Why Don't They Just Quit?

By Clifford A. McNaughton, MD, DDS

Abstract:
There has been increased emphasis on intervention by physicians with their patients concerning smoking and smoking cessation. Yet, many patients do not quit. This article reviews some of the reasons why they don't just quit. The physiologic effects of nicotine addiction, conditioned stimulus-response learning, mood disorders, personality traits and individual genetics impact cessation rates. Guidelines are presented for increasing cessation rates.

Why Don't They Just Quit?

There are one to two billion smokers in the world, and approximately one-half of them will die of diseases caused by smoking.[1] For more than 50 years, we have been aware that lung cancer is caused by cigarette smoking. In 1988, the U.S. Surgeon General reported that tobacco is addictive, with nicotine as the culprit, and that the pharmacological and behavioral process that determines addiction are similar to those that determine addiction to drugs such as heroine and cocaine (except for the absence of behavioral disruption seen in the latter two).[2]

As health care providers, we advise smokers to quit smoking. Brief advice from physicians can lead to spontaneous quit rates of approximately 2 percent. One study found only 50 percent of smokers over a 12-month period prior to 1987 were asked about their smoking or urged to quit.[3] There has been increased emphasis on intervention by physicians with their patients concerning smoking and smoking cessation. We have been making efforts to talk with our patients, to advise them to stop and to prescribe a variety of medications to aid with cessation. And yet, most of them do not stop. Why don't they just quit?

What Impacts Rate of Cessation?

Physiologic withdrawal symptoms commonly reported by adult smokers include restlessness, insomnia, increased appetite, weight gain, irritability or anger, depression, craving for cigarettes and trouble concentrating. Many smokers who attempt to quit actually may be unaware of or may underestimate the intensity of these withdrawal symptoms. Nicotine produces diverse neurophysiologic, motivational and behavioral effects in regions of the brain and in several neurochemical pathways. N-methyl-D-aspartate (NMDA) receptors mediate behavioral effects, tolerance, sensitization, dependency and withdrawal, which may occur by mediating adaptive processes. NMDA receptor antagonists may be useful in alleviating nicotine withdrawal symptoms and increase cessation rates.[4] There also are differences in treatment responses between men and women. Response to the nicotine patch vs. placebo shows quit rates were significantly lower in women.[5]

Nicotine use establishes reward systems that become associated with recurring activities and settings. This conditioned stimulus-response is very often problematic and responsible for increased craving. These activities or settings may include: finishing a meal, drinking alcohol, seeing an ashtray, thoughts about the taste of tobacco or other associated foods or snacks, driving when alone, seeing advertisements, social or sport settings or seeing others light up. The impact of nicotine on anxiety or mood states couples strongly with craving for nicotine, especially if the patient experiences increased irritation, frustration, depression or anxiety. A 1990 epidemiological study over a nine-year period found the prevalence of current smokers increased as depression scores increased, the quit rate decreased as the depression scores increased and depressed smokers were 40 percent less likely to quit compared to non-depressed smokers.[6] In a 20-year follow-up study of MMPI data, it was found that people who subsequently began smoking were more rebellious, impulsive, sensation seeking and hostile, were less likely to present a positive self-image and were socially extroverted. Those who continued to smoke 20 years later were more hostile and

sensation-seeking. These factors were equally predictive in men and women.[7]

Personal meanings around smoking can include the physical pleasure of the taste of the cigarettes, the smell and sight of a well-puffed cloud of smoke and the warmth of the smoke during cold weather.[8] Personal meanings can be difficult for the smoker and the intervening caregiver to identify and address. The variation we see in cessation rates and severity of the struggle by individual smokers may reflect the genetics that predispose individuals to behavioral traits like novelty seeking, impulsivity, hostility or harm-avoidance.[9]

It is important, as we look at cessation rates, to consider the sub-grouping that may exist based on genetic variability. Initiation of smoking behavior and transition to dependence show a strong heritability of approximately 60 percent for initiation of use and 70 percent for progression to dependence.[10] A candidate gene (CHRAN5-A3-BA) is associated with increase nicotine dependence severity in subjects who began smoking at or before age 16. Interestingly, this gene effect was not observed in individuals who carried this gene and who began daily nicotine use after age 16. In individuals with this candidate gene, increasing age appears to result in a reduction of susceptibility.[11] This study could have implications concerning reduction of teen smoking in this genetic group. Many gene variants are being studied, including genes for cholinergic nicotine receptors, dopamine pathway, tryptophan hydroxylase, serotonin transporter and reuptake, MAO-A and dopamine B hydroylase and nicotine metabolism (P450 2A6).[12]

How Can We Increase Cessation Rates?

