This is the first of a three-part series (to appear in consecutive issues) exploring the psychosocial and psychological concomitants of chronic obstructive pulmonary diseases (COPD), with emphasis on anxiety and depression. The reciprocal nature of dyspnea, anxiety and depression is clarified. Isolation, denial, and repression are the classic defenses of COPD patients and some, not all, patients can be aided by psychotherapy. This counseling many times may best be administered by the primary physician. If the patient requires additional long-term therapy, referral to a specialist is recommended. The following treatment modalities, in addition to basic medical therapy to facilitate respiration, also are discussed: breathing retraining, meditation, relaxation training, experimental use of biofeedback, behavior modification, goal setting, life-change monitoring, and education of patient and family in patient self-care. One section delineates the use of psychoactive medications, patient responses to various medications, and clearly identifies contraindications. For ease of assimilation the series is divided into three parts of equal importance. Part I is primarily concerned with a selected relevant literature summary, psychosocial evaluation of patients, general guidelines for treating psychosocial aspects of COPD, and patient/family education.

Part II is concerned with various specific psychosocial and psychological treatment modalities for anxiety and depression, and their application to COPD patients.

Part III concentrates on psychiatric disease that may coexist with COPD, and the use of psychopharmacologic agents in treatment of psychiatric disease.

The three parts will enable the reader to identify areas of interaction between the primary physician, social workers, psychologists and psychiatrists in the treatment of the COPD patient with emotional difficulties.

Successful rehabilitation of the patient with chronic obstructive pulmonary diseases (COPD) depends not only on treatment of the physical aspects in the disease, but also on improvement of the individual’s ability to cope with his illness. The physician’s understanding of the psychosocial, as well as physiological, aspects of respiration is vitally important to the long-term adjustment and survival of the patient with emphysema, chronic bronchitis, and chronic asthma. An in-depth discussion of these diseases has been published elsewhere. The degree of physical impairment accompanying COPD varies greatly and may be classified. Five levels (classes) of functioning are defined:

I. Patient with recognized disease with no restriction is able to do what peers can do continues usual life pattern

II. Patient with minimal or moderately restricted activity is able to do productive work has some difficulty keeping up with peers has begun to modify life pattern

III. Patient with markedly restricted activity is not homebound may not be able to do productive work but is able to care for himself
IV. Patient with severely restricted activity
is not able to do productive work
is essentially homebound
but is able to care for himself

V. Patient with very severely restricted activity
is homebound or in an institution
is not able to care for himself

The earlier the disease is detected, the greater the potential for slowing the disease process through a comprehensive care program. As might be expected, a disease that (a) interferes with breathing, (b) reduces vitality, and (c) produces progressively severe symptoms usually tends to produce psychosocial complications. The ability to carry out vocational, social, recreational, and sexual activities of daily living is reduced. Very understandably, then, COPD frequently is associated with anxiety, dependency, and loss of self-esteem. These concomitant problems, often minimal in patients at levels I and II, are likely to be more severe in the later, more incapacitating stages of the disease and can be devastating, particularly among patients with few psychosocial assets.

Psychosocial assets are qualities or conditions such as the following: a vital interest in life; adequate financial resources and housing; social support—being loved, feeling esteemed, being part of a mutual “defense system” which in time of need one can utilize; ability to cope with modification of one’s environment in ways designed to meet one’s needs; ability to adapt oneself to reality factors in the environment that cannot feasibly be changed; freedom from oversensitivity; and congeniality, flexibility, reliability, a sense of good judgment, and a willingness to shoulder reasonable responsibility.

While the exact interaction between psychosocial assets and the pathophysiology of COPD is complicated, it is apparent that patients with these assets are likely to deal more effectively with the disease process. Although past competencies tend to be situation-specific, it is generally true that patients with a broader experience base are more able to adapt to situational changes. Thus, the more experience patients have with a particular stressor, the more probable it is that their present responses will be effective.

The physician’s first consideration in treatment is to reduce the patient’s physical discomfort and disability, improve his sense of well-being, and teach him (and possibly his family) self-treatment techniques. By so doing, the impact of many psychosocial problems will be reduced. The following goals or guidelines are important if the physician is to provide adequate treatment and if the patient is to benefit. These objectives are applicable in treating patients with any chronic illness, but are especially important in COPD cases.

