



Case Study

Empowering a Patient with COPD to Change Smoking Behavior: A Case Study Based on Barrett's Theory of Power as Knowing Participation in Change

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Abstract

Background: Effective COPD management requires sustained behavioral change, particularly smoking cessation, which remains challenging despite standard counseling. Barrett's Theory of Power as Knowing Participation in Change emphasizes awareness, participation, and autonomy, potentially facilitating smoking behavior change.

Objectives: This case study examined changes in smoking behavior and empowerment following a Barrett Theory-based nursing intervention in a COPD patient with previous unsuccessful quit attempts.

Methods: A six-month theory-based intervention was delivered to a 55-year-old man with moderate COPD (GOLD stage II) in northern Iran. It included individualized education, collaborative smoking reduction planning, anxiety management, breathing exercises, and weekly follow-ups. Outcomes were daily cigarette use, dyspnea (0–10 Numeric Rating Scale), and FEV₁ spirometry.

Results: After six months, daily smoking dropped from 20 to 10 cigarettes (50% reduction), and dyspnea improved from 9/10 (severe) to 5/10 (moderate). FEV₁ stabilized at 60% of predicted value. The patient engaged actively in follow-ups, self-monitored his smoking, and reported greater self-management confidence. In month three, he temporarily increased smoking after a stressful event but, with ongoing support, resumed his reduction plan, consistent with Barrett's helicy principle.

Conclusion: This case suggests that Barrett's empowerment framework may support smoking reduction and enhance engagement in COPD care. The helicy principle helps reframe relapse as part of a nonlinear process, maintaining motivation. Further research with larger samples and longer follow-up is needed.

Implications for Nursing and Midwifery Preventive Care

- Barrett's theory enhances patient awareness and active participation in smoking behavior change.
- Individualized education and collaborative planning facilitate empowerment-based preventive care and behavioral change.
- Empowerment-based interventions can be integrated into chronic disease preventive care models.



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Introduction

Chronic obstructive pulmonary disease (COPD) is a progressive, lifelong disease [1]. The global prevalence is increasing (12% worldwide and 4.9% in Iran), mainly due to tobacco use and air pollution [2, 3]. Acute exacerbations are a common complication of the disease, leading to increased hospitalization, costs, and mortality [4, 5]. Behavioral interventions such as early detection, symptom management, smoking cessation, vaccination, and dyspnea management can help reduce exacerbations and hospitalizations [6]. Smoking is the primary cause of COPD and has systemic effects [7]. Behavioral therapies are effective in smoking cessation [8]. However, their implementation in hospital settings is often limited by prioritization of acute conditions, lack of resources and expertise, and inadequate financial reimbursement [9, 10].

In this context, nursing models based on theoretical frameworks can provide valuable guidance for improving care, promoting health, and supporting patient recovery [11].

Barrett's Theory of Power as Knowing Participation in Change emphasizes awareness, choice, intentional action, and participation in change processes [12]. The theory does not prescribe a fixed order for these concepts, as their importance may vary across contexts [13]. The theory suggests that nurses should be aware of their choices and feel free to initiate change across different domains [14]. Barrett distinguishes between power-as-control (hierarchical and deterministic) and power-as-freedom (relational and participatory). Without awareness, meaningful change is unlikely; individuals must actively participate in creating new realities and use power as a resource for achieving health-related goals [13].

The Theory of Power as Knowing Participation in Change, developed by Barrett from Rogers' Science of Unitary Human Beings, defines power as the capacity to consciously participate in change through four dimensions: awareness, choice, intentional action, and participation [13].

The theory was operationalized in nursing practice through the Health Patterning Model, which focuses

on enhancing patient awareness and agency during the change process [15]. Rogers' concepts of resonance and helicy describe change as continuous and nonlinear, emphasizing that human processes evolve dynamically and irreversibly [16, 17]. Barrett also distinguishes between power-as-control and power-as-freedom, highlighting the role of autonomy and participation in facilitating meaningful change [13].

