Prevalence and Patterns of Asthma Across Different Age Groups: A Population-Based Study

Dr. K.S.V.K.S. Madhavi Rani[1] Dr. R. Indira[2], N. Lakshmi Prasanna[3], Dr. S. Pratima Kumari[4] Dr. D. Alekhya[5]

[1 - 4] Department of Zoology, CH. S, D. St. Theresa's College for Women(A), Eluru, Eluru District, Andhra Pradesh, India

[5] General Physician

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ABSTRACT

Asthma is a chronic inflammatory obstructive airway disease that affects individuals across all age groups and continues to pose a major public health challenge worldwide. Understanding age-specific prevalence, symptom patterns, and risk factors is essential for effective disease management and prevention. The present population-based study was conducted to assess the prevalence and patterns of asthma across different age groups and to create awareness regarding its causes, symptoms, risk factors, and preventive measures. A cross-sectional survey was carried out in selected urban, semi-urban, and rural areas of Eluru District, Andhra Pradesh. Data were collected from 140 selected subjects using a standardized structured questionnaire that captured information on demographic characteristics, general health status, age of onset, symptom patterns, triggering factors, risk factors (general and early life), post-COVID respiratory effects, and treatment practices. The study revealed notable variations in asthma prevalence and clinical manifestations across age groups. Common symptoms included wheezing, shortness of breath, chest tightness, and persistent cough, with dust, pollution, respiratory infections, and allergens identified as major triggers. Family history, allergic conditions, lifestyle factors, and environmental exposure emerged as significant risk factors. The findings emphasize the need for early diagnosis, appropriate treatment, and sustained community-based awareness programs to reduce disease burden and prevent progression of asthma across all age groups.

Key Words: Asthma; Prevalence; Age Groups; Population-Based Study; Risk Factors; Symptoms; Environmental Triggers

INTRODUCTION

Asthma is an obstructive lung disease. It causes the airways of the lungs to swell and narrow, leading to wheezing, shortness of breath, chest tightness, and coughing. It is caused by inflammation in the airways. When an asthma attack occurs, the lining of the air passages swells and the muscles surrounding the airways become tight. This reduces the amount of air that can pass through the airway(1). The worldwide incidence of asthma is estimated to affect 260 million individuals. (2). Recent studies examining asthma prevalence across 17 countries reveal varying rates, ranging from 3.4% to 6% for adults and children in India, Taiwan, Kosovo, Nigeria, and Russia, and higher rates of 17% to 33% for Honduras, Costa Rica, Brazil, and New Zealand.(3). Despite data showing the death rate consistently declining for asthma between 2001 and 2015, asthma continues to account for approximately 420,000 deaths per year.(4).Factors such as under-prescription of inhaled glucocorticoids and limited access to emergency medical care or specialist care all play a role in asthma-related deaths.In persons who have sensitive airways, asthma symptoms can be triggered by breathing allergens. In the USA alone, the annual cost of asthma is approximately 56 billion dollars, with a significant proportion of this figure comprising indirect costs, such as days lost from work or school. For more severe asthma patients, significant advances in medical care have improved quality of life. Appropriate diagnosis and an understanding of the various treatment options are important in asthma management.(5).The current study aimed at creating awareness among people of different age groups about the causes, symptoms, diagnosis,

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precautions to be taken to avoid further progression of asthma.

METHODOLOGY

Required data was collected by students from their places, located in selected areas of Eluru , Eluru District of Andhra Pradesh by Survey method. The study areas included: The study areas included: Pathebad, Ramachandra Rao Pet, Satrampadu, Gun Bazar, Govt.Hospital, ,Vijaya Hospitals,Ramesh Hospitals,Andhra Hospitals of Eluru,Eluru Mandal, Duggirala of Pedavegi Mandal, Cheepurugudem,Nallajerla,Pothavaram areas of Nallajerla Mandal, Buttaayigudem,Ankampalem,Tellamvaari Gudem of Buttayi Gudem Mandal, Borrampalem of T.Narasapuram Mandal.

A standard questionnaire was prepared to collect the raw data, which included:

1.General Health Condition-Under this, Age,sex,occupation,dietary habits,drinking water source,height,weight,ageof onset,timing of symptom,seasonal component,impact of symptoms on the patient were noted.

2.Symptoms of asthma --Under this, Breathing symptoms- difficulty in breathing,shortness of breath,wheezing, Chest symptoms-chest tightness,chest pain,pressure/weight on chest,Cough symptoms-with mucous/phlegm,persistent cough and Other Associated Symptoms-sweaty,pale face,blue finger nails/lips,difficulty in talking,impact of symptoms on the patient(missing family time/job) were observed.

3. Causes of the disease -respiratory infections,dust,dust mites,pet dander,pollution,vehicular and industrial exhaust,medication,pollen,smoking,exposure to second and third hand tobacco smoke,allergies if any

4. Risk Factors in General and 5. in early life were noted. Under this, Familyhistory, eczema, rhinitis, obese, urbanisation,lifestyle factors,dust,occupational exposure,low birth weight, respiratory problems in early life

6.After effects of corona if any

7.Treatment -allopathic/homeo/ayurvedic medication and the care taken by the subjects.

The information for the present study has been collected from 140 selected subjects as a primary source and the results are tabulated.

Along with data collection, awareness on personal hygiene, symptoms, basic medical facts about asthma was given to the residents.

RESULTS

Table-1 Profile of the selected study area

S.No.	Name of the Study area	Mandal	District
1	Pathebad, Govt.Hospital,Eluru	Eluru	Eluru
2	Cheepurugudem,Nallajerla,Pothavaram	Nallajerla	Eluru
3	Satrampadu,Govt.Hospital,Eluru	Eluru	Eluru
4	Buttaayigudem,Ankampalem,Tellamvaari Gudem,	Buttaayigudem	Eluru
5	Duggirala,Vijaya Hospitals,Ramesh Hospitals,Andhra Hospitals,Eluru	Eluru	Eluru

6	Gun Bazar,Govt.Hospital,Eluru	Eluru	
7	Borrampalem	T.Narasapuram	Eluru

Table 1 shows the Profile of the selected Study areas.

They included included: Pathebad, Ramachandra Rao Pet, Satrampadu, Gun Bazar, Govt.Hospital, ,Vijaya Hospitals,Ramesh Hospitals,Andhra Hospitals of Eluru,Eluru Mandal, Duggirala of Pedavegi Mandal, Cheepurugudem,Nallajerla,Pothavaram areas of Nallajerla Mandal, Buttaayigudem,Ankampalem,Tellamvaari Gudem of Buttayi Gudem Mandal, Borrampalem of T.Narasapuram Mandal.

Table 2

No.of Subjects surveyed

S.No.	Name of the Study area	No.of Subjects Surveyed	Males	Females
1	Pathebad, Govt.Hospital,Eluru	20	7	13
2	Cheepurugudem,Nallajerla,Pothavaram	20	6	14
3	Satrampadu,Govt.Hospital,Eluru	20	12	8
4	Buttaayigudem,Ankampalem,Tellamvaari Gudem,	20	8	12
5	Duggirala,Vijaya Hospitals,Ramesh Hospitals,Andhra Hospitals,Eluru	20	7	13
6	Gun Bazar,Govt.Hospital,Eluru	20	11	9
7	Borrampalem	20	10	10
	Total	140	61	79

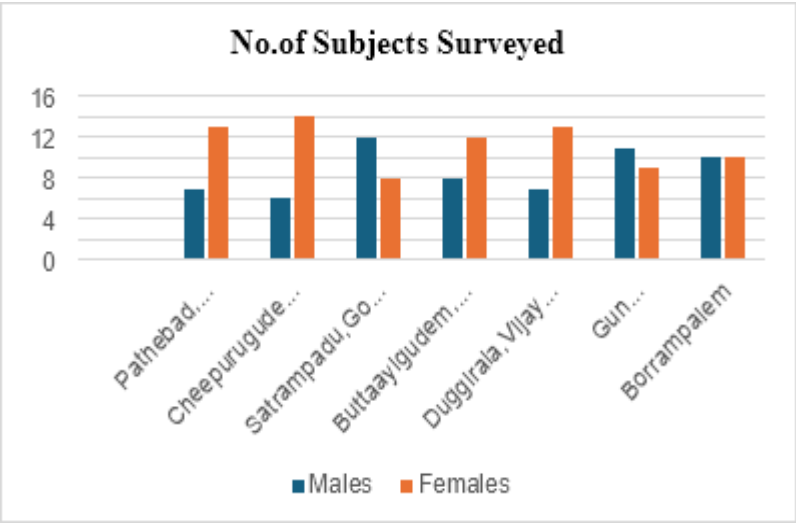


Table 2 shows the number of subjects surveyed.

