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Quality of Life of Older People Living with COPD in Nepal

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ABSTRACT

Background: Chronic Obstructive Pulmonary Disease (COPD) is one of the most common chronic health conditions in older people and is increasingly becoming a major public health concern.

Objectives: The study aimed to assess the quality of life among older patients living with COPD.

Methods: A hospital-based cross-sectional study was conducted from February 2017 to July 2018 in a tertiary care hospital in Kavre, Nepal. A total of 220 patients aged 60 years and above were the respondents. Participants ' quality of Life (QOL) was assessed through a widely used shorter version of ST George's Respiratory Questionnaire (SGRQ-C). The mean and Pearson correlation coefficients were used while analysing the data.

Results: The mean total score for all domains of QOL was 68.57 (SD=18.66). The mean QOL scores for symptom, activity, and impact domains were 70.51 (SD=±22.37), 68.12 (SD=±23.42), and 68.19 (SD=±20.32) respectively, which suggested marked impairments in QOL in all SGRQ-C domains. The factors significantly related to the overall QOL of COPD patients in this study were: gender, education, type of family, and economic status.

Conclusion: Nepalese older patients with COPD had poor quality of life. Older patients with COPD had an impaired QOL in all three components of symptom, activity, and impact domains. There should be some initiation on how the QOL of older patients with COPD can be improved.

Keywords: Chronic obstructive pulmonary disease, COPD, Elderly patients, Nepali elderly, SGRQ-C, St. George's respiratory questionnaire, Quality of life.

1. Introduction

Chronic obstructive pulmonary disease (COPD) poses a significant threat to public health globally. It's a leading cause of long-term illness and death [1]. Studies like the Global Burden of Disease estimate a high global prevalence of COPD, affecting nearly 4,000 per 100,000 people. Even more concerning, COPD ranked as the third most common cause of death worldwide in 2017 [2]. Notably, COPD disproportionately impacts low- and middle-income countries, where over 90% of COPD deaths take place [3].

Studies in Nepal reveal a high prevalence of COPD, ranging from 23% to 43% according to hospital-based surveys [4]. This finding is further supported by a wider analysis of the global disease burden, which identified Nepal as one of the countries with the highest COPD burden. A separate hospital study even found COPD to be the most common condition diagnosed among outpatients in Nepal [5]. Considering this evidence, the expected rise in COPD cases suggests a potential strain on Nepal's healthcare system in the future.

As per the GBD 2017 prediction, COPD is the second leading cause of death in Nepal, the fourth leading cause of premature death, and the third cause of disability-adjusted life years in Nepal [1]. As we get older, our lung function naturally declines [6]. This decline, combined with the damage caused by COPD, can significantly worsen symptoms and decrease quality of life.

The proportion of older people in Nepal has grown significantly in recent years [7-9]. Past research shows that Nepal's older people are suffering from multiple chronic diseases [10-13]. So, there is a very high chance that the number of older people suffering from COPD will increase in the coming days in Nepal. There is limited research on COPD in Nepal's elderly population and its impact on their quality of life (QOL) [14, 15]. The study aims to assess the quality of life among older patients living with COPD.

2. Methods

2.1 Study Area

This study was conducted at Kathmandu University Hospital (DH-KUH), Dhulikhel, Nepal.

2.2 Study Design

This cross-sectional study, conducted at Kathmandu University Hospital from February 2017 to May 2018, involved COPD patients admitted to the medical ward.

Inclusion criteria were hospitalized individuals over 40 who spoke Nepali, excluding those with recent myocardial infarction, stroke, hemoptysis, uncontrolled diabetes, hypertension, acute COPD exacerbations, or Alzheimer's disease.

2.3 Sample size and sampling

The study included a total of 220 older patients, aged 60 years and above, who were hospitalized with a diagnosis of Chronic Obstructive Pulmonary Disease (COPD) at Kathmandu University Hospital (DH-KUH) between February 2017 and May 2018. The sample consisted of all available COPD patients who met the inclusion criteria: being over 40 years old and able to communicate in Nepali. Patients with recent myocardial infarction, stroke, hemoptysis, uncontrolled diabetes, hypertension, acute COPD exacerbations, or Alzheimer's disease were excluded. This sampling approach aimed to provide a comprehensive representation of the COPD patient population within the specified age range and language capability during the study period.

2.4 Data Collection

Data for this study was collected from February 2017 to May 2018. The participants of this study were all patients diagnosed with COPD by the physician and admitted to the medical ward. All the available patients during the study period were included in this study. Details of the methodology are discussed elsewhere [16]. For this study, we included all older persons 60 years and above, accounting for 220 older persons.

