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## Risk Factors, Quality of Life and Management of Asthmatic Adults Attending Asthma and Allergy Center in Sulaimani City

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### Abstract:-

**Background:** The prevalence of asthma is increasing world wide which impose an increasingly large burden on the health services, and the mortality rate from asthma has risen sharply which may reflect the disease severity.

**The aim** of this study is to identify the risk factors of asthma, assess the quality of life (QoL) of asthmatic patients.

**Patients & Method:** The data were collected from Asthma and Allergy Center in Suliamania from February 2007 to June 2007 in which 173 cases were included all aged 18 years old and above.

**Results:** After analyzing the data we found that (61.3%) were females and (38.7%) were males and only (29.5%) of the participants had a positive family history of asthma. QoL of asthmatic patients was significantly affected (P-value<0.05) by socio-demographic characteristics such as (gender, level of education, and occupation). About (27%) of the cases used combined medication for treatment.

**Conclusion:** Asthma significantly affects QoL and general health status. Gender, education, occupation and severity were confirmed to have major impact on QoL. Female, low socio-economic status and being a housewife are among the most important risk factor of asthma while dust exposure, activities like exercise were among the commonest triggers of asthma .

**Key words:-** Asthma, Quality of life(QoL), Allergic rhinitis

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### Introduction:-

Asthma is a chronic allergic disorder of the airways in which many cells and cellular elements play a role in particular mast cells<sup>[1]</sup>. The inflammation causes recurrent symptoms of breathlessness, wheezing, chest tightness & cough usually there is a widespread airflow obstruction with these episodic symptoms which is reversible to varying degrees either spontaneously or with treatment.

Asthma prevalence in various part of the world is difficult to assess because of the lack of reliable population – based figures, However 3% of the population of the United States suffers from asthma<sup>[1]</sup>.

As communities adopt western lifestyle, it is estimated that there may be an additional 100 million cases of asthma by 2025, Race, sex, socioeconomic, smoking, obesity, hay fever and other factors are showed to be important factors related to asthma. <sup>[1]</sup>.

According to many studies allergic rhinitis usually occurs before asthma and rhinitis may be an important risk factor for the development of asthma <sup>[2]</sup>. Quality of life has become an important issue in measuring the impact of chronic diseases as well as in measuring the impact of treatment on the individual <sup>[3]</sup>. However health-related quality of life (HRQL) has been defined as "the functional effect of an illness and its consequent therapy on a patient, as perceived by the patient"<sup>[4]</sup>

Quality of life questionnaires focus on area that are related to patients with a particular disease, such as their feelings about the disease, its impact on daily activities which means that they focus on patient's physical and emotional well-being .

### The objectives of the study are:

- 1-To identify the risk factors of asthma.
- 2-To assess the QoL of asthmatic patients in Suliamania.

### Patients & Methods

#### Setting of the Study:

The study data was collected from Asthma and Allergy center in Suliamania.

#### Sample:

The sample includes all patients 18 years old and above (106 female, 67 male) living in Suliamania and consulted the physicians in Asthma and Allergy Center.

#### Study Design: -

One hundred seventy three cases (173) were included in the period from 1<sup>st</sup> February to 30<sup>th</sup> June 2007. The cases were interviewed by the researcher after receiving informed consent from the Ministry of Health and from the patients.

**Health Related Quality of Life Questionnaire:** In this study we use Mini asthma quality of life questionnaire (Mini-AQLQ) which

is a questionnaire that measures the functional impairments that are most troublesome to patients with asthma whom were asked to recall their experience during the two weeks prior to the survey.

**This questionnaire has four domains:**

- \*Symptoms (5 items).
- \*Activity limitation (4 items).
- \*Emotional function (3 items).
- \*Environmental stimuli (3 items).

All responses were recorded on a 7 point scale (from 1 which is equal to maximum impairment to 7 which is equal to no impairment).

**Statistical Analysis:**

STATA statistical software (version 9) in which we analyzed the data and P values < 0.05 considered as significant.

