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The Global Burden of Chronic Obstructive Pulmonary Disease: Exploring the Social and Psychological Dimensions

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Abstract
The *Millions worldwide suffer from chronic obstructive pulmonary disease (COPD), a progressive and debilitating respiratory condition. Beyond its physical symptoms, COPD has significant social and psychological repercussions. This research examines the connections between smoking, depression, suicidal ideation, and the quality of life (QOL) in COPD patients. By analyzing these variables, we aim to enhance the understanding of the challenges faced by individuals with COPD and inform healthcare strategies and public policy. Using a purposive sampling technique, the study employed the PHQ-9 (Patient Health Questionnaire-9), Suicidal Ideation Attribute Scale, and WHOQOL-BREF (World Health Organization Quality of Life-BREF) to collect data. The results revealed a significant negative correlation between depression and quality of life (r = -.475**). Smoking was positively correlated with the severity of COPD as diagnosed by doctors (r = .542**). A longer duration of COPD was associated with a lower quality of life (r = -.268*). The study also found that males (m = 23.15, Sd = 9.5) exhibited a higher prevalence of suicidal ideation compared to females (t = 3.38, p = .001, m = 16.06, Sd = 9.26). Additionally, the age of individuals with COPD positively correlated with disease severity (r = .268) and duration of illness (r = .457**). These findings highlight the need for comprehensive healthcare approaches addressing both the physical and psychosocial dimensions of COPD, guiding public policy and healthcare regulations to better support affected individuals.*

Keywords: Depression, Suicidal idea, Smoking, Quality of life

1. Introduction

The heterogeneous respiratory illness known as chronic obstructive pulmonary disease (COPD) is typified by a persistent airflow restriction that is not entirely reversible. Along with higher rates of morbidity and mortality globally, it includes emphysema and chronic bronchitis (Global Initiative for Chronic Obstructive Lung Disease, 2020). A significant public health concern, COPD is expected to impact 251 million people worldwide and rank third in terms of cause of death by 2030 according to World Health Organization (WHO). In addition to its outward symptoms, COPD has been linked to a number of psychological and social ramifications that need to be thoroughly researched and understood. Due to its substantial impact on treatment outcomes and psychological well-being, depression—a common comorbidity in people with COPD—has attracted a lot of attention recently. ManyAccording to several research, people with COPD are more likely than the general population to experience depression (Atlantis et al., 2012; Zhang et al.,

2015). Patients with COPD may experience depression as a result of the psychological effects of symptoms like dyspnea (difficulty breathing), functional limitations, and loss of independence (Laurin et al., 2019). Moreover, depression related to COPD has been linked to worse treatment compliance, higher healthcare use, and lower quality of life (Depression and COPD: Epidemiological Evidence and Methodological Challenges, 2016). Thus, knowing how common depression is in people with COPD is essential for developing management and intervention plans that work. It has also been noted that people with COPD are more likely to experience suicidal ideation, which is the idea of harming oneself or taking one's own life, is more prevalent individuals with COPD (Morasae et al., 2018; Yoshimasu et al., 2017). Suicidal thoughts may arise as a result of the burden associated with COPD, which includes the physical restrictions, chronic nature of the illness, and impact on day-to-day activities. Suicidal thoughts are common among COPD patients, which emphasizes the critical need for mental health screenings and suitable interventions in this susceptible group. Determining the variables linked to suicidal thoughts in people with COPD can aid in the creation of focused preventative and intervention plans.

A crucial outcome measure in COPD research, quality of life (QOL) captures the multifaceted effects of the disease on different facets of life. Research on depression and QOL in COPD patients has shown a consistent negative relationship (Miravitlles et al., 2014). Many QOL domains, including physical functioning, social interactions, emotional well-being, and general life satisfaction, can be impacted by the presence of depression. To find possible areas for intervention and enhance general well-being, it is imperative to look into the connection between depression and QOL in people with COPD.

