ORIGINAL ARTICLE

Self-Care Behavior among Patients with Chronic Obstructive Pulmonary Disease attending Medical Out-patient Department of a Tertiary Care Center of Nepal

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Abstract

Introduction: Self-care has been identified as integral to maintaining the health and wellbeing of people with long-term conditions like chronic obstructive pulmonary disease (COPD), and may contribute to effective and sustainable delivery of healthcare services. The objective of this study was to assess the self-care behavior among the patient with COPD attending Medical outpatient department and to find out the association between the self-care behavior with the selected variables.

Methods: Quantitative descriptive cross sectional study design was used to conduct the study on self-care behavior among patients with COPD attending Outpatient Department. A total of 178 respondents were interviewed through semi structured questionnaire and were analyzed using SPSS using mean, frequency, and percentage as descriptive analysis. For inferential analysis, chi square test was used and identified seperate association and at the significance level of 0.05.

Results: More than half of the respondents (52.8%) had adequate overall self-care behavior. More than one third (38.8%) of the respondents were from age group 60-70 years with mean age ± SD 64.5 ±11.07. Majority of the respondents (62.9%) were female. There was significant association between overall self-care behavior and gender, address, education, smoking, knowledge of self-care behavior, number of times of admission, exposure to indoor air pollutant, medication adherence, protein intake, follow-up visit ($p<0.05$).

Conclusion: This study shows more than half of the respondents had adequate overall self-care behavior. Educational interventions considering associated factors should be planned to improve self-care behavior among COPD Patients.

Keywords: COPD, patients, self-care behavior

Introduction

Chronic Obstructive Pulmonary Disease (COPD) is a chronic lung disease characterized by progressive and irreversible airflow limitation. It is the fourth leading cause of death and eighth leading cause of poor health worldwide, causing 3.5 million deaths in 2021, approximately 5% of all global deaths.[1] Consequently, COPD is associated with a significant economic burden, including hospitalization, work absence, and disability. Indoor air pollution contributes to chronic obstructive airway disease in South Asia. It is a major contributor to the disease in regions such as Nepal and rural India and Pakistan. Burning wood fuel in the home is likely to increase the burden of this disease, especially in winter.[2]

Self-care behaviors refer to a set of skills that the individual develops to preserve their own life, health, and well-being.Self-Care is the ability of individuals, families and communities to promote health, prevent and maintain health and to cope with illness and disability with or without the support of a health-care provider.[3]

Self-care has been identified as integral to maintaining the health and wellbeing of people with long-term conditions like COPD, and may contribute to effective and sustainable delivery of healthcare services. Various studies had shown overall Self-management practice with COPD were low.[4,5] This may be due to the lack of knowledge regarding self -care. Poor patient engagement and medication adherence are frequent and associated with worse COPD-specific health status, higher

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health care utilization, and lower satisfaction with health care.[6]In a study done among 182 respondents in Chitwan,most of all respondents (90.7%) had poor level of knowledge on self- care of COPD7. So, Researcher aims to conduct the study to assess Self-care behavior in the area. Also, increasing awareness regarding the Self-care, Behavioral modifications and adaptation can minimize the complication of COPD and improve quality of life.

Methods

This is a quantitative descriptive cross-sectional study design conducted on 178 patients with COPD attending the Medical OPD of BP Koirala Institute of Health Sciences (BPKIHS). Data was collected for four weeks period from 5th May 2017. Convenient sampling technique was used for the study.Patient diagnosed with COPD by the physician for at least three months were included in the study. COPD patients' Self Care Behavior interview questionnaire was used to assess the self -care behavior among COPD patient attending Medical OPD of BPKIHS which had two components. The first part consists of 21 forced choice and open ended items that relate to demographic profile and general information. The second part had COPD self-management scale with five domains that consists of questionnaire related to symptom management, daily life management, emotion management, information management and self-efficacy.The responses to each item were graded on a 5-point scale (1=never, 2=rarely, 3=sometimes, 4=often, and 5=always). Each participant received a total score of 51-255; high score indicating adequate self-care behavior. The cut off score was assigned as the equal to or above mean as adequate and below mean score as inadequate self-care behavior.

