

## Functional disability and Quality of life among asthmatic patients

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**ABSTRACT:** Asthma is an inflammatory condition. Asthmatic participants encounter wheezing, shortness of breath, and chest tightness<sup>1</sup>. QOL has been identified as a dominant variable to treat the airway diseases. SF-36 questionnaire is good in asthma and can thus be used to assess Quality of life of patients<sup>2</sup>

**Objective(s):** To assess the Functional disability and Quality of life of Asthmatic patients.

**Methodology:** Descriptive cross sectional study was follow up on 369 Adult asthmatic patients (young, middle and older adults). Participants were selected through convenient sampling between August to November 2022 from Aziz BhattiShaheed Teaching hospital Gujrat, and Major Shabbir Sharif Shaheed THQ Hospital Kunjah. SF-36 questionnaire was used for the assessment of QOL<sup>3</sup> in this 0 indicates the very poor whereas 100 indicates very good quality of life. All information were put and analyzed by SPSS Version 24.

**Results:** Findings of this study was concluded that 52 out of 369 were have very Poor QOL and 265 out of 369 participants were have Poor Overall QOL , Physical functioning , Role limitations due to physical Health And Health control were have Compromised QOL as compare to other segments of SF-36. Average age of patients was found (48.00 ± 18.39) years. Out of 369 patients, 185(50.10%) were Female and other were Male. Segments of QOL, Physical functioning in % was (23.78±16.44), Role limitations due to physical health in % was (23.49±14.09) and Overall QOL in % was (31.40±10.48) with a significant P-value <0.001\*.

**Conclusion(s):** It is concluded that asthmatic patients were have poor QOL and due to compromised physical functioning and RL due to physical health we can say that Asthmatic patients are functionally disable due to severe Dyspnea. Future research suggests that practitioners and physiotherapist should focus on the treatment goals, exercises and breathing techniques to lower dyspnea and to enhance the QOL of asthmatic patients.

**Keywords:** *Quality of life, Cross- sectional studies, Asthmatic, Airway Obstruction*

### INTRODUCTION

Asthma is a long-term inflammatory disease that is triggered due to allergies, contagious, and psychological factors. Wheezing, breathlessness, struggling to breathe, and tightness of the chest are all illnesses of asthma, as is fluid overload blockage<sup>1</sup>. The airway's lengthy basic anatomical structures and broad configurability indicate the possible importance of chronic nature altered airway tone, mucus secretion, inflammatory responses, and other significant elements.<sup>3</sup>The idea of quality of life encompasses an assessment of well-being on all levels: physiological, emotional, sentimental, and sociocultural. Although people with asthma have a lower quality of life than those who do not have asthma<sup>4</sup>.The main symptoms used to characterise asthmatic disease are dyspnea, which is sometimes associated with respiratory discomfort, coughing, and wheezing. Other symptoms include chest tightness, sputum, and exercise-related symptoms<sup>5</sup>. Adult asthma is estimated to affect 12% of persons, with a very little impact on quality of life, according to representative population surveys<sup>6</sup>Asthma prevalence has increased than before, as per Cdc (Center for disease control), and thus is expected to increase farther and farther.<sup>7</sup>

Asthma has a a comparable amount of years of disorder life lost worldwide to Hyperglycemia, cirrhosis of the liver, and mental illness all have a deleterious impact on quality of life. <sup>8</sup>Asthma can impair QOL due to significant physical and psychosocial complications<sup>9</sup>.In people who have respiratory disease, winter weather hinders functional capacity. Cold temperatures and dry weather are much more likely to harm the respiratory epithelium, having caused low - grade inflammation and shrinking of the breathing airways. Cold weather can exacerbate symptom reporting, especially in people who have underpinning respiratory diseases.<sup>10</sup>The aim of modern medical therapy would be to attain and maintain long-term asthma control.<sup>11</sup>