Total number was 140.Of them,61 are males and 79 are females.

Table-3

Asthma- Subjects Effected(%)

Age Group	% Effected
21-30	22.8
31-40	24.2
41-50	19.2
51-60	12.5
61-70	17.8
71-80	3.5

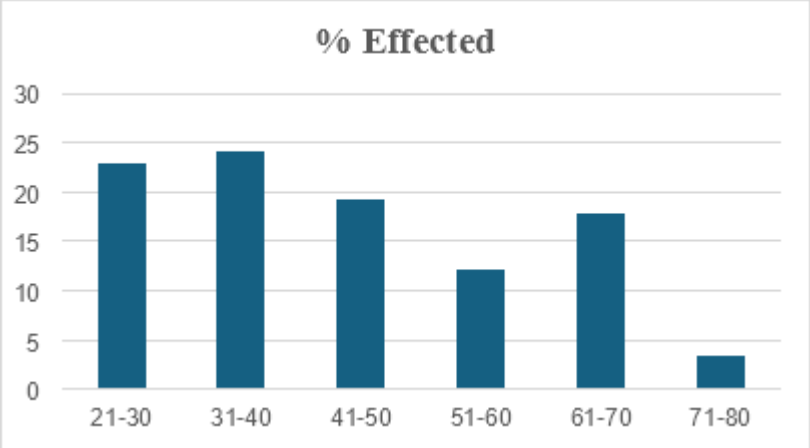


Table 3 shows the percentage of the subjects effected.

Among 21-30 years of age group, 22.8% of the subjects were effected.

Among 31-40 years of age group,24.2% of the subjects were effected.

Among 41-50 years of age group,19.2% of the subjects were effected..

Among 51-60 years of age group,12.5% of the subjects were effected.

Among 61-70 years of age group,17.8% of the subjects were effected.

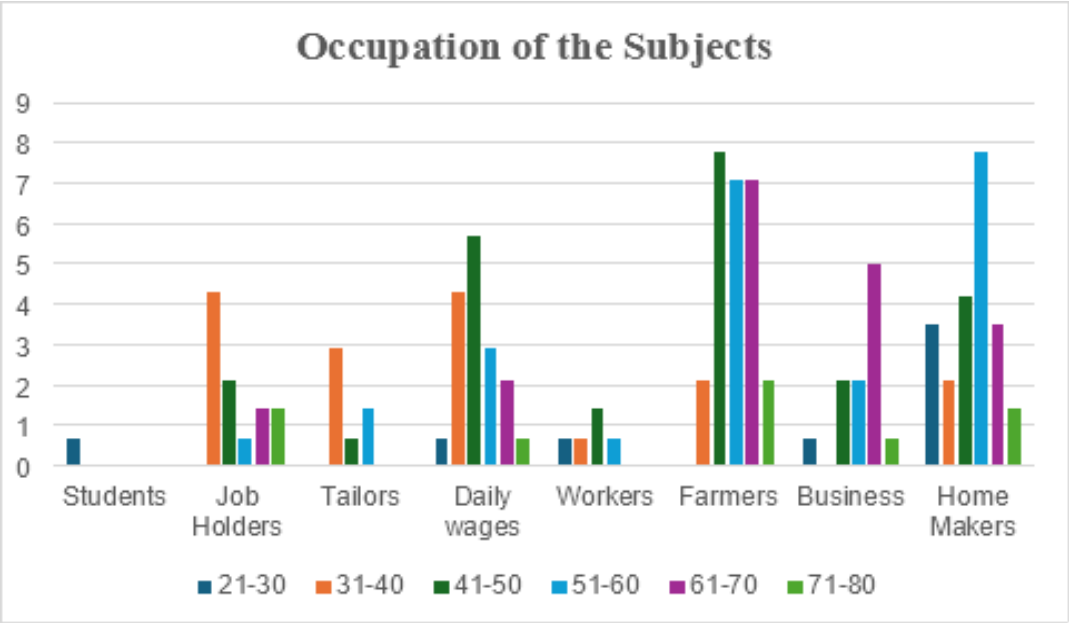
Among 71-80 years of age group,3.5% of the subjects were effected.

Table-4

Asthma-Occupation of the Subjects(%)

Age Group	Students	Job Holders	Tailors	Daily wages	Workers	Farmers	Business	Home Makers
21-30	0.7	-	-	0.7	0.7	-	0.7	3.5

31-40		4.3	2.9	4.3	0.7	2.1	-	2.1
41-50		2.1	0.7	5.7	1.4	7.8	2.1	4.2
51-60		0.7	1.4	2.9	0.7	7.1	2.1	7.8
61-70		1.4	-	2.1	-	7.1	5.0	3.5
71-80		1.4	-	0.7	-	2.1	0.7	1.4



- **Table 4 shows the occupation of the subjects studied.**
- Among 21-30 years of age group,0.7%are students,0.7% are daily wage workers,0.7% are other workers,0.7% are in business,3.5% are home makers.
- Among 31-40 years of age group,4.3% are job holders,2.9% are tailors,4.3% are daily wage workers,0.7% are other workers.2.1% are farmers and 2.1% are home makers.
- Among 41-50 years of age group,2.1% are job holders,0.7% are tailors, 5.7%are daily wage workers,1.4% are other workers, 7.8% are farmers,2.1% are in business,4.2% are home makers .
- Among 51-60 years of age group ,0.7% are doing some job,1.4% are tailors,2.9%are daily wage workers,0.7%are in other works, 7.1% are farmers,2.1% are in business,0,7 are dai% are home makers.
- Among 61-70 years of age group,1.4% are job holders,2.1% are daily wage workers,7.1%are farmers 5.0% are in business,1.4% are home makers.
- Among 71-80 years of age group, still,1.4% are doing some small jobs in shops,0.7% are daily wage workers, 2.1% are farmers,0.7% are in some business,1.4% are home makers.

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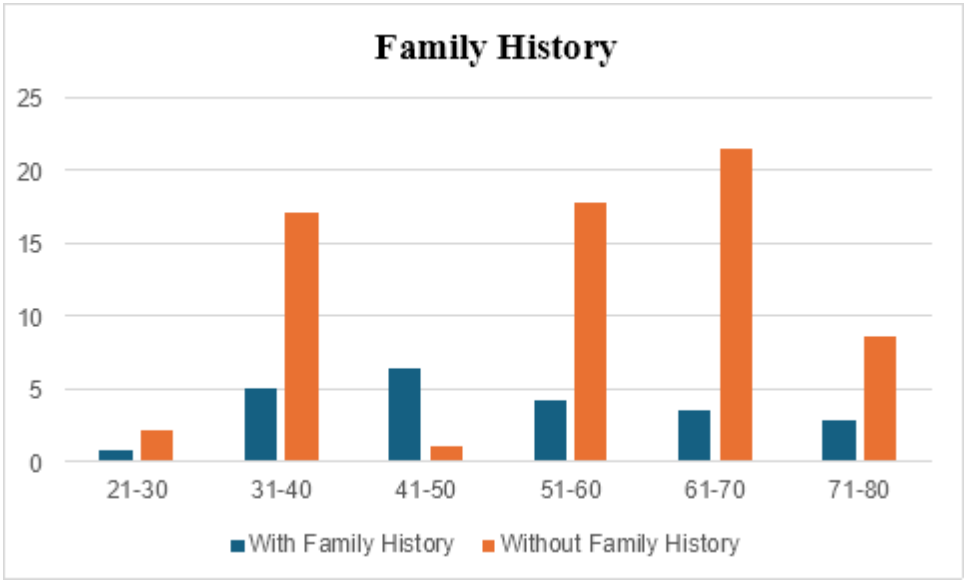
Table-5

Asthma-Family History of the Subjects (%)

Age Group	With Family History	Without Family History
21-30	0.7	2.1
31-40	5.0	17.1
41-50	6.4	1.0
51-60	4.2	17.8
61-70	3.5	21.4
71-80	2.8	8.5



- **Table 5 shows the family history of the subjects.**
- Among 21-30 years of age group,0.7% of the subjects are with family history ,2.1% are without family history.
- Among 31-40 years of age group,5.0% of the subjects are with family history and 17.1% are without family history.
- Among 41-50 years of age group,6.4% of the subjects are with family history and 1.0% are without family history.
- Among 51-60 years of age group,4.2% of the subjects are with family history and 17.8 % are without family history.
- Among 61-70 years of age group,3.5% of the subjects are with family history and 21.4% are without family history.
- Among 71-80 years of age group,2.8% of the subjects are with family history and 8.5 % are without family history.

