AN EFFECTIVE NURSING EDUCATION AND COUNSELLING SERVICE FOR PATIENTS WITH COPD TO ENHANCE MEDICATION ADHERENCE AND QUALITY OF LIFE: AN EXPLORATORY STUDY CONDUCTED IN HONG KONG.

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ABSTRACT

Chronic Obstructive Pulmonary Disease (COPD) was still one of the main causes of long-term illness in Hong Kong. Patients with COPD needed more than just medication to keep their condition under control. Patients needed coordinated help to make sure they understood and followed their treatment plans. This study examined the efficacy of nursing education and counselling services in enhancing medication adherence and the quality of life for patients with COPD. Participants were selected through simple random sampling from a cohort of COPD patients attending outpatient clinics in Hong Kong, as part of a quantitative study design. The intervention comprised organised nursing education sessions focused on medication management, inhaler techniques, and disease awareness, alongside counselling services aimed at enhancing motivation, facilitating lifestyle modifications, and addressing mental health concerns. The results showed that patients who got counselling and nursing education were much more likely to take their medications as directed. Their quality-of-life scores also went up a lot, especially in the areas of managing symptoms, doing daily tasks, and self-esteem. The results showed that counselling and education services should be part of standard care models and confirmed how important nurse-led interventions are for managing COPD. This study contributed empirical evidence to the expanding corpus of knowledge concerning chronic disease management in Hong Kong. It also said that patient-centered nursing practices were needed to get the best long-term results from COPD treatment.

Keywords: COPD, nursing education, counselling services, medication adherence, chronic disease management.

INTRODUCTION

A growing number of people in Hong Kong are suffering from COPD, which was a leading global killer in 2017. The major symptoms of COPD include persistent airflow restriction and recurring flare-ups, which lead patients with the condition to have a significantly reduced quality of life and spend more time in the hospital. Not taking drugs as prescribed was a major issue with COPD management. Because of this, therapies were less effective and more expensive. A cure for illness and alleviate its symptoms, it was necessary to take the medication exactly as prescribed. The most prevalent reasons individuals did not follow the instructions were a lack

of knowledge about the condition, incorrect inhaler use, lack of motivation, and psychosocial stress. In an effort to address these issues, healthcare providers have shifted their attention to patient-centered approaches, such as education and counselling. Patients benefited from counselling services because they provided them with moral support, practical life guidance, and words of encouragement. Patient education on COPD, medication adherence, and general health was a focus of nurse education. Although there was a dearth of data from Hong Kong, previous research shown that these therapies improved well-being and treatment adherence. Patients with chronic COPD in Hong Kong who participated in a structured nurse education and counselling program had their medication adherence and quality of life measured in this research. The research used a quantitative methodology with simple random sampling to show that nurse-led interventions are beneficial for managing chronic disease. The biggest source of healthcare expense for people with COPD is the cost of hospitalisations for COPD exacerbations. Patients with COPD have a decline in QOL and lung function as a result of frequent exacerbations (7-9). Also, many of the patients are old and have more than one medical condition, such as heart disease, diabetes, high blood pressure, osteoporosis, and mental illness. For clinical care of all COPD patients, it is vital to get a correct diagnosis and to evaluate the condition appropriately (San et al., 2019).

BACKGROUND OF THE STUDY

COPD is a leading cause of death among the elderly. COPD is becoming more common as a result of the worldwide epidemic of tobacco use. By 2020, COPD will have risen to the position of third biggest killer worldwide, with a projected prevalence of 11.7% (Agarwal et al., 2021). Dyspnoea, chronic cough, and sputum production are persistent respiratory symptoms that define COPD. There is a high rate of acute exacerbation, and patients with poorly managed respiratory symptoms end up in the hospital more often and have worse lung function. The cornerstone of treatment for respiratory symptom control is inhalation therapy. Agarwal et al. (2021) found that patients' treatment outcomes are diminished, their quality of life is diminished, and their hospital service utilisation is increased due to non-adherence and improper administration of therapy. Nearly 10% of hospital beds in Hong Kong are occupied by patients experiencing an acute exacerbation of chronic obstructive pulmonary disease (COPD). One preventable reason for admission is patients' failure to adhere to inhalation therapy. Few randomised controlled trials (RCTs) have focused on increasing COPD patients' adherence to inhalation medication, despite the fact that educational interventions can increase patients' self-care knowledge (Wang et al., 2025). A positive attitude and social motivation are the two components of motivation. A positive attitude means that you believe the changes in behaviour are good for you, and social motivation means that you feel socially supported when you do the behaviours you've chosen. The IMB model places an emphasis on enhancing the individual's belief in their own abilities to engage in the desired behaviours as a means to acquire those skills. In order to encourage patients to follow through with the desired behaviours, it is helpful for them to create goals and an action plan (Wang et al., 2025). Counselling the patient on his or her emotions and the obstacles to adherence can also give social support. A systematic