It Is still widely recognized that smoking increases the chance of developing COPD (Global Initiative for Chronic Obstructive Lung Disease, 2020). Numerous studies have been conducted on the link between smoking and COPD, and the best way to slow the disease's progression is to stop smoking (Vestbo et al., 2013). Nonetheless, there is still much to learn about the connection between smoking, depression, suicidal thoughts, and QOL in COPD patients. To improve the general well-being of COPD patients and guide targeted smoking cessation efforts, it is imperative to comprehend the intricate interactions that exist between smoking behavior, mental health outcomes, and QOL. One of the main causes of COPD's onset and progression is tobacco smoke. Airborne exposure Hereditary factors, occupational and household pollutants, and respiratory infections all contribute. To lessen the risk of developing COPD, people should make an effort to avoid breathing in tobacco smoke, air pollution at home and at work, and respiratory infections. Apart from these factors, it is imperative to take into account the duration of COPD and the employment status of individuals. Higher rates of depression have been linked to longer durations of COPD (Wei et al., 2019). Psychological well-being can be negatively impacted by COPD due to its chronic nature, progressive nature, and impact on daily activities. Over time, depressive symptoms may worsen. Investigating the relationship between the length of COPD and depression and suicidal ideation can shed light on the psychosocial paths taken by those who suffer from this illness. Being unemployed, which is frequently a result of the illness, can increase psychological distress and lead to suicidal thoughts and depression in people with COPD (Pombo et al., 2019) (Atalay et al., 2020). Losing a job can affect a person with COPD's sense of purpose, social interactions, and self-esteem in addition to their financial stability. Knowing how employment status affects depression and suicidal thoughts in people with COPD will highlight the value of specialized interventions, vocational rehabilitation, and support programs in improving mental health outcomes. By examining the prevalence of depression, the relationship between depression and QOL, the connection between smoking and COPD, the effect of COPD duration on depression and suicidal ideation, and the impact of employment status on depression and suicidal ideation in individuals with COPD, this study seeks to fill the aforementioned gaps in the literature. The research will provide a deeper understanding of the challenges faced by people with COPD and inform healthcare interventions and policies by thoroughly examining the relationships between depression, smoking, suicidal ideation, and QOL in the context of COPD.

2. Literature Review

One common comorbidity among people with COPD is depression. It has a detrimental effect on COPD patients' quality of life and general well-being. More than 50% of COPD patients experience

depression (Rodin et al., 2006). Compared to people without depression, those with co-morbid depression have a greater death risk. Greater in men. 2.75 times greater in older people than in younger people over the age of 59. Suicidal thoughts and behaviors, including attempted suicide, have been documented in people with COPD. There is a correlation between a higher likelihood of first-onset suicidal thoughts and chronic physical illnesses like COPD. Suicide is 1.9 times more often among COPD patients than in non-CPD individuals (Nock et al., 2014). The study underlined how critical it is to identify and treat mental health problems in people with COPD, including suicidal thoughts and actions. In individuals with COPD, the prevalence of suicidal ideation and suicide attempts is 2.5% and 12.1%, respectively (Miravitlles et al., 2014). Globally, smoking is the main factor contributing to chronic obstructive pulmonary disease. Compared to COPD patients without co-morbid addiction habits, individuals with such comorbidity had worse health outcomes and a lower quality of life. (Patten et al., 2012) conducted research. Brought attention to the growing issues of alcohol and drug abuse in later life, particularly among those who have long-term medical concerns. Compared to COPD patients without co-morbid addiction habits, individuals with such comorbidity had worse health outcomes and a lower quality of life. Reduced social engagement, psychological well-being, and physical functioning are all major effects of COPD on quality of life (Voogd et al., 2019). The COPD Gene cohort participants' social and psychological functioning predictors. Reduced social engagement, psychological health, and bodily functioning Lower physical activity can lower a COPD patient's quality of life. Lower QoL scores were linked to co- occurring depression and anxiety, emphasizing the necessity of integrated mental health care in the management of COPD. Several studies have continuously shown a substantial correlation between higher rates of depression and COPD (Jones & Johnson, 2016; Smith et al., 2018). According to a study people with COPD have a significantly higher chance of developing depression than people in general (Müllerova et al., 2019). The increased frequency of depression among individuals with COPD has been associated with variables like pulmonary function impairment and chronic inflammation (Bratås et al., 2020), which impact an individual's physical and mental health (Lee et al., 2017). Which supports our first hypothesis, according to which people with COPD will have a higher prevalence of depression.

