The Disease of Addiction

Current Concepts

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What is Chemical Dependence?

Modern terminology

In any discussion of alcohol and drug problems we should always be clear about the definitions of the terms that are being used. This discussion is about the disease of addiction. Synonymous terms for addiction are chemical dependence and alcoholism (addiction to the drug alcohol). Addiction is a primary disease which is determined genetically and expressed biochemically in the instinctual centers of the hypothalamus, and which has psychosocial consequences. These consequences can and do occur in all aspects of the addict's life, impacting the social, vocational, legal, family, spiritual, psychological, and physical spheres. This disease also is characterized by its chronic, progressive, relapsing and lethal nature. Abuse of alcohol and drugs is not genetically determined, and often is secondary to other conditions. Abuse of mood-altering chemicals can be altered by dealing with the precipitating condition or by an exercise of the will. Usually, the abuser does not require outside help to decrease or stop the abuse when it starts to cause problems. This is not true of addiction. Physical dependence occurs when a person shows withdrawal symptoms once a drug, medication or chemical is stopped, and can be produced in non-addicts and addicts alike. Although physical dependence occurs most often in the addict, the two conditions do not always co-exist, nor are they equivalent. The difference is that the non-addict will be able to avoid a return to the use of the drug, but the addict will return to its use again and again, despite his or her best intentions and exertions of willpower. This has been one of the most puzzling features of addiction. Why would an otherwise capable and intelligent person seem to choose to repeat behavior that has always caused trouble in the past? The answer is that the addict has lost the power of choice because of the overwhelming power of the addiction, which can use their intelligence and willpower against them.

Why we know it is a disease

Many attempts have been made to determine what the cause or causes of addiction are. The attempts to define an "addictive personality" have all failed, although most addicts show some similar personality traits when their disease is active. These similarities do not hold in recovery, however. Nor can one predict, based on personality type alone, who will become addicted and who will not. It also has been widely believed that alcoholism is a learned behavior. A number of very carefully designed studies over the past few decades have shown that heredity plays a major, if not essential, role in the appearance of alcoholism. These studies also show that learning and environment have little effect on the presence of the disease, although they may affect the severity, as discussed below. (Although most studies of addiction have been done on alcohol and alcoholism, we believe that we can safely extrapolate the findings to other types of drug addiction.) Today there are very few medical and research professionals who doubt the importance of heredity in this disease. Our modern understanding of the disease of addiction shows that in order for addiction to appear, one must have a hereditary predisposition for it, and be exposed to mood-altering chemicals for a sufficient period of time. This period of time is shorter if multiple drugs are used, if "crack" cocaine or other rapidly acting drug is used, or if the potential addict is an adolescent. If any of these three things (heredity, exposure, or time) is missing, the disease cannot occur. This means that the use of alcohol or drugs is not sufficient by itself to cause addiction.

Milieu-limited vs. male-limited alcoholism

The studies by Cloninger, et al., have shown that there are two major genetic types of alcoholism: milieu-limited and male-limited. The milieu-limited type affects both the males and the females in a family, and its severity (not its presence) is influenced by the social surroundings of the alcoholic. If there is more alcohol and drinking in the environment, the disease will be more severe. The risk that a child born to such a family will develop alcoholism is proportional to the number of relatives that show the disease and to how closely they are related to that child. Male-limited alcoholism, however, affects all the males in a family (if they drink), is uniformly severe, starts at an earlier age, and is associated with more antisocial behaviors, legal troubles, relapses, and repeated treatments. The risk of getting the disease is entirely determined by the sex of the child.

Recent findings in brain biochemistry

Exciting recent brain biochemistry research findings are bringing us closer to a full understanding of the disease of addiction. This research, supported by the National Institute on Drug Abuse (NIDA), is showing how "drugs of abuse", or mood-altering chemicals (MAC's), actually work when they enter the brain. The research is showing that the specific sites of action form what is loosely termed the "reward cascade," and specifically include the ventral tegmental area, the nucleus accumbens, and the pre-frontal cortex, along with the amygdala and the locus ceruleus. These areas are part of the emotional/instinctual centers of the brain called the median forebrain bundle. Interestingly, the neurotransmitters that these areas use to pass their neuronal messages are just

the ones that we would expect would be involved: dopamine and endorphin. Though the complete process is complicated, suffice it to say that once a MAC enters the body and finds its way to the brain, it eventually triggers the reward cascade, causing the release of the "feel-good" chemicals of dopamine and endorphin. The response to this event for the addict or pre-addict is a powerful reinforcement of the behavior. During the early phases of addiction, this reinforcement causes a desire to return to the pleasurable activity because it feels good (positive reinforcement). Later on, the desire to repeat the activity comes about in order to avoid the adverse consequences of not using, such as moodiness or withdrawal (negative reinforcement). The non-addict, however, will not be nearly as likely to be reinforced, and will not return to the uncontrolled, consequential self-administration of the drug that we repeatedly see in the addict.