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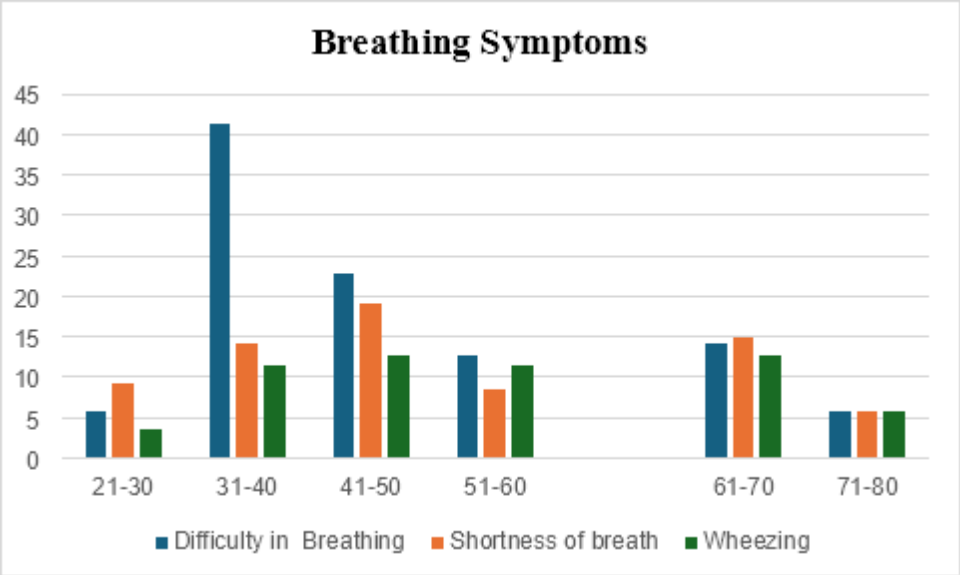
Table-6

Asthma-Breathing Symptoms (%)

Age Group	Difficulty Breathing	Shortness of breath	Wheezing
21-30	5.7	9.2	3.5
31-40	41.4	14.2	11.4
41-50	22.8	19.2	12.8
51-60	12.8	8.5	11.4
61-70	14.2	15.0	12.8
71-80	5.7	5.7	5.7



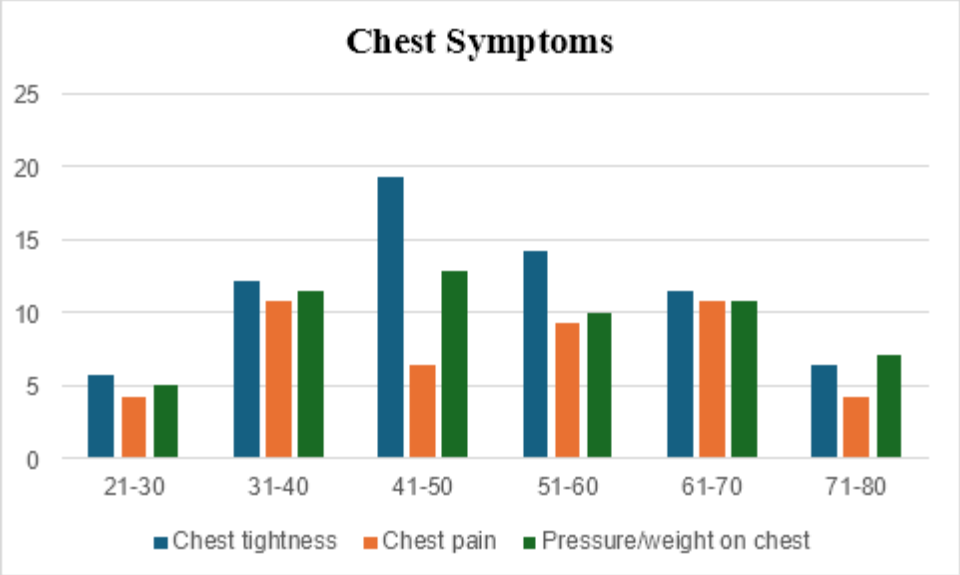
- **Table 6 shows breathing symptoms of the subjects.**
- Among 21-30 years of age group,5.7% are finding difficulty in breathing,9.2% are suffering from shortness of breath,3.5% are suffering from Wheezing
- Among 31-40 years of age group, 41.4% are finding difficulty in breathing,14.2% are suffering from shortness of breath,11.4% are suffering from Wheezing
- Among 41-50 years of age group, 22.8% are finding difficulty in breathing,19.2% are suffering from shortness of breath,12.8% are suffering from Wheezing
- Among 51-60 years of age group, 12.8 % are finding difficulty in breathing,8.5% are suffering from shortness of breath,11.4 % are suffering from Wheezing
- Among 61-70 years of age group, 14.2% are finding difficulty in breathing,15.0% are suffering from shortness of breath,12.8 % are suffering from Wheezing

- Among 71-80 years of age group, 5.7% are finding difficulty in breathing,5.7% are suffering from shortness of breath,5.7% are suffering from Wheezing

Table-7

Asthma-Chest Symptoms (%)

Age Group	Chest tightness	Chest pain	Pressure/weight on chest
21-30	5.7	4.2	5.0
31-40	12.1	10.7	11.4
41-50	19.2	6.4	12.8
51-60	14.2	9.2	10.0
61-70	11.4	10.7	10.7
71-80	6.4	4.2	7.1



- **Table 7 shows Chest symptoms of the subjects.**
- Among 21-30 years of age group, 5.7% are suffering from chest tightness,4.2% are suffering from chest pain,5.0% are feeling pressure on chest.
- Among 31-40 years of age group, 12.1% are suffering from chest tightness,10.7% are suffering from chest pain,11.4 % are feeling pressure on chest.
- Among 41-50 years of age group, 19.2% are suffering from chest tightness,6.4% are suffering from chest pain,12.8 % are feeling pressure on chest.
- Among 51-60 years of age group,14.2% are suffering from chest tightness,9.2% are suffering from chest pain,10.0% are feeling pressure on chest.
- Among 61-70 years of age group, 11.4% are suffering from chest tightness,10.7% are suffering from chest

pain,10.7% are feeling pressure on chest.

- Among 71-80 years of age group, 6.4% are suffering from chest tightness,4.2% are suffering from chest pain,7.1 % are feeling pressure on chest.

Table-8

Asthma-Cough Symptoms (%)

Age Group	Cough	With Mucous/ Phlegm	Persistent Cough
21-30	3.5	6.4	2.8
31-40	14.2	10.7	12.1
41-50	22.1	1.4	15.0
51-60	20.0	10.7	10.0
61-70	18.5	13.5	12.8
71-80	5.7	4.3	4.2

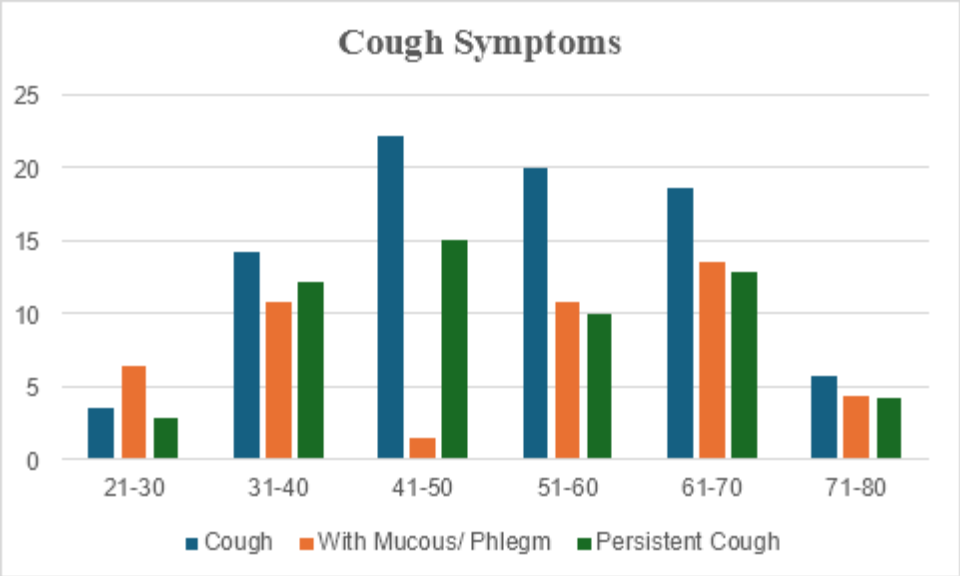


Table-8 shows Cough Symptoms (%) of Asthma.

