



THE EFFECT OF AVERSION THERAPY ON STUDENTS' ATTITUDE TOWARDS CIGARETTE SMOKING IN ANAMBRA STATE

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Cigarette smoking is fast becoming an addictive behaviour among senior secondary school students which is responsible for their unprecedented rise into maturity on the wrong path. This study investigated the effect of aversion therapy on students' attitude towards cigarette smoking in Anambra state. one research questions guided the study and one null hypotheses were tested at 0.05 level of significance. The design for the study was pure experimental. The study has a population of 1800 SS 2 students in secondary school in Awka South Local Government Area of Anambra State. A sample of 62 SS2 students with positive attitude towards cigarette smoking was selected through purposive sampling technique. Instrument for data collection was the Cigarette Smoking Questionnaire (CSQ) developed by the researcher. Data collected were analyzed using mean and analysis of co-variance (ANCOVA). Findings of the study indicated that aversion therapy is ineffective in modifying cigarette smoking attitude. Based on the findings, it was recommended among others that aversion should not be adopted by counsellors as treatment for modifying cigarette smoking attitude of secondary school students in Anambra state.

Cigarette smoking is an addictive behaviour that has been problematic in Nigerian society, especially among senior secondary school students. Cigarette smoking is the commonest form of tobacco use and in developed countries accounting for at least 80% of overall tobacco consumption (U.S Centers for Disease Control and Prevention, 2009). Cigarette smoke contains nicotine; a poisonous alkaloid and harmful substances like carbon monoxide, acrolein, ammonia, prussic acid and a number of aldehydes and tars. Surgeon General's Advisory Committee (2007) maintained that a smoker has a significantly greater chance of contracting lung cancer than a non smoker, depending on factors such as number of cigarette smoked daily, number of years the subject smoked and the time in the person's life when he or she began smoking.

Cigarette smoking is an important risk factor for many non-communicable diseases. It is one of the greatest contributors to preventable illness and premature death (Mather & Loncar, 2006). Cigarette smoking is a significant risk factor in the development and acceleration of the atherosclerosis epidemic threatening the lives of at least one billion people (Peto & Lopez, 2001). According to Owonaro and Eniojukan (2015), cigarette smoking is the largest risk factor that leads to premature death globally. The authors reported that the United States of America recorded 480,000 deaths due to cigarette smoking annually and in the United Kingdom, 30 most common causes of deaths were due to cigarette smoking (Carter, Abnet, Feskanich, Freedman, Hartge & Lewis, 2015). Despite its adverse effects, cigarette smoking continues to rise especially in developing countries like Nigeria (Abikoye & Fusigboye, 2010).

According to Global Youth Tobacco Survey Collaborating Group (GYTSCG, 2003), in developing countries like Nigeria, cigarette smoking is on the increase among adolescents. The habit of cigarette smoking starts during adolescence age before the age of 18 in Nigeria (Paavola, Vartiainen & Haukkala, 2004). Factors for initiation of cigarette smoking in Nigeria include gender, smoking parents or siblings, peers, advertisement and the increase in the perception that smoking is not harmful but makes them look mature (GYTSCG, 2002). In addition, most African countries including Nigeria

have not respond appropriately to the growth of cigarette smoking because of the revenue generated from the tobacco industry. Hence, Nigerian government has not been able to ban the business of cigarette smoking completely because of the huge sum of taxes generated from the manufacturers and markers of cigarette in the country (Adeyeye, 2011).

Consequently, Ockene and Miller (2006) stated that smoking causes about 90% of lung cancer death in men and almost 80% of lung cancer death in women in Nigeria. The author further maintained that cigarette smoking poses a threat to male potency in the country. Cigarette smoking has many adverse reproductive effect such as infertility, miscarriage, pre-term delivery, still birth weight, and sudden infant death syndrome (Surgeon General Report, 2006). Unfortunately, addicted smokers from the developing countries such as Nigeria are unlikely to quit the attitude as there are no smoking cessation programs (WHO, 2008).