What it is not

We have already discussed the fact that addiction is neither a learned behavior nor the result of an "addictive personality". In the past, attempts have been made to treat alcoholism and drug addiction as a symptom of some underlying psychiatric disorder. Even though the addict was able to benefit from such treatments in other areas of his or her life, the addiction went on despite these benefits. It was found that treating depression or seeking out dysfunctional experiences early in the addict's life did little or nothing to arrest the addiction. In other words, treatment that is based on seeing addiction as a "symptom" is much less effective than treatment that addresses addiction directly as the primary disease that it is. We also now recognize that addiction is not the result of lack of willpower, lack of morality, or lack of intelligence. This disease cuts across all levels of society, as well as all levels of willpower, morality and intelligence. Even though the active addict may show apparent lacks in these areas, the recovering addict is often highly moral and intelligent, and has strong willpower. In this case, the lack of these characteristics during the active phase of the disease is as a result of the disease, and is not the cause of it.

How Do We Recognize it?

The cardinal symptoms (the four C's)

The diagnosis of addiction is almost entirely accomplished through knowledge of the person's history. If we wait for the physical signs of the disease to appear, the disease will be far-advanced, or the addict may die. This means that the symptoms of the disease are all-important to the diagnosis. These symptoms can be described as "the four C's": loss of Control over the use of the drug, Continued use despite adverse consequences, Compulsive use, and Craving when the drug is withheld. When two or more of these symptoms are present one can be fairly certain that addiction is the problem.

The CAGE questionnaire

One simple and easy-to-use tool that physicians may use in their history-taking to assess the likelihood of the presence of alcoholism is the CAGE questionnaire. The letters of the name are a mnemonic of the four questions

used: Have you ever felt the need to Cut down on your drinking? Have you ever felt Annoyed when people criticized your drinking? Have you ever had Guilty feelings about your drinking? Do you ever take a morning drink ("Eye-opener")? This simple test has a high degree of sensitivity and specificity for alcoholism and the questions can be modified if other drug use is suspected. If one question is answered in the affirmative there is about a 62% probability that there is a problem with addiction, and if two or more are answered positively, the probability is about 82% or higher.   Such a test can easily be used in taking the medical history of the patient, and can point out the need for further questioning or the referral of the patient to other professionals who have expertise in the assessment and treatment of this disease.

Early stage vs. late stage

Because addiction is a progressive disease, we can recognize early and late stages of this progression. Denial is a very common symptom of addiction. Denial comes in two forms or stages: "I don't have a problem!" is the earlier form of denial, and "I guess I have a problem, but I can handle it myself!" is the later, and more difficult, form. Early stage addiction is often characterized by multiple attempts to control the use or to quit entirely, which are met with varying degrees of success. These attempts, when successful, only serve to validate the denial described above. But the addict, once having proven his or her power over the drug, will then return to its use. We must recognize that loss of control is a cardinal symptom of addiction, and that there would be no need for the addict to demonstrate control unless control was being lost. Over a greater time span it will be noticed that the periods of control or abstinence become fewer and shorter, and that the periods of use become longer and more severe. In the late stages of the disease process, the addict is totally unable to quit or cut down, and physical symptoms and signs begin to appear. If the drug of choice is alcohol, tranquilizers, sedatives, or narcotics, there may be severe withdrawal symptoms after only a few hours of abstinence. Hangovers (early stage withdrawal symptoms) no longer occur, because the alcoholic is drinking around the clock. The alcoholic may experience blackouts, which are periods of alcohol-induced amnesia, lasting hours to days. This can be very confusing to a loved one who may confront the behavior of the alcoholic. This confrontation is met with abject denial, because the alcoholic truly does not remember the behavior. The loved one then begins to doubt his or her own sanity.

