8.6
Two Childs	46	**65.7**
Three children	13	18.6
Four children	5	7.1
Residence		
Rural	5	7.1
Urban	65	**92.9**
Do you have a family history of smoking?		
Yes	29	41.4
No	41	**58.6**

Table (2) This table demonstrates that the mean age of the studied children was 8.31+1.06 years and more than two-thirds of them were aged between 6 to 9 years. Moreover, less than two-thirds (64.3% & 64.1%) of them were males and at an educational level from first to third grade respectively. Additionally, less than two-thirds (65.7%) of them had two children in the room, the majority (92.9%) of them lived in the urban area and more than two-fifths (41.4%) of them had smokers in the family.

Table (3): Distribution of the studied children according to their medical history (n=70).

Items	N	%
Confirmed diagnosis of bronchial asthma		
<1year	4	5.7
1 ≤ 3year	30	42.9
3≤ 5 years	36	**51.4**
Duration of the bronchial asthma episode		
10 minutes	13	18.6
15 minutes	15	21.4
30 minutes	22	**31.4**
More than 30 minutes	20	28.6
Number of times a child has been hospitalized in the past three months		
Nothing	48	**68.6**
Once	17	24.3
Twice	5	7.1
Three times	0	0
Child take nebulizer		

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Yes	56	**80.0**
No	14	20.0
Frequency of visiting the emergency department during the past three months		
Nothing	48	**68.6**
Once	17	**24.3**
Twice	5	7.1
Reason for visiting the hospital n=22		
Acute episode	15	**68.2**
Follow up	7	31.8

Table (3) This table presents that more than half (51.4%) of the studied children have bronchial asthma at age 3 to 5 years and less than one-third (31.4%) of them have a duration of bronchial asthma episodes for 30 minutes. Furthermore, the majority (80%) taking nebulizer. Regarding hospitalization, more than two-thirds (68.6%) of them were not hospitalized in the last three months while less than a quarter (24.3%) visited the emergency one time during the last three months.

Table (4): Distribution of the studied children according to their medical history (n=70).

Items	No	%
Frequency episodes of bronchial asthma occurred during the three months		
Nothing	61	**87.1**
Once	7	10.0
Twice	2	2.9
Bronchial asthma attacks occur in any season of the year.		
Spring	16	22.8
Winter	21	30.0
Autumn	27	**38.6**
Summer	6	8.6
Severity of the symptoms of bronchial asthma		
Mild	38	**54.3**
Moderate	19	27.1
Sever	13	18.6
Route of giving medication to child		
Oral	42	**60.0**
Inhalation by nebulizer	29	41.4
Steam inhalation	37	52.9
What the parents do during attacks of bronchial asthma		
Go to the hospital	0	0
Parents give prescribed medication to child	70	**100.0**
Bronchial asthma causes frequency of absenteeism from school		
Yes	12	17.1
No	58	**82.9**

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Table (4) This table shows that the majority (87.1%) of the studied children didn't have episodes of bronchial asthma during the last three months. More than one-third (38.6%) of them had bronchial asthma attacks in autumn and more than half (54.3%) had mild symptoms. Regarding ways to give medication to children, three-fifths (60%) of them take the medication by oral route. Also, all (100%) of parents gave the prescribed medication to their child during the attack of bronchial asthma and the majority (82.9%) of them didn`t absent from school due to bronchial asthma attack.

