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List of Abbreviations

AHRQ	Agency for Healthcare Research and Quality
APA	American Psychiatric Association
CBT	Cognitive behavioral therapy
CDC	Centers for Disease Control and Prevention
CHD	Coronary heart diseases
CO	Carbon monoxide
COPD	Chronic Obstructive Pulmonary Disease
CPD	Cigarettes per day
CS	Conditioned stimulus
CVD	Cardiovascular diseases
DSM-IV-TR	Diagnostic and Statistical Manual of Mental Disorders Text Revision
ESPRI	Egyptian Smoking Prevention Research Institute
ETS	Environmental Tobacco Smoke
FTND	Fagerström Test for Nicotine Dependence
FTQ	Fagerström Tolerance Questionnaire
GYTS	Global Youth Tobacco Survey
HHS	Health and Human Services
HIS	Heaviness of Smoking Index
ICD-10	International Classification of Diseases, Tenth Revision
MDD	Major depressive disorder

MI	Myocardial infarction
MI	Motivational interviewing
NCI	National Cancer Institute
NHLBI	National Heart, Lung, and Blood Institute
NIDA	National Institute on Drug Abuse
NRT	nicotine replacement therapy
PAD	Peripheral arterial disease
PCASRM	Practice Committee of the American Society for Reproductive Medicine
PREPs	Potential Reduced Exposure Products
RWJF	Robert Wood Johnson Foundation
SES	Socioeconomic status
SPs	Smoking physicians
SSS	Subjective Social Status
TTS	tobacCo treatment specialists
US	Unconditioned stimulus
UW-CTRI	University of Wisconsin Center for Tobacco Research and Intervention
WHO	World Health Organization

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Non Pharmacological Approaches in the Treatment of Nicotine Dependence

Essay

Submitted for partial fulfillment of the Master Degree
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أساليب العلاج غيرالدوائى فى معالجة اعتمادية النيكوتين

رسالة

توطئة للحصول على درجة الماجيستير فى الأمراض النفسية والعصبية

مقدمه من

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Introduction

Nicotine is one of the most highly addictive and heavily used drugs in the United States and around the world, about 20 % of the population develops nicotine dependence at some point, making it one of the most prevalent psychiatric disorders. Tobacco is the most common form of nicotine. It is smoked most commonly in cigarettes, then, in descending order, cigars, snuff, chewing tobacco, and in pipes. The world Health Organization (WHO) estimates that there are 1 billion smokers worldwide, and they smoke 6 trillion cigarettes a year. The WHO also estimates that tobacco kills more than 3 millions persons each year **(Sadock and Sadock, 2007).**

The globalization of tobacco began more than 500 years ago, but the public health response to the death, disease, and economic disruption that it has caused is fewer than 50 years old. The global health community should success in reducing, and eventually eliminating, the rising tide of tobacco use, particularly in the low- and middle-income nations that are the target of the multinational tobacco industry **(American Cancer Society, 2010).**

Diminished autonomy and control over smoking is seen in 25% of students after smoking nicotine only once and in 35% after smoking it 3 to 4 times **(Scragg et al., 2008).**

Smoking is a known cause of multiple cancers, heart disease, stroke, complications of pregnancy, chronic obstructive pulmonary disease (COPD), and many other diseases (**U.S. Department of Health and Human Services, 2004).**

Despite the tragic consequences of tobacco use, clinicians and health care systems fail to treat it consistently and effectively, the failure to assess and intervene consistently with all tobacco users continues despite substantial evidence that even brief interventions can be effective among many different populations of smokers **(Fang et al., 2006).**

When a person who is addicted to nicotine stops smoking, the urge to resume is recurrent and persists long after withdrawal symptoms dissipate. With regular smoking, the smoker comes to associate specific moods, situations, or environmental factors - smoking-related cues with the rewarding effects of nicotine. Typically, these cues trigger relapse. The association between such cues and the anticipated effects of nicotine, and the resulting urge to use nicotine, constitute a form of conditioning. Nicotine also enhances behavioral responses to conditioned stimuli, which may contribute to compulsive smoking **(Neal, 2010).**

The associative learning model of dependence helps to explain the powerful effect that expectations about smoking have in reinforcing habitual behavior. Changing the expectancies or beliefs about smoking is an important cognitive

strategy to help create awareness about the consequences of smoking, an important step in the change process. For example, smokers who remain abstinent 3 months after participation in a smoking-cessation program are more likely to express weaker beliefs about smoking such as that smoking reduces depressed feelings, or facilitates socialization, etc, than individuals who hold stronger beliefs in these effects **(Brandon et al., 1999)**.