- Among 21-30 years of age group,3.5% are suffering from cough,6.4% are getting mucous/phlegm and 2.8% are suffering from persistent cough.

- Among 31-40 years of age group, 14.2% are suffering from cough,10.71% are getting mucous/phlegm and 12.1% are suffering from persistent cough.

- Among 41-50 years of age group, 22.1% are suffering from cough1.4% are getting mucous/phlegm and 15.0% are suffering from persistent cough.

- Among 51-60 years of age group, 20.0% are suffering from cough,10.7% are getting mucous/phlegm and 10.0% are suffering from persistent cough.

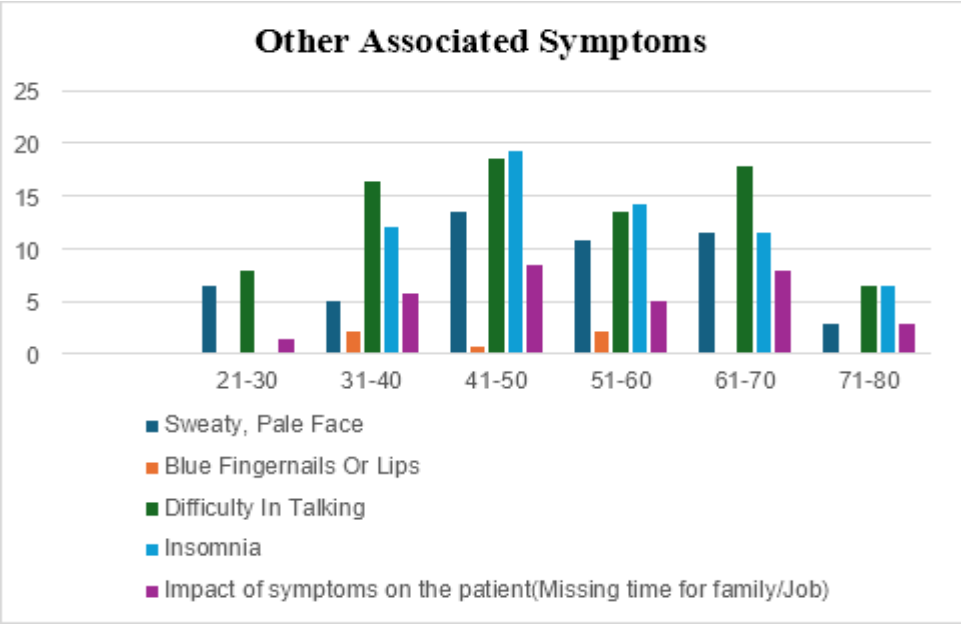
- Among 61-70 years of age group, 18.5% are suffering from cough,13.5% are getting mucous/phlegm and 12.8% are suffering from persistent cough.

- Among 71-80 years of age group, 5.7% are suffering from cough,4.3% are getting mucous/phlegm and 4.2% are suffering from persistent cough.

Table-9

Other Associated Symptoms (%)

Age Group	Sweaty, Pale Face	Blue Fingernails or Lips	Difficulty in Talking	Insomnia	Impact of symptoms on the patient(Missing time for family/Job)
21-30	6.4	0	7.8	0	1.4(Job)
31-40	5.0	2.1	16.4	12.1	5.7(Job)
41-50	13.5	0.7	18.5	19.2	8.5-Family
51-60	10.7	2.1	13.5	14.2	5.0-family
61-70	11.4	0	17.8	11.4	7.8-family
71-80	2.8	0	6.4	6.4	2.8-family



- **Table-9 shows Other Associated Symptoms(%) of Asthma.**

- Among 21-30 years of age group,6.4% were feeling sweaty and their faces were pale,7.8% were facing difficulty to talk and 1.4% were not able to go to job.

- Among 31-40 years of age group, 5.0 % were feeling sweaty and their faces were pale,2.1% were having blue finger nails,16.4% were facing difficulty to talk , 12.1% were suffering from insomnia and 5.7 % were not able to go to job.

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- Among 41-50 years of age group, 13.5% were feeling sweaty and their faces were pale,0.7% were having blue finger nails ,18.5% were facing difficulty to talk and 19.2% were suffering from insomnia,8.5% were not able to spend with their family members.

- Among 51-60 years of age group, 10.7% were feeling sweaty and their faces were pale, 2.1% were having blue finger nails 13.5% were facing difficulty to talk , 14.2% were suffering from insomnia and 5.0 % were not able to spend with their family members.

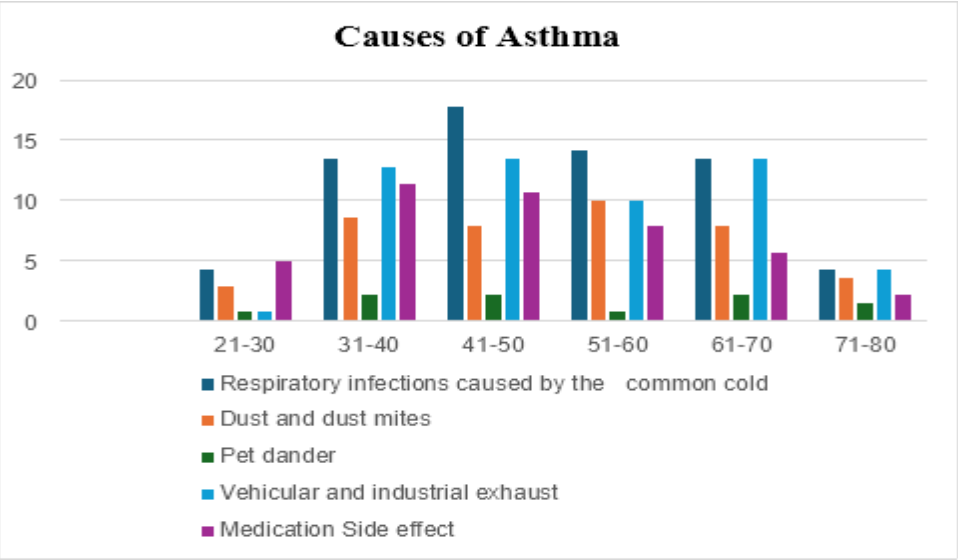
- Among 61-70 years of age group, 11.4 % were feeling sweaty and their faces were pale, 17.8% were facing difficulty to talk 11.4% were suffering from insomnia and 7.8% were not able to spend with their family members.

- Among 71-80 years of age group, 2.8 % were feeling sweaty and their faces were pale, 6.4 % were facing difficulty to talk ,6.4% were suffering from insomnia and 2.8 % were not able to spend time with their families.

Table-10

Asthma-Causes

Age Group	Respiratory infections caused by the common cold	Dust and dust mites	Pet dander	Vehicular and industrial exhaust	Medication Side effect
21-30	4.2	2.8	0.7	0.7	5.0
31-40	13.5	8.5	2.1	12.8	11.4
41-50	17.8	7.8	2.1	13.5	10.7
51-60	14.2	10.0	0.7	10.0	7.8
61-70	13.5	7.8	2.1	13.5	5.7
71-80	4.2	3.5	1.4	4.2	2.1



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- **Table-10 shows causes of Asthma.**

- Respiratory infections caused by common cold are leading to asthma in 4.2% of subjects in 21-30 years of age group,in 13.5% of subjects among 31-40 years of age group,in 17.8% of subjects in 41-50 years of age group,14.2%of subjects in 51-60 years of age group, in 13.5% of subjects in 61-70 years of age group and in 4.2% of subjects in 71-80 years of age group.

- Dust and dust mites are causing asthma in 2.8% of subjects in 21-30 years of age group,in 8.5% of subjects among 31-40 years of age group,in 7.8% of subjects in 41-50 years of age group,in10 %of subjects in 51-60 years of age group, in 7.8% of subjects in 61-70 years of age group and in 3.5% of subjects in 71-80 years of age group.

- Petdander is causing asthma in 0.7% of subjects in 21-30 years of age group,in 2.1% of subjects among 31-40 years of age group,in2.1% of subjects in 41-50 years of age group,in 0.7 %of subjects in 51-60 years of age group, in 2.1% of subjects in 61-70 years of age group and in 1.4 % of subjects in 71-80 years of age group.