**Results:-**

The total number of the participants was 173. 67 (38.7%) were males and 106 (61.3%) were females. The mean age was 39 years old and 80 participants (46.2%) were 40 years and above. One hundred thirty seven (79%) living inside the city while 36 (21%) living outside the city. We

found that 68 (39.3%) of the cases had low income, 64 (37.0%) of them had middle income and 41 (23.7%) had high income( according to monthly income, owned or rented house and number of working individuals in each house) which mean that asthma is associated with poverty but with no significant difference (P value > 0.05) between males and females. Regarding the education level (**Table 1&2**) there was a significant difference (P value < 0.05) between males and females in their education level, out of the 173 participants 64 (37.0%) were illiterate of which (51) were females, 80 (46.2%) of them have completed either primary or secondary school of which (37) were females, and 29 (16.8%) have completed college of which 18 were females. Out of the 173 participants, 80 (46.2%) were housewives, 79 (45.6%) were employed, 7(4.1%) were students, and 7 (4.1%) unemployed with significant difference between male and females. Table-2 also showed that (31) out of 173 participants were smokers with significant difference (P value < 0.05) between males & Females and (49) of them had one or more smoker persons at home with a significant difference (P value<0.05) between males and females.

**Table (1) Socio-demographic characteristics of the study samples**

Characteristics	No.	Percentage
Age		
-18-29	33	19.1
-30-39	60	34.7
- 40 +	80	46.2
Sex		
- Male	67	38.7
- Female	106	61.2
Geographical location		
- Urban	137	79
- Semi-urban	36	21
Education		
- illiterate	64	37.0
-Intermediate	80	46.2
-College	29	16.8
Income		
- Low	68	39.3
-Middle	64	37.0
-High	41	23.7
Occupation		
- Housewives	80	46.2
-Employed	79	45.6
-Student	7	4.1
-Unemployed	7	4.1

**Table (2) Socio-demographic characteristics stratified by gender**

Variable	Males	Females	P - value
<b>Income</b>			
Low	30	38	0.491
Middle	22	42	
High	15	26	
<b>Education</b>			
Illiterate	13	51	0.001
Intermediate	43	37	
college	11	18	
<b>Smoking status</b>			
Yes	28	3	0.001
No	39	103	
<b>Passive smoker</b>			
Yes	38	11	0.006
No	68	56	
<b>Occupation</b>			
Yes	54	25	0.001
No	13	81	

We found that most of patients had more than one triggered or risk factor that exacerbate their asthma like dust exposure, exercise, seasonal variation and odor exposure.

Of the 173 participants 51(29.5%) of them reported severe asthma, 71(41.0%) reported moderate asthma with no significant difference between males and females (classification of asthma according to the frequency and severity of symptoms).Regarding duration of the disease most of the patients 96(55.5%) their complain is 1-9 years. 51 patients had family history of asthma while 122 have no family history of

asthma (**Tab-3**). We studied the association between (QoL) and socio-demographic characteristics such as (gender, education, income, and occupation).We found that females reported higher prevalence of poor health related (QoL) indicators than males in (feeling shortness of breath, frustration as a result of their asthma, avoiding cigarette smoke, difficulty in getting a good night sleep, concerned about asthma,

Strenuous activities and moderate activities) which is statistically significant (P value < 0.05) as it is shown in **Table (4)**.

**Table (3) Medical background of asthmatic patients**

<b>Characteristics</b>	<b>No.</b>	<b>(%)</b>
<b>Severity</b>		
-Severe	51	29.5
-Moderate	71	41.0
-Mild	51	29.5
<b>Family history of asthma</b>		
Yes	51	29.5
No	122	70.5
<b>Duration</b>		
< 1 year	21	12.1
1-9 years	96	55.5
10-19 years	35	20.3
20 and more	21	12.1
<b>Admission to hospital</b>		
No	119	68.8
Yes	54	31.2

**Table (4) Relation of QoL with gender**

QoL items		Males	Females	P-value
<b>Feeling shortness of breath</b>	Yes	61	105	0.009
	No	6	1	
<b>Avoiding dust in the environment</b>	Yes	60	99	0.366
	No	7	7	
<b>Feeling frustrated</b>	Yes	17	53	0.001
	No	50	53	
<b>Bothered by coughing</b>	No	56	98	0.069
	Yes	11	8	
<b>Feeling afraid of unavailability of drugs</b>	Yes	3	1	0.132
	No	64	105	
<b>Experienced feeling of chest tightness</b>	Yes	51	89	0.201
	No	16	17	
<b>Avoiding cigarette smoke</b>	No	54	98	0.020
	Yes	13	8	
<b>Difficulty in getting good night sleep</b>	Yes	43	88	0.005
	No	24	18	
<b>Concerned about having asthma</b>	Yes	9	32	0.012
	No	58	74	
<b>Experienced wheeze in the chest</b>	Yes	20	47	0.057
	No	47	59	
<b>Avoiding going out because of air pollution</b>	Yes	19	35	0.519
	No	48	71	
<b>Strenuous activities</b>	No	39	79	0.025
	Yes	28	27	
<b>Moderate activities</b>	Yes	6	23	0.029
	No	61	83	
<b>Social activities</b>	Yes	1	3	0.568
	No	66	103	
<b>Work related activities</b>	Yes	11	26	0.205
	No	56	80	