In this study, the theory was used to support smoking behavior change by increasing awareness of smoking risks, promoting autonomous decision-making, and encouraging active participation in care planning. Interventions included pattern recognition, exploration of patient experiences, identification of barriers, goal setting, and progress monitoring [15]. Barrett's theory was selected due to its emphasis on autonomy rather than authority, its relevance to psychological dependence in COPD-related smoking behavior, and its alignment with the nonlinear nature of behavioral change in chronic illness.

Objectives

This case study aimed to explore changes in smoking behavior and patient empowerment following a nursing intervention based on Barrett's Theory of Power as Knowing Participation in Change in a patient with COPD and previous unsuccessful smoking cessation attempts.

Methods

Study Design

This is a single-case study conducted according to the CARE reporting guidelines.

Study Setting

The study was conducted in a teaching hospital affiliated with Golestan University of Medical Sciences in northern Iran.

Outcome Measures and Data Collection Tools

Data were collected using the following instruments:

A 0–10 numeric rating scale for dyspnea severity

Daily cigarette consumption record sheet

Spirometry testing for pulmonary function (FEV₁)

Assessments were performed at Baseline and at the end of the six-month intervention period.

Case Presentation

A 55-year-old male construction worker with a diploma-level education was admitted with a diagnosis of chronic obstructive pulmonary disease (COPD). He had a 30-year history of smoking approximately one pack of cigarettes per day and reported multiple unsuccessful attempts to quit smoking.

The patient experienced progressive dyspnea, chronic cough with sputum production, wheezing, and reduced physical activity tolerance. He also reported psychological dependence on smoking. His spouse provided emotional support during hospitalization.

The patient was purposively selected due to recurrent COPD-related hospital admissions and a history of failed smoking cessation attempts.

The patient and nurse jointly agreed on the intervention goals at Baseline, in accordance with Barrett's participatory approach [Table 1].

Clinical findings at Baseline

At admission, the patient's dyspnea severity was rated 9/10 on a numeric rating scale. Vital signs included respiratory rate 23 breaths/min, heart rate 83 beats/min, blood pressure 110/83 mmHg, temperature 36.7°C, and oxygen saturation 88%. Spirometry results confirmed moderate COPD with a forced expiratory volume in one second (FEV₁) of 60% predicted, consistent with GOLD stage II classification.

Nursing Diagnoses

Based on the North American Nursing Diagnosis Association (NANDA-I) classification system, the following nursing diagnoses were identified:

- Ineffective breathing pattern.
- Impaired gas exchange.
- Ineffective health maintenance related to smoking dependence.
- Anxiety related to dyspnea and chronic illness.

Timeline of Intervention

The intervention was implemented over six months. Baseline assessment was conducted at admission, followed by initiation of the nursing intervention. Weekly structured follow-up sessions were conducted during hospitalization and after discharge through outpatient visits and telephone follow-ups. Final evaluation of outcomes was performed at the end of the six months.

Nursing Intervention Based on Barrett's Theory

A structured nursing intervention grounded in Barrett's Theory of Power as Knowing Participation in Change was applied to support smoking behavior change and patient empowerment.

The intervention was designed according to four core dimensions of the theory:

Awareness

Education was provided regarding the relationship between smoking and COPD progression, along with training in breathing techniques and symptom awareness.

Choice

The patient was actively involved in shared decision-making to develop a gradual smoking reduction plan based on his readiness to change.

Intentional action (freedom)

Anxiety management strategies, coping skills, and individualized respiratory care techniques were introduced to enhance autonomy and self-regulation.

Participation

The patient engaged in goal setting, care planning, and weekly progress monitoring throughout the intervention period.

The intervention also included psychosocial support and family involvement. Each session lasted approximately 30–45 minutes and was delivered weekly by the nursing researcher.

Other components of Barrett's framework, such as guided imagery, therapeutic touch, dream analysis, meditation, and administration of the PKPCT questionnaire, were not included in this intervention. The full nursing process is presented in Table 2.