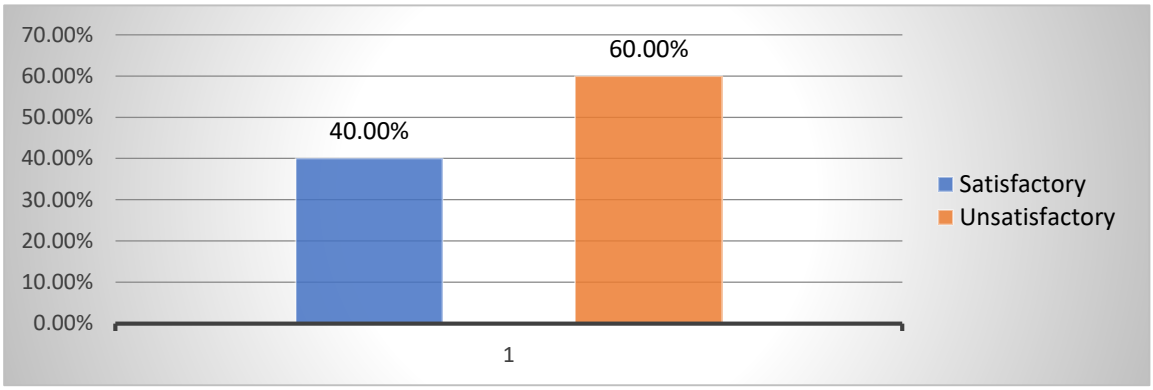

Figure (1): Percentage of the studied parents, total knowledge about bronchial asthma (n=70).

Fig (1) This figure shows that two-fifths (40%) of the studied parents had satisfactory knowledge. While about two-thirds (60%) of them had an unsatisfactory level of knowledge regarding bronchial asthma.

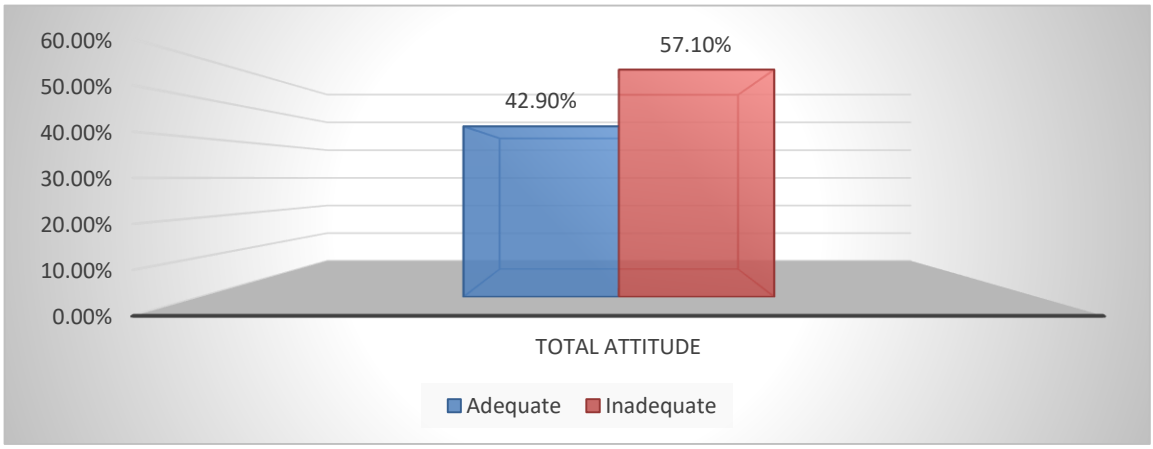

Figure (2): Percentage distribution of studied parent total practice (n=70).

Fig (2) This figure demonstrates that in the studied parent's total practice regarding the use of metered dose inhalers and breathing exercise techniques more than half (57.1%) had inadequate practices, while only more than two fifth (42.9%) of them had total adequate
practice.

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Table (5): Distribution of children regarding their total domain quality of life of children with bronchial asthma (n=70).

Items	No	%
Activities		
High	13	18.6
Moderate	44	62.8
Low	13	18.6
Symptoms		
High	11	15.7
Moderate	35	50.0
Low	24	34.3
Psychological side		
High	12	17.1
Moderate	37	52.9
Low	21	30.0

Table (5): This table reveals that about two thirds (62.8%) of the studied children had moderate level regarding quality-of-life activities domain, and half of them (50%) had moderate level regarding symptom domain also more than have (52.9%) had moderate regarding psychological effect domain for quality of life.