As a result, control is advantageous not only for clinical manifestation management but also for improving wellness lifestyle quality of life.<sup>12</sup> The SF-36 is a health perception assessment tool. This is easy to be using, doctor, and needs to meet rigorous reliability test criteria.<sup>13</sup> The 36-item survey is reliable and valid in respiratory problems and can therefore be used to evaluate QOL in both asthma attack and non-asthmatic patient populations, and to decide how so much asthma interacts with community interaction.<sup>2</sup> According to the 36-item survey, this can discern both beneficial and detrimental nations.<sup>14</sup> Health care workers are rated their reactions on a scale of 3 - 6 (box) in six of the eight dimensions rather than simply answering yes or no. With each dimension, item scores are configured, combined, and converted on a scale ranging from 0 (terrible health) to 100 (best of health).<sup>15</sup> The evidence for construct validity was also strong, with the SF-36 distinguishing between those who had and did not have markers of poor health<sup>16</sup>. The World Health Organization estimates that the cost of asthma care exceeds combined with Diseases such as HIV and Tb. Several psychosocial and emotional factors, Poor allergy oversight and even worse respiratory problems life quality have been linked to stress, depressed mood, and improper (– for example, avoidant) coping techniques.<sup>17</sup> Symptoms in patients experience shortness of breath and suffocation as a result of bronchoconstriction blockage, which is followed by enhanced vasomotor drive, arising in a sympathetic/parasympathetic mismatch. Various emotions and anxiety enhance oscillating tolerance<sup>18</sup>. As a result, the purpose of this study was to evaluate the functional disability and the QOL of asthmatic patients. There have been many studies on QOL in other populations, so the purpose of this study is to assess the QOL of adult (young, middle, and older) asthma patients. So because goal of modern asthma treatment is to gain and maintain asthma symptoms and Functional status and quality of life the results of this study will help refine the QOL of asthmatic patients

This table shows age of participants Mean  $\pm$  Std. Deviation was 48.00 $\pm$ 18.39, Gender of participants were Male 184(49.90%) and Female 185(50.10%), Living Area of Participants were Urban

**Table 3: Domains of SF-36**

## METHODOLOGY

In Gujarat, A descriptive cross-sectional study was carried out. Subjects was chosen who fulfill the criteria. Adult asthmatics (young, middle-aged, and elderly) was included. Pregnant women and sick people with other respiratory chronic health conditions (pneumonia ,COPD). Patients with unstable heart problems and those unwilling to take part in the study were excluded. This study included asthmatic sick people using a non-probability convenient sampling technique. Prior to filling out the forms, participants will be given information about consent forms. My research's outcome measures will be the SF- 36 Questionnaire. The participants will be given a brief explanation of the Questionnaire before the data is collected. Physical functioning (PF), bodily pain (BP), role limitations due to physical health problems (RP), role limitations due to personal or emotional problems (RE), general mental health (MH), social functioning (SF), energy/fatigue or vitality (VIT), and general health and health change are the nine scales of the SF-36 Questionnaire The components contributing to a scale was scored so that a higher score represents good health, and the scale score was calculated by averaging the scores. The SF-36 Questionnaire provided a brief explanation of asthmatic patients' life quality and functional limitations. Data was collected in accordance with the rules and restrictions of the University of Lahore's ethical committee.

## RESULTS

**Table1: Demographic Details**

Characteristics	Catagories/ Units	n(%)
Age of participants	Years, mean $\pm$ S.D	48.00 $\pm$ 18.39
Gender of participants	Male	184(49.90)
	Female	185(50.10)
Living Area of participants	Urban Area	198(53.70)
	Rural Area	171(46.30)
Marital status of participant	Married	291(78.90)
	Unmarried	78(21.10)
<b>Total</b>		<b>369(100)</b>

Area participants 198(53.70%) and Rural Area participants 171(46.30), Merital status of participants were Married 291(78.90%) and Unmarried 78(21.10%) so Total participants are 369(100%).