Table 1. Patient and Nurse Goals

Participant	Goals
Patient	To quit smoking and improve respiratory status.
Nurse	To support smoking cessation, improve breathing, and enhance quality of life.

Table 2. Barrett Theory–Based Nursing Process for COPD Patient

Nursing Stage	Content
Assessment	Data were collected through patient and family interviews, medical records, and clinical examination. Patient perceptions, smoking behavior, respiratory status, and psychosocial factors were assessed. Baseline findings included dyspnea (9/10), FEV ₁ 60%, oxygen saturation 88%, and a smoking history of 20 cigarettes/day.
Nursing Diagnoses (NANDA-I)	Ineffective breathing pattern; impaired gas exchange; ineffective health maintenance; anxiety; fear related to smoking cessation and disease progression.
Goals	Reduce dyspnea, decrease smoking behavior, improve respiratory status, reduce anxiety, and enhance patient awareness and empowerment.
Planning	Education on smoking risks, breathing exercises, gradual smoking reduction plan, anxiety management, and strengthening social support.
Implementation (Barrett-based intervention)	<i>Awareness:</i> education on COPD–smoking link. <i>Choice:</i> shared decision-making for quitting plan. <i>Freedom:</i> patient autonomy in quitting process. <i>Participation:</i> goal setting, weekly follow-up, self-monitoring of smoking.
Evaluation	Dyspnea reduced from 9/10 to 5/10; smoking decreased from 20 to 10 cigarettes/day; improved patient engagement and anxiety reduction reported.
Key Barriers/Facilitators	Psychological dependence, previous failed quit attempts; facilitators included family support and motivational reinforcement.

Data Analysis

As a single-case study, data were analyzed descriptively.

Quantitative outcomes (daily cigarette consumption, dyspnea scores, and FEV₁) were compared between Baseline and six-month follow-up. Qualitative data on patient engagement and empowerment were derived from weekly session notes and patient self-reports during follow-up visits.

Findings

After the six-month intervention period, the patient demonstrated improvements in both clinical and behavioral outcomes:

Smoking Behavior

Daily cigarette consumption decreased from 20 cigarettes per day at Baseline to 10 cigarettes per day at the end of the intervention, representing a 50% reduction.

Dyspnea Severity

The patient's dyspnea score improved from 9/10 (severe) at Baseline to 5/10 (moderate) at the six-month follow-up, as measured by the 0–10 Numeric Rating Scale.

Pulmonary Function

Spirometry results showed stabilization of FEV₁ at 60% of predicted value, with no further decline during the study period.

Patient Engagement and Empowerment

The patient actively participated in all weekly follow-up sessions, self-monitored his smoking behavior using a daily record sheet, and reported increased confidence in managing his condition.

He expressed greater awareness of the link between smoking and COPD exacerbations and demonstrated autonomous decision-making in his gradual reduction plan.

Challenges Encountered

During the third month, the patient experienced a temporary increase in cigarette consumption to 15 cigarettes

per day following a stressful life event. However, through supportive counseling and reinforcement of coping strategies, he was able to return to his reduction plan and continue progress. This fluctuation, consistent with

Barrett's helicy principle, was reframed as part of the nonlinear change process rather than as failure.

Discussion

According to Barrett's theory of power as conscious participation in change [15], our nursing interventions helped the patient overcome the challenges of COPD and smoking cessation through a sequential but nonlinear process. As presented in the findings section, the patient's dyspnea improved from 9/10 to 5/10, and his smoking decreased from 20 to 10 cigarettes per day over the six-month period. These changes were achieved through the following theory-based mechanisms.