analysis indicated that education-only treatments were ineffective compared to interventions that incorporate behavioural and psychosocial components, even though the IMB model has never been utilised to enhance inhalation therapy adherence among COPD patients.

PURPOSE OF THE STUDY

Purpose of this study was to determine whether nurse education facilitated medication adherence among Hong Kong patients with COPD. Patients who did not follow their treatment plans for chronic COPD ended up in the hospital again and their symptoms got worse. The objective of this research was to ascertain whether structured educational interventions administered by nurses could enhance adherence levels through heightened illness awareness and the implementation of appropriate medication practices. The results indicated that nurse education should be integrated into standard COPD treatment to enhance therapeutic efficacy and facilitate sustained disease management.

LITERATURE REVIEW

Recent theoretical and empirical studies have underscored the importance of integrating Self-Efficacy Theory with educational frameworks to enhance medication adherence in patients with COPD. A quasi-experimental study in Iran revealed that targeted educational sessions significantly improved health literacy and self-efficacy among COPD patients ($F = 62.15$, $p < 0.05$), highlighting self-efficacy as a vital mediator of self-management behaviours (Aliakbari et al., 2022). A randomised controlled trial (RCT) based on the Chronic Care Model demonstrated that nurse-led education and structured follow-ups significantly enhanced self-efficacy and patient-reported outcomes in COPD populations, highlighting the importance of confidence enhancement in fostering adherence (Liu et al., 2025).

Employing constructs from the Health Belief Model, research demonstrated that patients' beliefs—particularly those related to medication apprehensions and necessity beliefs—mediated the relationship between illness perception and inhaler adherence. A study revealed that increased concerns predicted reduced adherence, whereas heightened necessity beliefs were associated with improved adherence (Wang et al., 2025). Moreover, a structural equation modelling analysis conducted in U.S. COPD cohorts demonstrated that health literacy did not exert a direct influence on adherence; rather, it affected medication beliefs, which in turn impacted adherence behaviours (Liu et al., 2025).

Furthermore, observational network analysis conducted in China confirmed that self-care self-efficacy was essential to self-management behaviours, particularly in symptom monitoring, problem-solving, and adjusting treatments in response to symptom variations, thereby underscoring the importance of confidence in shaping adherence behaviours (Sazak & Olgun, 2025).

These findings collectively supported a unified theoretical synthesis: Self-Efficacy Theory demonstrated that increased confidence through nursing education bolstered adherence; elements of the Health Belief Model suggested that modifying beliefs about medication—especially by alleviating concerns and reinforcing necessity—were essential mechanisms; and health literacy served as a primary factor in shaping those beliefs. Interventions based on the Chronic Care Model, which combine education, counselling, and follow-up, effectively utilised these mechanisms to improve adherence outcomes. This theoretically substantiated evidence necessitated the integration of structured nursing education and counselling in COPD interventions, particularly in contexts like Hong Kong, where tailored strategies could facilitate patients in adopting manageable self-care practices.

RESEARCH QUESTIONS

What was the effect of nursing education on enhancing medication adherence among patients with COPD in Hong Kong?

RESEARCH METHODOLOGY

Research Design

The statistical analysis was performed using SPSS version 25. The statistical relationship's strength and direction were determined using the odds ratio and 95% confidence interval. A criterion of $p < 0.05$ was set by the researchers as being statistically significant. We used descriptive statistics to find out what the data's most salient features were. When evaluating data processed by computer tools for statistical analysis or data obtained by surveys, polls, or questionnaires, quantitative methods are frequently employed.

Sampling

The questionnaire had a preliminary test with 20 Chinese consumers before being administered to a final sample of 500 customers for the research. 700 surveys were sent to clients picked at random. The researcher eliminated 200 questionnaires that had not been completed for the study.

