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SMOKING CESSATION FOR ADULT SMOKERS: APPLICATION OF THE TRANS-THEORETICAL MODEL

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ABSTRACT

Over the years research has shown that there is evidence of health benefits associated with smoking cessation. It has been shown that some people may quit smoking because they are sick, and health-conscious persons may be more motivated to quit. More so, the US Department of Health and Human Services via the office of the Surgeon General has stated that there are health risks, one of which is cancer, associated with smoking leading to a conclusion that cigarette smoking has adverse causal effects on persons already diagnosed with cancer.

The focus on adult populations is equally complex because of its diversified behavioral nature. Furthermore, the behavioral change required in smoking itself is a process with several stages and processes. A theory that would be relevant must be effective in addressing the complexity of this health behavior and expected change outcomes among this population. The Trans-Theoretical Model (TTM) is structured to effectively meet this demand.

This descriptive review showcases the application of the TTM in addressing behavior change regarding smoking behaviors among adult populations, because sometimes individual practice resources may not be sufficient to provide the level of intervention as recommended for this group with high addiction and relapse, so application of the behavioral model need to be considered by Public Health and Clinical leaders responsible for commissioning tobacco cessation programs.

KEYWORDS: - Adult Smokers, Behavior, Cessation, Tobacco, Trans-Theoretical Model.

INTRODUCTION

Smoking cessation intervention is imperative in our contemporary work because tobacco use has been described as the deadliest artifact in human civilization (Proctor, 2012). Proctor states that

cigarette factories today produce death at a faster rate and cheaper than any previous form of industrial manufacturer. He opined that "if cigarettes cause cancer, then so do the machines that roll cigarettes and the companies that supply the "filters", "flavorings" and paper, along with the convenience stores and pharmacies that sell cigarettes" (p.89). He further adds that the executives that work for cigarette companies cause cancer as to do the artists who design cigarette packs, and the PR advertising firms that manage such accounts. Farmers who grow tobacco are part of this network as are politicians who take money from "Big Tobacco" and those chemists and breeders who favor the nicotine molecule. So, too must we include those many hundreds of experts who testify for the industry in court." (pp. 90-91). This shows the complexity or multi-faceted nature of the "golden holocaust" tobacco, or cigarette smoking. Without understanding this web or networks, we cannot effectively tackle this world's deadliest malignancy and its complexities.

Sampson, Bhochhibhoya, Digeralamo, and Branscum (2013) reported that tobacco consumption primarily cigarette consumption accounts for a surge in chronic conditions such as cardiovascular diseases, Chronic Obstructive Pulmonary Disorder (COPD) various types of cancers including lung, oral cavity, larynx, esophagus, stomach, pancreas, colorectal, bladder, and kidney. Tobacco uses primarily from cigarette is the single, largest, and leading preventable cause of death and diseases in the United States, killing 480, 000 annually with 41,000 of deaths traceable to second-hand smoke. In the USA, the CDC estimated that 36.5 million (15.1%) of adults were current smokers, 75.7% (27.6 million) smoke daily, while 24.3% (8.9 million) smoke some days. Smoking is costly to smokers and society. 47 million Americans indulge in smoking. Over 500,000 preventable deaths are attributed to smoking annually (US Department of Health and Human Services, 2000). Globally, 500,000,000 are expected to die from this health behavior with approximately a loss of 5 billion years of life due to tobacco use (Glanz, Rimer, & Viswanath, 2008, p. 109). Something proactive must be done to curb this trend. Effective smoking cessation program or intervention among adult population would largely reverse this catastrophic trend.

BACKGROUND

The Price for Smoking

Smoking related illness costs more than $300 billion a year, including $170 billion in direct medical care for adults and $156 billion loss in productivity (CDC, 2017). These funds have alternative functional use which could enhance the quality of life for mankind in other sectors such as education, agriculture, healthcare, road networks or employment generation and security. Smokeless tobacco has been established to cause cancer, while nicotine in smokeless tobacco increases sudden death from ventricular arrhythmias (CDC, 2017). It is also accountable for residential fires. It is even estimated that tobacco is expected to kill 50% more people in 2015 than HIV/ AIDS (Glanz, Rimer, & Viswanath, 2008, p. 515). This health risk behavior is not genetic, hence there is a need for timely intervention and reorientation towards the cessation of this harmful lifestyle.

Its recreational and convivial nature also makes smoking attractive because it is group oriented. The need to "belong" enlarges its consumption base or network; therefore, ecologically, the profitability of selling cigarettes drives advertising and marketing campaigns. In 2005 Tobacco companies spent $13.1 Billion in advertising and marketing, over $35million is spent daily on promoting the perceived mood-elevating effect of tobacco (American Lung Association, 2012).

In the four lines of evidence: population studies, animal experimentation, cellular pathology, and cancer-causing chemicals, none could absolve the harmful effect of a cigarette to human health and longevity (Proctor, 2012, pp. 89-91). The World Health Organization (WHO) estimated that tobacco caused 5.4 million deaths in 2004 and 100 million deaths in the 20th century. The argument that tobacco cessation programs will lead to huge losses and massive labor turnover is not tenable, because no product of research should be allowed to endanger or compromise human safety. Such labor and industrial (factory) lines have alternative use and cannot be compared to the risk factor or threat to human lives.