Regardless of the health problems associated with smoking, smokers still prefer to spend their last kobo on a stick of cigarette even when they lack enough cash to buy food that will nourish their body system even among Nigerian students. In Nigeria, efforts are being made by the Federal Ministry of Health to curb cigarette smoking. The Federal Ministry of Health makes it clear to the public that smokers are liable to die young. This information is passed across to the public through radio and television stations nationwide. However, the use of cigarettes smoking and other drugs are fast becoming part of everyday life in many communities, societies, clubs and even in institutions of learning in Nigeria. Zuerev (2008) posited that the reasons behind this trend remain multi-factorial and suggested that economic factors, urbanization and westernization as important drivers of cigarette smoking among African students. Despite the effort of the Federal Ministry of Health in Nigeria to curb smoking, some individuals including students still have a positive attitude towards smoking.

Bandura (2006) defined attitude as “mental and neural representations, organized through experience, exerting a directive or dynamic influence on behaviour”. Attitude is a hypothetical construct that represents an individual’s like or dislike for an item. An attitude is positive when a

person is well disposed towards an object or person. Negative attitude is when a person does not have good feelings, thoughts or reactions towards an object or person. Smoking attitude is common among secondary school students. Students' attitude towards cigarette smoking can be described as student's thoughts, ideas, feelings or emotions that might predispose them to engage in cigarette smoking attitude. In order to modify the undesirable attitude of smoking, several techniques such as operant conditioning, aversion, desensitization, modeling, aversion condition help to build desirable attitude.

In this research, aversion therapy will be used on student's attitude towards cigarette smoking. Aversion therapy for smoking developed in the 1960's and its procedures include electric shock, desensitization training, breath holding, over-exposure to stale smoke and covert sensitization. Davison in Hajek and Stead (2011) asserted that aversion methods have been used in attempts to modify a range of behavioural disorders such as overeating, and smoking. They further posited that rapid smoking is the most frequently and effective aversion procedure for smoking. Rapid smoking usually consists of asking smokers to take a puff every six to 10 seconds for three minutes or consume cigarettes until they feel unable to continue. Aversion therapy is primarily a way of stopping maladaptive response for a period of time during which there is an opportunity for changing a life style by encouraging more adaptive alternative patterns. This therapy has been successfully used to treat alcoholism and cigarette smoking. American Psychiatric Association (APA, 2000) opined that aversion therapy uses the behavioral approach principles that new behavior can be learned in order to overcome addictions, obsessions or violent behavior. In aversion therapy, an aversive stimulus is paired with an undesirable behavior in order to reduce or eliminate behavior such as smoking. Therefore, this study is designed in line with this platform involving aversion therapy on its effectiveness on modifying students' attitudes towards smoking in Anambra State.

Statement of the Problem

The increasing prevalence of cigarette smoking among secondary school students has been of a much concern to governmental, non-governmental organizations and stakeholders in the educational sectors across nations of the world. This has led to series of smoking control programmes such as anti smoking campaign, bans, decrees and warnings by both governments of different countries. It has been observed by Martin (2008), that many smokers often get addicted to smoking overtime. About 70% of smokers want to quit, 25% try to quit each year, but only 5% succeed. This is because smokers become physically addicted to cigarette smoking based on the perception that smoking makes them function effectively. When students smoke, it could lead to academic underachievement and academic failure.

In most cases, students that smoke tend to fall into wide practices of examination malpractice, ranging from copying from each other and bribery to impersonations. Many of these students have the cognitive ability to do well in examinations, but may not do so because of the health problems associated with cigarette smoking. In order to treat students with some cigarette smoking interventions geared towards making them stop smoking is the problem of this study. However, the effectiveness of aversion therapy in modifying the positive attitude of students towards cigarette smoking is not clearly known. This study, therefore sought to determine the effect of aversion therapy on Students' attitude towards cigarette smoking.