Although 70 % of patients who smoke say they would like to quit **(Mallin, 2002)**, of those less than 40% of smokers try to quit each year **(Centers for Disease Control and Prevention, 2007)**, only 7.9 percent are able to do so without help **(Mallin, 2002)**, and almost two-thirds of smokers who relapse want to try quitting again within 30 days **(Fu et al., 2006)** and few remain abstinent after 1 year **(Fiore et al., 2008).**

Smokers cite a physician's advice to quit as an important motivator for attempting to stop smoking **(Ossip-Klein et al., 2000).** The advice of a physician alone can improve the smoking cessation rate to 10.2 percent **(Jorenby and Fiore, 1999).** Even when patients are not willing to make a quit attempt at this time, clinician-delivered brief interventions enhance motivation and increase the likelihood of future quit attempts **(Rennard and Daughton, 2000).**

Psychotherapy exceeded bupropion's efficacy, presenting an alternative to pharmacological smoking cessation aids,

especially for smokers who reject drugs to treat their substance dependence **(Gerald et al., 2008).**

Family physicians should take advantage of each contact with smokers to encourage and support smoking cessation. Once a patient is identified as a smoker, tools are available to assess readiness for change. Using motivational interviewing techniques, the physician can help the patient move from the precontemplation stage through the contemplation stage to the preparation stage, where plans are made for the initiation of nicotine replacement and/or bupropion therapy when indicated. Continued motivational techniques and support are needed in the action stage, when the patient stops smoking. Group or individual behavioral counseling can facilitate smoking cessation and improve quit rates. A plan should be in place for recycling the patient through the appropriate stages if relapse should occur **(Mallin, 2002).**

Aim of the Work

The aim of this work is:

- To address commonly encountered problems and risks among nicotine dependent individuals.
- To describe the different non-pharmacological approaches for nicotine dependent individuals.
- To review the recent literature discussing the non-pharmacological approaches for nicotine dependent individuals ands its outcome.

[A] Introduction

The crux of understanding the pathophysiology of tobacco addiction and its measurement relies on the identification of critical characteristics and the definition of addiction. This area continues to evolve, and significant gaps in research are evident. There is no established consensus on criteria for diagnosing nicotine addiction. However, researchers have identified several symptoms as indicators of addiction. The 1988 Surgeon General's report lists the following general "criteria for drug dependence," including nicotine dependence **(U.S. Department of Health and Human Services, 1988):**

Primary Criteria:

- Highly controlled or compulsive use.
- Psychoactive effects.
- Drug-reinforced behavior.

Additional Criteria:

- Addictive behavior, often involves:
  - Stereotypic patterns of use.
  - Use despite harmful effects.
  - Relapse following abstinence.

- Recurrent drug cravings

- Dependence-producing drugs often produce:

- Tolerance
- Physical dependence
- Pleasant (euphoriant) effect

These criteria are consistent with those for a diagnosis of dependence provided in the text revision of the fourth edition of Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR) **(American Psychiatric Association [APA], 2000)** and the International Classification of Diseases, Tenth Revision (ICD-10) **(World Health Organization [WHO], 1992).**

Table (1): Similarities and Differences Between Tobacco Dependence and Other Chemical Dependencies.

Similarities	Differences
Compulsive use	No behavioral intoxication or adverse behavioral outcomes
Continued use despite harm	Does not cause other mental disorders
Impaired control over drug use	Giving up or reducing activities to use is rare, although this is beginning to change
Tolerance	High intensity of use
Withdrawal	Little euphoria
Mediated via dopamine release	Spending lots of time in obtaining/ using/recovering from effects is rare