Domains of SF-36	n(%)	
Physical functioning	<20 (very poor)	248(67.20)
	21-40=(poor)	36(9.80)
	41-60=(good)	83(22.50)
	61-80=(very good)	2(0.50)
Role limitation due to physical health	<20=(very poor)	201(54.50)
	21-40=(poor)	92(24.90)
	41-60=(good)	74(20.10)
	61-80=(very good)	2(.50)
Role limitation due to Emotional health	<20=(very poor)	196(53.10)
	21-40=(poor)	127(34.40)
	61-80=(very good)	40(10.80)
	81-100=(Excellent)	6(1.60)
Energy/fatigue	<20=(very poor)	55(14.90)
	21-40=(poor)	195(52.80)
	41-60=(good)	117(31.70)
	61-80=(very good)	2(.50)
Emotional well-being	<20=(very poor)	43(11.70)
	21-40=(poor)	160(43.30)
	41-60=(good)	127(34.40)
	61-80=(very good)	39(10.60)
Social functioning	<20=(very poor)	94(25.50)
	20-40=(poor)	93(25.20)
	41-60=(Good)	126(34.10)
	61-80=(Very good)	56(15.20)
Pain	<20=(very poor)	121(32.80)
	20-40=(poor)	76(20.60)
	41-60=(good)	87(23.60)
	61-80=(very good)	78(21.10)
General health	81-100=(Excellent)	7(1.90)
	<20=(very poor)	179(48.50)
	20-40=(poor)	93(25.20)
	41-60=(good)	93(25.20)
Health change	61-80=(very good)	4(1.10)
	<20=(very poor)	169(45.80)
	20-40=(poor)	144(39.00)
	41-60=(good)	46(12.50)
Overall Quality of Life	61-80=(very good)	7(1.90)
	<20=(very poor)	3(.80)
	20-40=(poor)	52(14.10)
	41-60=(good)	265(71.80)
Total	61-80=(very good)	50(13.60)
	41-60=(good)	2(.50)
	20-40=(poor)	369(100.0)
	<20=(very poor)	

This table shows Domains of SF-36 and QOL of all Domains in n(%) where (n=number of patients). 248(67.20%) participants were have very poor Physical functioning, 201(54.50%) participants were have very poor QOL IN Role limitation due to physical health, 196 (53.10%) participants were have very poor QOL in Role limitation due to emotional health, 195( 52.80%) participants were have poor Energy /fatigue, 160(43.30%) participants were have Poor Emotional well-being, 94(25.50%) participants were have very poor Social functioning, 121 (32.80%) participants were have Very Poor QOL in

Pain, 179(48.50%) participants were have Very Poor General health, 169(49.80%) participants were have very Poor Health control and 265(72%) patients were have Poor overall QOL and 52(14%) patients very poor QOL.

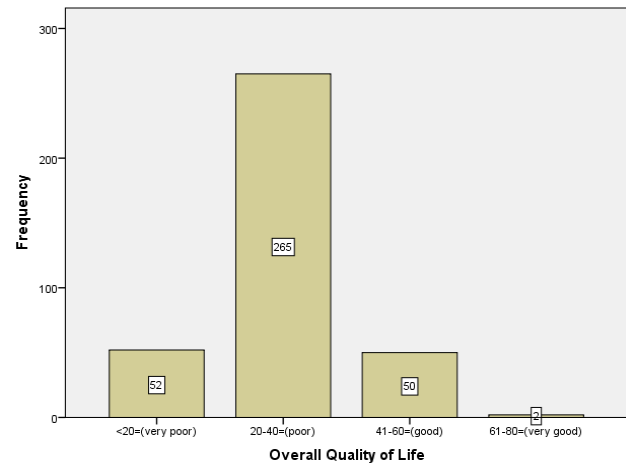


Figure 1: Overall Quality of Life

Out of 369 patients 52 Patients were have Very poor QOL and 265 out of 369 patients were have Poor QOL due to asthma.