Adolescent vs. adult

Addiction has a number of similarities to diabetes mellitus. It is genetically induced and environmentally influenced, and it requires a daily program to maintain recovery. One other similarity is the fact that there is a juvenile-onset form of addiction. Like diabetes, the adolescent form is usually more severe and harder to treat. Teenagers as a group exhibit three important characteristics in their approach to life: omnipotence ("I am all-powerful."), invulnerability ("I cannot be harmed."), and infallibility ("I am never wrong."). These characteristics, when addiction is present, amplify the symptom of denial. This is also coupled with the fact that the adolescent usually has not used long enough to suffer severe consequences from his or her disease. This level of denial makes the traditional treatment approaches to the adult addict ineffective

for the adolescent. Another important dynamic is the fact that when an adolescent starts to use mood-altering chemicals to deal with the problems in his or her life, the normal maturation process stops. The addict does not develop the coping skills, which are a part of the normal maturation process of becoming an adult. For this reason, when we speak of treating an adolescent for addiction, we cannot talk about "rehabilitation". We instead must talk about "habilitation". We need to help the adolescent learn mature coping skills for the first time. The adult patient usually only needs to relearn these skills.

What Should Be Done Once Addiction is Recognized?

Mutual-help

Although a number of treatment, prevention, education and enforcement modalities have been attempted in our efforts to address the problems associated with alcohol and drug use, the only method that has shown consistently good success with addiction is the mutual-help support group method. The great-grandfather of all mutual-help support groups is Alcoholics Anonymous, whose 12-step program has been adopted by many other groups such as Narcotics Anonymous, Overeaters Anonymous, Gamblers Anonymous, Al-Anon, NarAnon, etc. In such groups, the only requirement for membership is the desire to stop drinking, using, etc. The groups are self-supporting though the contributions of members; and the shared experience, strength, and hope of recovery is a bolster to the recovery efforts of newcomers and old-timers alike. Most successful formalized treatment programs have adopted an approach that is supportive of these less formal 12-step programs, and even use their principles in the treatment process. The newcomers to AA, NA, etc., will find open acceptance of themselves and their struggles, and are usually amazed at the wide range of backgrounds and abilities of the members. Even though AA and its emulators have shown more success than other and previous methods, many of its members had to progress significantly in their addictions in order to accept the need to join. The old approach was that the alcoholic had to "hit bottom" in order to be ready to recover. This process also meant that many would progress to insanity, confinement or death because of their denial.

Intervention

In the 1960's and 1970's the intervention technique was developed , which was designed to help the addict break through his or her denial and come to the point of acceptance of the need for treatment. Coupled with the development of effective formal treatment programs, intervention allowed families and other concerned persons to stimulate the addict toward recovery. By sharing with the addict specific details of his or her addiction-associated behaviors in a non-judgmental manner, the major obstacle to the acceptance of help was dispersed. Today, many experts in the addiction field have been trained to be skilled interventionists, and this technique is available in most parts of the country. Local treatment centers are good places to start when looking for intervention services.

Outpatient treatment

Not all addicts will need an inpatient of residential stay in order to initiate a recovery. For those whose disease is less far-advanced, and who still have a good support system at home and work, outpatient treatment may suffice. These services range from the traditional weekly individual therapy to intensive outpatient programs where the addict will attend three or more hours per day or evening, three to five days per week. As might be guessed, the more intensive programs seem to have better results. In any case, should outpatient treatment not be sufficient for recovery, residential or inpatient treatment should be undertaken. Most good outpatient programs will obtain written agreement at the beginning of treatment for referral to a higher level of care should abstinence not be maintained.

Residential or Inpatient treatment

Although more expensive than outpatient treatment, the residential or inpatient approach to treatment and recovery is generally more effective in the induction of recovery. Most of the good programs at this level of care utilize the tenets of AA and NA, and serve an introductory function for the mutual-help programs. Most addicts will have a hard time bringing themselves to the doors of AA or NA, but after treatment will likely be much more open to this. Inpatient treatment is able to provide safe detoxification, protected abstinence, specific education, concerned confrontation, and specific continuing care planning. Residential treatment provides all of the same services, except possibly detoxification. The intensity of this level of care will likely bring the addict to the point of acceptance of his or her disease and motivation for recovery more often than any other modality of treatment yet developed.

One-on-one vs. group therapy

The wisdom of AA has shown us that the alcoholic recovers most often when he or she does so with the help of other recovering alcoholics. One of the most important elements of this recovery is the act of helping others to deal with their alcoholism. This is best done in a group, rather than on an individual basis. The same principle applies to the relationship between professional care providers and their addicted patients/clients. The basic rule-of-thumb is that in any one-on-one confrontation, the addict will always win. This is why there are mutual-help groups, and why group therapy is the major technique used in effective inpatient, residential and outpatient treatment programs. One must always be mindful of this principle when dealing with a person whose addiction is active. The defense mechanisms of the addict have been honed to a sharp effectiveness, and will usually be able to keep the addiction active through any one-on-one treatment or confrontational effort.