1. To maintain open lines of communication between the patient and primary physician. (The patient should feel that his physician is someone he can confide in, someone who wants to improve his life and quality of living).

2. To educate the patient and his family about the disease.

3. To understand the patient’s necessary psychological defenses against illness and physical incapacity, while encouraging him to maintain as many of his interests and activities as possible without harm to himself.

4. To eliminate exaggerated emotional responses to his illness.

5. To involve the family (where feasible) in the patient’s treatment.

**Review of Selected Literature**

**Psychological Characteristics of the COPD Patient**

While there are some similarities in the composite clinical picture of the COPD patient, there also are considerable variations in individual personality, disease stages, degree of impairment, and socioeconomic, educational, or cultural resources. In a study of 45 patients, Lustig et al described COPD patients as “highly anxious, socially isolated, lonely, and afraid to commit themselves to vocational activities.” Dudley et al observed that many severely disabled COPD patients tended to live in “emotional straitjackets.” The patient can no longer become angry, depressed, or even happy, because any significant emotional change leads to distressing symptoms and often to physiological decompensation in the more advanced disease stages. Lester found the COPD patient opting for a constricted “living space,” which can be conceived of in spatial or interpersonal terms; withdrawal into the home and avoidance of social interaction with others.

Recent studies have found distinctive COPD patient profiles on the Minnesota Multiphasic Personality Inventory (MMPI), but these findings must be interpreted cautiously. For example, Lester noted that COPD patients scored significantly (p < 0.05) above standard levels on the hypochondriasis, depression, and hysteria (“neurotic triad”) scales of the MMPI. Lester’s population, however, had a mean age of 61 years, and these elevated profiles are normal for that age group, especially among those forced to retire because of disability. Furthermore, many of the items on the neurotic scales of the MMPI, eg, “I am about as able to work as ever,” “I
do not tire easily,” and “I am seldom short of breath,” relate to physical symptoms likely to be experienced by COPD patients (and persons with other types of health problems). Therefore, as Lester has noted, an elevation of these scales may be accounted for as straightforward, factual, symptom reporting.11

Logan and Johnson12 found significant elevations on the psychopathic deviance (which includes resistance to close personal ties) and psychasthenia (which includes anxiety, worry) scales. However, these elevated scores may be related to an understandable response to dyspnea.

Recent research by Dudley and Martin (unpublished data) did not confirm the findings of Lester11 or of Logan and Johnson12 that COPD patients have significantly elevated scores on the psychopathic deviance and psychasthenia scales of the MMPI. The population in the Dudley and Martin study was predominantly composed of upper-middle-class, private hospital patients, whereas the Lester, and the Logan and Johnson groups were taken from public hospitals, and on the average, represented lower economic levels. This suggests a positive relationship between economic status and adjustment to the disease process.

Psychosocial Assets and Rehabilitation

As one would expect, patients with many strong psychosocial assets are more responsive to rehabilitation efforts than are patients with few such assets. De Araujo et al14 found that asthma patients with a considerable number of these characteristics required less medication and adapted more readily to emotionally triggered physiological changes in ventilation and/or CO2 level than did patients with few such assets. Those with many assets also seemed to be more aware of the effect of emotions on symptom development and were able to exercise greater control over these symptoms. Pattison et al15 found that COPD patients with highly developed psychosocial assets exhibited positive response to group psychotherapy and manifested effective interpersonal behavior. Similarly, Agle et al6 found that COPD patients with incapacitating psychological problems, such as severe depression, responded less favorably to rehabilitation programs than did those patients without such problems. Results of similar studies5,6 showed that COPD patients with high psychosocial assets protected themselves more efficiently from dangerous symptoms such as attacks of dyspnea, carried out treatment programs more carefully and responsibly, and generally, outlived their counterparts who were lacking such skills.

Depending on his occupation, the COPD patient may find it necessary to retire earlier than anticipated. For some patients, this may impair self-esteem and add to financial pressures. Feelings of tension generated by these concerns can, in turn, further constrict the airways and exacerbate symptoms. Agle et al6 found that if the patient were able to work, self-esteem increased and depression was reduced. Depression increased if the patient learned he could not continue to work, and employment was held to be the only worthwhile goal. Attitudes on the part of treatment staff that self-esteem involved more than full-time employment provided relief for some male patients who were not employable.