Data and Measurement

The study's primary data collection instrument was a questionnaire survey. The survey was divided into two sections: (A) general demographic information and (B) responses to online and offline channel factors measured using a 5-point Likert scale. Secondary data was gathered from a variety of sources, most notably online databases.

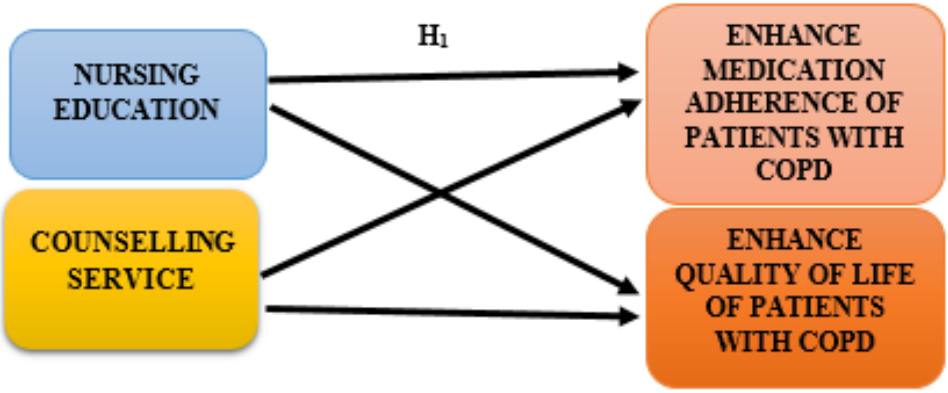
Statistical Software

The statistical analysis was conducted using SPSS 25 and MS-Excel.

Statistical Tools

Descriptive analysis was utilised to get an understanding of the data's essential characteristics. The researcher is responsible for analysing the data using ANOVA.

CONCEPTUAL FRAMEWORK



RESULT

Factor Analysis: Among Factor Analysis (FA)'s common applications is confirming the presence of latent components in visible data. In cases when there are no readily apparent visual or diagnostic indicators, it is usual practice to generate evaluations using regression coefficients. The success of FA is dependent on models. Using models, one may look for errors, intrusions, and evident relationships. The Kaiser-Meyer-Olkin (KMO) Test is one tool for evaluating datasets that have been generated by numerous regression analyses. A representative model and set of variables are checked for by them. The data seems to be duplicated, based on the statistics. The data becomes more comprehensible with smaller proportions. A value between 0 and 1 is the output of KMO. A sufficient sample size is defined as a KMO value between 0.8 and 1. These are the acceptable limits, as stated by Kaiser: The standards that Kaiser has established for admission are as follows:

A dismal 0.050 to 0.059, worse than the typical 0.60 to 0.69 for middle grades, the usual range is 0.70 to 0.79. Possessing a quality point score in the range of 0.80 to 0.89.

They are amazed with the range of 0.90 to 1.00.

Kaiser-Meyer-Olkin .890 as a Measure of Sampling Adequacy this is what Bartlett's sphericity test came up with: estimated chi-square

df=190

sig.=.000

Therefore, claims made just for sampling reasons are shown to be valid. The relevance of the correlation matrices was confirmed by the researchers using Bartlett's Test of Sphericity.

Kaiser-Meyer-Olkin states that a result of 0.890 indicates an appropriate sample. The p-value, as determined by Bartlett's sphericity test, is 0.00. A good result from the Bartlett's sphericity test indicates that the correlation matrix does not seem to be an identity matrix.

Table 1. Bartlett's Test and KMO Analysis of Bartlett and KMO Organisms.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.890
Bartlett's Test of Sphericity	Approx. Chi-Square	3252.968
	df	190
	Sig.	.000

The validity of statements on the execution of a sample is supported by this. Scientists assessed the significance of the correlation matrices using Bartlett's Test of Sphericity. With a score of 0.890, the Kaiser-Meyer-Olkin measure considers the sample good. After doing Bartlett's sphericity test, the p-value came out as 0.00. According to Bartlett's sphericity test, the correlation matrix is not an identity matrix since the results are statistically significant.

