The International Journal of INDIAN PSYCHOLOGY

Research Paper

Effectiveness of Cognitive Behavior Therapy (CBT) for smoking adults in IT Industry

Mr. Manisankar[1]*, Dr. Kalyani Kenneth[2]

ABSTRACT

Background: Tobacco use including both the smoking and the non-smoking forms of tobacco is common in India, Tobacco consumption is responsible for half of all the cancers in men and a quarter of all cancers in women, in addition to being a risk factor for cardiovascular diseases and chronic obstructive pulmonary diseases. The World Health Organization predicts that tobacco deaths in India may exceed 1.5 million annually by 2020. Cognitive Behavioral Therapy has been shown to be effective in the treatment of smoking alcoholic patients. According to Kalman et al., the cognitive behavioral approach is used in the treatment of smoking by allowing changes in the lifestyle of the individuals, as well as modifications of dysfunctional beliefs and behaviors that relate to the act of smoking. *Objective:* Cognitive Behavioral Therapy is a therapy based on cognitive and behavioral techniques: cognitive psychological education, cognitive restructuring, interoceptive exposure, breathing exercises and relaxation, all aiming at behavioral changes. The objective of the study is to determine the effectiveness of Cognitive Behavioral Therapy for smoking adults in IT Industry. *Methods:* Cognitive Behavioural Therapy Sessions were carried out in two stages: (1) a "stop smoking" stage lasting four weeks, with 3 sessions/ week; (2) a maintenance stage beginning with 2 weeks of a single weekly session, followed by monthly sessions until the end of treatment. *Results:* Thirty adults' men participated in this research. After the CBT treatment, 18 adults had stopped smoking, whereas 11 relapsed during the course of the year; one abandoned treatment. Married adults showed better results: 60% stopped smoking by the end of the treatment. *Conclusions:* The dominance of CBT for 15 weeks, suggests that continued emphasis on the development of cognitive and behavioral strategies for maintaining non-smoking behaviour among IT professional, during an extended treatment phase may help smokers to maintain abstinence in the longer term. At present, the minimum duration of therapy is unknown. Cognitive Behavioral Therapy proved to be effective in the treatment of tobacco dependency mainly in married men.

Keywords: Cognitive Behaviour Therapy, IT Professionals, Smoking.

Tobacco use including both the smoking and the non-smoking forms of tobacco is common in India. The few reports of tobacco use in different population groups report its prevalence

[1]M.Phil Scholar, Dept. of counselling Psychology, Madras School of Social Work, Chennai, India.
[2]Assistant Professor, Dept. of Counselling Psychology, Madras School of Social Work, Chennai, India
*Responding Author

from about 15% to over 50% among men[1-7]. Differences in its prevalence are rather wide for the non-smoking forms. Tobacco smoking in most parts of India except Punjab, Maharashtra and Sikkim is reported in about one fourth to half of adult men of over 15 years of age [8]. Amongst women, smoking was more common in the North Eastern states, Jammu & Kashmir and Bihar, while most other parts of India had prevalence rates of about 4 percent or less [8]. In other reports, ever smoking among the school going youth of 13- 15 years age, studied as a part of the Global Youth Tobacco Survey (GYTS) study was reported on an average in up to about 10 percent individuals [9-12]. All these reports clearly indicate a higher prevalence of tobacco smoking in adult men.

Cognitive Behavioral Therapy has been shown to be effective in the treatment of smoking alcoholic patients.[13]Its use for anti-tobacco treatment is based on the assumptions that (i) cognitive activity influences behavior, (ii) cognitive activity can be monitored and changed, and (iii) the desired behavior can be attained by cognitive change.

According to Kalman et al.,[14] the cognitive-behavioral approach is used in the treatment of smoking by allowing changes in the lifestyle of the individuals, as well as modifications of dysfunctional beliefs and behaviors that relate to the act of smoking. This is an active and pragmatic approach where the alcoholic individual learns to detect smoking relapse situations and develops strategies to cope and to prevent the repeat happenings.[15]

Dependence can involve specific psychoactive substances, such as alcohol and tobacco. Both substances are described in the Diagnostic and Statistical Manual of Mental Disorders of the American Psychiatric Association (DSM-IV),[16] where alcohol has the diagnostic label F10 and tobacco, F17. Dependence syndrome is described as a set of behavioral, cognitive and physiological phenomena that develop after repeated use and are typically associated with a powerful desire to consume the drug.