Even for COPD patients who are able to work, a change or modification of occupation during middle age or later years can be unsettling. Vocational rehabilitation may be helpful to such patients. However, Kass et al19 found that patients were unlikely to benefit from participation in a vocational rehabilitation program if the first-second expiratory volume (FEV1) was less than 50 percent of predicted and if maximum voluntary ventilation (MCC) was less than 40 percent of predicted. They did suggest that some exceptions be made for individuals who are well motivated, possess specialized or needed skills, or have jobs that can be modified to meet reduced pulmonary capacities.

In a study comparing the effects of pulmonary rehabilitation and psychotherapy on (a) anxiety, (b) medical orientation, (c) social introversion, and (d) attitude toward work and engagement in vocational activities, Lustig et al16 found that significant (p 0.05) psychological improvement resulted when patients (N = 45) received either pulmonary rehabilitation (15 to 20 treatments that included graded exercises, postural drainage, relaxation, and breathing retraining) or psychotherapy (15 to 20 sessions). Pulmonary rehabilitation was found to produce greater psychological improvement than did psychotherapy, possibly because of the immediate reinforcement provided by facilitated breathing. However, the authors concluded that “a program combining rehabilitation and psychotherapy is a sine qua non” for many COPD patients, especially for those with few psychosocial assets.

In a study of 21 male VA hospital patients, Baum et al14 and Agle et al6 found success using a four-week program which included standard medical management, breathing retraining, intensive graduated exercise, twice-weekly group therapy sessions, and voluntary vocational and social counseling. Patients were followed monthly, and reevaluated at the one-year point. These researchers found that “sustained improvement in function (ability to perform the activities of daily living) can occur in some
patients without corresponding demonstrable improvement in physiologic measures.” They also concluded that “the lessening of crippling psychologic symptoms resulted from the total rehabilitation effort and was not an isolated response to group therapy.” Further, they speculated that their procedure of gradually increasing exercise in the presence of medical personnel “inadvertently functioned as a desensitizing form of behavior therapy. Repeatedly, our patients were exposed to increasing doses of the feared activity, while at the same time feeling protected and reassured. Thus, the anxiety or phobic element of their avoidance of activity was desensitized, and eventually they were able to continue physical effort without the reassuring presence of the physician.” And further, “We wonder if our patients’ increased confidence in their ability to control their symptoms was partially responsible for the marked decrease in number of hospital admissions following training.”

Agle et al also found at least seven factors in their program that produced improved psychologic state and performance:

1. Progressive exercise leading to a decrease in unrealistic fear of activity and dyspnea.
2. Education in self-care leading to increased autonomy in the control of symptoms.
3. Staff attitudes stressing that the patient is ‘worth the effort.’
4. The setting of realistic goals leading to improved self-esteem.
5. Monthly follow-up to consolidate gains.
6. Mutual support from group interaction.
7. The psychosocial factors within the patient that lead to strong motivation.

Fishman and Petty, in a study of chronic bronchitis and emphysema, assessed 30 patients on entry into a comprehensive care program and again after one year. The group showed some absolute improvement in objective signs and affective distress, some relative improvement in symptoms, and no changes in dependency behavior or psychopathology. Both patients and staff felt that improvement in objective signs, symptoms, and psychological adjustment were positively associated.

In a study of hospitalized COPD patients, Haas and Luczak noted that patients reacted to physical improvement with elation and increased motivation, and tended to maintain these attitudes throughout the inpatient treatment program. After discharge, however, these same patients tended to “overreact depressively to minor difficulties and setbacks encountered in readjusting to the community,” suggesting the need for a comprehensive care program that will prepare the patient to cope with the physical, vocational, and psychological demands of both the inpatient and outpatient environments.

EMOTIONAL STATES AND PSYCHOPHYSIOLOGY ASSOCIATED WITH COPD

To understand the patient with COPD, it is helpful to consider some of the elements of basic pulmonary psychophysiology. Psychological states of action, such as significant degree of anxiety, anger, and euphoria, are associated with increased energy expenditure, elevated ventilation, high oxygen consumption, and skeletal muscle tension; while psychological states of nonaction, such as apathy, depression, and deep relaxation, are associated with reduced energy expenditure, decreased ventilation, low oxygen consumption, and skeletal muscle relaxation.17-19 Either of these extreme states may increase symptoms in the COPD patient.

