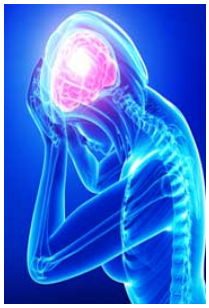

Models of Alcoholism: Medical / Physiological Causes

Medical Illness Model:

Near the end of the Second World War researchers and leaders in the recovery community jointly formulated the problem of uncontrolled drinking into what is now known as the Disease Model of alcoholism. This model postulates that, like medical illnesses, alcoholism--more specifically alcohol dependence, or addiction—can be diagnosed, its course observed, and its physical causes understood

. Further, scientific trials can be undertaken to identify the best treatments for those who suffer from it. The diagnosis of Alcohol Dependence, in this model, rested on four symptoms: 1) a tolerance to alcohol in which a person needs to drink ever greater amounts to reach a desired effect, 2) withdrawal symptoms, such as "the shakes" and others, on stopping use, 3) the Loss of Control phenomenon in which affected persons lose the ability to control how much they drink at a sitting and thereby can no longer predict how much they will drink from one episode to the next, and 4) social or physical impairment resulting from combinations of the first three symptom categories[1].

This model pictures a condition from which many alcohol dependent people emerge every year, and into which many others return. View as a disease, alcoholism takes on the characteristics of a remitting-relapsing illness with primary symptoms that direct us to brain functioning. And, because ethyl alcohol is a very small molecule with easy access to most parts of the body, moderate to

heavy alcohol use often injures other organs, such as the liver and heart among others. Uncontrolled, or dependent, alcohol use also affects the social network setting of family as well as work activities, friendships, and legal involvement. Last, however, the Disease model brings with it the possibilities of treatment and of hope. At this date, effective medicinal agents against alcoholism are very few. But hope, that necessary ingredient for recovery, waxes strong in the illness model. In the words of the alcoholic patient quoted in the Part 2, "It is much easier to think of myself as an ill person working to become well, rather than a bad person trying to become good."

Genetic Models:

From the Disease model has come another, that of genetic influence. The observation that alcoholism often runs in families for many years meant that family cultures or mores determined who would become alcoholic and who would not. While it is clear that cultural and family life influences are very powerful, more recent studies have noted that an underlying genetic disposition may be at play in some genealogical lines[2]. If so, the evidence suggests a confluence of many gene effects rather than the dominant/recessive results of inheritance in Mendelian models of genetic death, as for example, in Huntington's Disease. Instead, the gene effects seem to have more to do with the vulnerability towards alcoholism. One form appears in those who have a genetically-based insensitivity to alcohol—an "inborn tolerance," and develop alcohol dependence at much higher rates than alcohol sensitive comparison groups. Another form may require a combination of gene influences and environment conditions to come together to result in alcohol-plus-multiple drug dependence, sometimes referred to as Type 2 or Type B alcoholics.

Unexpectedly, the news of gene involvement was greeted with enthusiasm among some quarters of the actively drinking alcoholic public: "Since alcoholism is genetic, we can't escape our genes and may as well keep drinking." As with older models however, the element of choice remains present in the sober periods between drinking episodes. As some of the other models suggest, healing from alcoholism remains an individual process.

Psychological Adaptation Models in Illness and Recovery:

Further modern research asks that we look at individuals and their abilities to adapt to the stresses of life. Careful observation has established that individual humans have the ability to

adapt creatively to the painful thoughts and feelings of living and to do so in ways that connect us together rather than drive us apart[3]. This model of Mature human psychological adaptation, however, emphasizes that the brain function at its healthy best. Heavy, continuous use of alcohol carries often subtle, if severe, effects on the brain that are as yet poorly understood.

But we know they exist because of their effects in driving down the ability to adapt, from psychological Maturity to much more rigid Primitive mechanisms of coping, such as when an alcoholic "denies" that an obvious problem exists at all. This kind of Denial can occur in the actively drinking alcoholic who understands that resolving his or her ambivalence toward drinking is too painful to contemplate; therefore, a failure to perceive the problem seems preferable than facing it. So it is that the Adaptation model views the First of the Twelve Steps as addressing primitive Denial in coming to recognize that the individual's alcoholism exists. Progressing along the continuum of the Steps leads finally to the Twelfth: helping others who have the same problem. In the Psychological Adaptation model, this exemplifies the Mature mechanism of Altruism: selflessly helping others. The occurrence of brain healing as abstinence continues—along with the progression towards psychological maturity, whether viewed in the Psychological Adaptation or the Twelve Step models—suggests that brain recovery process are at work. We can only recognize their existence at this point, and need to understand their biology if we are to improve treatments in the Disease model.

Many Models, More Questions:

With this overview of the different model formulations of the problem of alcoholism and what to do about it, we are now ready to look as specific questions from a scientific point of view. As this series unfolds, we will have recourse to use all of the models mentioned—now adding the crucial ingredient of evidence, systematically gathered. In future Updates, the discussion will focus on specific problems and what we can learn about them.

[1]Jellinek, E.M., Disease Concept of Alcoholism, College and University Press, 1960
[2]Shuckit, M.A., Drug and Alcohol Abuse: A Clinical Guide to Diagnosis and Treatment, Springer, 2006
[3]Beresford, T., Psychological Adaptive Mechanisms, Oxford University Press, 2012, Chapter 22

Models of Alcoholism: Medical / Physiological Causes

Etiology of Alcohol Abuse or Dependence	Approach	Clinical Intervention	Response/Effect	Clinical Outcome(s)
Medical / Physiological Causes	Medical Illness[i]	Symptoms, signs, course, treatment	"A sick person trying to become well"	Disease Model: 1) Hope, 2) Application of clinical science from many disciplines, 3) Self-help programs such as Alcoholics Anonymous, 4) Systematic studies of diagnosis, treatment and prevention
	Genetic Condition[ii]	Choice vs. No choice (i.e., congenital predisposition to disease/disorders)	"Choice" continues	Unclear: Possible early identification/prevention; some genetic influence in some patient groups, not a genetic death sentence
	Adaptive Behavior Mechanisms[iii]	Abstinence to improve brain function	Restore the brain's neuroadaptive abilities	Development of/return to Mature level adaptation; 12 Steps

[i]Jellinek, E.M., Disease Concept of Alcoholism, College and University Press, 1960; Valliant, G.E., The Natural History of Alcoholism Revisited, Harvard University Press, 1983
[ii]Shuckit, M.A., Drug and Alcohol Abuse: A Clinical Guide to Diagnosis and Treatment, Springer, 2006
[iii]Beresford, T., Psychological Adaptive Mechanisms, Oxford University Press, 2012, Chapter 22

The NCADD Research Update welcomes constructive comments on current installments and suggestions for further topics.

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