Numerous studies have consistently shown a significant negative correlation between depression and the quality of life in COPD patients. The heightened levels of depression were strongly associated with lower reported quality of life scores among individuals diagnosed with COPD (Smith, 2018). The detrimental impact of depression on various domains of life quality in COPD patients, including social functioning and emotional well-being. This trend suggests a consistent pattern of reduced quality of life associated with increased depressive symptoms in the COPD population. (Johnson, 2020)

Studies have established a direct link between smoking history and the severity of COPD diagnosed by physicians. A strong positive correlation was found between the number of pack- years smoked and the severity of COPD indicated by diagnostic tests (Thompson, 2017). This association was reinforced emphasizing that higher cumulative smoking exposure significantly predicted the severity of COPD as diagnosed by clinicians (Lee, 2019). These findings underscore the substantial impact of smoking history on the diagnosed severity of COPD by medical professionals.

Studies investigating the duration of COPD and its impact on quality of life consistently demonstrate a negative correlation. Research found that individuals experiencing COPD for longer duration reported significantly lower quality of life scores compared to those with a shorter duration of illness (Garcia et al., 2017; Chen & Lee, 2021). Factors contributing to this decline in quality of life might include increased symptom burden, functional limitations, and psychological distress associated with coping with COPD over an extended period. Several studies have investigated the relationship between gender and suicidal ideation among individuals diagnosed with chronic obstructive pulmonary disease (COPD), providing varying perspectives on this correlation. A comprehensive study involving a large cohort of COPD patients, revealing a higher prevalence of suicidal ideation among men as compared to women. The study highlighted that men diagnosed with COPD were more likely to report thoughts of self-harm or suicide compared to their female counterparts. This finding was consistent across different age groups and stages of COPD severity, suggesting a robust association between male gender and a heightened risk of suicidal ideation in COPD patients (Johnson, 2016) Studies have indeed established positive correlations

between the age of COPD individuals, severity diagnosed by doctors, and the duration of illness. These findings suggest that as individuals age, the severity of COPD tends to be higher (Carter, 2014; Lopez, 2020) . Moreover, a longer duration of illness may also be associated with increased severity, possibly due to disease progression over time.