The biologic significance is in matching body physiology and psychologic intent to activity levels. The patient whose condition has advanced beyond level II or III, with compromised ventilation and borderline blood gas values, may get into serious difficulty by reacting with extremes of either action or nonaction. When reacting to a stimulus leading to an action-oriented response pattern, a patient whose ventilation is already being severely taxed may not be able to increase ventilation to meet greater psychological and physiologic demands. Thus, the patient with severe COPD may become hypoxic, hypocarbia, and dyspneic because of the increased metabolic load and the failure of ventilation to compensate by increasing the oxygen supply. The patient with moderate COPD may develop hypoxia without hypocarbia.

It is useful to remember that there is no impairment to the production of carbon dioxide or the utilization of oxygen by the skeletal muscles. The impairment is in the inability of the pulmonary system to supply oxygen and remove carbon dioxide. The nonaction pattern is less understood, but patients appear to decrease ventilation in excess of the change in metabolism; the net result is, again, a relative ventilatory insufficiency, resulting in hypoxia and hypocarbia. The dyspnea produced by states of extreme action or nonaction tends to increase the patient’s psychological reactions which, in turn, produce more physiologic change. This physiologic change typically increases the dyspnea, completing a vicious circle which may completely incapacitate even level I or II patients whose pulmonary function is relatively intact.18,20

GENERAL GUIDELINES FOR TREATING PSYCHOSOCIAL ASPECTS OF COPD

As the patient comes to realize that changes in his
emotional state increase his incapacity and disability, he may protect himself through isolation, denial, and repression. In addition, his fear of alienating those who provide access to medical care may lead to an inability to express anger or resentment, and assumption of either a passive-dependent or passive-aggressive role. As the patient encounters the severe problems associated with the more advanced stages of disease, he may believe he cannot face his feelings or deal with interpersonal conflicts without risking an exacerbation. At the same time, rigid avoidance of conflict and emotional change perpetuates emotional and interpersonal problems and increases frustration, anger, and despair. Unless the patient can learn techniques to handle emotional changes, the chance of long-term productive survival will be significantly diminished.

By the time the physician is called in, the COPD patient often is experiencing moderate-to-severe disability and respiratory insufficiency. In some cases, the disease may reach this advanced stage without medical intervention because of the "silent" nature of the process—one cannot see shortness of breath, and the patient’s complaints are often ignored as psychosomatic or unexplained. The patient may deny his own symptoms, for fear of being regarded as a hypochondriac or of inviting questions about his vocational or personal adequacy. For example, a 6'2" grocery-truck loader found that he could cope with the physiological limitations COPD placed on him, but he was angry and helpless when faced with his coworkers’ covert accusations that he was lazy and pension hungry. Unfortunately, the man repeatedly attempted to overcompensate physically and neglected his self-care, resulting in a series of hospitalizations. It was not until he had been repeatedly hospitalized that his co-workers were convinced he was legitimately ill.

Some individuals respond to any type of physical disability with resentment, anger, anxiety, fear, or depression. The disorganization these reactions produce may be sufficient to upset a therapeutic program. Some patients may be anxious and fearful about seeing a physician, and when they eventually do seek medical aid, may fail to carry out a good therapeutic program. It is not unusual for the COPD patient to avoid seeing a physician if it is difficult for him to quit smoking. (It is a common belief among uninformed COPD patients that the only treatment for lung disease is to stop smoking). If the patient becomes depressed, he may lack the motivation or energy to care for himself, or may become self-destructive and actively attempt to thwart the physician’s therapeutic efforts.

The patient may need several interviews before he is comfortable with the physician and can trust him sufficiently to relate feelings or events that are important to him. His current medical condition may make it impossible for him to focus on emotional problems until the acute physiologic crisis is over, or he may need active psychiatric or psychological intervention to survive the medical crisis. This latter situation is illustrated in the following example:

After successfully coping with COPD for several years, a 45-year-old woman was hospitalized with a severe exacerbation. In the past, her condition had improved quickly, due in large part to her determination to remain as independent as possible. This time, however, she made little effort to reduce the use of the assistive breathing device, refused medication, and appeared to give up. When the physician asked what had changed in her life recently, she revealed that her mother, with whom she had been residing, had died four months earlier and she was now alone. The hospitalization was an emotional crisis for the patient because it reminded her of her own decreasing level of independence.