The objective of this study is to show that treatment with Cognitive Behavioral Therapy can be an effective technique for the treatment of smoking among adults in IT industry

METHODOLOGY

The study was conducted during the period of 2019 to 2020 among adults in the various information technology companies in Chennai, India.

The sample was selected using purposive sampling technique, consisting of 30 smoking adults and they were included in the study. Diagnosis was made by a psychologist, through personal and family history collection, and through the patient's smoking history. The Fargestron test was used to evaluate the degree of physical dependence prior to the CBT intervention. Inclusion criteria for this study were: age between 18 and 45 years old with a regular habit of smoking. Exclusion criteria were the presence of mental retardation and diseases serious enough to prevent the ministration of the follow-up protocol. Participants signed an informed consent in accordance with the code of ethics in research. The treatment lasted for one year, being conducted in 2 stages: Stage 1 "Quit smoking" and Stage 2 "Maintenance" (Relapse prevention). The first stage lasted four weeks (five if necessary), with sessions of Cognitive Behavioral Therapy.

During the sessions the theme of smoking treatment with Cognitive Behavioral Therapy was addressed. At the end of each week, a manual was offered to the patient with the sequence of the treatment. The aims of treatment are to break the social prejudice against smoking, to

improve quality of life and to rescue the sense of citizenship. The work is performed under a shared management regime (smokers and psychologists), where activities (workshops) are jointly agreed upon. The patients attend the workshops three times a week; on one of the days, a volunteer teaches the techniques of sewing and painting of objects; on the other days the volunteer is replaced by one of the smokers who help the group.

The second stage, maintenance, deals with the prevention of relapse. In this stage it is important to distinguish between a lapse, as opposed to a relapse. A lapse consists of an isolated event of tobacco use while a relapse is the establishment of a new usage pattern or the return to the old pattern. During the first two maintenance weeks, patients attended a single weekly session. After that, patients attended two sessions spaced 15 days apart, then monthly sessions until the end of the one-year treatment. It is essential that the individual remain tobacco-free to continue the treatment. Psychotherapy, when required, is accompanied by nicotine supplementation (adhesive and gum) according to the degree of dependence established by the Fargestron test.

Instrument An interview is always conducted, in which we approach the patient history including clinical diseases, existence of familiar smokers, patient relationship with tobacco, existence of psychiatric disorders in the family as well as their motivation for treatment. We can evaluate motivation according to three moments: (i) Pre-contemplative, patient smokes and is not motivated to stop; (ii) Contemplative, patient is motivated to stop, but no date of stoppage has been stipulated within the coming days; (iii) Action, patient already has a date or is motivated to stop within a month.

Intervention
Cognitive Behavioral Therapy protocol: the first phase
First session. Initial questions: Why do you smoke? How does it affect your health? Points to be made: the harm caused by tobacco, its disease-causing components, such as risk of impotence, stroke, increased coughing, sneezing, chronic bronchitis, emphysema, cancer, coronary artery disease, peptic ulcer disease, peripheral vascular disease, and loss of taste. Other topics discussed are: ambivalence, consumption of cigarettes, motivation to quit smoking, most difficult obstacles to reach the goal, time of first daily cigarette. It is important that the patient be made aware that the urge to smoke is transitory and be advised that the methods to quit smoking can be abrupt or gradual (Reduction or Postponement). For a Fargestron test above 5 points, the suggested method to stop smoking is the abrupt one, because of a high or very high level of dependence. Below 5 points, the method of quitting may be gradual (Reduction or Postponement). In the abrupt mode, the patient has to quit smoking on an immediate given date.

In the Reduction mode, the patient must keep an account of smoked cigarettes and reduce this in a daily predetermined way. A date for cessation is established. Patients are advised to bear in mind that a decrease rate by only one cigarette per day is insufficient, unless he already smokes very few cigarettes per day.