The validity was established by developing the instruments on the basis of extensive literature review, opinion of subject experts and research advisors. Simple and understandable language was used in the questionnaire for obtaining response from participants. Pre-testing of the instrument was done in 10% of the sample. The reliability of the tool in context of this research was measured and had acceptable internal consistency (Cronbach's alpha = 0.75)

Prior to the data collection, approval from the IRC was obtained (Ref. No. 358/073/074). The investigator discussed the nature of the study and data collection process and took permission with the Head of Department, internal medicine to conduct the study. Informed written consent was taken from each of the participant. Confidentiality of the participants was maintained. Participants were reassured that their participation is voluntary, that they can withdraw from study at any time. Furthermore, they were assured that their participations will not affect the quality of services provided. The information was collected primarily from the patients. The investigators interviewed the participants using the questionnaire while the patients visited the medical OPD. Data was collected in period of four weeks. Data was entered in SPSS and Descriptive statistics i.e. frequency, percentage, mean, standard deviation were used to analyze the demographic and general information variables. Inferential statistics i.e. Chi-square test was used to find the association between the self-care behavior and the selected variables.

Results

Out of 178 respondents, results were interpreted as:

Table 1: Socio-demographic Characteristics of the Respondents n=178

Characteristics	Category	Frequency	Percentage
Age in years	Less than 40 years	6	3.4
	40-50	14	7.9
	50-60	39	21.9
	60-70	69	38.8
	70-80	38	21.3
	More than 80	12	6.7
	Mean ± SD	64.5 ± 11.07	Range: 26-95
Gender	Male	66	37.1
	Female	112	62.9
Marital status	Unmarried	3	1.7
	Married	153	86.0
	Single	21	11.8
	Separated	1	.6
Educational Status	Illiterate	98	55.1
	can read and write	49	27.5
	Primary level	12	6.7
	Secondary level	13	7.3
	Higher secondary and above	6	3.4
Residence	Urban	115	64.6
	Rural	63	35.4
	Total	178	100.0
Occupation	Job	3	1.7
	Retired army	17	9.6
	Daily wages	4	2.2
	Farmer	34	19.1
	Business	8	4.5
	House wife	72	40.4
	Others	40	22.5
Type of family	Nuclear Family	60	33.7
	Joint Family	107	60.1
	Extended Family	11	6.2
Monthly Income	<10000	56	31.5
	10000-20000	61	34.3
	20000-30000	31	17.4
	30000-40000	13	7.3
	>40000	17	9.6
	Mean ± SD	26319.10 ± 46393.363	Range: 2000-500000

Table 1 depicts that more than one third (38.8%) of the respondents were from age group 60-70 years with mean age

± SD 64.5 ±11.07. Majority of the respondents were female (62.9%). Most of the respondents (86%) were married. More than half of the respondents (55.1%) were illiterate. Majority of the respondents were from urban areas (64.6%) and nearly half (40.4%) were house wife. More than half of the respondents lived in joint family (60.1%) More than one third of the respondents (34.3%) had income within range of ten thousand to twenty thousand.

Table 2: General Information Regarding the Disease Condition of the Respondents
n=178

Characteristics	Category	Frequency	Percentage
Duration of COPD (in years)	<5	110	61.8
	5-10	37	20.8
	10-15	17	9.6
	15-20	6	3.4
	>20	8	4.5
No. of admission to hospital due to disease. (No. of times)	0(no admission)	63	35.4
	<3	93	52.2
	3-5	15	8.4
	>5	7	3.9
	Range	0-10	
Prevalence of Family history of COPD	Yes	35	19.7
	No	143	80.3
Smoking	Smoking at present	24	13.5
	Used to smoke at past	79	44.38
	Do not smoke	75	42.13
Present smoker duration in years (n=24)	Less than 5 years	3	12.5
	5-10 years	5	20.8
	More than 10 years	16	66.7%
No. of cigarette stick/ day(n=24)	1-4 stick/day	14	58.3
	4-8 stick/day	5	20.8
	8-12 stick/day	3	12.5
	More than 12	2	8.3
Duration of quitting smoking in years (n=79)	Less than 5 years	30	36.6
	5-10 years	20	24.4
	More than 10 years	32	39
Knowledge about self-care of COPD	Yes	39	21.9
	No	139	78.1
Source of knowledge #	Health personnel	29	54.7%
	Television/ radio	7	13.2%
	Friends	14	26.4%
	Books/ internet	2	3.8%
	Others(other patients)	1	1.9%
Type of food	Vegetarian	27	15.2
	Non-vegetarian	151	84.8
Frequency of taking protein diet	Rarely	25	14.0
	Sometimes	97	54.5
	Most often	45	25.3
	Daily	11	6.2
Indoor air pollutant exposure	Yes	80	44.9
	No	98	55.1
Duration of exposure to indoor air pollutant(n=80)	less than 2 hour	41	51.25
	2-5 hour	34	42.5
	5-8	5	6.25
Medication adherence	Sometime	13	7.3
	Most often	57	32.0
	Daily	108	60.7
Follow-up	Never	7	3.9
	Rarely	6	3.4
	Sometimes	32	18.0
	Most often	68	38.2
	Regularly	65	36.5