QOL of participants was assessed in this study through a widely used shorter version of The ST George's Respiratory Questionnaire (SGRQ-C) [17]. SGRQ-C contains 40 items with 76 weighted responses that cover three domains: Symptoms (frequency and severity), Activity (activities that cause or are limited by breathlessness), and Impact (social functioning, psychological disturbances resulting from airway disease). The SGRQ-C scores range from 0 (no disability) to 100 (maximum disability) indicating poorer QOL.

. Verbal informed consent, which is very common in these types of studies in Nepal was obtained from the study participants with a full explanation of the purpose of the study [18].

2.5 Data Analysis

Data entry and statistical analysis were performed using the Statistical Package for the Social Sciences (SPSS) software, version

16.0. The mean and standard deviation of QOL scores were calculated. The relationship between QOL scores and variables was assessed using the Pearson correlation coefficient (r). A p-value of <0.05 was considered statistically significant.

2.6 Ethical Clearance

The study was reviewed, and ethical approval was obtained from Institutional Review Committee (IRC) of Kathmandu University with ethical approval reference number IRC/23/16. Before the actual data collection, written as well as verbal consent was obtained from the study participants

3. Results

The mean age of the participants was 71.99 (SD=±7.44) years, with an age range of 60-94 years. It was 72.25 (SD=±7.19) for elderly males and 71.73 (SD=±7.71) for elderly women. More than half (58%) of the respondents were females. More than half (55.0 %) of participants were from rural areas. Less than half of them (46 %) were illiterate. More than half of the respondents (57 %) were Hindu. 41% of participants were involved in agriculture. Regarding the type of family, more than half of the participants belonged to joint families (51%).

Concerning the economic condition, one-third of the respondents (34%) had enough resources (food) for a year. Slightly more than half of the respondents (52%) did not produce enough resources (food) for a year. 14% of respondents had some financial savings before their illness (Table 1).

Table 1: Socio-demographic Characteristics of Respondents (n=220)

Characteristics	Number (n)	Percentage (%)
Age	Mean: 71.99 (SD=±7.44)	
Mean (±SD)		
Gender		
Female	127	58.0
Male	93	42.0
Residence		
Rural	121	55.0
Municipality	99	45.0
Education		
Illiterate	102	46.0
Literate	118	54.0
Religion		
Hindu	125	57.0
Buddhist	58	48.0
Christian	37	17.0
Family Type		
Nuclear	108	49.0
Joint	112	51.0
Occupation		

Characteristics	Number (n)	Percentage (%)
Agriculture	91	41.0
Home maker	78	35.0
Other	51	23.0
Economic Status		
Not enough to eat for one year	115	52.0
Enough to eat for one year	75	34.0
Extra saving	30	14.0

Further, the majority of them (76 %) were smokers. Nearly 75% of the respondents had a history of previous hospital admission for COPD. The mean duration of illness is 5.9 years. Nearly two-thirds (64%) of the respondents used firewood for cooking. The majority of the respondents had reported their perceived their health as poor health (39%) or very poor (30%) (Table 2).

Table 2: Health-Related Characteristics of the Respondents (n=220)

Variables	Number (n)	Percentage (%)
Smoking		
Yes	170	77.2
No	50	22.8
Previous hospital admission		
Yes	165	75.0
No	55	25.0
Duration of illness		
Mean (±SD)		5.9(±4.2)
Major Fuel used for cooking		
Firewood	140	63.6
Gas	80	36.4
Perceived health condition		
Very Good	2	0.9
Good	7	3.2
Fair	61	27.7
Poor	85	38.6
Very poor	65	29.5

The table 3 describes the overall components of the Quality of Life (QOL) score of 220 respondents. It includes the following variables: symptom, activity, impact, and total score. The mean total score for all domains of QOL was 69.07 (SD=±18.12). The mean QOL (SD) scores for symptom, activity, and impact domains were 71.51 (SD=±22.21), 68.12 (SD=±23.01), and 67.78 (SD=±19.91) respectively. It shows impairments in QOL among COPD patients in all SGRQ-C domains.

Table 3: Overall and components of QOL Score of Respondents (n=220)

Quality of life	Symptom	Activity	Impact	Total Score
Mean	71.51	68.12	67.78	69.07
SD	±22.21	±23.01	±19.91	±18.12
Minimum	11.21	6.21	7.21	12.33
Maximum	91.2	92.5	94.89	97.36

Table 4 shows the correlation (relationship between two variables) between socio-demographic and health characteristics with SGRQ-C scores and its domains.

In the socio-economic variables, the symptoms domain showed gender, educational status, type of family, and economic status ($p<0.001$) had a statistically significant positive correlation on quality-of-life score in this study. Similarly, the activity domains showed that economic status was correlated with activity-related QOL. The impact domain showed that the type of family, and the economic status were correlated with QOL. The overall score showed that factors significantly related to the overall QOL of COPD patients in this study were: gender, education, type of family, and economic status.