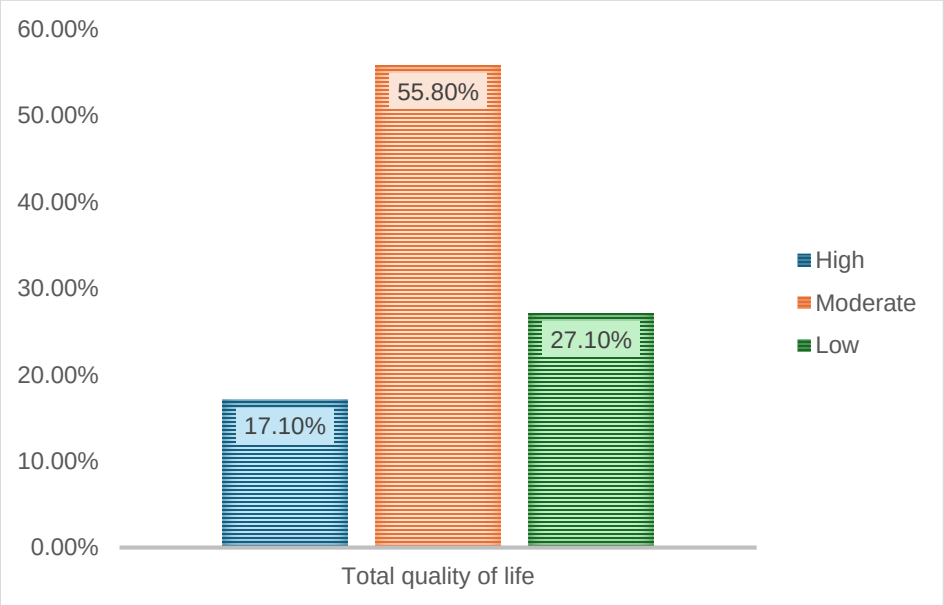

Figure (3): Percentage of the children studied regarding their total quality of life of children with bronchial asthma (n=70).

Fig (3) This figure shows that less than one quarter (17.1%) of children had high quality of life and more than half (55.8%) of children had moderate quality of life while less than one third (27.1%) had low quality of life.

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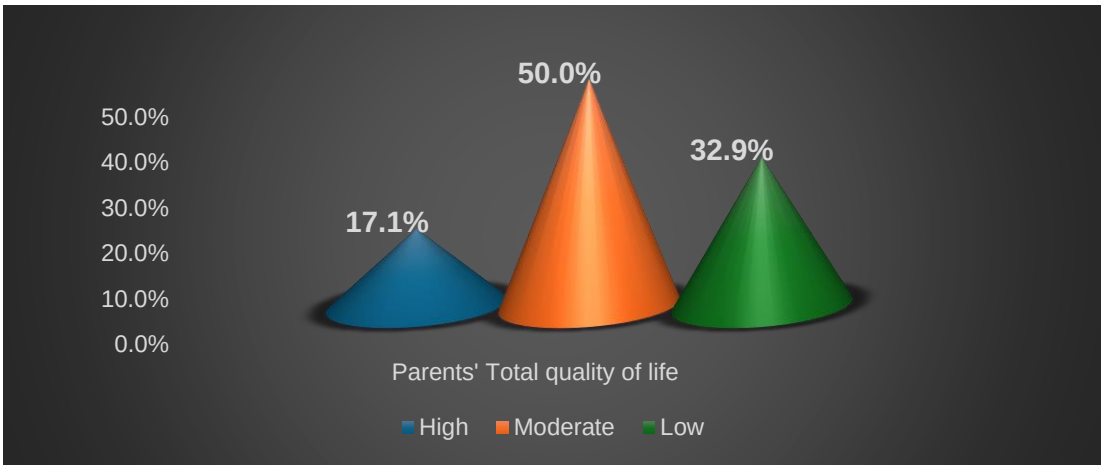

Figure (4): Percentage of the studied parent regarding their total quality of life (n=70).