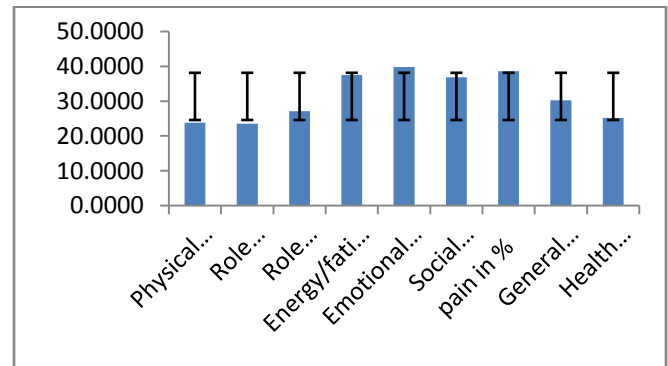


Figure 2: Domains of SF-36 for Quality of Life

Table 2: One Sample Test

Domains of SF-36	Mean±S.d	Test Value = 40				
		T	P-value	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Physical functioning in %	23.78±16.44	-18.943	<0.001*	-16.21680	-17.9002	-14.5334
Role limitation due to physical health in %	23.49±14.09	-22.493	<0.001*	-16.50949	-17.9528	-15.0661
Role limitation due to Emotional health in %	27.14±18.52	-13.332	<0.001*	-12.85664	-14.7529	-10.9604
Energy/fatigue in %	37.49±14.38	-3.351	0.001*	-2.50976	-3.9827	-1.0368
Emotional well-being in %	39.80±14.97	-.250	0.802	-.19512	-1.7280	1.3378
Social functioning in %	36.88±18.25	-3.280	0.001*	-3.11707	-4.9857	-1.2485
pain in %	38.56±21.78	-1.261	0.208	-1.43035	-3.6607	0.8000
General Health in %	30.23±16.25	-11.538	<0.001*	-9.76152	-11.4252	-8.0979
Health control in %	25.20±15.08	-18.844	<0.001*	-14.79946	-16.3438	-13.2551
<b>Overall Quality of Life (%)</b>	<b>31.40±10.48</b>	<b>-15.752</b>	<b>&lt;0.001*</b>	<b>-8.59958</b>	<b>-9.6731</b>	<b>-7.5261</b>

This table shows Mean ± St.D of **P.F** in % was (23.78±16.44) with P value <0.001\* and Mean Deviation was (-16.21), **RL due to physical health** in % was (23.49±14.09) with P-value <0.001\* and Mean difference -16.50, **RL due to Emotional Health** in % was (27.14±18.52) with P value (<0.001\*) and M.D( -12.85), **Energy/fatigue** in % was (37.49±14.38) with P value ( 0.001\*) and M.D( -2.509), **Emotional well-being** in % was (39.80±14.97) with P value (0 .802) and M.D(-

0.195), **Social functioning** in % was (36.88±18.25) with P value(0 .001\*) and M.D(-3.117), **Pain** in % was (38.56±21.78) with P-value (0.208) and mean diff. (-1.430) , **General Health** in % was (30.23±16.25) with P-value (<0.001\*) and mean diff.(-9.76), **Health control** in % was (25.20±15.08) with P-value (<0.001\*) and mean difference (-14.79) and **Overall QOL** in % was (31.40±10.48) with P-value (<0.001\*) which is significant and mean difference(-8.599).