Multiple response

Majority of the respondents (61.8%) had been diagnosed with COPD for less than five years and 35.5% of the respondents were not admitted till date due to the disease. Only 19.7% of the respondents had a family history of COPD. Out of 178 respondents only 13.5% were found to have a habit of smoking at present and 45.5% used to smoke in past. More than one fifth of the respondents (21.9%) had a knowledge regarding the self-care behavior. Health personnel was the source of knowledge for the maximum of the respondents(54.7%.). Most of the respondents (84.8%) were non-vegetarian. Only 6.2% of the respondents used to take protein diet in regular basis. Nearly half of the respondents (44.9%) were exposed to indoor air pollutant and among them half of the respondents (51.25%) had the history of being exposed to indoor air pollutant for less than two hours a day. Majority of the respondents (60.7%) used to take medicine daily as per the prescription. Only 36.5% of the respondents used to come for follow up regularly as advised by the physician

Table 3: Overall Score obtained in Subscales of Self-management among COPD(n=178)

Subscale	No. of items	Obtained score range	Mean ± SD	Inadequate self-care behavior	Adequate self-care behavior
Symptom management	8	9.00-34.00	23.45 ± 5.48	92(51.7%)	86(48.3%)
Daily Life management	14	21.00-62.00	43.23 ± 8.77	83(46.6%)	95(53.4%)
Emotion management	12	15.00-59.00	40.49 ± 8.91	99(55.6%)	79(44.4%)
Information management	8	8.00-40.00	19.06 ± 5.86	100(56.2%)	78(43.8%)
Self-efficacy	9	11.00-45.00	27.91 ±6.99	102(57.3%)	76(42.7%)
Overall self-management	51	79.00-218.00	154.15 ± 26.71	84(47.2%)	94(52.8%)

Table 3 depicts adequate self-care behavior on symptom management domain was found among 48.3% of the respondents, on daily life management domain 53.4%, on emotional management domain 44.4%, on information management domain 43.8% and self-efficacy domain 42.7%. Likewise, more than half of the respondents (52.8%) had adequate overall self-care behavior.

Table 4: Association of Overall Self-care Behavior with Selected Demographical Variables
n=178

Characteristics	Category	Self-care behavior		Chi square	P value
		Inadequate No. (%)	Adequate No. (%)		
*Age in years	Less than 70	58(45%)	71(55%)	0.935	0.334
	More than 70	26(53.1%)	23(46.9%)		
*Gender	Male	22(33.3%)	44(66.7%)	8.083	0.004
	Female	62(55.4%)	50(44.6%)		
*Marital status	Married	69(45.1%)	84(54.9%)	1.915	0.166
	Others(unmarried, single, separated)	15(60%)	10(40%)		
*Religion	Hindu	63 (47%)	71(53%)	0.007	0.935
	Others(Buddhist, Muslim, Christian, Kirati)	21(47.7%)	23(52.8%)		
*Occupation	Employed	27(40.9%)	39(59.1%)	1.661	0.197
	(housewife and others)	57(50.9%)	55(49.1%)		
*Education	Illiterate	58(59.2%)	40(40.8%)	12.584	0.0001
	Literate	26(32.5%)	54(67.5%)		
*Address	Urban	46(40%)	69(60%)	6.742	0.009
	Rural	38(60.3%)	94(52.8%)		
*Type of family	Nuclear	24(40%)	36(60%)	1.878	0.171
	Joint	60(50.8%)	94(52.8%)		
*Income per month in Rs	Less than 20000	57(48.7%)	60(51.3%)	0.319	0.572
	More than 20000	27(44.3%)	34(55.7%)		

*Pearson Chi-square.

Table 4 depicts that there was no significant association between self-care behavior with age, marital status, religion, occupation, type of family and income ($p>0.05$) whereas gender and address were significantly associated ($p<0.05$) with the overall self-care behavior while association between self-care behavior with education was highly significant ($p<0.0001$).