Research Question

The following research question served as a guide for the study:

1. What is the difference in the pre-test and pro-test means scores of student's attitude towards cigarette smoking after being treated with Aversion therapy and those in the control group?

Hypothesis

The following null hypotheses guided the study, and were tested at the 0.05 level of significance:

1. There is no significant difference in the pre-test and post-test mean scores of student's attitude towards cigarette smoking after being treated with Aversion therapy and those in the control group.

REVIEW OF RELATED LITERATURE

Concept of Aversion Therapy

Aversion therapy is a form of psychological treatment in which the patient is exposed to a stimulus while simultaneously being subjected to some form of discomfort. Hajek and Stead (2003) posited that adding an unpleasant (aversive) stimulus to an attractive behaviour reduces the attractiveness and may extinguish the behaviour. Aversion therapy pairs the pleasurable stimulus of smoking a cigarette with an unpleasant stimulus, with the aim of extinguishing the urge to smoke.

Aversion therapies include rapid puffing (smoke not inhaled), smoke holding, excessive smoking, paced smoking, self-paced smoking, focused smoking, covert sensitization, symbolic aversion, electric shocks administered by therapist or subject and behavioural treatments with bitter pills (Hajek & Stead, 2003). Aversion therapy is intended to cause the smokers to associate the stimulus with unpleasant sensations in order to stop the smoking attitude (O'Farrel & Cutter, 2002). Aversion therapies can take various forms, for example: placing unpleasant tasting substances on the fingernail to discourage nail-chewing, Aversion therapy pairs the pleasurable stimulus of smoking cigarette with some unpleasant stimulus. The objective of Aversion therapy is to extinguish the urge to smoke.

In the context of this study, aversion therapy is a type of behavioural therapy which aims to reduce or eliminate smoking behaviours and habits among students.

Concept of Smoking

According to the Surgeon General Advisory Committee on Health appointed by the United States America (2007), smoking refers to the inhalation and exhalation of fumes from burning tobacco in cigars, cigarettes and pipes. Correspondingly, Borid (2006) described smoking as the inhalation and exhalation of fumes from burned dried or cured leaves of the tobacco in cigars, cigarette or pipes.

Abdullahi (2013) asserted that smoking refers to the action of lighting a cigarette, a pipe, a cigar, a water pipe, or any other object made from tobacco or materials of similar effects. The object is then sucked on with the lips to extract smoke. This smoke is inhaled into the chest and then exhaled from the nose and mouth as a thick white smoke. In the context of this study, smoking refers to the smoking of cigarette or the inhalation of smoke through cigarettes which is done actively at regular or irregular interval.

Types of Aversion Therapy for Cigarette Smoking

The first report of the use of an aversion method with smokers seems to have been a 1964 paper by Wilde on blowing warm stale smoke in subjects' faces while they smoked (Wilde in Hajek & Stead, 2011). Following this, several other aversion procedures were developed. The most frequently examined procedure has been rapid smoking. It was first reported by Lublin and Joslyn (Lublin in Hajek & Stead, 2011) who combined Wilde's procedure with asking subjects to smoke at an increased rate. Rapid smoking was rejected due to concerns about a risk of nicotine poisoning, myocardial ischemia, and cardiac arrhythmia (Horan in Hajek & Stead, 2011), although these concerns are now considered largely unfounded (Hall in Hajek & Stead, 2011).

The alternative 'milder' methods of aversion therapy towards cigarette smoking, which use smoking itself as an aversive stimulus are described below:

Paced smoking:

It is a similar procedure where inter-puff interval is increased to 30 seconds, which does not by itself elicit aversive sensations. In some studies this has been used as an inactive control (Hall in Hajek & Stead, 2011).

Self paced smoking or focused smoking:

It is a procedure where subjects smoke at their own pace focusing on negative sensations (Hackett in Hajek & Stead, 2011),

Rapid puffing:

Rapid puffing differs from rapid smoking in that subjects are asked not to inhale. This provides some unpleasant stimulation, but not the central malaise (Erickson in Hajek & Stead, 2011).

