Motivation in Relation to Psychosocial Variables and their Role in Smoking Cessation

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بسم الله الرحمن الرحيم

"وما أوتيتم من العلم إلا قليلا"

صدق الله العظيم

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Introduction

About 100,000 young people worldwide become addicted to tobacco every day. In high income countries, 15,000 youth become addicted to tobacco every day. In middle and low income countries, 84,000 youth become addicted to tobacco every day. Tobacco smoke contains approximately 4000 chemical substances, of which at least 438 can produce cancer. Tobacco is the most important and preventable cause of cancer world-wide. The growth and ageing of the world population are going to have an enormous impact on the future cancer burden. There is a need to act now to limit the consequences of the tobacco epidemic. 80-90% of lung cancers are attributed to tobacco smoking. The longer a person has been smoking and the more packs per day smoked, the greater the risk. Cigar smoking and pipe smoking are almost as likely to cause lung cancer as cigarette smoking. A national study, held in 2005, showed that total prevalence of daily tobacco smoking among adults (18-years) in Egypt was 19.1%; 39.2% for males and 0.4% for females. Egyptians smoke 42 billion cigarettes annually which are expected to rise to 85 billion within the next few years. Six million Egyptians smoke cigarettes. Out of which, 439000 are under 15 years and 74000 are under 10 years. An integrated monitoring system to create global consensus and momentum should be run around 5 essential policy proposals to eradicate the

tobacco smoking habit by: (1) taxes (2) labeling (3) complete advertising ban (4) completely smoke-free environments and (5) smoking cessation programs through motivational interviewing **(*WHO, 2005*).**

Smoking related diseases account for 6% -15% of all annual health costs including oral cancer (mouth, throat, esophegus, larynx), premature teeth loss and staining, gastro-esophegeal reflux, Crohn's disease, ischemic heart disease, chronic obstructive pulmonary disease, spontaneous pneumothorax, aortic aneurysm, peripheral vascular disease, lung cancer, pneumonia, pancreatic cancer, back pain, disc degeneration, peptic ulcer, cardiovascular stroke, hair loss, hearing loss, sinusitis, gum disease, bladder cancer, early menopause, impotence, infertility, cervical cancer, early skin aging and wrinkles, delayed/ impaired wound healing, osteoprosis and impaired immunity. During pregnancy, tobacco smoke exposure can cause premature labor, spontaneous abortion, low birth weight, congenital malformations and fetal/ neonatal deaths **(*Litt, 2005*).**

At the Center for Tobacco Control at North Shore Health System, New York, a study compared health status, motives and obstacles for quitting smoking between 1,909 smokers under age 65 (younger smokers) and 143 smokers over age 65 (older smokers), who were attending a 6-week comprehensive cessation program. Younger smokers were more likely than older smokers to report concerns about weight gain (30% vs. 15%), stress management (59% vs. 45%), fear of failure (15% vs. 8%),

handling social situations (24% vs. 7%), and cravings (44% vs. 36%) as obstacles to quitting smoking. Furthermore, 54% of older smokers and 69% of younger smokers reported not wanting to give up their first cigarette in the morning as an obstacle to quitting smoking. Young smokers also believe that trying to quit is best, when in reality, only 7% of smokers achieve long-term abstinence without professional help. It was suggested that health-care providers should offer weight management programs and stress management strategies as part of the treatment and the relapse prevention programs for younger smokers, while older smokers may be more successful with physician encouragement and knowledge of how smoking is influencing their current health conditions **(*Reichert, 2007*).**

Reviews provide detailed analysis of anxiety and depression as they relate to each stage of the cigarette smoking cycle: initiation, maintenance and cessation with an emphasis on nicotine withdrawal. An analysis of the literature confirms that cigarette smoking is highly co-morbid with anxiety disorders and clinical depression, and that this relationship appears to be moderated by factors such as age of the smoker, type of disorder, and level of nicotine dependence. Studies also offer evidence to suggest a relationship between smoking and both subclinical anxiety and depression. Research findings have not revealed whether common factors influence the development of anxiety, depression, and smoking, whether anxiety and depression lead to smoking, or whether the reverse is true **(*Morrell and Cohenm, 2006*)**.