Fig (4) This figure reveals that there are less than two-fifths (17.1%) of studied parents have a total high quality of life. Also, more than half (50%) of them had moderate quality of life respectively. Additionally, less than a third (32.9%) of them had total moderate quality of life.

Table (6): Relation between characteristic data of the studied parent and their total knowledge about the bronchial asthma episode(n=70).

Items	Total knowledge				X^2	P-Value
	Satisfactory (no=28)		Unsatisfactory (no=42)			
	No	%	No	%		
Age						
25< 35	3	10.7	15	35.7		
35< 45	17	60.7	25	59.5	4.816	.001**
45≤55	8	28.6	2	4.8		
Father's educational level						
Not read and write	0	0	2	4.8		
Read & write	0	0	2	4.8		
Intermediate education	5	17.9	33	78.5	9.435	.008**
Bachelor's degree	21	75.0	4	9.5		
Postgraduate	2	7.1	1	2.4		
Mother's educational level						
Not read and write	0	0	3	7.1		
Read & write	0	0	5	11.9		
Intermediate education	9	32.1	32	76.2	5.369	.002**
Bachelor's degree	18	64.3	2	4.8		
Postgraduate	1	3.6	0	0		
Mother's job						
Work	11	39.3	20	47.6	.942	.514
Not work	17	60.7	22	52.4		
Father's job						
Employee	12	42.9	26	61.9	0.693	.077
Free Business	13	46.4	11	26.2		
Literal	3	10.7	5	11.9		
Do you have family members who suffer from bronchial asthma?						.012*

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Yes No	5 23	17.9 82.1	2 40	4.8 95.2	2.990	

***Significant at p < 0.05. **Highly significant at p <0.01. No significant at p>0.05**

Table (6) This table elicits that there is a highly statistically significant association between the studied parents` total knowledge about the bronchial asthma episode.

Table (7): Relation between socio-demographic data of the studied parent and their total practice (no=70).

Items	Total practice				X^2	P-Value
	Satisfactory (no=30)		Unsatisfactory (no=40)			
	No	%	No	%		
Age						
25<35	15	50.0	3	7.5	14.47	.001**
3<45	11	36.7	31	77.5		
45≤55	4	13.3	6	15.0		
Father's educational level						
Not read and write	0	0	2	5.0	3.232	0.024*
Read & write	1	3.3	1	2.5		
Intermediate education	8	26.7	30	75.0		
Bachelor's degree	19	63.3	6	15.0		
Postgraduate	2	6.7	1	2.5		
Mother's educational level						
Not read and write	0	0	3	7.5	2.279	.016*
Read & write	0	0	5	12.5		
Intermediate education	14	46.7	27	67.5		
Bachelor's degree	15	50.0	5	12.5		
Postgraduate	1	3.3	0	0		
Mother's job						
Work	2	6.7	29	72.5	7.581	.009**
Not work	28	93.3	11	27.5		
Father's job						
Employee	17	56.7	21	52.5	1.956	.239
Free Business	10	33.3	14	35.0		
Literal	3	10.0	5	12.5		
Do you have family members who suffer from bronchial asthma?						
Yes	4	13.3	3	7.5	2.101	0.041*
No	26	86.7	37	92.5		

***Significant at p ‹0.05. **Highly significant at p ‹0.01. Not significant at p>0.05**

Table (7) This table shows that there is a highly statistically significant association between the studied parents` total practice and their age and mothers' jobs (P <0.001). Moreover, there is a statistically significant association between the studied parent's total practice and fathers' educational levels (P <0.005). While there is no statistically significant association between the studied parent's total practice and their job (p > 0.05).

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Table (8): Relation between socio-demographic data of the studied parent and their quality of life (n=70).