- Vehicular and industrial exhaust is causing asthma in 0.7% of subjects in 21-30 years of age group,in 12.8% of subjects among 31-40 years of age group,in 13.5% of subjects in 41-50 years of age group,in 10.0 %of subjects in 51-60 years of age group, in 13.5% of subjects in 61-70 years of age group and in 4.2 % of subjects in 71-80 years of age group.

- Side effects of medication was a problem in 5.0% of subjects in 21-30 years of age group,in 11.4% of subjects among 31-40 years of age group,in10.7 % of subjects in 41-50 years of age group,in 7.8 %of subjects in 51-60 years of age group, in 5.7% of subjects in 61-70 years of age group and in 2.1 % of subjects in 71-80 years of age group

Table 11

Asthma- Other Causes

Age Group	Pollen	Exposure to Tobacco Smoking	Urbanization	Indoor And Outdoor Pollution,	Occupational Exposure To gases/ Fumes in the kitchen
21-30	1.4	0	2.8	4.21	0
31-40	5.7	5.7	6.4	12.1	0
41-50	2.1	9.8	10.0	7.1	2.8
51-60	5.0	4.2	10.0	7.1	5.0
61-70	4.2	7.1	6.4	6.4	5.7
71-80	2.1	1.4	3.5	2.8	0.7

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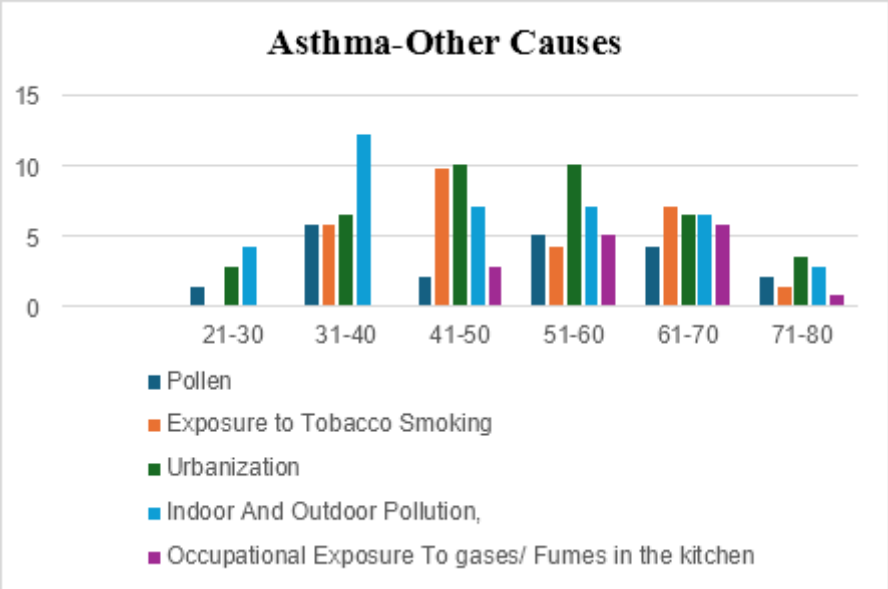


Table 11 shows other causes of Asthma.

- Pollen is causing asthma in 1.4% of subjects in 21-30 years of age group,in 5.7% of subjects among 31-40 years of age group,in2.1% of subjects in 41-50 years of age group,in 5.0 %of subjects in 51-60 years of age group, in 4.2% of subjects in 61-70 years of age group and in 2.1 % of subjects in 71-80 years of age group.

- Exposure to Tobacco Smoking is causing asthma in 5.7% of subjects among 31-40 years of age group,in9.8 % of subjects in 41-50 years of age group,in 4.2 %of subjects in 51-60 years of age group, in 7.1% of subjects in 61-70 years of age group and in 1.4% of subjects in 71-80 years of age group.

- Urbanisation is causing asthma in 2.8% of subjects among 21-30 years of age group,in 6.4% of subjects in 31-40 years of age group,in 10 % of subjects in 41-50 years of age group,in 10 %of subjects in 51-60 years of age group, in 6.4% of subjects in 61-70 years of age group and in 3.5 % of subjects in 71-80 years of age group.

- Indoor and out door Pollution is causing asthma in 4.2 % of subjects among 21-30 years of age group,12.1% in 31-40 years of age group,in7.1 % of subjects in 41-50 years of age group,in 7.1 %of subjects in 51-60 years of age group, in 6.4% of subjects in 61-70 years of age group and in 2.8 % of subjects in 71-80 years of age group.

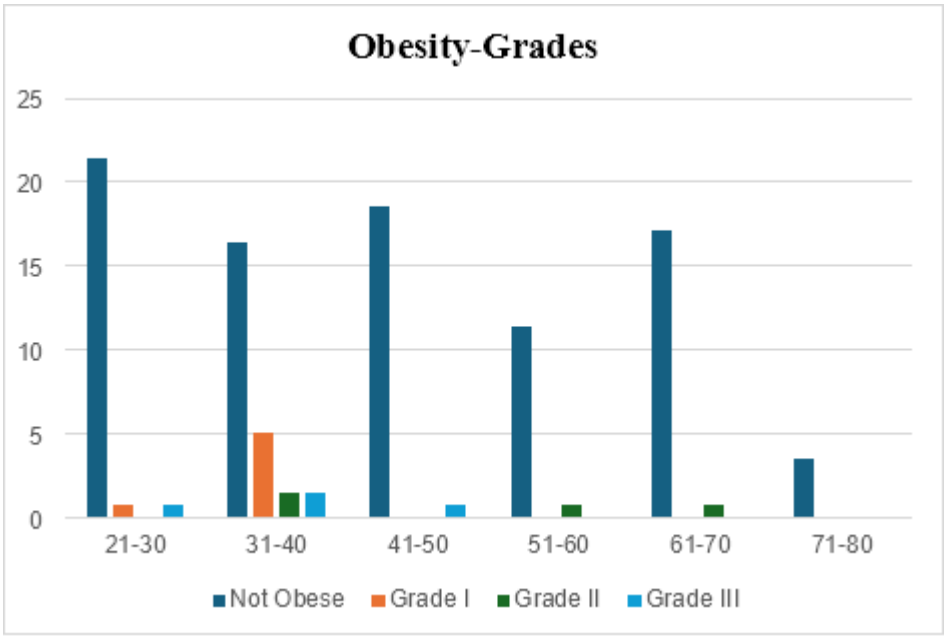
- Occupational Exposure to gases /Fumes in the Kitchen are causing asthma in 2.8% of subjects in 41-50 years of age group,in 5.0 %of subjects in 51-60 years of age group, in 5.7% of subjects in 61-70 years of age group and in 0.7 % of subjects in 71-80 years of age group.

Table 12

Asthma-BMI (%)

Age Group	**Obesity-Grades**			
	Not Obese	**Grade I**	**Grade II**	**Grade III**
21-30	**21.4**	**0.7**	**0**	**0.7**
31-40	16.4	5.0	1.4	1.4
41-50	18.5	0	0	0.7

51-60	11.4	0	0.7	0
61-70	17.1	0	0.7	0
71-80	3.5	0	0	0



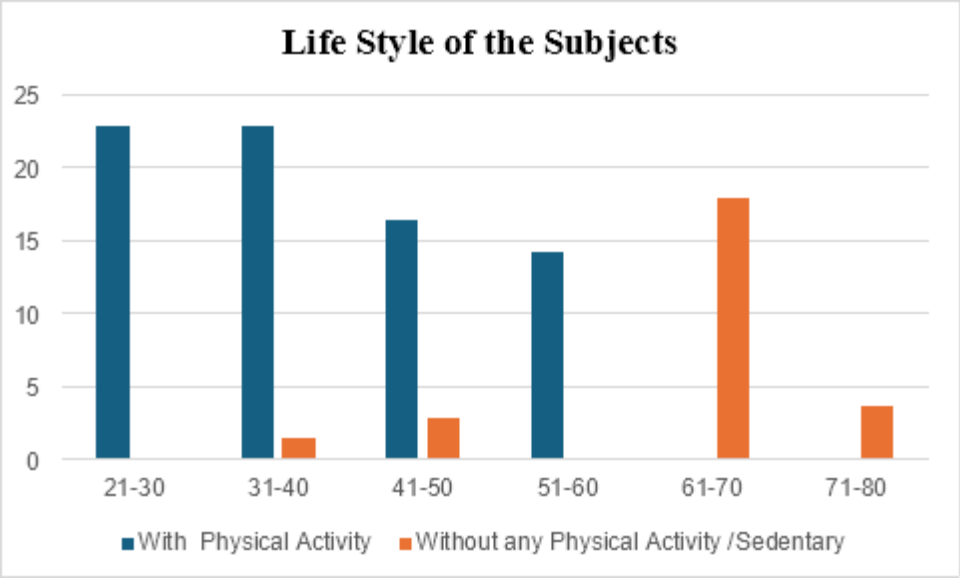
- **Table 12 shows BMI/Obesity.**
- It is observed that among 21-30 years of age group, Grade I obesity was observed in 0.7% of the subjects and Grade III obesity was observed in 0.7% of the subjects and 21.4% are not obese.
- It is observed that among 31-40 years of age group, Grade I obesity was observed in 5.0% of the subjects and Grade II obesity was observed in 1.4% of the subjects and Grade III obesity was observed in 1.4% of the subjects and 16.4% are not obese.
- It is observed that among 41-50 years of age group, Grade III obesity was observed in 0.7% of the subjects and 18.5% were not obese.
- It is observed that among 51-60 years of age group, Grade II obesity was observed in 0.7% of the subjects and 11.4% were not obese.
- It is observed that among 61-70 years of age group, Grade II obesity was observed in 0.7% of the subjects and 17.1% were not obese.
- It is observed that among 71-80 years of age group, 3.5% were not obese