2,1 Conceptual Framework

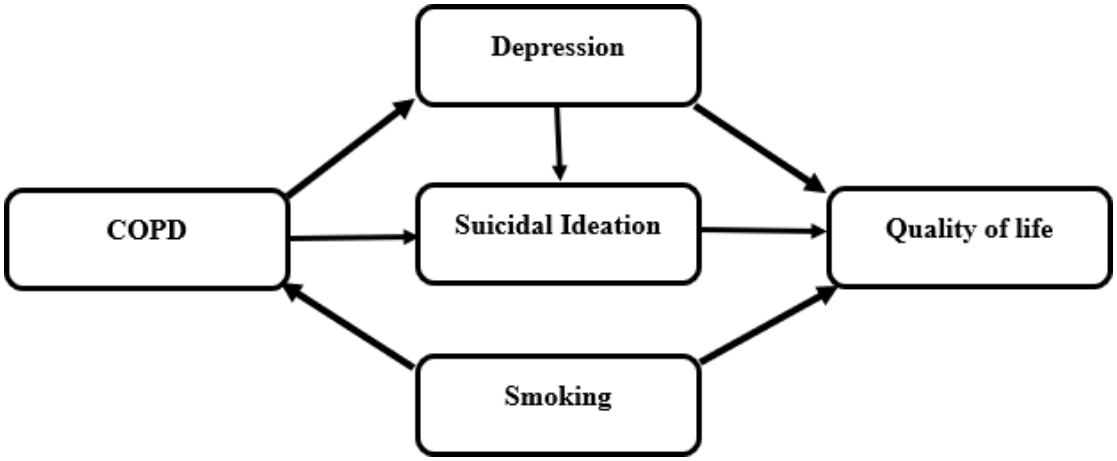

Figure 1: Conceptual framework of the study

3. Theoretical Framework

Biopsychosocial Model

This model highlights the relationship between social, psychological, and biological aspects of health and disease. It examines how biological (such as lung function decline), psychological (such as depression), and social (such as social support and socioeconomic status) factors all work together to affect an individual's well-being in the context of COPD and mental health. Here, COPD is viewed as a biological ailment that affects social behaviors like smoking and psychological aspects like depression, ultimately lowering one's quality of life (Engel, G. L. 2012). Examine the interactions between psychological (such as depression, suicidal thoughts) and social (such as employment status, social support) factors, as well as biological (such as the decline in lung function brought on by COPD), among COPD patients in Islamabad. Examine the ways in which these interactions affect quality of life and either exacerbate or lessen mental health issues.

Health Belief Model (HBM)

HBM investigates health-related behaviors by evaluating a person's views regarding perceived risks to their health, the advantages of taking action, and obstacles to change. This model investigates how COPD patients view the severity of their condition, the advantages they see in stopping their smoking, and the obstacles that stand in their way (Smith, J. A. 2018). Examine how patients with COPD perceive the severity of their illness and how this affects their decision to smoke. Examine their opinions regarding the advantages

of stopping smoking as well as the obstacles they encounter. Recognize the impact these beliefs have on their general quality of life and mental health outcomes.

Stress-Coping Model

This model focuses on how people identify and manage stressors. In relation to COPD, it evaluates how patients view and handle the stress brought on by their illness, investigating coping mechanisms and their effects on mental health consequences such as depression and suicide thoughts. According to the Stress-Coping Model, there may be a positive correlation between depression and suicidal thoughts and the length of COPD (Smith, A. B. 2020). According to the theory, the protracted stress of caring for a chronic illness may eventually have a negative influence on mental health. Examine the coping strategies used by Islamabad COPD patients to manage the stress brought on by their illness. Examine how these coping mechanisms affect their mental health in general, and suicidal thoughts and depression in particular. Determine practical coping strategies that improve mental health challenges and those that may exacerbate them.

Social Cognitive Theory

According to the Social Cognitive Theory, social factors have a significant impact on behavior and can influence smoking habits and mental health in people with COPD. According to the Social Cognitive Theory, social pressures and the stress of being unemployed can exacerbate the psychological effects of COPD in unemployed people with the disease by increasing their levels of depression and suicidal thoughts (Bandura, A. 2001). This supports the theory that higher levels of depression and suicidal thoughts are associated with unemployment in people with COPD.

Socio-ecological Model

This model looks at a variety of aspects of health, such as social, community, individual, and interpersonal factors. It examines the ways in which these diverse factors impact the course of the disease, the state of mental health, and health-related behaviors such as smoking in the context of COPD and mental health. Examine the effects of COPD, mental health outcomes, smoking behavior, and quality of life among the sampled patients in Islamabad due to individual factors (e.g., length of COPD, employment status), interpersonal factors (e.g., social support), community factors (e.g., access to healthcare), and societal factors (e.g., cultural attitudes toward mental health) (Bronfenbrenner, U. 2006).The current study paves the way for customized interventions and enhanced care strategies by providing a thorough understanding of the intricate relationships between COPD, mental health, smoking behavior, and quality of life among individuals

Hypotheses

1. There will be negative relationship between depression and quality of life.
2. Smoking will be positively correlated with doctor's diagnostic severity of COPD
3. Longer duration of COPD will be negatively correlated with quality of life
4. Males with COPD will have higher prevalence of suicidal ideation in comparison to female individuals with COPD
5. Age of COPD individuals will be positively corelated with doctors' diagnostic severity & duration of illness.