Items	Total quality of life						X^2	P-Value
	High (no=12)		Moderate (no=35)		Low (no=23)			
	No	%	No	%	No	%		
Age								
25< 35	3	25.0	10	28.6	5	21.7		
35< 45	8	66.7	21	60.0	13	56.6	.823	.475
45≤ 55	1	8.3	4	11.4	5	21.7		
Father's educational level								
Not read and write	0	0	1	2.9	1	4.3		
Read & write	0	0	1	2.9	1	4.3		
Intermediate education	2	16.7	17	48.6	19	82.6	8.429	.000**
Bachelor's degree	9	75.0	14	40.0	2	8.8		
Postgraduate	1	8.3	2	5.7	0	0		
Mother's educational level								
Not read and write	0	0	1	2.9	2	8.8		
Read & write	0	0	2	5.7	3	13.0		
Intermediate education	2	16.7	22	62.8	17	73.9	4.851	.002**
Bachelor's degree	10	83.3	9	25.7	1	4.3		
Postgraduate	0	0	1	2.9	0	0		
Mother's job								
Work	1	8.3	10	28.6	20	87.0	4.118	.006**
Not work	11	91.7	25	71.4	3	13.0		
Father's job								
Employee	6	50.0	18	51.4	14	60.9		
Free Business	5	41.7	13	37.2	6	26.1	1.022	.051
Literal	1	8.3	4	11.4	3	13.0		
One of the family members suffers from bronchial asthma								
Yes	2	16.7	4	11.4	1	4.3	1.077	.136
No	10	83.3	31	88.6	22	95.7		

***Significant at p ‹0.05. **Highly significant at p ‹0.01. Not significant at p>0.05**

Table (8) This table portrays that there is a highly statistically significant association between the studied parents' total quality of life and their educational level and the mother's job (P <0.001). Also, there is no statistically significant association between the studied parents' total quality of life and their parent's age, father's job, and the presence of family members suffering from bronchial asthma (p > 0.05)

Table (9): Relation between socio-demographic data of the studied children and their total quality of life (n=70).

Items	Total quality of life						X^2	P-Value
	High (n=12)		Moderate (n=39)		low (n=19)			
	No	%	No	%	No	%		
Age								
6<9	3	25.0	26	66.7	18	94.7	2.951	.040*
10-12	9	75.0	13	33.3	1	5.3		
Gender								
Male	7	58.3	23	59.0	15	78.9	1.056	.191
Female	5	41.7	16	41.0	4	21.1		

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Educational level								
From the first-third	3	25.0	26	6.7	18	94.7	2.294	.010*
From the third-sixth	9	75.0	13	33.3	1	5.3		
Number of children in the room								
One	5	41.7	1	2.6	0	0	4.518	.002**
Two	6	50.0	34	87.1	6	31.6		
Three four	1	8.3	3	7.7	9	47.3		
Four	0	0	1	2.6	4	21.1		
Living								
Countryside	1	8.3	3	7.7	1	5.3	.765	.410
City	11	91.7	36	92.3	18	94.7		
Does anyone in your family smoke								
Yes	0	0	12	30.7	17	89.5	7.122	.005**
No	12	100.0	27	69.2	2	10.5		

*Significant at p ‹0.05. **Highly significant at p ‹0.01. Not significant at p>0.05

Table (9) portrays that, there is a statistically significant association between the studied children's total quality of life several children in the room, and the presence of a smoking family member (p <0.001). There is a statistically significant association between the studied children's total quality of life and their age and educational level (p < 0.05). Moreover, there is no statistically significant association between the studied children's total quality of life and their gender and residence (p > 0.05).

Table (10): Correlation between studied variables (no=70).

Variables					
Total knowledge	r p				
Total practices	r p	.763 .000**			
Total quality of life for parent	r p	.695 .001**	.634 .001**		
Total quality of life for children	r p	0.722 .002**	.605 .003**	.576 .004**	

(**) Statistically significant at p<0.01. r Pearson correlation

Table (10) This table clarifies the correlation between studied variables. There is a statistically positive correlation between the studied parents` total knowledge and their total practice at (p = .000), total quality of life for parents at (p = .001), and total quality of life for children at (p = .002). Moreover, there is a highly significant statistically positive correlation between the studied parents` total practice and their total quality of life for parents at (p = .001) and total quality of life for children at (p = .003). Additionally, there is a highly significant statistically positive correlation between the studied parents` total quality of life and the total quality of life for children at (p = .004).