## DISCUSSION

It is a Descriptive cross-sectional study to evaluate asthma attack patient's quality of life. The study included 369 Adult patients (young, middle and older adults) from Aziz Bhattishaheed hospital Gujrat and Major Shabbir Sharif Shaheed THQ Hospital Kunjah. Data was collected from 369 subjects by using SF-36 questionnaire. In recent study mean age group was 18<sup>19</sup>. The nine dimensions that make up the quality of life questionnaire are PH, RL due to physical health, RL due to Emotional health, Energy, Emotional well-being, Social functioning, Pain, General health and Health change. The values and answer of questionnaire were encoded in SPSS software and

details of analyzed data were discussed. The overall mean age of the patients was (48.00 ± 18.39) years. In recent study conducted in Trinidad concluded that. Fatness, delayed disease, sleep apnea, and anxiety were all independently linked to respiratory problems.<sup>19</sup> Another 2022 study concluded that better asthma control improved Health-Related Quality of Life (HRQoL) improves disease management.<sup>20</sup> A Brazilian study found QOL was found to be clearly relevant to treatment outcomes and intensity in adolescents and children.<sup>20</sup> The very same thing happened to kids in Germany. Not only will the detrimental consequences on QOL affect the

child, and also caretakers and family dynamics. Eventually, the most significant medical parameter affecting the QOL of patient populations with bronchial asthma is illness severity, such as the regularity of unplanned clinic and hospital admissions due to asthma attacks.

Another study involving adolescents and children ranging in age from seven to seventeen. Their quality of life was evaluated using the Paediatric Asthma Life quality Questionnaire (PAQLQ). Children and adolescents with asthma have a lower standard of living, which is associated with less well off disease management and intensity, and the existence of allergic chronic conditions.<sup>21</sup> In a study of 2032 adults who had asthma, Stucky et al. found that some other variables includes social activities and roles risen as the best predictors of respiratory problems QOL. The degree of disease, in addition to the extent and intensity of depressed state, seem to significantly affect QOL in asthma sufferers. Another previous study found that having more perceived asthma triggers was associated with lower HRQOL in children from asthma. Non-allergic things were found to be associated with lower HRQOL.<sup>22</sup> According to one study, poor sleep quality is linked with poor managed asthma and a bad quality of life. Asthmatic patients frequently experience sleep deprivation. Asthma severity has also been linked to lower QOL in adolescents, according to several studies from around the world.<sup>23</sup> A cross-sectional study was carried out in a remote Nepalese community. The study's goal is to assess the quality of life (QOL) of older adults and investigate the factors that influence

## CONCLUSION

It is concluded that asthmatic patients were have poor QOL and due to compromised physical functioning and RL due to physical health we can say that Asthmatic patients are functionally disable due to severe Dyspnea. Future research suggests that practitioners and physiotherapist should focus on the treatment goals, exercises and breathing techniques to lower dyspnea and to enhance the QOL of asthmatic patients.

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it. The study included 671 seniors over the age of 60. QOL was assessed using the WHOQOL-OLD questionnaire. According to the findings of this study, determinants such as age 70, income sufficiency, depression, social support, and access to healthcare services all have a significant impact on QOL.<sup>24</sup>

One another recent study was carried out to assess the HRQOL and health utility impairment associated with asthma severity. Asthma patients over the age of 18 were included. The SF-12 physical component summary (PCS) and mental component summary (MCS) were used to assess HRQOL, and the SF-6D was used to assess health utility. HRQOL and utilities for mild, moderate, and severe asthma were estimated using survey regression models. 75.4%, 23.9%, and 0.8% of the 10,222 asthma patients had mild, moderate, or severe asthma, respectively. Patients with severe asthma had lower physical HRQOL than those with good mental health.<sup>25</sup>

In this cross sectional study Physical functioning in % was (23.78±16.44), Role limitations due to physical health in % was (23.49±14.09) and Overall QOL in % was (31.40±10.48). Findings of this study was concluded that 52 out of 369 participants were have very Poor QOL and 265 out of 369 participants were have Poor Overall QOL, Physical functioning and Role limitations due to physical Health And Health control were have Compromised QOL as compare to other segments of SF-36, From which we can say that Asthmatic patients are functionally Disable due to severe Dyspnea.

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**Data Availability:** Data will be provided on the demand by corresponding author

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