In the Postponement mode, the patient delays the time at which he smokes his first daily cigarette by a predetermined number of hours each day. The patient must increase this delay by 2 hours every day; in this modality, reduction of the number of consumed cigarettes becomes irrelevant.

Second session. The point to be made here: the first few days without smoking. The topics discussed with the adults are: assertiveness, withdrawal syndrome, reinforcement of the date for quitting. Assertiveness is the patient's capacity to develop his/her ability to express thoughts and feelings and to deal with stressful situations that have to do with smoking.

The adult is checked about the following physical symptoms that can occur during abstinence from tobacco: sweating, headache, dizziness, coughing, drowsiness, increased appetite, insomnia, cramps, tingling in the extremities of the fingers and toes, tension, difficulty concentrating, disturbance in the intestine and stomach.

Adult must understand that withdrawal signs and symptoms last from 1 to 3 months, being more pronounced in the first month. Intensity depends on the degree of dependence. The symptoms occur because the body is recovering toward normal metabolism, which was formerly compromised by the cigarettes. Some symptoms are purely psychological such as: anxiety, restlessness, irritability and tension. Because stress and boredom can worsen abstinence, it is important for the patient to identify stressful and boring situations, thus enabling the change from negative to positive thoughts. During this second session, respiratory and body relaxation practices should be taught.

Third session. The main point here is the overcoming of obstacles to remain smoke-free. The topics discussed with the patient are: strengthening decision about the end-date; review of obstacles that have been overcome and those still remaining ahead; valuation of anticipated benefits after stopping. In addition to symptoms, another factor may occur, namely the fear of abstinence which may lead the patient to doubt whether he or she can stop smoking. A point to be addressed is the reward system that makes the patient quit smoking, such as gifts and eating more than usual. If overeating occurs, weight gain may result and referral to nutrition counseling is advised.

Fourth session. The main point here relates to the benefits obtained after smoking stops. The topics discussed with the patient are: improvements in quality of life, detection of possible pitfalls to remain smoke-free. Resort to manuals that are given at the end of the sessions, and particularly in moments of rift, call for professionals and other patients.

Second-stage Maintenance: The maintenance sessions discuss how the patient is feeling without a cigarette in his or her life, and how he or she is manipulating the resources learnt during the first phase.

The patients must be made aware that smoking is not the answer to their problems no matter how difficult the problems are to cope with. Patients must also be made to understand that their assertiveness and determination will be essential to ensure abstinence.

RESULTS

Table 1 Displays demographics for all patients segregated between smokers vs. non-smokers.

Demographic Variables	All the patients (n=30)	Patients who stopped smoking at the end of the treatment	Patients unsuccessful in quitting smoking	Statistical significance
Age	Avg.: 35.17 ± 10.85 yrs	Avg.: 37.13 ± 8.94 yrs	Avg.: 27.32 ± 8.94 yrs	t-value=0.543; p=0.873 (NS)

	Min.: 24. Max: 45	Min.: 27. Max: 45	Min.: 27. Max: 34	
Marital Status	Married N=20 Single N=10	Married N=12 Single N=6	Married N=8 Single N=4	t-value=3.245; p=0.02**
Shift	Night N=20 Day N=10	Night N=11 Day N=7	Married N=9 Single N=3	t-value=3.076; p=0.010**
Quit smoking during treatment	23	18	5	
Relapse during treatment	16	11	5	
Quit at the end of treatment		18		

** Significant at 0.01 Level.

In all, 18 adults (60%) had positive results for the treatment, i.e. had stopped smoking at the end of one year of therapy. There was a statistically significant difference regarding the marital status of those who managed to quit smoking. Five adults stopped smoking, but did not retain the result at the end of treatment. Married adults showed significantly better results with 66.6% of the quitting at the end of treatment, vs. only 34% of the unmarried men. Other observations which may be useful: (i) five patients stop smoking, but did not keep the result by the end of treatment; (ii) among all the successful quitters, 11 (36.6% of successful) had relapses during treatment.