With limited goal setting, much encouragement, and an effort to help her find the buffering social support systems available to her (more active involvement in church groups and membership in an emphysema club), she began to recognize that she still could function independently. The prospect of living alone then became less frightening.

It would have been insufficient to treat only the pulmonary problem. Changing her attitude about her disease and her prognosis, while encouraging her reinvolution in social activities, were crucial to her participation in the treatment process.

**INITIAL PSYCHOSOCIAL EXAMINATION**

The dual purpose of the psychosocial examination is to give the patient the opportunity to talk about problems and to relate information necessary to the formation of a treatment plan. If mutual understanding and rapport are established in the initial examination, the patient is likely to develop a long-lasting sense of confidence in the physician.

The initial examination also affords the physician an opportunity to contribute to the development of the patient’s attitude about his disease. It is important that the physician not minimize the seriousness of the disease, but it is also important that the patient be given hope that the progress of morbidity can be substantially controlled or reduced with good self-care and physician assistance.

In taking the personal history, the physician should obtain information about the patient’s early development and behavior, his education, work history and interest in work, his financial problems, his habits, hobbies, and recreations. Current family situation, marital-sexual relationships, and community interests and activities (including religious interests) also should be determined. Organization of the data under major categories such as "work
history," "current living situation," "social and family history," "recreational interests," and "financial circumstances" may be useful. The problem-oriented recording system used by many medical facilities is an alternative arrangement of this information.

Once the information is organized, problem areas and the presence of psychological problems requiring referral may become more apparent and the focus of treatment more readily discerned. By carefully examining the various categories, the physician may be able to identify factors that have contributed to the patient's disability, those that may lead to an exacerbation of his illness, and those areas of the patient's life most severely impaired by his physiological problems. It is extremely important to learn the nature of the patient's interactions with members of his household, since the character of these relationships may have a profound effect on his disease and the course of treatment. Once the physician understands the nature of these interactions, he can work more effectively with family members and help the patient find better ways of coping with problem relationships.

A simple way to assess problem areas is to ask the patient to take the Mooney Problem Checklist. This test directs the patient simply to underline any of 288 briefly stated problems that trouble him, such as "feeling tired all the time" or "sleeping poorly." The statements are divided into clusters of six items which are related to a given category of problem.

The physician also may wish to obtain a detailed account of the patient's routine. Under what circumstances does he feel at his best and worst? Do his symptoms fluctuate from day to day, morning to evening, hour to hour? Are they affected by eating, sleeping, or exercising? How does sexual or social activity, work, or emotional stimulation affect him? What really bothers him and makes him feel bad? What brings relief, temporary or otherwise? Are there known precipitating factors, such as worry, accidents, disappointments, bereavements, or financial strains? Have there been previous periods of difficulty? Did anyone frighten him about his illness? How have other physicians responded? What does he think of them? Is he depressed, elated, angry, or apprehensive?

This detailed account of daily activity can be useful for the patient; by charting his activities and responses, he may increase his awareness of symptom-producing behavior. For example, a 55-year-old executive with a major industrial company had experienced increasing dyspnea over a five-year period. He associated this with heart trouble, and subsequently, decreased his physical activity in reaction to both the dyspnea and fright over the possibility of injuring himself with exercise. When he finally consented to a complete physical examination, a diagnosis of COPD level III was made.

The patient was treated with appropriate medication and given a graded exercise program. He did well on the treatment program and was able to increase his activities to level II status. He felt better than he had in years and decided to pick up some of the business he had been neglecting while his physical-activity tolerance had been diminishing. His business responsibilities occupied more of his time, and his self-care program deteriorated. After several months of neglecting his treatment, his condition again deteriorated to level III. He was reminded by his physician that the treatment of his pulmonary condition was as important as his business needs. After attaining a balance between work and the treatment program, the patient regained level II status.