Table 5: Association of overall self-care behavior with selected variables of general information regarding disease condition

n=178

Characteristics	Categories	Self-care behavior		Chi square	P value
		Inadequate	Adequate		
*Duration of illness	Less than 5 years	50(45.5%)	60(54.5%3)	0.348	0.555
	More than 5 years	34(50%)	34(50%)		
*No. of admission in hospital due to COPD	Not admitted	30(47.6%)	33(52.4%)	0.007	0.933
	Admitted	54(47%)	61(53.0%)		
*Smoking	Yes	6(25.0%)	18(75.0%)	5.481	0.019
	No	78(50.6%)	76(49.4%)		
***No. of cigratte smoking at present stick / day(n=24)	Less than 4 stick/day	3(21.4%)	11(78.6%)	-	0.665
	More than 4 stick/ day	3(30.0%)	7(70%)		
*Duration of quitting smoking in years (n=79)	Less than 10 years	29(61.7%)	18(38.3%)	2.474	0.167
	More than 10 years	14(43.8%)	18(56.2%)		
*Family history of disease	Yes	13(37.1%)	22(62.9%)	1.765	0.184
	No	71(49.7%)	72(50.3%)		

*Pearson Chi-square, *** Fisher's exact test

Table 5 depicts that smoking was significantly associated ($p<0.05$) with the overall self-care care behavior.Whereas duration of illness, number of times of admission, present smoker duration, no. of cigarette smoking at present, duration of quitting smoking and family history of disease were not significantly associated ($p>0.05$) with the overall self-care care behavior.

Discussion

While comparing the five domain of the self-management, the information management was found to have lowest mean score which is similar to the study conducted by Wang et al., 2017. While the majority of the respondents 57.3% had inadequate self-care behavior in self efficacy domain of self-management. More than half of the respondents (52.8%) had adequate self-management in overall self-care behavior among COPD patient which is somewhat similar to the finding of the Wang et al., 20178 study that showed nearly half of the respondents i.e. only 43% had a high level of self-management.

This study depicts that education is highly significant ($p<0.0001$) with the overall self-care behavior which is in consistent with the various study in which level of knowledge on self-care is statistically significant with educational status ($p=0.000$)[7,9]. Literacy may play an important part in controlling COPD and enhancing self-care behavior because it requires effective self-management skills and navigation of the health care system to maintain quality of life and avoid life-threatening exacerbation.[10]

Similarly, gender was also found to be associated with the self-care behavior among COPD patient. And residence was significantly associated ($p<0.05$) with the overall self-care behavior.One study found that rural residence was linked with poor health status and higher health care utilization contributing to lower self-care behavior finding consistent with this study[11] however, factors such as marital status, religion, occupation, type of family and income were not significantly associated with the overall self-care care behavior($p>0.05$).

In the current study, smoking is associated with the self-care behavior among COPD attending medical OPD of BPKIHS which is consistent to another study revealing smoking was associated with lower levels of adherence across multiple measures of self-care.[12] Also the study findings reveal that exposure to indoor air pollutant is significantly associate with the overall self-care behavior among COPD patients attending medical OPD of BPKIHS.

The study findingsdemonstrates that respondent's knowledge of self-care behavior is significantly associated ($p<0.05$) with the overall self-care care behavior which is similar to the study conducted on self-management education program for patients with chronic obstructive pulmonary disease improve quality of life enhancing self-management.[13] The results of this study depicts that number of times of admission due to COPD was significantly associated ($p<0.05$) with the overall self-care care behavior. The person with repeated hospitalization can increase their level of self-care behavior as the health personnel was found to be the major source of knowledge which may in turn increase their ability to self-manage the disease complication.

Another study conducted on Health behaviors and their correlates among participants in the continuing to confront COPD reveals that medication adherence was related to low levels satisfaction with COPD self-management as indicated by more frequent emergency department visits.[14] Also, this study finding shows that there is significant association between medication adherence and overall self-care behavior which is consistent to the above study.

This studyreveals that consumption of protein, follow-up visit, were significantly associated ($p<0.05$) with the overall self-care behavior. Whereas duration of illness, type of food, duration of exposure, were not significantly associated ($p>0.05$) with the overall self-care care behavior.

Conclusion

The study findings conclude that more than half of the respondents had adequate self-care behavior. Gender, address smoking, knowledge of self-care behavior, number of times of admission, exposure to indoor air pollutant, medication adherence, protein intake, follow-up visit, were significantly

associated with the overall self-care care behavior. Thus educational interventions focusing on these aspects of self-care behavior is essential in order to improve their quality of life, reduce complication, rate of hospitalization and increase self-care behavior among COPD patients.

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