In a nationwide survey in USA of high school students, smokers attached greater importance to hedonic gratification values and less importance to idealism values than nonsmokers. Hedonic gratification values were associated with favorable attitudes toward smoking, while idealism values were associated with unfavorable attitudes toward smoking. Attitudes toward smoking predicted adolescent smoking behavior. Evidence suggested that advertising plays an important role in motivating adolescents with hedonic gratification values to smoke **(*Chang, 2005*).**

Smoking cessation interventions are widely underused in primary and secondary care despite being effective and easy to deliver. Maximizing the delivery of cessation interventions to smokers wanting to quit can probably achieve more in terms of years of life saved and provide better value for money than almost any other simple medical intervention. Managing smoking cessation needs to become a key part of routine practice for all clinicians. Health professionals often cite pressure of time, among other things, as a reason for not intervening against smoking more frequently. Smoking can be one of several important health issues that need tackling in a single, short consultation. The crucial difference between individual smokers is their motivation to stop. Smokers vary greatly in their motivation and, to make best use of limited time, health professionals should tailor their approach to the motivational level of the individual smoker. As only about a fifth of smokers who attend general practitioners clinics intend to try to stop

smoking, it makes no sense for general practitioners to give all smokers they meet, detailed information about how to stop. Non-motivated smokers need to be encouraged to change their attitudes to smoking before being urged to take action to quit. General practitioners are urged to treat more motivated and less motivated smokers differently: motivated smokers are given specific advice about quitting that would be inappropriate for those not interested in stopping **(*Coleman, 2004*).**

Motivational interviewing is a directive, client-centered counseling style for eliciting behavior change by helping clients explore and resolve ambivalence. Compared with nondirective counseling, it is more focused and goal-directed. The examination and resolution of ambivalence is its central purpose, and the counselor is intentionally directive in pursuing this goal. There are, nevertheless, specific and trainable therapist behaviors that are characteristic of a motivational interviewing style, for example, seeking to understand the person's frame of reference particularly via reflective listening, expressing acceptance and affirmation, eliciting and selectively reinforcing the client's own self motivational statements expressions of problem recognition, concern, desire and intention to change and ability to change, monitoring the client's degree of readiness to change, and ensuring that resistance is not generated by jumping ahead of the client and also affirming the client's freedom of choice and self-direction **(*Miller and Rollnick, 1995*)**.

A study discussing the efficacy of MI (Motivational Interviewing) versus BA (Brief Advice) in smoking cessation programs was set up in Butler Hospital, Providence, Rhode Island, USA. MI consisted of two, 45 minute individual sessions, while BA consisted of 5–10 minutes of advice and information on how to quit smoking. Eligible participants in both conditions were offered an eight week regimen of trans-dermal nicotine patch upon hospital discharge. Proximal outcomes included intent to change smoking behavior (upon hospital discharge), and self efficacy for smoking cessation. MI was more effective than BA for increasing self efficacy regarding ability to quit smoking. A significant interaction of treatment with baseline intention to quit smoking was also found. MI was more effective than BA for adolescents with little or no intention to change their smoking, but was actually less effective for adolescents with pre-existing intention to cut down or quit smoking **(*Brown et al., 2003*).**

Rationale of the Work

Smoking remains the largest preventable cause of ill health in the world. Much could be done to improve the motivation and management of smoking cessation in primary health care centers besides the specialized smoking cessation clinics using and stressing on the smokers' psychosocial variables and not only using the medical problems caused by tobacco smoking in order to develop a supportive organizational infra-structure to insure

the delivery of high quality clinical care. So, studies should draw the attention to the importance of the presence of autonomous self regulation through the smoker's personality profile, temperamental state, socioeconomic status, life stressful situations, depression and anxiety besides the severity of his nicotine dependence as a cornerstone reflecting his controlled motivation and perceived competence for smoking cessation. Therefore, the psychosocial profile of each smoker has a clinical implication in the motivational interviews and successful smoking cessation interventions.