Discussion

Bronchial asthma in children has risen globally, particularly in low-middle-income countries, due to environmental factors like passive smoking and air pollution. This increase has significantly impacted patients' quality of life and placed a substantial burden on families. Quality of life assessment is essential in asthma management, as it affects daily activities and emotional health. Family empowerment programs have shown promise in improving asthma outcomes by reducing parental stress and enhancing family functioning (**Dardouri et al., 2020**).

So, this study aims to assess family-centered empowerment on the quality of life of school-age children with bronchial asthma and their parents, to fulfill this aim research questions were stated.

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Regarding the characteristics data of studied parents, the result of the study (table 1) revealed that more than half of the studied parents were aged between 35 to less than 45 years. More than half of fathers and mothers have intermediate educational levels respectively. Moreover, more than half of mothers did not work, while more than half of fathers were employed. Also, less than one-fifth of them reported having one of the family members suffer from bronchial asthma, and slightly more than a quarter of them reported that there were sources of pollution near the house. This result contrasts to a study conducted by **Volosovets et al. (2020**) study entitled "Bronchial Asthma in Children of Ukraine: medical and Environmental Parallels of Morbidity and Prevalence." And found that more than half of newly diagnosed bronchial asthma cases were observed in children, which is in line with global trends. While this study agrees that the cause of bronchial asthma was air pollutant emissions from stationary sources.

Concerning characteristics of children, this study (Table 2) demonstrated that the mean age of the studied children was 8.31+1.06 years and more than two-thirds of them were aged between 6 to 9 years. Moreover, less than two-thirds of them were males and at educational levels from first to third grade. Additionally, less than two-thirds of them had two children in the room, most of them lived in the urban and more than two-fifths of them had a family history of smoking, this known fact about children developing asthma in families with smoking members is enhanced by **Mohammed et. (2020**) who conduct study about "Prevalence of Bronchial Asthma among School-Aged Children in Elmaraghah Center in Sohag Governorate "and founded that Children who are exposed to smoking had 1.7 times risk of developing asthma than who isn't.

The study result (Table 3) Presented that more than half of the studied children had bronchial asthma at age 3 to 5 years and less than one-third of them reported having a duration of bronchial asthma episode for 30 minutes. Furthermore, the majority reported taking nebulizers. Regarding hospitalization, more than two-thirds of them were hospitalized in the last three months while more than two-thirds did not visit the emergency during the last three months. This result did not match with **Agrawal et al, (2021**). Who conducted a study about "Quality of life in at-risk school-aged children with asthma" and found that about one-third of children attended emergency.

The present study (Table 4) reported that the majority of the studied children didn't have episodes of bronchial asthma during the past three months. More than one-third of studied children had bronchial asthma attacks in autumn and more than half had simple symptoms. Regarding the route of medication administration to children, three-fifths of them take the medication by oral route. Also, all parents give the medication to the child as prescribed and the majority of them aren`t absent from school due to bronchial asthma attacks. This harmonized with **Bloom et al., (2021**) Who studied the Burden of preschool wheeze and progression to asthma in the UK: population-based cohort 2007 to 2017" and signified that more than one-third of children developed asthma in autumn.

By evaluating the knowledge of parents regarding bronchial asthma episodes, the result of the current study (Table 5) mentioned that improved the studied parents' knowledge about factors that contribute occurrence of bronchial asthma in children from less than half at preprogram to the majority post-program. Also, improved knowledge about warning signs that predict the occurrence of bronchial asthma from less than two-fifths at preprogram to the majority post-program, and the best method to take bronchial medications changed from less than one-third preprogram to majority post-program.