Covert sensitization or symbolic aversion:

It involves imagining aversive consequences of smoking such as nausea and vomiting, and the relief following putting out the cigarette (Lowe in Hajek & Stead, 2011).

Smoke-holding:

It includes asking subjects to draw smoke into their mouths and hold it there for 30 seconds while breathing through the nose and focusing on the unpleasant sensations caused by the smoke (Becona in Hajek & Stead, 2011).

Excessive smoking, negative practice, satiation or over smoking:

It involves smoking more cigarettes per day than usual between sessions. Examples include doubling cigarette consumption (Lando in Hajek & Stead, 2011), or increasing consumption according to various schedules, e.g. to 150% for two days, then stopping for one day, then to 200% for one day and then to quit for good (Delahunt in Hajek & Stead, 2011). Sometimes this has been combined with a period of continuous smoking during sessions.

Other methods have been proposed which use aversive stimuli other than smoking. They include electric shocks administered by therapists or subjects themselves (Conway in Hajek & Stead, 2011). Self-administered snapping of a rubber band worn around wrist (Berecz in Hajek & Stead, 2011), and a combination of electric shocks and behavioural treatments with bitter pills taken prior to smoking (Whitman in Hajek & Stead, 2011).

Another method using the aversion principle is the application of silver acetate. This chemical combines with smokers' saliva to create an unpleasant taste in the mouth. Because it is a pharmacotherapeutic agent marketed for self administration outside formal behavioural treatments, it has been covered in a separate review (Lancaster in Hajek & Stead, 2011).

Effects of Cigarette Smoking

The following are some of the effects of cigarette smoking

Increases Stress:

Contrary to popular belief, smoking does not relieve stress. Studies have shown that on average, smokers have higher levels of stress than non-smokers (Caumo, 2001). The feelings of relaxation that smokers experience while they are smoking are actually a return to the normal unstressed state that non-smokers experience all of the time

Bronchospasm:

This term refers to "airway irritability" or the abnormal tightening of the airways of the lungs. Behrman (2000) opined that bronchospasm makes airways smaller and leads to wheezing similar to that experienced by someone with asthma during an asthma attack. He further maintained while smokers may not have asthma, they are susceptible to this type of reaction to tobacco smoke. An asthmatic that starts smoking can severely worsen his/her condition. Behrman asserted that bronchospasm makes breathing more difficult, as the body tries to get more air into irritated lungs.

Increases Phlegm Production:

The lungs produce mucus to trap chemical and toxic substances. Small “finger like” hairs, called cilia, coat the lung's airways and move rhythmically to clear this mucus from the lungs. Combined with coughing, this is usually an effective method of clearing the lungs of harmful substances. Cigarette smoke paralyzes these hairs, allowing mucus to collect in the lungs of the smoker (Behrman, 2000). Cigarette smoke also promotes goblet cell growth resulting in an increase in mucus (Takeyama, 2001). More mucus is made with each breath of irritating tobacco and the smoker cannot easily clear the increased mucus.

Decreases Physical Performance:

When the body is stressed or very active (for example, running, swimming, playing competitive sports), it requires that more oxygen be delivered to active muscles. The combination of bronchospasm and increased phlegm production result in airway obstruction and decreased lung function, leading to poor physical performance. In addition, smoking has been shown to stunt lung development in adolescents, limiting adult breathing capacity. Behrman, (2000) asserted that smoking not only limits one's current state of fitness, but can also restricts future physical potential.