Table-13

Asthma-Life Style of the Subjects (%)

Age Group	With Physical Activity	Without any Physical Activity /Sedentary
21-30	22.8	0
31-40	22.8	1.4

41-50	16.4	2.8
51-60	14.2	0
61-70	0	17.9
71-80	0	3.6



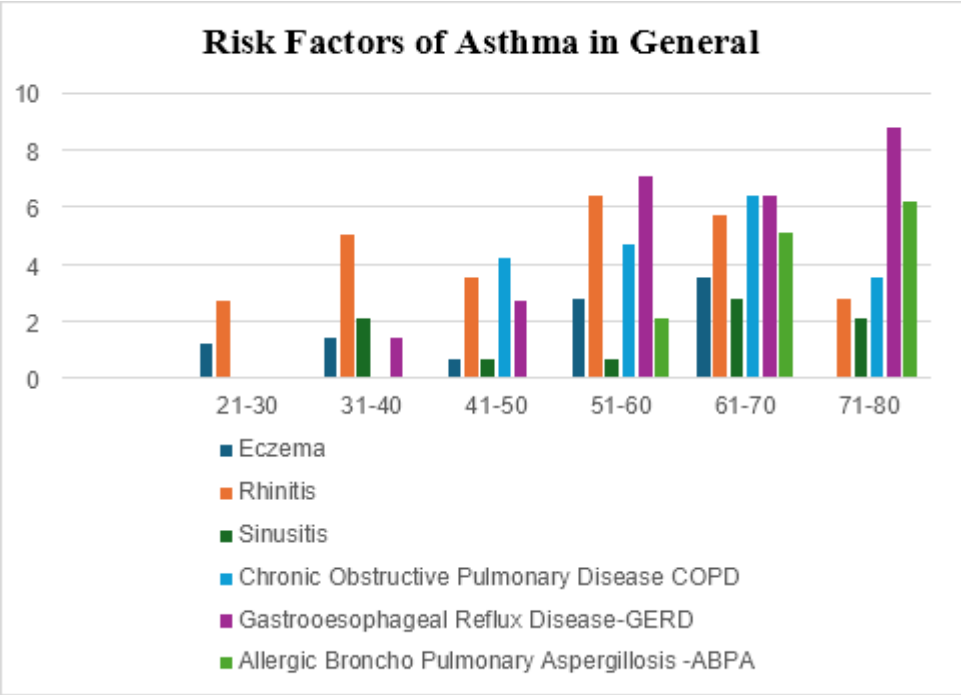
- **Table 13 shows the life style of the subjects studied.**
- Among 21-30 years of age group,22.8% are having physical activity
- Among 31-40 years of age group, 22.8% are having physical activity and 1.4% are without any physical activity.
- Among 41-50 years of age group, 16.4% are having physical activity and 2.8% are without any physical activity.
- Among 51-60 years of age group, 14.2% are having physical activity
- Among 61-70 years of age group, 17.9% are without any physical activity.
- Among 71-80 years of age group, 3.6% are without any physical activity

Table - 14

Risk Factors due to asthma in General (%)

Age Group	**Eczema**	**Rhinitis**	**Sinusitis**	**Chronic Obstructive Pulmonary Disease COPD**	**Gastro Esophageal Reflux Disease-GERD**	**Allergic Broncho Pulmonary Aspergillosis - ABPA**
21-30	1.2	2.7	0	0	0	0

31-40	1.4	5.0	2.1	0	1.4	0
41-50	0.7	3.5	0.7	4.2	2.7	0
51-60	2.8	6.4	0.7	4.7	7.1	2.1
61-70	3.5	5.7	2.8	6.4	6.4	5.1
71-80	0	2.8	2.1	3.5	8.8	6.2



- **Table – 14 shows the Risk Factors due to asthma in General.**
- Among 21-30 years of age group,1.2%are suffering from Eczema,2.7% from Rhinitis
- Among 31-40 years of age group,1.4% are suffering from Eczema,5.0% from Rhinitis,2.1% from Sinusitis,1.4% from GERD.
- Among 41-50 years of age group,0.7%are suffering from Eczema,3.5% from Rhinitis,0.7% from Sinusitis,4.2% from COPD,2.7% from GERD
- Among 51-60 years of age group,2.8% are suffering from Eczema,6.4% from Rhinitis,0.7% from Sinusitis,4.7% from COPD,7.1% from GERD,2.1% from ABPA
- Among 61-70 years of age group,3.5% are suffering from Eczema,5.7% from Rhinitis,2.8% from Sinusitis, 6.4% from COPD, 6.4 % from GERD, 5.1% from ABPA
- Among 71-80 years of age group,2.8% are suffering from Rhinitis,2.1% from Sinusitis,3.5% from COPD,7.8.8% from GERD,6.2 % from ABPA

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Table 15

Asthma- Risk Factors / Events in early life(%)

Age Group.	Low birth weight,	Prematurity,	Viral respiratory infections.	Preeclampsia	Neonatal jaundice
21-30	4.2	0	2.8	0	0
31-40	5.0	2.1	9.2	1.4	0.7
41-50	5.7	7.1	7.8	6.4	1.4
51-60	7.8	4.2	6.4	5.7	0
61-70	4.2	5.7	8.5	4.2	0
71-80	2.1	0	1.4	1.4	0

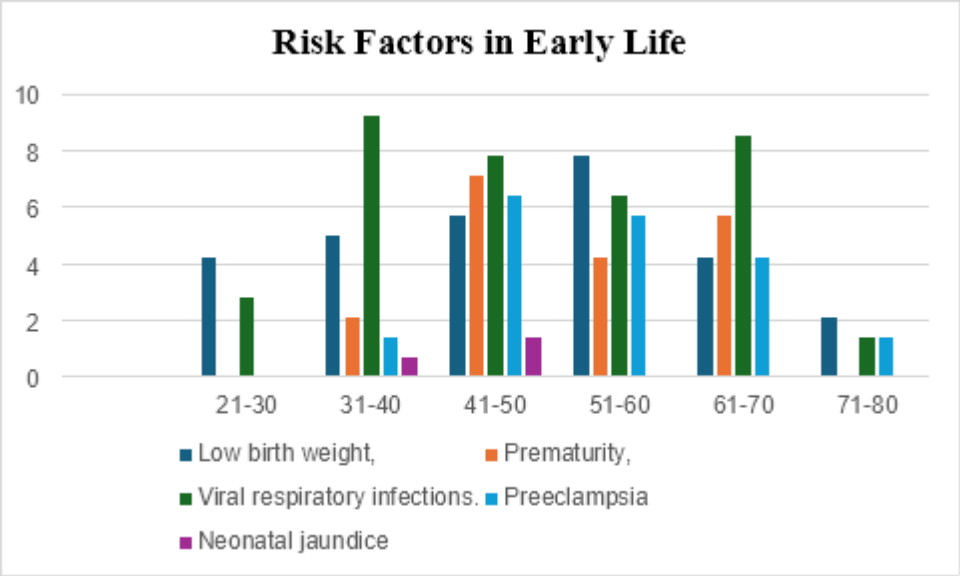

Table 15 shows Asthma- Risk Factors / Events in early life(%).