The Trans-Theoretical Model

The Trans-Theoretical Model (TTM) was developed by psychotherapy and studies on individuals who successfully quit smoking (Glanz, Rimer, & Viswanath, 2008). The Model uses the stages of change, which integrates principles of change in theoretical intervention. It encompasses four constructs, derived from value expectancy namely: (a) The Stages of Change, (b) The ten Processes of Change, (c) Decisional Balance which comprises of Pros and Cons of the health behavior, and (d) Self Efficacy. These constructs are collectively called the Stage Model. The TTM Model is preferred because it uses stages of change to integrate processes and principles of change across major theories of intervention (Glanz, Rimer, & Viswanath, 2008, p. 97). It looks at what is involved after people decide to change; as it fills noticeable gaps in earlier models or theories such as the Health Belief Model (HBM), and the Theory of Reasoned Action (TRA). The TTM's original work focused on smoking cessation; therefore, replicating it on adult smokers in any population will fill the gaps and contribute to existing knowledge in this subject.

Trans-Theoretical Model and the Adult Smoker

Given the network or web of relationship connected to smoking, it is a complex health behavior problem. The adult population is equally complex because of its diversified nature. The behavioral change required in smoking itself is a process with several stages and processes. A theory that would be relevant must be effective in addressing the complexity of this health behavior and expected change outcomes. The TTM is structured to effectively meet this demand.

It helps meet individuals at their different stages and processes of the continuum, by providing adaptable tailored or specific rather than generic solutions. This would assist the adult smoking population through the variety of their predictable stages in their health behavior.

Proctor (2012) showed that for every emotional component of health behavior of the adult population, the use of TTM decisional balance which reflects individual's cognition of pros and cons of behavioral change and decision-making, helps researchers to gain insight into the self-efficacy (confidence) and temptation (urges and cravings) of adult smokers. It builds on integration of component parts in solving a pandemic risk behavior (Glanz, Rimer, & Viswanath, 2008, p. 108). The self-efficacy, an adaptation of Bandura (1982) self-efficacy theory is equally strategic in understanding temptation which deals with the challenge of relapse, intensity, or urges of craving to engage in smoking, when faced with difficult or stressful situations. Such insight as provided by TTM will take researchers through the stages and processes, to provide specific or tailored approach to this global malignancy. This is particularly appropriate to smoking where temptation undermines

gains or frustrates attainment or sustenance of maintenance and termination status which are critical in evaluating cessation programs.

The TTM matches the needs of adult populations with their stage of distortion in this specific high-risk behavior (smoking), making it relatively effective than other interventional strategies. It also structures population and activities/ stages for effective and efficacious outcomes. Whereas studies in the USA showed 20% of smokers were in preparation, approximately 40% in contemplation, another 40% in pre-contemplation (Prochaska & Velicer, 1997, pp. 38-47). Countries without a long history of tobacco control were in pre-contemplation, 10% in preparation. China had 70% in pre-contemplation and 5% in preparation. The TTM is therefore suitable and adaptable across geopolitical boundaries, stages, and processes (Glanz, Rimer, & Viswanath, 2008, p. 103).

The integration of systematic relationships between people and stages and the process of their behavioral change also makes TTM appropriate for a study in smoking cessation (Prochaska, Diclemente, & Norcross, 1992). This is beneficial towards understanding the role of cognitive, affective, and evaluative processes. It is also supportive in understanding latter stages by proffering explanations on commitments, conditioning, contingencies, environmental controls, and progress towards maintenance or termination. This is absent in other models. TTM allows us to categorize study population for specific evaluation, by preventing empirical and practical mistakes. It is more flexible and amenable to social norms than the on-site or fixed site intervention program. It can also be delivered or disseminated through the internet or multi-media because it enjoys a relatively wider reach than comparable programs.

TTM studies focus particularly on smoking cessation. It also enjoys application in many settings: primary care, homes, churches, schools, campuses, and communities, particularly when tailored communication was combined with TTM constructs (Glanz, Rimer, & Viswanath, 2008, pp. 106-107). Intervention which included the non-TTM constructs of perceived susceptibility had significantly worse outcomes. This model is more effective if adapted on a theory driven basis, rather than variable-driven basis. This explains why I prefer this theory to other comparable standards of smoking cessation intervention in adults. Buchanan (1994) states that the TTM provides general principles which inform wider application, to prevent empirical evidence which leaks capability to guide practice. The TTM is not mere empirical evidence in explaining this health behavior (smoking), it explains characteristics and consequences using predictive theories and constructs. In terms of suitability, TTM is more relevant to different units of practice, particularly smoking cessation intervention. It provides a logical model to explain the risky health behavior given its multi-factorial dimensions. It enjoys adequacy in three critical criteria of logic, internal consistency, and parsimony and plausibility in the subject of study (Glanz, Rimer, & Viswanath, 2008, p. 35).