Table 2: Pre & post-test results, age, marital status and shift on CBT of smoking adults

Variables	Groups	Mean±SD	t-value	p-value
Fagerstron Test	Pre-Test	6.82±1.32		
	Post-Test	2.85±0.34	6.234	0.00**
Age	24-35 Years	4.34±1.42	0.543	
	Above 35 years	4.67±1.12		0.873 (NS)
Marital Status	Single	5.64±1.54		
	Married	3.45±1.23	3.245	0.002**
Shift	Night	4.56±0.98		
	Day	3.12±1.09	3.076	0.010**

**Significant at 0.01 Level

Hypothesis – 1 States that "CBT intervention will have no significant difference between Pre-Test and Post- Test scores among smoking adults.

From the above table it can be observed that there is a significant difference in the level of smoking among the IT men. The calculated t – value is 6.234, which is significant at 0.01 level indicating that CBT intervention has significant effectiveness on the rate of smoking among IT adults. Hence, the above stated hypothesis is rejected.

Hypothesis – 2 States that there will be no significant difference between marital status among smoking adults.

From the above table it can be observed that there is a significant difference in the level of smoking among the IT men marital status. The calculated t – value is 3.245, which is

significant at 0.01 level indicating that CBT intervention has significant effectiveness on the marital status of smoking IT adults. Hence, the above stated hypothesis is rejected. It can be inferred that there is significant difference in the rate of smoking among single and married smoking IT adults.

Hypothesis – 3 States that there will be no significant difference between shift works among smoking adults.

From the above table it can be observed that there is a significant difference in the level of smoking among the IT men shift works. The calculated t – value is 3.076, which is significant at 0.01 level indicating that CBT intervention has significant effectiveness on the shift works of smoking IT adults. Hence, the above stated hypothesis is rejected. It can be inferred that there is significant difference in the rate of smoking among day shift works and night shift works smoking IT adults.

DISCUSSION

The sample studied by Chaiebet al.[17] presented an association between smoking and marital status. Married adults are more willing and easily cooperated for the quitting of smoking. The association between smoking and marital was also found in our study. Around 30% of the adults who quitted the smoking are married.

Prochaskaet al.[18] claim that interventions for smoking cessation concomitant with the treatment of other addictions increases the period of abstinence. Smokers with a previous history of problems with alcohol are more capable of stopping the use of tobacco than smokers without this history. They attribute this to the fact that these subjects developed skills to solve their problems with alcohol that help to minimize dependence on nicotine and consequently respond to minimum interventions for tobacco cessation.

Peterson et al.[19] note that nicotinic receptors are related to the pathophysiology of various mental disorders and to the mechanisms of action of other psychotropic drugs such as alcohol. From this understanding of the neurobiology of nicotine addiction and usage, it is possible to understand why they are such common mental disorders. Tobacco and alcohol are the two most consumed drugs worldwide, because they are legal and freely sold drugs. However, unlike alcohol, tobacco does not generate socially inconvenient behaviors. In the case of the association of these two drugs, there is evidence that drinking starts before smoking.[19]

According to the Diagnostic and Statistical Manual of Mental Disorders of the American Psychiatric Association (DSM-IV), we have found in this study that there is a great deal of distress and that this can be a facilitator for the development of chemical dependency. This can be revealed as some personality traits, for example, emotional regression, immaturity, anxiety, insecurity, inadequacy and weakness of the ego. Tobacco addiction acts as an escape mechanism for people with traces of shyness or fear of taking initiatives, and serves to remove responsibility; all of this is due to low self-esteem and negative self-image.

Fiore states that nicotine replacement therapy results in the occurrence of a reduction of abstinence in patients wanting tobacco cessation; Cognitive Behavioral Therapy alone is an effective alternative for the treatment of smoking.

In the study by Holt et al.,[20] in the sample of 32 smoker patients tobacco relapse also leads to alcohol relapse. In our study, 6 patients relapsed to tobacco, but not to alcohol.

According to Fisher et al.[21] the choice of cognitive behavioural treatment proposed by the Brazilian National Health Service (Sistema U ´ nico de Sau ´de) is related to the efficacy observed in previous studies that have shown that working with the motivation of the individual leads to good results as regards to tobacco cessation.