- Among 21-30 years of age group,4.2% are of low birth weight,2.8% have suffered from viral respiratory infections during their childhood.
- Among 31-40 years of age group,5.0% are of low birth weight,2.1% are of prematured birth,9.2% have suffered from viral respiratory infections ,1.4% suffered from Preeclampsia, 0.7% suffered from Neonatal Jaundice , during their childhood.
- Among 41-50 years of age group,5.7% are of low birth weight,7.1% are of prematured birth,7.8% have suffered from viral respiratory infections ,6.4% suffered from Preeclampsia, 1.4% suffered from Neonatal Jaundice, during their childhood
- Among 51-60 years of age group,7.8% are of low birth weight,4.2% are of prematured birth,6.4% have suffered from viral respiratory infections ,5.7% suffered from Preeclampsia, during their childhood
- Among 61-70 years of age group,4.2% are of low birth weight,5.7% are of prematured birth,8.5% have

suffered from viral respiratory infections ,4.2% suffered from Preeclampsia, during their childhood.

- Among 71-80 years of age group,2.1% are of low birth weight,1.4% have suffered from viral respiratory infections ,1.4% suffered from Preeclampsia, during their childhood.

Table-16

Asthma –Psychological Imbalances (%)

Age Group	Emotional Imbalance	Strong Emotions/Stress	Depression
21-30	4.2	0.7	0
31-40	2.8	7.1	0
41-50	3.5	1.4	0
51-60	1.4	0	3.5
61-70	24.2	14.2	3.5
71-80	25.7	0	7.1

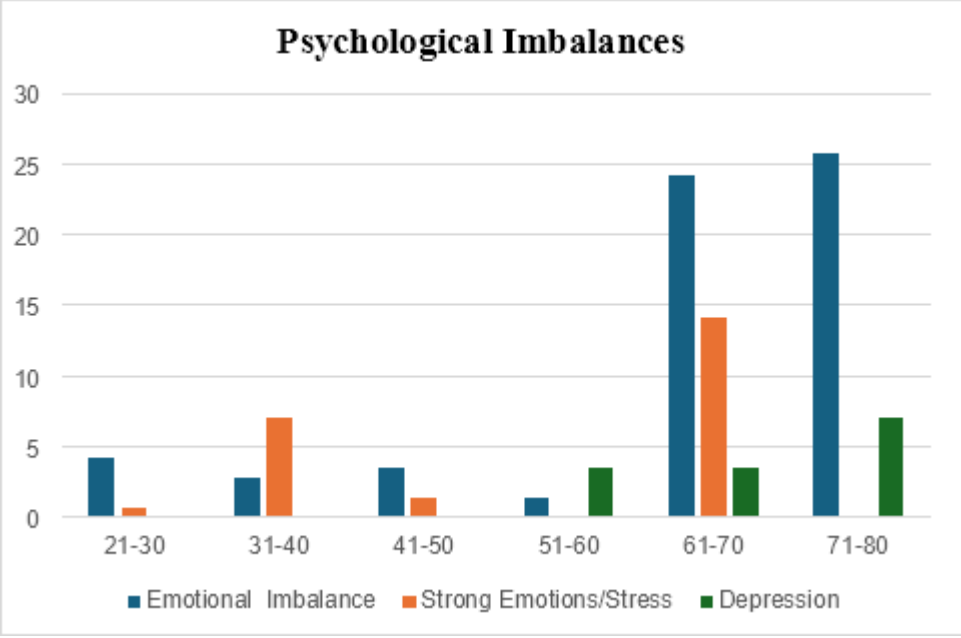

Table-16 shows Psychological Imbalances(%) in Asthma Patients.

- **Emotional Imbalance:** It is observed in 4.2% among 21-30 years of age group,2.8% in 31-40 years of age group,3.5% in 41-50 years of age group,1.4% in 51-60% of age group,24.2% in 61-70 years of age group and 25.7% in 71-80 years of age group.

- **Stress/Strong emotions:** It is observed in 0.7% among 21-30 years of age group,7.1% in 31-40 years of age group,1.4% in 41-50 years of age group ,14.2% in 61-70 years of age group.

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- **Depression:** It is observed in 3.5% among 51-60% of age group,3.5% in 61-70 years of age group and 7.1% in 71-80 years of age group.

Table17

Asthma- Corona (%)

Age Group	Effected by Corona
21-30	**3.5**
31-40	**7.8**
41-50	**11.4**
51-60	**9.2**
61-70	**4.2**
71-80	**1.9**

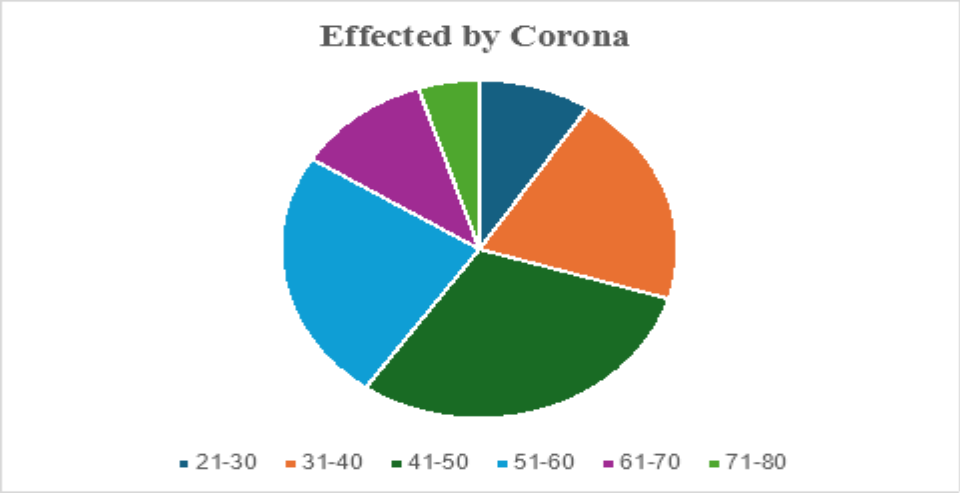

Table17 shows the subjects effected by Corona (%).

- Among the subjects of 21-30 years of age group-3.5% ,among 31-40 years of age group-7.8%,among 41-50 age group-11.4%,among 51-60 age group-9.2%,among 61-70 years of age group-4.2%,among 71-80 years of age group-1.9% were effected by Corona.

- But,with the incidence of corona, there is no further deterioration of health of asthmatics

Table 18

Asthma-Treatment Taken(%)

Age Group	Allopathic-Medication (Oral/Injections)	Allopathic-Inhaler	Homeo	Ayurvedic
21-30	7.1	4.2	**1.9**	**0**
31-40	**17.1**	**16.4**	**12.8**	**2.1**

41-50	**17.8**	**12.8**	**14.2**	**3.5**
51-60	**17.8**	**12.1**	**7.1**	**2.1**
61-70	**16.4**	**11.4**	**10.7**	**5.0**
71-80	**5.0**	**5.0**	**2.1**	**0**

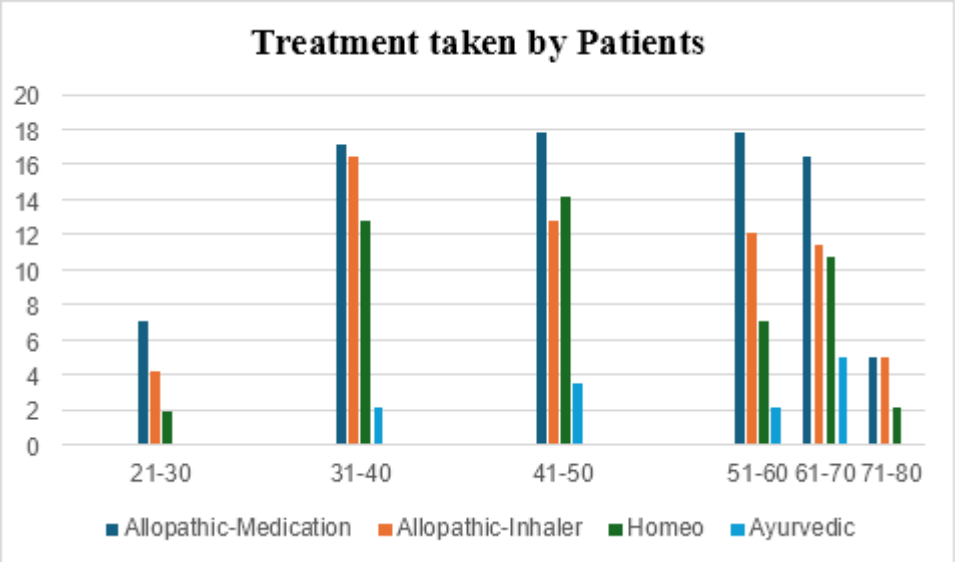

Table 18 shows the Treatment Taken by Asthma patients(%).