Even brief interventions can increase cessation. It is important that we first identify smokers by asking every existing and new patient if he or she smokes. This includes teens and preteens. A primary issue for health care providers is to understand the "Stages of Change" model.

This behavioral model provides structure that can help the care providers remain objective in their approach to the smoker and to the issues involved in cessation. Let us consider this model as it applies to smoking cessation:

Pre-contemplation Stage

In this stage, the individual is not even thinking about smoking cessation. These are individuals we first identify by asking if they smoke and if they have thought about quitting. This group includes individuals who may have attempted to quit in the past, failed, became demoralized and stopped trying. We can best approach them with information, questionnaires, advice giving, brief clinical assessments such as "lung age" spirometry.[13] As caregivers, we can provide information and feedback, yet allow the patient to remain for the time being in the "no action" group without feeling that the patient does not value our advice or rejects our authority and without labeling the patient as non-compliant.

Contemplation Stage

This stage includes individuals who have considered cessation but who struggle with ambivalence. Caregivers continue to provide education and advice but also accept the patient's current state of ambivalence. Avoid arguing with the patient. Rather, get on the same side of the problem with empathetic statements about how difficult it is to make a firm decision to quit. Anticipate that the patients may vacillate in resolve to change. Encourage the patient to select a date to quit (within the next two or three weeks). It may take a long time for some patients to get through this stage. Educate the patient on the impact of co-morbid depression on cessation rates. Assist the patient with assessment or referral to evaluate and treat co-morbid depression.

Preparation Stage

The individual is saying, "I can change," or "I must change." The patient will respond to our advice to quit. This is the time to begin introduction of information about withdrawal symptoms. Affirm patient self-efficacy. Outline potential cessation plans, social support, and pharmacotherapy options. Work with the patient on problem solving skills: identify high risk situations; plan for extinguishing associated learning; specifically outline replacement behaviors; and develop specific plans to manage withdrawal symptoms. Commonly, you will see patients shift for brief periods from the contemplative stage to the preparation stage. If no action is taken, patients often will slip back into the contemplation stage. Treat co-morbid depression if present. Simple screening tools, such as the Beck Depression Inventory, can be helpful in assessing for depression.[14] In the future, we may have genetic testing to identify those individuals who are susceptible to greater dependency and greater difficulty with failed attempts or relapse.

Action Stage

The patient takes action. It becomes critical to manage the behavioral aspects of avoiding high risk situations, reinforcing the extinguishing of associated learning, actively substituting new behaviors and managing withdrawal symptoms. Supportive interaction improves outcomes. Encourage the patient to make the cessation plan public, and ask for support from family members and others. Counseling and

patient education, follow-up phone calls from office staff and use of 24/7 phone help lines improve outcomes.

Maintenance Stage

The patient will need the ongoing refinement of skills to avoid high-risk situations and to extinguish associated learning. It is also important to continue pharmacotherapy for withdrawal and mood disorders.

Relapse

It is important for care providers to remember this is a chronic, addictive condition. Discuss this issue with patients early in treatment and before relapse. Reframe the relapse episode as a learning experience, with the goal to reset the cessation efforts. Unfortunately, relapse can provoke self-blame and demoralization. Some individuals may even regress through the stages of change all the way to the pre-contemplative stage. Additional information on this process can be found in articles on behavioral approaches to smoking cessation and counseling for behavioral change in the medical encounter.[15,16]

Conclusion

Why don't they just quit? There has been increased emphasis on intervention by physicians with their patients concerning smoking and smoking cessation. Caregivers must guard against the sense of rejection of our advice and against labeling the patients as not caring or non-compliant. Many factors – including physiological, psychological and genetic – affect cessation rates. There is a continuing flow of new research studies about the genetics of neurohormones, receptors, transporters and metabolism involved in nicotine use. In the future, we can anticipate genetic screening tests that will identify subgroups of patients who will be given targeted therapies. At present, we may best be able to improve smoking cessation rates by considering each patient's individual stage of change. With the assessment of stage of change, specific interventions can be provided that support the patients coursing through the stages to action and the maintenance of cessation.

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