The flexibility of the Trans-Theoretical Model, particularly the combination of stage-matched interventions with proactive recruitment strategies enjoys high enrollment and unprecedented impact on the population. The openness of TTM five stages to self-help manuals, individualized computer feedback reports, based on “pros” and “cons”, counseling and computer reports enjoy high enrollment and retention rates. It is a more proactive rather than reactive recruitment-based

approach, which enjoys relatively high retention rates. Matching intervention to stage of change improved retention in three smoking cessation studies at same levels in pre-contemplation and preparation stage (Glanz, Rimer, & Viswanath 2008, p. 110).

THEORY APPLICATION IN SOCIAL MARKETING OF SMOKING CESSATION

The pursuit of health interventions that best optimize available resources is imperative in the field of public health. Resources are not only scarce but must be used judiciously and applied in promoting health behavior and preferences. Evidence on the use of theories and models in social marketing intervention is not only scarce, but scholars are also far from reaching consensus on the appropriate theory for each situation, unlike what is obtained in the physical sciences. Given the limitation of resources, behavioral change theories may help researchers configure/ structure interventions which best promote healthful living. Not only must we find pertinent theories, but they must also be efficacious in promoting human health. A smoker should be able to show progress in stages and processes if interventions are structured to meet their specific needs. The Trans theoretical model offers such opportunities on a diverse population with diverse positions in the smoking continuum.

Diehr et al., (2011) applied the TTM in smoking interventions to explain how individuals quit smoking using the stages of change. They reported that strategies which emphasize increasing motivation to quit may be helpful in pre-contemplation or contemplation stages just as behavioral skill intervention emphasizing quitting strategies may be appropriate for preparation and action stages. The essential thing is: what stage is being targeted? This would determine the appropriate strategy to be adopted. TTM also helps in categorizing the smoker's population into categories along the stages of changes on homogenous sub-group. This facilitates matching each segment's needs. This can also influence which stage we want to target. TTM offers a structural base for implementing such programs, thereby minimizing confusion or waste of resources. It can also draw attention to a particular stage or process requiring attention.

Diehr et al (2011, pp. 128-129), even modified or adapted the TTM Model to include the Never Smoke and Dead Population, another attempt in strengthening the model. They also emphasized the need to focus on relapse prevention. The TTM therefore serves as a valuable framework for design and evaluation of intervention programs across stages in a non-unidirectional approach. An understanding of this would help interventional planning and campaigns in becoming effective and specifically efficacious across stages.

Hammond, Fong, McDonald, Cameron, and Brown, (2003) also used the TTM in assessing the impact of warning labels on smoking cessation. They posited that cognitive processing of labels is predictive of cessation behavior in smokers. Suggesting a label salience perceived effectiveness. Proctor (2012) also used telephone-based health coaching to influence the decision to quit smoking tobacco on some worksites. While they found the intervention effective, they were of the view that chronic health condition could be a significant barrier to smoking particularly in women population (Terry, Seaverson, Staufacker, & Tanaka, 2011 pp. 117-125). The categorization of the smoking population makes this inference possible.

Evaluation of the Trans-Theoretical Model and Its Application

TTM systematic application can be evaluated in terms of outcomes by assessing impacts of reducing the prevalence of smoking in the target population. A global health challenge like tobacco uses and tobacco abuse deserves a holistic theory like TTM (with its relevant components) in marching mankind towards the cessation of this preventable risk behavior or health choices.

Check periodically as per state assigned if individual is making progress through stages. Make adjustment per stage attained or reversed. Movement is not unilineal. Is the goal to progress all the way through the stages or just to make progress? We also require action and maintenance phases for accountability. This would help intervention program implementation.

It is easy to fit individuals into stages and processes, and then efficiently and effectively utilize resources once individuals are identified by their stage. This process can be cumbersome and at times subjective and might affect the internal validity of inferences drawn from data generated from study.

Strengths of the Trans-Theoretical Model

The TTM meets individuals where they are in the smoking cessation intervention program. Progress in the quitting arrangement is better than none. The use of rewards and sanction compliments/sustains efficacy attainment. Tailored programming or matched interventions saves money, time, and resources, thereby making health workers meet target population where they are. The identification of stages also makes collaborative effort work because resources are not managed haphazardly but targeted at specific needs.

Limitations of the Application of the Trans-Theoretical Model

These limitations include the following: a). Stage does not necessarily occur in stages or predictive phases in human beings unlike what obtains in finite sciences. b). The stages can be ambiguous, thereby making the categorization/ compartmentalization of participants subjective. c). Stage is also not linear. What is defined as a success may not be substantial enough to qualify as efficacy, particularly in cessation expectation.

CONCLUSION

Nations of the world should exercise firmer control on publicity and advertisement of hazardous products. Cessation is all about control and prevention. It is a strategy to prolong and elongate the quality of human lives. Public enlightenment and awareness campaign would forestall the damaging capacity of tobacco products to human safety and health. Awareness campaign would reduce the mortality rates traceable to tobacco smoking. The transactional companies such as Phillip Morris that embarked on a global campaign in the 1980s should also be statutorily regulated and controlled, particularly on second hand “smoke hazards”. We therefore identify that tobacco usage in all ramifications poses a threat to lives and health because of copious evidence presented above.

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