The extent to which differences in self-control and reward processing related to motivation can affect the individuals at-risk to be smokers and can be "normalized" in addicted tobacco smokers with behavioral and/ or pharmacological interventions, warrants additional investigations. Many smokers attempted to quit smoking just after having chronic or serious medical illnesses but failed afterwards to maintain quitting because of lacking the supporting professional counseling (cognitive/ behavioral or/ and pharmacological) and the training for ameliorating their maladaptive personality disorders, temperamental state and their social stressors. So interventions should be given early to any smoker through education, motivational programs and smoking cessation clinics instead of waiting till the medical problems start to appear and drag the smoker to ask for professional help.

"Do not wait to strike till the iron is hot, but make it hot by striking it" ***William B Sprague****.*

Hypotheses

The hypotheses of this study are that:

1-The psychosocial variables of each smoker including: temperamental state, personality disorders, life events and stressors, socioeconomic status, anxiety experience, prevailing depressive state and degree of nicotine dependence can collectively affect his\her general views about, his\her motivation and attempts for smoking cessation, also affecting the smoker's preferential judgment upon the positive aspects of engaging in the smoking behavior in spite of knowing its disrupted short term and long term consequences on health state, quality and quantity of life time and upon the negative aspects of quitting smoking.

2- Smokers with higher levels of intrinsic relative to extrinsic motivation are more likely to achieve self control and maintained abstinence from smoking.

Aim of the Work

1- To highlight and compare the psychosocial variables between two groups of nicotine smokers: the motivated smokers for smoking cessation and non motivated smokers for smoking cessation.

2- To assess the impact of the smoker's accountable temperamental state, maladaptive personality profile, anxiety experience, prevailing depressive state, life events and stressors, socioeconomic status and degree of nicotine dependence on his motivation for quitting smoking.

List of Abbreviations	
5-HT	5-hydroxytryptamine
AEPI	Adult Eysenck Personality Inventory
AHCPR	Health Care Policy and Research
AMPA	alpha-amino-3-hydroxy-5-methyl-4-isoxazole propionic acid
BA	Brief Advice
BDNF	Brain Derived Neurotophic Factor
CB1	Cannabinoid1
CM	Contingency Management
CO	Carbon Monoxide
D3R	D3 type dopamine Receptors
DA	Dopamine
DOHMH	Health and Mental Hygiene
ERI	Effort-Reward Imbalance
ERPs	Event Related Potentials
ESPRI	Egyptian Smoking Prevention Research Institute
FTND	Fagerström Test of Nicotine Dependence
GABA	Gamma Amino Butyric Acid
Glu	Glutamatergic
GP	General practitioner
HC	Health Consequences Expectancy Increase
MAO	Mono Amine Oxidase
MET	Motivational Enhancement Therapy
mGlu	metabotropic Glutamate
MI	Motivational Interviewing
MM	Mood Management Expectancy Challenge
MPSS	Mood and Physical symptoms scale
NAcc	Nucleus Accumbens
nAChRs	nicotinic Acetyl Choline Receptors
NDRI	Nor epinephrine Dopamine Reuptake Inhibitor
NHS	National Institute Service
NicQb	Nicotine- Bacteriophage
NPA	Nicotinic Partial Agonist
NR	Non contingent Reinforcement
NRT	Nicotine Replacement Therapy
NS	Novelty Seeking
sEPSCs	spontaneous Excitatory Postsynaptic Currents
STAI	State trait Anxiety Inventory
TCI	Temperament and Character Inventory
VLP	Virus-Like Particles
VTA	Ventral Tegmental Area