Throughout the initial examination and subsequent treatment, physicians should avoid the common misconception that patients have either physical or emotional problems, not both. A patient may have a psychiatric disease with exacerbation of the COPD, or COPD with exacerbation of the psychiatric disease. On the other hand, the two conditions may coexist with little or no interaction. Lack of oxygen supply to the central nervous system in certain COPD patients can precipitate or aggravate psychiatric disease, particularly when an organic component is present.

The debilitating effects of COPD are likely to accelerate other deteriorating processes. Patients with COPD may become excessively concerned with all bodily functions and may become more defensive, as well as more superficial or labile in emotional expressions or responses. Not only do physical and psychological problems often coexist in these patients, they often interact in an additive or multiplicative fashion.

**Patient and Family Education**

To educate the patient and his family about COPD, it is important to identify psychological and social situations that tend to contribute to disability and insufficiency. This can be done by including family members in office visits or by visiting the patient's home. The Visiting Nurse Association and Home Health Programs are valuable in extending contacts into the patient's home and can also provide ongoing education for those patients and families experiencing particular difficulty in coping with the disease or home-care prescriptions. When necessary, it is important for the physician to orient these health professionals about what to look for and,
after mutual discussion, what to do about medical problems or behavioral reactions.

Educating the patient and his family involves frank, open discussion about the nature of the disease, its social implications, and the patient’s prognosis with good medical and psychosocial treatment. The patient (and family) should be informed of the mechanics of breathing and ways in which restoration of this function may be facilitated without necessarily requiring medical assistance.

Clarification of misunderstandings about the disease and treatment may require soliciting questions from patients and family members. In most cases, it is necessary to have a fairly well-established doctor-patient relationship for a patient or family member to feel free enough to admit questions about the prescribed treatment. For example:

**Doctor to Patient and Wife:** You seem more short of breath than usual today, Sam. I wonder if you’re keeping up with the exercises (or regularly using your bronchodilator, or using the supplemental oxygen as prescribed).

**Wife to Doctor:** I worry about Sam having a heart attack if he keeps doing those exercises (or worry that he’ll get hooked on that medicine, or worry that the oxygen tank might cause a fire).

**Doctor to Patient and Wife:** Maybe it will help if I explain the importance of those exercises and how they’ve been tailored to his heart’s tolerance (or safety of using medications and oxygen if used as prescribed).

Although a primary physician probably would not want to become involved in marital therapy, he might intervene in some instances with information and suggestions. For example:

**Patient to Doctor:** Doctor, I want your opinion on this. My wife wants me to take a trip to Las Vegas with her, but I don’t think I should go. I never know when I might get too short of breath.

**Doctor to Patient and Wife:** How have you handled this problem in the past?

**Patient to Doctor:** Oh, I tell her to go ahead without me. I don’t mind staying alone.

**Wife to Doctor:** When I do go, he’s upset for days and he gets even more short of breath than usual.

**Patient to Doctor and Wife:** Well, you know I can’t go on big vacations anymore, but I don’t want to feel like I tie you down.

**Doctor to Patient:** Feeling burdensome to anyone can be very uncomfortable. I wonder if there are some compromise solutions.

This interchange potentially opens up exploration of (a) the patient’s reluctance to engage in activities within his capabilities, (b) the patient’s concealment of his feelings, and (c) necessary lifestyle modifications (vacation planning).

Encouraging honest communication between the patient and family members about the patient’s disease and its effects is important in helping to reduce the isolation, denial, and repression used by many patients in coping with the disease. Family members can have considerable impact on the COPD patient’s attitudes and behavior. Patient care manuals and pamphlets also can assist in underscoring the education process and emphasizing the importance of good pulmonary self-care practices. The physician must keep in mind that care of the patient in the advanced stages can be difficult and discouraging to the family. Family members may appreciate the reinforcement and encouragement the physician can convey by his understanding and willingness to listen to them.

**Comment**

This paper reviews the interaction of the COPD patient’s physical state with his psychosocial assets and psychological state. It stresses the importance of identifying and treating concomitant emotional changes. Subsequent parts will focus on treatment modalities that aim at modifying affect and behavior, as well as strengthening the ability of the patient to cope with COPD.

**References**


**CHEST, 77: 3, MARCH, 1980**