Adverse lipid profile:

Lipids, a form of fat, are a source of energy for the body. Most people use this fat in its good form, called high-density lipoproteins, or HDLs. Some forms of fat, such as low density lipoproteins (LDLs, triglycerides and cholesterol) can be harmful to the body. Most bodies have a balance of good and bad fats. However, that is not the case for smokers. Nicotine increases the amount of bad fats (LDL, triglycerides, cholesterol) circulating in the blood vessels and decreases the amount of good fat available (Mitchell, 1999). According to Mitchell, smoking 1-5 cigarettes per day presents a significant risk for a heart attack and stroke

Atherosclerosis:

According to Cotran (1999), atherosclerosis is a process in which fat and cholesterol form “plaques” and stick to the walls of an artery. These plaques reduce the bloods flow through the

artery. Nicotine and other toxic substances from cigarette smoking are absorbed through the lungs into the blood stream and are circulated throughout the body. These substances damage the blood vessel walls, which allow plaques to form at a faster rate than they would in a non-smoker (Mitchell, 1999).

Thrombosis:

Thrombosis is a process that results in the formation of a clot inside a blood vessel. Normally, clots form inside blood vessels to stop bleeding, when vessels have been injured. However, components of cigarette smoking dangerously increased rates of clot formation. Smokers have elevated levels of thrombin, an enzyme that causes the blood to clot immediately after smoking (Hioki, 2001). This process may result in blockage of blood vessels, stopping blood flow to vital organs. Because of this abnormal tendency to clot, smokers have more heart attacks than non-smokers (Mitchell, 1999). In addition, Mitchell added that sudden death is four times more likely to occur in young male cigarette smokers than in non-smokers.

Constricts Blood Vessels:

It has been shown that smoking, even light smoking, causes the body's blood vessels to constrict (vasoconstriction). Smoking does this by decreasing the nitric oxide (NO₂) and reducing blood supply. Vasoconstriction may have immediate complications for certain persons, particularly individuals whose blood vessels are already narrowed by plaques (atherosclerosis), or partial blood clots, or individuals who are high cigarette smokers.

Increases Heart Rate:

Heart rate is a measure of how fast your heart is pumping blood around your body. Young adult smokers have a resting heart rate of two to three beats per minute faster than the resting heart rate of young adult non-smokers. Nicotine consumption increases a resting heart rate, as soon as 30 minutes after puffing; and the higher the nicotine consumption (through deep inhalation or increased number of cigarettes) the higher the heart rate (Rose, 2001). She further asserted that smokers' hearts

have to work harder than nonsmokers' hearts. A heart that is working harder is a heart that can tire-out faster and may result in an early heart attack or stroke. Increases blood pressure:

Blood pressure is a measure of tension upon the walls of arteries by blood. Nicotine consumption increases blood pressure (Rose, 2001). She further maintained that higher blood pressure requires that the heart pump harder in order to overcome the opposing pressure in the arteries. This increased work, much like that related to increased heart rate, can wear out a heart faster. The higher pressure can also cause organ damage where blood is filtered, such as in the kidneys.

Periodontal Diseases:

These occur when groups of bacteria are able to form colonies that cause infections and diseases of the mouth. Smoking quickly changes the blood supply, immune response, and healing mechanisms of the mouth, resulting in the rapid initiation and progression of infections (Sabiston, 1997). In this way, smoking makes the mouth more vulnerable to infections and allows the infections to become more severe. The bacterial plaques of smoking also cause gum inflammation and tooth decay (Fitzpatrick & Blair, 2000) In addition, smoking increases tooth and bone loss and hastens deep gum pocket formation (Johnson & Slach, 2001).

Studies on Aversion Therapy

Herman (2007) carried out a study on the modification of smoking behaviour: A research evaluation of aversion therapy, hypnotherapy, and a combined technique in Ontario, Canada. Five hypotheses guided the study. A correlational survey research design was adopted for the study. The population of the study consisted of 42 smokers that were over eighteen years of age. There was no sampling as the researchers were able to study the whole population. A structured questionnaire was used for data collection. Data collected were analyzed using ANOVA. Findings of the study

indicated that combined Treatment technique proved better than either aversive-imagery with shock and hypnotherapy with aversive imagery therapy was effective in modifying cigarette smoking attitude.