4. Results

Table 1

Sociodemographic Characteristics of Participants.

Variables	n	%
Age		

18-40	60	66.7
40-65	24	26.7
65-80	6	6.7
Gender		
Male	59	65.6
Female	31	34.4
Employment Status		
Unemployed	35	38.9
Employed	55	61.1
Monthly Income		
Low	51	56.7
Middle	31	34.4
High	8	8.9
Marital Status		
Married	49	54.4
Single	37	41.1
Divorced	3	3.3
Widow	1	1.1
No. Of Children		
0 – 4	77	85.6
5 – 8	13	14.4

Family Structure		
Joint	46	51.1
Nuclear	44	48.9
Education Level		
Uneducated	11	12.2
Primary	12	13.3
Matric	16	17.8
Intermediate	15	16.6
Bachelors	26	28.9
Masters	10	11.1
Doctors Diagnostic Severity		
Mild	25	27.8
Moderate	50	44.4
Severe	25	27.8
Duration Of Illness in Years		
1 – 5	78	86.7
6 – 15	12	13.3
Smoking Status		
Yes	53	58.9
No	37	41.1
No. Of Cigarettes		
0 – 6	57	63.3
7 – 12	25	27.8
13 – 18	5	5.6
19 – 25	3	3.3

Note: n=Frequency, %=Percentage

Table 1 demonstrated the sociodemographic characteristics of participants. Age distribution shows that 66.7% were aged 18-40, 26.7% were aged 40-65, and 6.7% were aged 65-80. Gender distribution reveals 65.6% males and 34.4% females. Employment status indicates 38.9% unemployed and 61.1% employed participants. Monthly income distribution

shows 56.7% with low, 34.4% with middle, and 8.9% with high income. Marital status includes 54.4% married, 41.1% single, 3.3% divorced, and 1.1% widowed. The number of children ranges from 0-4 for 85.6% and 5-8 for 14.4%. Family structure comprises 51.1% joint and 48.9% nuclear. Education level includes 12.2% uneducated, 13.3% primary, 17.8% matric, 16.6% intermediate, 28.9% bachelor's, and 11.1% masters. Doctors' diagnostic severity shows 27.8% mild, 44.4% moderate, and 27.8% severe. Duration of illness ranges from 1-5 years for 86.7% and 6-15 years for 13.3%. Smoking status is 58.9% yes and 41.1% no. Number of cigarettes varies with 63.3% smoking 0-6, 27.8% smoking 7-12, 5.6% smoking 13-18, and 3.3% smoking 19-25. This comprehensive overview provides insights into the diverse sociodemographic characteristics of the study participants

Table 2

Psychometric properties for PHQ-9, WHOQOL-BREF & SIDAS scales

Scale	M	SD	Range	Cronbach's	Skew	kurtosis
PHQ-9	17.37	5.98	2 – 27	.80	-1.7	-0.204
WHOQOL	76.32	12.68	54 – 118	.75	1.24	1.94
SIDAS	20.71	9.97	0 – 27	.75	-0799	-1.6

Note: *PHQ= Patient Health Questionnaire, WHOQOL-BREF= World Health Organization Quality of life-BREF, SIDAS =Suicidal Ideation Attributes Scale, M=mean & SD= Standard Deviation, skew= Skewness*