INDEPENDENT VARIABLE

Nursing Education: Nurses teach patients about their health, their treatment options, and how to take an active role in their own care through a planned process of teaching and learning. People with chronic COPD learnt how to tell if their symptoms were getting worse, how to use their medications and inhalers correctly, and how to change their lifestyles. It stressed how important it is for skilled nurses to give patients evidence-based information in both one-on-one and group settings so that they can feel empowered. Nursing education's main goals were to help people live longer and healthier lives, get them to stick to their treatment, and teach them how to take better care of their own health (San et al., 2019).

INDEPENDENT VARIABLE

Counselling Service: Through the process of counselling patients, nurses are able to assist individuals who are coping with long-term diseases in addressing the mental, emotional, and social issues that are associated with these conditions. Individualised guidance on how to cope with stress, make changes to one's lifestyle, get emotional support, and continue taking their prescriptions was provided to participants in the COPD counselling program. In the end, they are able to feel more confidence in themselves since they were able to speak about their concerns, obtain answers to their questions, and learn from the experience. Assisting patients with their mental health, encouraging them to take their prescriptions, and improving both their physical health and their quality of life were the primary objectives of the therapy system (Chu et al., 2025).

DEPENDENT VARIABLE

Enhance Medication Adherence of Patients with COPD: People with COPD may be more likely to follow their doctor's advice if we teach them how to use inhalers, oral drugs, and other therapies appropriately. This makes it very clear that it is very important for patients to follow the treatment plans that have been made just for them. People with COPD had to take their prescription at the same time every day and in the amount that their doctor told them to. Because they didn't do what they were supposed to, their symptoms typically became worse, which meant more flare-ups, longer stays in the hospital, and a worse quality of life overall. They were able to keep to their objectives and get the outcomes they wanted with the help of coordinated support, which included patient education, counselling, and follow-up care. Healthcare workers gave patients the most up-to-date knowledge, useful skills, and words of encouragement. The purpose of these workers was to help patients feel more secure and stay committed to their therapy (Bhattarai et al., 2020).

DEPENDENT VARIABLE

Enhance Quality of Life of Patients With COPD: Improving the physical, mental, and social health of people with COPD can help them live better lives. COPD often caused symptoms that lasted a long time, like shortness of breath, tiredness, and less ability to exercise. These made it harder to do everyday things and be independent. Patients also felt emotionally distressed, with anxiety and depression being common, because their disease limited them and they had to go to the hospital often. To make their lives better, people had to do things that made their symptoms less severe, made them stronger mentally, and made it easier for them to do things. Through nursing school, patients learnt about their illnesses and how to take care of themselves. Counselling services helped people deal with stress, make changes to their lives, and get emotional support. These treatments helped patients deal with their symptoms better, do daily tasks, and stay in touch with family and friends. Patients with COPD had a better quality of life, used less health care, and got better long-term results when they improved both their physical and mental health (Grygus et al., 2019).

Relationship Between Nursing Education and Enhance Medication Adherence of Patients with COPD: There was a strong link between nursing education and people with COPD taking their medications as directed. Patients learnt the right things about COPD, how it gets worse, and how important it is to take their medicine on time through nursing education. This helped them keep their symptoms from getting worse and keep them under control. A lot of people with COPD had trouble sticking to their medication plans because they didn't know how to use the inhaler or didn't realise how important it was to take their doses on time. Registered nurses went over treatment plans in detail, showed patients how to use an inhaler correctly, and answered questions about dosage, side effects, and treatment plans during organised educational sessions. After going through this process, patients felt more in charge of their medications and surer that they could take care of them. Patients changed how they thought about and acted on

their treatment after nurse education, which stressed the importance of following instructions and gave practical advice. Patients lacking specialised nursing education were less likely to comply with prescribed treatments, exhibited higher rates of hospital readmissions, and displayed overall suboptimal disease management. Conversely, patients who received such interventions were more inclined to adhere to their treatment regimens (Chu et al., 2025).

After considering the points raised before, the researcher came up with a hypothesis: examine the relationship between nursing educations and enhance medication adherence of patients with COPD.

"H_{01}: There is no significant relationship between nursing education and enhance medication adherence of patients with COPD."

"H_1: There is a significant relationship between nursing education and enhance medication adherence of patients with COPD."

Table 2. H_1 ANOVA Test.