CONCLUSION

Researchers conclude that the Fargestrom test for physical dependence was an effective assessment tool. It's found that 60% of the sample attained the goal of the study of quitting smoking after 1 year of treatment. Relapse was a part of the treatment for reaching the goal of quitting smoking. The maintenance of the patient's tobacco-free lifestyle is independent of completion of treatment, because this is linked to emotional stability, family and social conditions.

REFERENCES

Beck AT, Wright FD, Newman CF, Liese BS. Cognitive therapy of substance abuse: Guilford Press; 2011.

Behera D, Malik SK. Chronic respiratory disease in Chandigarh teachers. Indian J Chest Dis Allied Sci 1987; 29: 25-8.

Chaieb JA, Castellarin C. Association between smoking and alcoholism: initiation into the major human dependencies. Revised Edition Mental Health Atlas 2005. World Health Organization-Geneva; 1998;32(3):246-54.

Clark DA, Beck AT. Cognitive theory and therapy of anxiety and depression: convergence with neurobiological findings. Trends Cogn Sci. 2010;14(9):418-24.

Fisher GL, Roget NA. Encyclopedia of Substance Abuse Prevention, Treatment, and Recovery.Sage; 2009.

Ghosal AG, Ghosh A, Debnath NB, Saha AK. Smoking habits and respiratory symptoms: observations among college students and professionals. J Indian Med Assoc 1996; 94: 55-7.

Gupta PC, Ray C. Tobacco and youth in the South-East Asian region. Indian J Cancer 2002; 39: 5-33.

Holt JL, Litt DM, Cooney LN.Prospective analysis of early lapse to drinking and smoking among individuals in concurrent alcohol and tobacco treatment.Psychol Addict Behav. 2012 (3):561-72.

Jindal SK, Aggarwal AN, Gupta D, Kashyap S, Chaudhary D. Prevalence of tobacco use among school going youth in North Indian states. Indian J Chest Dis Allied Sci 2005; 47: 161-6

Kalman D, Morissette SB, George TP. Co-morbidity of smoking in patients with psychiatric and substance use disorders. Am J Addict. 2005;14(2):106-23.

Kumar A, Mohan U, Jain VC. Influence of some sociodemographic factors on smoking status of academicians. Indian J Chest Dis Allied Sci 1997; 39: 5-12.

Malaowalla AM, Silverman S, Mani NJ, Billimoria KF, Smith LW. Oral cancer in 57, 518 industrial workers of Gujarat, India: a prevalence and follow-up survey. Cancer 1976; 37: 1882-6.

Pandey GK, Raut DK, Hazra S, Vajpayee A, Pandey A, Chatterjee P. Patterns of tobacco use amongst school teachers. Indian J Pub Health 2001; 45: 82-7.

Peterson AL, Weg MWV, Jae ´n CR. Nicotine and Tobacco Dependence: Hogrefe Publishing; 2011.

Prochaska JJ, Gill P, Hall SM. Treatment of tobacco use in an inpatient psychiatric setting. Psychiatric Services. 2004;55:1265-70.

Rani M, Bonu S, Jha P, Nguyen SN, Jamjoum L. Tobacco use in India: prevalence and predictors of smoking and chewing in a national cross-sectional household survey. Tobacco Control 2003; 12: e4.

Reddy KS, Gupta PC, editors. Prevalence of tobacco use. Report on Tobacco Control in India. New Delhi: Ministry of Health and Family Welfare, Govt. of India 2004; pp 49-56.

Sarkar D, Dhand R, Malhotra A, Malhotra S, Sharma BK, Perceptions and attitude towards tobacco smoking among doctors in Chandigarh. Indian J Chest Dis Allied Sci 1990; 32: 1-9.

Sinha DN. Exposure vs targeting youth in north and east of India. Health for the Millions 2003; 29-30: 15-22.

The American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders.5th Edition. Porto Alegre: medical arts; 2000.

The Global Youth Tobacco Survey Collaborating Group. Tobacco use among youth: a cross-country comparison. Tobacco Control 2002; 11: 252-70.