Some occupational groups show poor QoL indicators in comparison to other occupational groups which were statistically significant (P value < 0.05) and this was regarding (frustration as a result of asthma, difficulty in getting a good night sleep, strenuous activities & work related activities). There was no significant association (P value > 0.05) between severity of asthma and poor QoL indicators except in (feeling frustrated as a result of asthma, feeling of chest tightness, concerned about having asthma and avoiding going out because of air pollution) there was no significant association between income and poor QoL indicators except for doing (strenuous activities) in which there was significant association with low income (P- value < 0.05). We observe that prevalence of some poor QoL

indicators associated with educational level which is significantly associated (P- value < 0.05) for frustrated as a result of asthma, difficulty in getting good night sleep, concerned about having asthma, wheeze in the chest, strenuous activities, moderate activities, and work related activities. Regarding management most of the participants used more than one drug for their asthma relief which was about (27.8%) and the combination was between different drug groups,(23.1%) did not use drugs,(11.6%)did not know the name of the drugs,(15.6%) used antihistamines, (10.4%)used Beta agonist inhaler,(4%)used steroid inhalers,(2.9%)used bronchodilators, (2.9%) used steroid tablets according to schedule given by a physician,(1.7%) used Leukotriene inhibitors.

### Discussion :-

The results from this observational study showed that asthma is more common in females than males and this may be due to indoor air pollution or allergens like dust mite<sup>[5]</sup> or may be due to that female had poor air way caliber size<sup>[6]</sup>. It also showed that there is an association between asthma and poverty as (39.3%) had low income status which is consistent with studies that have looked at the relationship between asthma and poverty in adults<sup>[4]</sup>. also low socio-economic status is a major risk factor for death from asthma<sup>[7]</sup>. In contrast, MIELCK et al<sup>[8]</sup> in a review of 24 studies found either no association or negative association of socioeconomic status with asthma, Housewives were the commonest occupational group in this study as they account for about(46.2%)of all participants and this may be due to that they deal with chemicals and irritants for a long period of time and this is inconsistent to other studies that found higher rates of asthma among teachers<sup>[9]</sup>.and farm related occupation is associated with asthma among adults<sup>[5]</sup>.There was association between both smoking and passive smoking with asthma .However there was a significant difference between males and females in both smoking and passive smoking in contrast to other studies that found no significant differences in gender distribution between smokers and non-smokers<sup>[10]</sup>.Only (29.5%) mentioned a positive family history of asthma and this is because atopic asthma is more common in younger age groups but our study sample include only those who are 18 years and above. We found that (22%) of all the cases had rhinitis which is inconsistent with some large clinical studies that rhinitis is present in nearly all the patients with asthma, in one study over 95% had a history of allergic rhinitis<sup>[11]</sup>.This study revealed that activities like exercise were among the most important triggers of asthma which is consistent with previous studies<sup>[12,13]</sup>. Demographic and socioeconomic factors have been shown to be important determinants of health-related quality of life in asthmatic patients<sup>[14]</sup>.We found that females had poor QoL in comparison to males in most of QoL indicators which was statistically significant (P value < 0.05) as it is proved in some previous studies<sup>[15]</sup>. While there are studies that found no association between health-related quality of life and gender<sup>[16]</sup>. Unlike other studies that showed a significant association between socio-economic status and (QoL)<sup>[17]</sup>. Income was not a strong predictor for poor QoL domains such as (symptoms, emotion, and environment) but it

had a significant association with activity as those with low income had significant decrease in moderate and work related activities and this was consistent with results by other previous studies<sup>[18,19]</sup>. We found that (QoL) of those with moderate to severe asthma was significantly impaired (P value < 0.05) in most domains of mini asthma quality of life questionnaire. Educational level was found to have an impact on quality of life as some of (QoL) domains like (symptoms, activity limitation, and emotional function) were significantly impaired (P value < 0.05) in non-educated cases. There was statistically significant (P value < 0.05) influence of occupation upon the (symptoms and activity limitation) domains of quality of life as housewives reported poorer (QoL) in comparison to other occupations.

**We recommend** health education of females through women welfare organization, health centers and mass Medias (T.V& posters) to raise their awareness to improve their life styles.

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