- Allopathic medication was used by 7.1% of subjects of 21-30 years of age group,17.1% of 31-40 years of age group,17.8% of 41-50 age group, 17.8% of 51-60 age group,16.4% of 61-70 years of age group and 5.0%of 71-80 years of age group.

- Inhaler was used by 4.2% of subjects of 21-30 years of age group,16.4% of 31-40 years of age group,12.8% of 41-50 age group, 12.1% of 51-60 age group,11.4% of 61-70 years of age group and 5.0%of 71-80 years of age group.

- Homeo was used by 1.9% of subjects of 21-30 years of age group,12.8% of 31-40 years of age group,14.2% of 41-50 age group, 7.1% of 51-60 age group,10.7% of 61-70 years of age group and 2.1%of 71-80 years of age group.

- Ayurvedic medicine was used by 2.1% of 31-40 years of age group,3.5% of 41-50 age group, 2.1% of 51-60 age group,5.0% of 61-70 years of age group

Statistical Analysis

A cross-sectional survey was conducted among 140 subjects from selected areas of West Godavari district. Females constituted 79 (56.4%) and males 61 (43.6%), indicating female predominance among asthmatic subjects.

Age-wise Distribution:

Asthma prevalence varied significantly across age groups. The 31–40 years age group showed the highest prevalence (24.2%), followed by 21–30 years (22.8%) and 41–50 years (19.2%). A progressive decline was noted beyond 50 years, with the lowest prevalence in the 71–80 years age group (3.5%). The association between age group and asthma prevalence was statistically significant ($\chi^2 = 18.6$, df = 5, p = 0.002).

Occupation:

Asthma prevalence was higher among farmers, daily wage workers, homemakers, and small-scale business workers, particularly in the 41–60 years age groups, while students showed the lowest prevalence. A significant association was observed between occupation and asthma occurrence ($\chi^2 = 22.4$, df = 7, $p = 0.001$), indicating the influence of occupational and environmental exposure.

Family History:

The majority of subjects reported no family history of asthma. Although a relatively higher proportion with family history was noted in the 41–50 years age group, the overall association was not statistically significant ($\chi^2 = 6.1$, df = 5, $p = 0.29$), suggesting a limited genetic contribution.

Respiratory, Chest, and Cough Symptoms:

Breathing symptoms (difficulty in breathing, shortness of breath, wheezing), chest symptoms (chest tightness, chest pain, pressure on chest), and cough symptoms were most prevalent in the 31–50 years age groups, with a peak in 41–50 years.

Age group showed a significant association with symptom burden and severity ($\chi^2 = 27.8$, df = 10, $p = 0.002$).

Other Associated Symptoms and Functional Impact:

Symptoms such as difficulty in talking, insomnia, sweating, and pale face were predominantly observed in 41–50 and ≥60 years age groups. Functional impairment, including loss of workdays and reduced family interaction, increased with age.

Environmental and Triggering Factors:

Respiratory infections due to common cold were the most frequently reported trigger, followed by vehicular and industrial exhaust, indoor and outdoor pollution, dust and dust mites, and tobacco exposure. Environmental triggers showed a strong and statistically significant association with asthma ($\chi^2 = 31.5$, df = 8, $p < 0.001$). Pet dander and pollen were less frequent triggers.

BMI and Lifestyle Factors:

Most subjects were non-obese. Obesity (Grade I–III) was observed mainly in the 31–40 years age group. The association between BMI and asthma was not statistically significant ($\chi^2 = 5.4$, df = 6, $p = 0.49$).

Physical activity was higher among younger adults, while a sedentary lifestyle predominated in subjects ≥60 years, showing a significant association with age

($\chi^2 = 16.9$, df = 5, $p = 0.005$).

Comorbidities and Early-Life Risk Factors:

Comorbid conditions such as GERD, rhinitis, COPD, ABPA, eczema, and sinusitis were more common in middle-aged and elderly subjects. Early-life factors including low birth weight, prematurity, viral respiratory infections, preeclampsia, and neonatal jaundice were reported by a subset of adults.

These factors showed a moderate but significant association with asthma ($\chi^2 = 14.2$, df = 6, $p = 0.028$).

Psychological Factors:

Emotional imbalance and depression increased markedly in subjects aged ≥60 years.

A significant association was observed between age and psychological morbidity ($\chi^2 = 19.3$, df = 5, $p = 0.002$).

COVID-19 and Treatment Pattern:

COVID-19 infection was reported in a small proportion of subjects and showed no significant association with asthma deterioration ($\chi^2 = 2.1$, df = 2, p = 0.35). Allopathic medication and inhaler therapy were the most commonly used treatment modalities, while alternative therapies were used by fewer subjects.

DISCUSSION

This study highlights the epidemiological profile of asthma among selected populations of West Godavari district, emphasizing the role of age, occupation, environmental exposure, and comorbid conditions.

The higher prevalence among females and the peak in the 31–40 years age group indicate that asthma significantly affects individuals during their productive years, with potential socioeconomic consequences. The strong association between occupation and asthma underscores the impact of agricultural dust, industrial emissions, indoor air pollution, and occupational allergens.

The absence of a significant association with family history suggests that asthma in this population is largely environment-driven rather than genetically determined. Symptom severity peaking in the 41–50 years age group reflects disease progression, cumulative exposure, and possibly delayed diagnosis or suboptimal control.

Environmental triggers, particularly respiratory infections and pollution, emerged as the strongest determinants of asthma. Obesity did not show a significant association, whereas sedentary lifestyle and comorbidities contributed to poorer asthma control, especially in older adults.

Psychological morbidity was significantly higher in elderly asthmatics, highlighting the chronic burden of disease and the need for integrated psychosocial care. COVID-19 infection did not worsen asthma outcomes, suggesting stable disease control among affected individuals.

Asthma in the studied population is predominantly environmentally mediated, with significant associations with age, occupation, exposure to pollutants, symptom burden, lifestyle, and comorbidities, while genetic factors and obesity play a limited role. Targeted preventive measures focusing on environmental control, occupational safety, early diagnosis, lifestyle modification, and mental health support are essential for effective asthma management.

Suggestions & Conclusion

Suggestions

- Identifying and avoiding asthma triggers will help us to maintain an active and healthy lifestyle with asthma.(1).
- Some suggestions to handle :
- Tobacco smoke should be avoided inside and outside of the home
- Try to avoid exposure to Air pollution
- Usage of antihistamine medications and staying indoors protect from pollen
- To avoid animal dander ,the pets should be kept outside, washed often and must be kept in a separate home
- When effected by Viral infections , we should consult a physician
- Over the counter medication should be avoided.
- A scarf over mouth and nose during winter months can be used.

- Bed sheets, blankets, pillows, and stuffed toys should be kept clean to avoid dust mites.
- Foods with allergens must be avoided.
- Fruits and vegetables have been inversely associated with wheeze symptoms in children. Long-term fruit intake was found to be inversely associated with asthma symptoms in children,adolescents and adults. Dairy consumption increases the symptoms(9)
- Should follow the methods of stress reduction including breathing, meditation, progressive relaxation, and exercise.
- Moderate exercise is beneficial in people with stable asthma. (10)Yoga could provide small improvements in quality of life and symptoms in people with asthma
- More research is necessary to determine how effective weight loss improves quality of life, the usage of health care services, and adverse effects for people of all ages with asthma. (11)

CONCLUSION

Chronic asthma conditions affect patient's physical, psychological and social wellbeing.Treatment of comorbid conditions and avoidance of environmental and allergic triggers are important in asthma management. For example, obesity, gastro-oesophageal reflux disease, anxiety and depression, rhinitis, sinusitis, seasonal and perennial allergies have all been associated with worsening asthma symptoms. Additional treatments targeting these comorbidities can significantly improve asthma control, especially in those with severe asthma. (5). Patients with asthma are at increased risk of psychological distress, So,attention should be given to factors that cause psychological distress in asthmatic patients by giving clear and honest information on the triggering factors of their disease and medication . It is better for future researchers to undertake research on risk factors for Psychological distress(7).Different Counselling strategies must be followed -combining advanced-verbal counselling by incorporating the "Smart Asthma : Forecast Asthma"-phone application alongside traditional verbal counselling is a more effective approach for improving asthma control in adults(8).Awareness regarding asthma is important as it has significant implications for the health and quality of life of the persons. The more we can learn about asthma,the better we and our loved ones can manage living with this disease,making the most of everyday and maintaining a high quality of life.

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