Further, self-reported health conditions and smoking habits ($p=0.000$) showed statistically significant positive correlations in overall QOL scores.

Table 4: Correlation of Socio-demographic and Health Characteristics with SGRQ-C Scores (n=220)

Variables	Symptom		Activity		Impact		Total	
	r value	P-value	r value	P-value	r value	P-value	r value	P-value
Age	.049	.375	.035	.520	.091	.137	.071	.275
Gender (Female=1)	-.132*	.008	.037	.453	.027	.619	-.119*	.004
Residence	-.178	.071	-.025	.725	-.060	.467	-.058	.389
Educational Status (Illiterate=1)	-.159*	.010	-.028	.670	-.071	.201	-.210**	.001
Religion	.019	.791	.021	.759	-.061	.453	-.031	.691
Type of Family (Nuclear =1)	.176**	.008	.107	.075	.140*	.022	.194**	.002
Economic Status (Not enough =1)	-.174**	.006	-.184**	.003	-.261**	.000	-.255**	.000
Occupation	.007	.934	-.019	.945	.017	.811	.005	.892
Co morbidities	.109	.079	.005	.842	-.047	.412	-.002	.792
Duration of illness	.043	.571	.039	.431	.112	.058	.091	.141
Numbers of admission	-.029	.658	.063	.278	.111	.074	.081	.201
Health Condition (Very good =1)	.342**	.000	.325**	.000	.319**	.000	.385**	.000
Smoking Habits (No=1)	.307**	.000	.199**	.000	.201**	.000	.319**	.000
Fuel used for cooking	-.112	.074	-.081	.241	-.061	.279	-.078	.135

*Correlation is significant at the 0.05 level (2-tailed).
**Correlation is significant at the 0.01 level (2-tailed).

4. Discussion

Research on QoL in COPD patients have primarily focused on middle-aged adults. This study investigates a critical gap, examining the QOL of COPD patients aged 60 and above in Nepal, a region with limited research on this topic. This study found that elderly patients with Chronic Obstructive Pulmonary Disease (COPD) scored high on the SGRQ-C questionnaire, indicating a significant decrease in their quality of life (QOL).

In this study, COPD patients showed a higher total mean (SD) SGRQ-C score of 69.07 (SD=18.12). This is quite high compared to many other studies [19-21]. However, some other studies show consistent results too [22-25]. A study shows COPD in elderly patients 60 years and older was 73.1 (SD=5.5) [24].

Our results show that having no education or lower education results in a higher prevalence of high SGRC-C scores. This result is consistent with those of population-based studies conducted in China and Bangladesh and is similar to the results reported by Kanervisto *et al* [26-28].

Like in other studies, this study also shows that women have lower quality of life compared to men [29, 30]. Some other authors have shown that gender plays no role in the QOL of COPD patients [31]. This study found that the smoking habit was statistically significant with lower QOL. The more years a patient has smoked, the worse their quality of life was. Various authors have reported similar results [32-34]. In the present study the type of family showed a significant relation with QOL score [16]. This is supported by other studies [22, 35]. Further, this study found that self-reported health status is significantly correlated with the SGRQ-C Score. We found that poorer self-reported health corresponded to lower quality of life. This finding is consistent with previous studies [36].

This study shows age has no relation with COPD which is also supported by a study from India [20]. However, many other studies show COPD has a substantial negative bearing on the QOL with advancing age and is worse among the geriatric age group population [35, 36]. As the population of Nepal is aging rapidly and noncommunicable diseases are also increasing, the problems with COPD may also increase in the coming days. A Latest study shows Nepalese older people suffer from anxiety and depression as well [37]. It is necessary to introduce some healthy aging [38] and active aging [39] -

related intervention programs so that older people may have QOL [40].

Being a cross-sectional study, this study is not free of information bias. This was a cross-sectional study; therefore, the causal relationship between QOL and the examined variables could not be established. Despite the extensively trained enumerators, who collected the data, we cannot deny the possibility of mis-calculations of self-reported outcomes such as smoking behaviours, physical activity, biomass fuel exposure, and respiratory symptoms. This study was limited to a hospital and cannot be generalized to all populations. The strength of the article is that there are a limited number of studies focusing on the QOL of COPD, our study contributes significant information in this regard.

Implication: The research findings might be helpful to some extent to improve the knowledge about areas needed for improving the quality of life of COPD patients. It also provides some basic information to conduct further studies in this area to health care professionals

5. Conclusion

This study showed older patients suffering from chronic obstructive pulmonary disease had an impaired quality of life in Nepal. COPD is one of the main causes of severe deterioration of QoL in older people in Nepal. It worsens lung function gradually and increase the symptoms. As COPD is a slowly progressive disease, which is incurable, we should focus on potentially more treatable aspects of QOL. Government should formulate the appropriate policies to support the older people living with COPD so that they could live the QoL.

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