Relation between characteristic data of the studied parent and their total knowledge about the bronchial asthma episode, this study (table 6) elicits that, there was a highly statistically significant association between the studied parents` total knowledge about the bronchial asthma episode and their age, educational level of father and mother. Moreover, there was a statistically significant association between the studied parents' total knowledge and the presence of a family member who suffers from bronchial asthma. This result is supported by **Fasola et al. (2022).** Who examined "Asthma-related knowledge and practices among mothers of asthmatic children: A latent class analysis" and demonstrated higher education levels were associated with "good knowledge". From researcher mentality this may be due to Education increases the knowledge of patients about the disease and treatment which leads to better management of the disease.

In Relation between characteristic data of the studied parent and their quality of life portrayed that, there was a highly statistically significant association between the studied parents` total quality of life and fathers' educational level and mothers`

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educational level and mothers` job. Also, there was no statistically significant association between the studied parents` total quality of life and their parents' age, fathers` job, and the presence of family members suffering from bronchial asthma. This disagrees with **Abdel-Hameed et al. (2021**) in their study entitled "Assessment of Quality of Life of Asthmatic Children Attending the Outpatient Clinic in Zagazig University Hospital (Quality of life of Asthmatic Children "and found that a negative correlation between QOL scores and age of parents.

Concerning characteristic data of the studied children and their total quality of life at preprogram, the current study (table 9) portrayed that there was a statistically significant association between the studied children's total quality of life at pre-program and the number of children in the room and presence of smoking family members. Additionally, there was a statistically significant association between the studied children's total quality of life at pre-program and their age and educational level. Moreover, there was no statistically significant association between the studied children's total quality of life pre-program and their gender and residence. This result disagrees with **Hallit et al., (2019**). Who studied "Validation of the mini pediatric asthma quality of life questionnaire and identification of risk factors affecting quality of life among Lebanese children" and reported there was no correlation between quality of life and age. While agrees with **Akhiwu et al., (2022**) who conducted a study about "Assessment of the health-related quality of life in children with asthma in a tertiary hospital in North Central" and showed that there was a significant association between QoL and age.

Concerning the correlation between studied variables. The current study (Table 10) demonstrated that there was a statistically positive correlation between the studied parents` total knowledge and their total practice, total quality of life for parents, and total quality of life for children. Moreover, there is a highly significant statistically positive correlation between the studied parents` total practice and their total quality of life for parents and total quality of life for children. Additionally, there was a highly statistically significant positive correlation between the studied parents` total quality of life and the total quality of life for children. This result agrees with **Fathala et al. (2022)** who found that there was a highly significant statistically positive correlation between the studied parents` total practice and their total quality of life for parents and total quality of life for children.

Conclusion: Based on the results, it can be concluded that:

The study of 70 parents and their children with bronchial asthma reveals key insights: about two-thirds of parents are aged 35-45, with a mean age of 38.85 years. More than half of fathers and mothers have intermediate educational levels. More than two-thirds of children are aged 6-9 years, with a mean age of 8.31 years. A significant proportion are male, and 64.1% are in the first to third grade. The majority live in urban areas. More than half of children have had bronchial asthma for 3-5 years, and most use a nebulizer. Hospitalization rates in the past three months have been low, with more than two-thirds not hospitalized. Less than half of parents have satisfactory knowledge and adequate practices regarding bronchial asthma management. More than half of children and parents have a moderate quality of life. There are significant correlations between parents' educational levels, mothers' jobs, and their knowledge, practice, and quality of life.

Recommendations: Based on the results, it can be recommended that:

- Implement targeted educational programs for parents to improve asthma management knowledge and practices.
- Develop strategies to minimize exposure to pollutants and promote smoking cessation in families.
- Ensure accessible healthcare services and proper use of medications for children with asthma.
- Establish support groups and provide psychological support to improve the quality of life for both parents and children.
- Work with schools and community organizations to raise asthma awareness and support affected children.
- Conduct studies to evaluate the long-term impact of interventions on asthma management and investigate genetic and environmental interactions.

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