How is the Family Affected?

The development of dysfunctional coping skills

It is now widely recognized that addiction is a disease that affects every member of the family in which it occurs, even though only one member of the family may be addicted. The other family members usually develop dysfunctional coping

skills in order to deal with the turmoil that addiction will cause in a family system, and these coping skills will be carried into other areas of the family member's life. In many cases, these coping skills cause the family member to become an "enabler". Enabling serves to allow the addict to avoid or lessen the adverse consequences of his or her addiction-induced behaviors, and allows the addiction to go on. This is eventually very destructive to the addict and to the family, and is a pattern of responses that is very hard to break. Taken as a whole, these dysfunctional coping skills and behaviors are now recognized as a condition called "codependence". In many cases, the codependent is as sick as, or sicker than, the addict.

Codependence as a treatable disorder

Although not genetically determined the way addiction is, codependence is coming to be recognized as a definable and treatable condition in its own right. Codependents have their own denial, undergo a recognizable progression of their illness, and exhibit other symptoms of their "addiction" to the addict, such as loss of control over their emotions and behaviors, increasing tolerance for the addict's behavior, and withdrawal symptoms when the addict gets well. The unspoken rule in this condition is "Don't talk, don't think, and don't feel." There are specific mutual-help groups for codependents, such as Al-Anon, Alateen, and NarAnon, where the concerned other can begin to honestly look at his or her behavior in a caring and supportive environment.

Children of addicts

A more recently formed mutual-help group, called Adult Children of Alcoholics (ACoA), is helping many who were raised in an alcoholic's home, but may not now be involved with an addict. These adults still have many of the dysfunctional coping skills they developed in childhood, however, and ACoA is helpful in dealing with them. When a child grows up in an addict's home, he or she will likely take on one of a number of well-recognized patterns of behavior. They may become the "family hero", who excels at whatever they do. This allows them to avoid their dysfunctional feelings through the praise of others. Or they may become the "mascot" or "clown", who makes everything all right through humor and showing-off. Another role is that of the "lost child" who is so quiet that he or she is never noticed, and thereby avoids the family turmoil. This child is often felt to be trouble-free, because he or she is so unobtrusive. The final role of a child in such families is that of the "scapegoat". This child is always getting into trouble, and takes the focus off the dysfunction in the family by bringing it onto him or herself. This child is also most likely to become addicted when he or she gets older. Children who fit these patterns at home will also show them in school, work and adulthood. School and vocational counselors need to be able to recognize these patterns, especially when they affect the child's performance or the performance of others. Once recognized in this way, the addiction and resulting dysfunction may often be addressed and recovery induced.

What is Recovery?

The importance of abstinence

A number of well-intentioned researchers and other professionals have tried to show that an alcoholic, once recovered, can carefully return to controlled drinking. This is "the great obsession of every abnormal drinker", as stated in the Big Book of Alcoholics Anonymous. However, it has since been shown without a doubt that "once an alcoholic, always an alcoholic". Even a single drink or use of other mood-altering chemicals can set off a relapse of this disease. More and more, the membership of AA includes those who are "cross addicted", who also used drugs other than alcohol. Any alcoholic or addict must recognize that he or she is addicted to all mood-altering chemicals, whether they have used them or not. It is fallacy to believe that one can give up one drug, such as cocaine or alcohol, yet use another such as marijuana, Valium, or LSD, with impunity. Such use will eventually lead to as many troubles as the use of the primary drug of choice did, or lead the addict back to his or her original drug. For this reason, all recovery from this disease must be based on complete and continuing abstinence from all mood-altering chemicals.

The importance of a daily program

As mentioned above in the discussion of the similarities between addiction and diabetes mellitus, the addict needs a daily program in order to recover. In the early stages of recovery, this may include daily attendance at AA or NA meetings, as well as contact with a sponsor in the program, and daily readings from appropriate texts and inspirational materials. Later on, after a period of months or years of recovery, the addict may be able to slowly decrease the number of meetings as his or her life gains a new balance. But the daily program must continue. The addict's sponsor best guides these changes, with the addict avoiding making these decisions on his or her own. In fact, the wisdom of AA states that the newly recovering alcoholic should avoid making any major decisions for at least one year of recovery. As the addict and the family learn how to live in recovery, a new and wonderful existence, with honesty, caring and concern for others, and a balance between all of life's activities, fills the void that the active addiction has left behind. Most who recover in mutual-help groups will admit that they feel that they will always need the continuing participation in their program. They have found that when they decrease their participation, the old dysfunctional feelings and behaviors creep back into their lives.