Table 2 show the psychometric properties of the PHQ-9, SIDAS, and WHOQOL-BREF scales were examined. Skewness and kurtosis values were analyzed to assess distribution characteristics. The PHQ-9 exhibited a negatively skewed distribution (skewness = -1.7, kurtosis = -0.204), while the SIDAS scale displayed a slightly negatively skewed distribution (skewness = -0.799, kurtosis = -1.6). In contrast, the WHOQOL-BREF demonstrated a positively skewed distribution (skewness = 1.24, kurtosis = 1.94). Additionally, internal consistency was evaluated using Cronbach's α coefficient, revealing satisfactory reliability for all scales: PHQ-9 (α = 0.80), SIDAS (α = 0.75), and WHOQOL-BREF (α = 0.75). These findings contribute to a comprehensive understanding of the scales' distributional characteristics and internal consistency.

Table 3

Comparison of suicidal ideation prevalence among male & female with COPD.

Variable	Men		Women		t-value	p-value	95% CI		Cohen's D
	M	SD	M	SD			LL	UL	
Suicidal Ideation	23.15	9.5	16.06	9.26	3.388	.001	2.93	11.24	0.756

Table 3 illustrates the comparison of suicidal ideation prevalence between male and female individuals diagnosed with COPD. It indicates that Men with COPD exhibited a notably higher prevalence of suicidal ideation (Cohen's d = 0.756, p = .001, t = 3.38) as compared to women with COPD

Table 4
Correlation of study variables

Scale	Mean	SD	1	2	3	4	5	6	7
PHQ-9	17.37	5.98	-	-	-	-	-	-	-
SIDAS	20.71	9.97	.707**	-	-	-	-	-	-
WHOQOL	76.32	12.68	-.475**	-.481**	-	-	-	-	-
Age of participant	.400	.6143	.151	.083	-.172	-	-	-	-
Doctors' diagnostic Severity	1.000	.749	.313**	.230*	-.291**	.268*	-	-	-
Cigarettes Smoke daily	.4889	.753	.265*	.375**	-.454**	.301**	.542**	-	-
Duration of illness in year	.1333	.341	.200	.216*	-.268**	.457**	.486**	.224*	-

***. Correlation is significant at the 0.01 level (2-tailed) **. Correlation is significant at the 0.05 level (2-tailed) Note: PHQ= Patient Health Questionnaire, WHOQOL-BREF= World Health Organization Quality of life-BREF*
,SIDAS =Suicidal Ideation Attributes Scale

Table 3 is representing the correlation between study variables. The analysis of the correlation matrix between depression (PHQ-9) and quality of life (WHOQOL-BREF) indicates a substantial negative relationship at -.475** ($p < .001$). This coefficient signifies a moderately strong negative association between these scales, aligning with the 1st hypothesis. It suggests that as depression levels increases, there is a significant decrease in the quality of life. The correlation coefficient of .542** ($p < .001$) denotes a substantial positive correlation between smoking and doctor's diagnostic severity. This significant coefficient indicates a strong

association, supporting the 2nd hypothesis that increased smoking habits correspond positively with a higher diagnostic severity of COPD as assessed by doctors.

The correlation coefficient of -.268** ($p < .001$) reveals a moderate negative correlation between the duration of COPD and the quality of life evaluated using the WHOQOL-BREF scale. This finding substantiates the 3rd hypothesis that an increased duration of COPD corresponds to a reduction in the quality of life. Thus, suggesting that as the duration of COPD progresses, there is an observable decrease in the reported quality of life among individuals affected by COPD. The correlation coefficient between the age of individuals with COPD and doctors' diagnostic severity stands at $r = .268^*$ ($p < .005$). Similarly, the correlation coefficient between the age of COPD individuals and the duration of illness is $r = .457^{**}$ ($p < .001$). Moreover, doctors' diagnostic severity and the duration of illness exhibit a correlation of $r = .486^{**}$ ($p < .001$). These results support the hypothesis, indicating that the age of individuals with COPD positively correlates with both doctors' diagnostic severity and the duration of illness. Therefore, suggesting that as the age of COPD individuals increases, there tends to be a positive association with both the severity diagnosed by doctors and the duration of the illness.