First, increasing the patient's awareness of the association between smoking and exacerbation of COPD symptoms (dyspnea 9/10) strengthened his motivation to change behavior by creating cognitive dissonance. Second, offering conscious choice allowed him to select assistive methods aligned with his preferences (e.g., nicotine gum vs. gradual reduction), which enhanced perceived control and intrinsic motivation. Third, the freedom dimension removed perceived external pressure, reducing psychological resistance commonly seen in smokers with prior failed attempts. Fourth, the patient's active participation in designing a smoking cessation program and recording progress transformed him from a passive recipient to an active agent, giving him a sense of control over the treatment process. Finally, the helicy principle reframed setbacks as irreversible forward movement rather than regression, which prevented demoralization when cravings occurred. As noted in our findings, the patient experienced a temporary increase in smoking

during the third month following a stressful event. Through ongoing support, he was able to resume his reduction plan. These mechanisms directly targeted the patient's previous failed attempts, rooted in psychological dependence and anxiety rather than lack of knowledge alone. The results of this study are consistent with previous research on the application of Barrett's theory in the management of chronic diseases. The Etheridge-Bagley study showed that increasing patients' awareness through this theory improves their participation in the change process [12]. Chang's study also confirmed the positive impact of individual empowerment-based interventions on patients' quality of life. However, the main difference in this study was the practical application of Barrett's theory in smoking cessation in COPD patients, which has received less attention in the literature [14]. Dehkordi's study also emphasized the importance of self-management in COPD but used traditional self-care models. The present study, by integrating Barrett's theory, emphasized the role of patient agency [2]. Andy's study, which was conducted as a systematic review, also showed that behavioral interventions such as gradual smoking reduction are effective in smoking cessation. Still, the present study examined the patient's lived experience with a qualitative approach [8]. Also, unlike studies such as Hübsch that focused on post-discharge interventions, this study used Barrett's theory to empower patients during hospitalization [6]. While studies such as Siltanen emphasized the role of the family in self-management, this study demonstrated how active patient participation (alone) can facilitate behavior change [1].

The innovation of the present study is the combination of Barrett's theory with standard smoking cessation interventions (such as gradual reduction in consumption and psychological support) and patient participation in decision-making, which is in line with the principles of individualized care in modern nursing.

This study has several limitations. As a single-case design, the findings cannot be generalized to broader populations. The absence of a control group limits causal inference, and smoking reduction was self-

reported, which may introduce reporting bias. The six-month follow-up period may also be insufficient to assess long-term abstinence.

Despite these limitations, a key strength of this study is the theory-driven, individualized intervention grounded in Barrett's framework, which addresses both psychological and behavioral aspects of smoking dependence. The integration of empowerment strategies within routine hospital care is another notable strength.

Future research should include randomized controlled trials with larger samples and longer follow-up periods (≥ 12 months). Biochemical validation of smoking status (e.g., exhaled carbon monoxide) is also recommended. Comparative studies between Barrett's theory and other behavioral models may further clarify its relative effectiveness in smoking cessation interventions.

Conclusion

This case illustrates that Barrett's theory can serve as an effective framework for supporting smoking cessation in COPD patients with a history of failed quit attempts. The findings suggest that enhancing awareness, offering meaningful choices, supporting autonomy, and promoting active participation can facilitate sustained behavioral change beyond traditional educational approaches. The helicy principle is particularly valuable in reframing relapse as part of a continuous, nonlinear process, thereby maintaining patient motivation.

For clinical practice, nurses can apply this framework to structure brief, patient-centered interventions during hospitalization. Even short empowerment-focused interactions may initiate meaningful behavioral change in high-risk COPD patients and support long-term self-management.

Ethical Consideration

The study was approved by the Research Council and the Biomedical Ethics Committee of Golestan University of Medical Sciences (IR.GOUMS.REC.1404.331). Written informed consent was obtained from the patient before participation and publication of this case report, in accordance with the Declaration of Helsinki.

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Conflict of Interest

This study has no conflicts of interest.

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Authors' Contributions

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Writing – Review & Editing: Kh. Yazdi

All authors read and approved the final manuscript.

Artificial Intelligence Utilization

No generative artificial intelligence or AI-assisted technologies were used in the writing, editing, or data analysis of this article.

Data Availability Statement

It will remain confidential to the first author.

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