ANOVA					
Sum					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	39588.620	187	4203.953	1216.597	.000
Within Groups	492.770	312	3.455		
Total	40081.390	499			

Impressive findings are produced by this inquiry. A p-value of.000, which is lower than the.05 alpha criterion, achieves significance with a F value of 1216.597. As a result, we can say that *"H_1: There is a significant relationship between nursing education and enhance medication adherence of patients with COPD."*

DISCUSSION

This study found that patients with COPD in Hong Kong who took part in nurse education and counselling programs had a better quality of life and were more likely to stick to their medications. Patients gained a more comprehensive understanding of their condition, the importance of adhering to a consistent medication regimen, appropriate inhaler usage, and strategies for symptom management during the instructional sessions. Counselling helped in this by giving patients a safe place to talk about their problems, lowering their stress levels, and encouraging them to stick with their treatment plans. Patients who received personalised assistance and organised teaching also showed more self-assurance and better health outcomes. Better adherence not only reduced the likelihood of issues necessitating hospitalisation but also enhanced overall health and facilitated daily living. These results showed how important it is for nurses to always be in charge of COPD treatment. Patients may receive information and counselling to facilitate increased engagement in their healthcare. It

had a big effect on their health. Even though it was an exploratory trial, the results showed that organised nurse interventions might help people with chronic illnesses manage their health in similar healthcare settings.

CONCLUSION

This study showed that nursing education and counselling services helped patients with COPD in Hong Kong stick to their medications and live better lives. Patients who got structured educational help learnt more about their condition, learnt how to manage their medications better, and felt more confident about following their treatment plans. Counselling helped this process even more by dealing with emotional issues, giving patients support, and helping them get past obstacles to sticking to their treatment plan. The combination of education and counselling led to better daily self-management, fewer symptoms, and better overall health. These results showed how important it is to give patients the power to be involved in their own care by making nursing interventions easy to get and consistent. This exploratory study underscored the potential of nurse-led education and counselling as essential elements of COPD management programs. Incorporating these strategies into standard healthcare services can assist patients in sustaining long-term adherence, avert unnecessary hospitalisations, and ultimately foster healthier, more autonomous living.

REFERENCES

1. Agarwal, P., Lin, J., Muellers, K., O'Conor, R., Wolf, M., Federman, A. D., & Wisnivesky, J. P. (2021). A structural equation model of relationships of health literacy, illness and medication beliefs with medication adherence among patients with chronic obstructive pulmonary disease. Patient education and counseling, 104(6), 1445-1450.
2. Aliakbari, F., Tavassoli, E., Alipour, F. M., & Sedehi, M. (2022). Promoting health literacy and perceived self-efficacy in people with chronic obstructive pulmonary disease. Iranian Journal of Nursing and Midwifery Research, 27(4), 331-336.
3. Bhattarai, B., Walpola, R., Mey, A., Anoopkumar-Dukie, S., & Khan, S. (2020). Barriers and strategies for improving medication adherence among people living with COPD: a systematic review. Respiratory care, 65(11), 1738-1750.
4. Chu, H., Ding, Y., Zhou, Y., Ji, P., Yuan, B., Zhan, X., ... & Zhan, S. (2025). Patient journey and Quality of Life for Patients with Idiopathic Pulmonary Fibrosis (IPFLife) in China: a sequential exploratory mixed methods research protocol. BMJ open, 15(8), e098770.
5. Grygus, I., Nesterchuk, N., Zukow, W., Nikolenko, O., & Prymachok, L. (2019). The quality of life in COPD patients in the process of physical rehabilitation. Journal of Physical Education and Sport, 19(2), 1126-1132.
6. Liu, Y. R., Wang, Y., Peng, X., & Xie, H. (2025). The Impact of Illness Perception on Medication Adherence to Inhaler Therapy in Elderly Individuals With COPD. Respiratory care, 70(1), 65-73.

7. San Ko, F. W., Chan, K. P., & Hui, D. S. C. (2019). Comprehensive care for chronic obstructive pulmonary disease. Journal of thoracic disease, 11(Suppl 17), S2181.
8. Sazak, Y., & Olgun, N. (2025). The effect of Chronic Care Model-based follow-up on self-efficacy and patient-reported outcomes in COPD patients: a randomized controlled study. BMC nursing, 24(1), 578.
9. Wang, X., Liu, Y., Liu, Y., Zhang, J., Liu, L., Matarese, M., & Wang, L. (2025). Exploring patients with COPD self-care behaviours and self-efficacy and their interconnections: A network analysis. Journal of Clinical Nursing, 34(2), 517-528.