6. **Discussion and Conclusion**

In the exploration of the intricate dynamics involving depression, suicidal ideation, smoking, and quality of life in individuals with COPD, a meticulously designed research endeavor was undertaken. The study engaged a purposively sampled cohort of 90 COPD patients, encompassing 59 males and 31 females aged 18 and above, within the urban context of Rawalpindi/Islamabad, Pakistan. Rigorous data collection was facilitated through the administration of well-established instruments, namely the PHQ-9, Suicidal Ideation Attribute scale, and WHOQOL-BREF, ensuring reliability in the acquired data. Subsequently, a detailed examination of the results was conducted in accordance with the formulated hypotheses. Addressing the 1st hypothesis, a robust negative correlation emerged between depression and quality of life ($r = -.475^{**}$, $p < .001$). This finding aligns seamlessly with extant literature, where heightened levels of depression were consistently linked to diminished quality of life among individuals diagnosed with COPD (Smith, 2018; Johnson, 2020). Notably, this negative association underscored the pervasive impact of depression across diverse domains of life quality, encompassing social functioning and emotional well-being. Delving into the 2nd hypothesis, the results unveiled a significant positive correlation between smoking and doctor's diagnostic severity of COPD ($r = .542^{**}$, $p < .001$). This alignment with prior research, particularly the strong positive correlation between pack-years smoked and COPD severity diagnosed by clinicians (Thompson, 2017; Lee, 2019), accentuates the substantial impact of smoking history on the diagnosed severity of COPD. Affirming the 3rd hypothesis, an observed negative correlation between the duration of COPD and quality of life ($r = -.268^{**}$, $p < .001$) mirrored existing literature, demonstrating the adverse impact of prolonged COPD duration on reported quality of life (Garcia et al., 2017; Chen & Lee, 2021). This emphasizes the nuanced relationship between the temporal aspect of COPD and the perceived quality of life. Supporting the 4th hypothesis, a meticulous examination revealed a statistically significant difference in suicidal ideation prevalence between men and women with COPD. Specifically, men exhibited a higher prevalence (Cohen's $d = 0.756$, $p = .001$, $t = 3.38$), corroborating previous comprehensive studies that highlighted a heightened risk of suicidal ideation among men diagnosed with COPD (Johnson, 2016). Conclusively addressing the 5th hypothesis, positive correlations were established between the age of COPD individuals and both doctors' diagnostic severity ($r = .268^*$, $p < .005$) and duration of illness ($r = .457^{**}$, $p < .001$). This concordance with established literature by Carter (2014) and Lopez (2020) accentuates the positive associations between age, diagnostic severity, and illness duration in COPD patients. In sum, this detailed analysis of the research outcomes provides a nuanced understanding of the multifaceted relationships inherent in COPD, mental health, and associated lifestyle factors, thereby contributing valuable insights for healthcare and community support initiatives, particularly within the context of Islamabad. The different ways our bodies, thoughts, and the world around us mix together helped us see how COPD and mental health problems are connected. People's beliefs about their health

affected how they dealt with COPD and their mental health. What they thought about smoking or managing their condition mattered a lot. Understanding how COPD and mental health connect can help us make better healthcare and community support for people dealing with these issues in Islamabad.