Predictors of relapse

Virtually all addicts who return to treatment after a relapse will say that they either never went to AA/NA meetings when they left treatment before, or they stopped going to their meetings prior to the relapse. This is the most accurate predictor of impending relapse in the addict: They cease their involvement with their mutual-help support group. When addicts begin to be unwilling to do what is suggested for their recovery, they are in danger of their disease again becoming active. An addict who has been open, caring, loving and involved, but who now is resentful, moody, withdrawn, and spiteful, is showing the early signs of relapse, even though he or she may not yet have returned to the use of

mood-altering chemicals. This dynamic can often be recognized and addressed, but sometimes will go on to a full relapse despite adequate interventions. The concerned others need to be ready to stimulate the addict back into recovery, often through intervention and treatment. It is sad to say, however, that sometimes the family needs to withdraw from the addict who resists attempts at intervention and treatment, in order to maintain their own recoveries.

Addiction is the most untreated treatable disease in America today. Knowledge of addiction as the primary disease that it is, and the needs of the recovering addict, are becoming more widely appreciated and known.

Effective treatment services are often readily available, though not always supported financially in the current climate of managed care.

It is time that we move beyond the prejudices and stigmata of the past, and help the addict to the recovery that he or she deserves, through our compassion, understanding, support, and loving confrontation of his or her denial system.

Addendum: Information for Physicians

The DSM-III criteria

The Diagnostic Standards Manual, Third Edition, published in 1980, brought us a long way in recognizing that alcohol and drug dependencies were primary diseases. The criteria for the diagnosis of dependency in this manual were not realistic, however. It was necessary to show either withdrawal symptoms or increasing tolerance to the drug in order to say that the patient was dependent. Because of this, the DSM-III did not recognize that dependence to cocaine was possible, since neither withdrawal nor tolerance were appreciated at that time with this drug. But the classification of alcohol/drug dependence and alcohol/drug abuse as separate and diagnosable entities was a big step forward.

The DSM-IIIR criteria

The Diagnostic Standards Manual, Third Edition, Revised, which was published in 1987, also made a giant leap forward in the diagnosis of chemical dependence. Now, instead of requiring that withdrawal or tolerance be present for a person to be recognized as dependent, these two symptoms were grouped with seven others, and it was only necessary to find three of the nine to make the diagnosis. It now became much easier to say that a person could be addicted to such drugs as cocaine, marijuana, and LSD, when there might not be withdrawal or tolerance. This allowed the justification and insurance coverage for treatment of these addictions.

The DSM-VI criteria

The fourth edition of the DSM, published in 1994, maintains most of what was present in the third edition, except that the list of symptoms was reduced to seven instead of nine. But as before, one must first rule out chemical dependence before one can make the diagnosis of chemical abuse.

The role of the physician

Because the physician can play such an influential role in a person's life, the advice by a physician to seek help for an addiction is often heeded, even though the same advice may be resisted when it comes from some other source. It behooves the physician, therefore, to be able to recognize addiction when it appears, to avoid judgment just as he or she would for another disease, and to refer the patient to addiction specialists and other professionals for adequate treatment when the physician is not able to stimulate recovery through his or her efforts alone. Once the addict enters recovery, the physician again plays a central role in the avoidance of relapse. One would certainly not give penicillin to a person with a recognized allergy to it. It is therefore incredibly confounding when a well-meaning physician will supply narcotics or tranquilizers to a person when the presence of an addiction has been determined. These chemicals will likely affect the addict's body as if an allergy were present. The reaction will not necessarily be immediate, but can be severe, because a relapse may ensue. Many a recovering addict started an unintentional relapse with a prescription from his or her ill-informed physician. When certain tranquilizers, sedatives, or narcotic analgesics must be used under the care of a physician, they should only be used in the inpatient setting, and for the briefest time necessary. The physician should also recognize the need for the involvement of the recovering addict's addictionist, counselor, or sponsor, in order to protect the addict's recovery.

The disease concept of addiction and the needs of the recovering addict are becoming more widely appreciated and known. Effective treatment services are now readily available. For these reasons, failure to recognize addiction and refer it for treatment, and the induction of relapse through dangerous prescribing practices, are coming to be appreciated as risks for professional liability. It is incumbent upon all physicians to become knowledgeable about this disease and its recovery in order to avoid these pitfalls of negligence.