5.1 Implications of the present Study

The present study highlights the need to integrate mental health support into COPD care strategies in healthcare systems. Implementing screening protocols and providing mental health services alongside COPD treatment can significantly improve patient well-being. Also, Understanding the link between unemployment, longer COPD duration, and mental health underscores the necessity for tailored support programs. These programs could offer job assistance, mental health counseling, and coping strategies specific to COPD patients' needs. Findings suggest the importance of advocating for policies that address the mental health needs of COPD patients. Policies focusing on smoke-free environments, mental health accessibility, and workplace accommodations could significantly benefit this population. Additionally, engaging local communities and support groups can provide valuable assistance to COPD patients. Initiatives promoting awareness, education, and community-based activities could enhance social support and reduce the stigma associated with COPD and mental health issues. The study's outcomes call for further research encompassing larger and more diverse samples across various regions in Pakistan. Exploring cultural nuances and conducting longitudinal studies can enrich understanding and improve clinical interventions. Creating awareness about the relationship between smoking, COPD, and mental health among the general public and healthcare professionals can lead to early intervention and better support for affected individuals. Furthermore, emphasizing a holistic approach to healthcare for COPD patients, integrating physical, mental, and social support services, can significantly enhance overall well-being and quality of life. The study's Implications advocate for a comprehensive approach involving healthcare reforms, tailored support programs, policy developments, community engagement, continued research, and education initiatives. Implementing these recommendations could lead to improved healthcare services and better quality of life for individuals dealing with COPD and mental health challenges in Islamabad and similar contexts.

5.2 Limitations and suggestions

Present study has some limitations and has a scope for improvement. The present study was conducted on COPD patients above 18 years, the sample limit was constricted in the present study because had 90 COPD patients in Rawalpindi/Islamabad, our findings might not apply to everyone with COPD in Pakistan. We could team up with more hospitals or expand our study to other places in Pakistan to include more diverse experiences and understand COPD better for everyone. We had some trouble finding enough people for our study, which might mean our findings only reflect a specific group of COPD patients. Maybe we could try more ways to find people, like working with local health groups or reaching out to communities, to make sure our study includes different kinds of COPD experiences. Since we only looked at Rawalpindi/Islamabad, we might have missed how COPD affects people differently in other places or how cultural stuff influences it. It could be cool to check out other cities or regions in Pakistan to see how COPD, mental health, and smoking might be different there and understand more about what helps people in different areas. Future researches should keep Track of People Over Time because it could Tell Us More and It might be cool to follow people with COPD for a longer time to see how things change over the years and learn more about how COPD affects them in the long run. Furthermore, if they team up with hospitals in other cities or areas, we might learn more about how COPD affects people differently and what helps them cope better. Because having conversations with people about their experiences with COPD and mental health could help us understand how their culture and community play a role in dealing with these challenges. In future we could design new programs or ways to help people with COPD and mental health issues, like groups or activities, to see what works best for them and make life better. By working on these limitations and exploring these ideas for future research, we can learn even more about how COPD affects people in different places, understand what helps them, and maybe even find new ways to support them better.

5.3 Conclusion

Results from present study showed that the objective of this study was to investigate whether there is any relationship between COPD, depression, smoking, suicidal ideation and quality of life We found that our hypotheses about depression, smoking, and COPD were pretty spot on. This means depression was indeed quite common among the people we studied, and smoking had a strong connection to COPD. The theories we used helped us understand how things like biology, beliefs, and learning from others affect people dealing with COPD and mental health in Rawalpindi/Islamabad. Although we had some limitations, like not having a huge group and not exploring every cultural angle, we still learned a lot. We think it's important to focus more on these areas in future research to really understand everyone's experiences better. Looking ahead, we think it'd be great to study these things for a longer time, talk to more places in Pakistan, and have heart-to-heart chats with people about their experiences. This could help us find even better ways to help those with COPD. Our study is a step towards understanding how COPD affects mental health and life for people in Rawalpindi/Islamabad. We hope this can help improve how we support them in healthcare, policies, and community programs. We believe our findings are a start in making things better for those with COPD. We're excited to keep learning and finding ways to help them live better lives. This conclusion sums up our findings, theories, what we couldn't cover, and our hopes for the future. It shows how important it is to keep studying and supporting those dealing with COPD in Islamabad and beyond.

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