The researcher concluded that a combination of aversive imagery with shock training, plus hypnotherapy in a punish/reward sequence reduced cigarette smoking. The recommended combined treatment techniques and content should be adopted for reducing the urge of smoking among smokers. Herman's study is related to the present study in the sense that both studies examined the effectiveness of aversion therapy but differs in research design and area of study.

Frawley and Smith (2010) carried out a study on chemical aversion therapy in the treatment of cocaine dependence as part of a multimodal treatment program in Santa Barbara, California. One objective guided the study. The study adopted an experimental research design. The population consisted of twenty-one (21) patients volunteered to enter this program and indicated that snorting cocaine was the primary method of use. Drug abuse screening test and the Michigan Alcoholism Screening Test (MAST) was used for data collection. Data collected was analyzed using chi-square. Findings of the study revealed that aversion therapy was effective in modifying cocaine and alcohol addiction.

The researchers concluded chemical aversion therapy lead to the abstinence of alcohol/cocaine intake by smokers after undergoing this treatment. The study recommended that support systems should be maintained for treated smokers in order to avoid future relapsed into cocaine intake. Frawley and Smith (2010) is related to the present research in that both aimed at investigating the effectiveness of aversion therapy in modifying cocaine and alcohol addiction. It is however related to the present study in the sense that both studies focus on aversion therapy. However, they differ in the sense that the work of Frawley and Smith did not included cigarette smoking which the current study did. In addition, Frawley and Smith's study did not consider the students attitude towards cigarette smoking which the present study did.

Hajek and Stead (2011) carried out a study on aversive smoking for smoking cessation in United Kingdom. The study was carried out to determine the efficacy of aversion in helping smokers to stop smoking. Two objectives guided the study. The study adopted an experimental research design. The population consisted of smokers who participated in the study. Instruments used for data collection was cigarette smoking questionnaire and aversion therapy was used in the treatment process. Data was analyzed using ANOVA. Findings from the study indicated that aversion therapy was not shown to be effective.

The researchers concluded that the efficacy of rapid smoking and other milder versions of aversive smoking seem to lack specific efficacy to stopped cigarette smoking stimulation. The study recommended that modern rigorous methodology should be adopted to stop smokers from cigarette smoking. Hajek and Stead's study is related to the present study in the sense that both studies sought to determine the effectiveness of aversion therapy in modifying cigarette smoking behaviour. However, their study focused on any group of smokers while the present study focused on students with positive attitude towards cigarette smoking.

METHOD

Research Design

The study adopted a pure experimental design. In a pure experimental, cause and effect between variables under controlled and treatment conditions are established.

Population of the Study

The population of this study comprises of all the SS2 Students in secondary schools in Awka South Local Government Area of Anambra State. There were 18 public secondary schools in Awka South Local Government Area of Anambra State with population of 3,921 SS II students. (Source: Anambra State Post Primary School Service Commission, 2015). The choice of SS2 students was made on the account of the fact that they were considered to be matured than their junior secondary

school counter-part. The SS3 students were excluded on account of their engagement in preparation for external examinations at the time of the study.

The sample size employed for this study is 62 secondary school students.

Instrument of Data Collection

The instrument that was used for measurement of students' attitude towards cigarette smoking questionnaire (CSQ) was developed by the researcher. The CSQ enabled the researcher to identify students who have the attitude of cigarette smoking. The questionnaire was administered on secondary school students who scored 45. The instrument is made up of twenty items. Each item on the questionnaire were rated on a four point scale of strongly agree (4), agree (3), disagree (2) and strongly disagree (1).

Experimental Treatment Procedure

The researcher obtained the consent of the school principals for carrying on with the research. The experimental treatment took place at the school premises (counselling centers) on treatment days, the participant were made to stay in a conducive counselling clinic within the school bulldug. The treatment programme was held for eight week. The senior secondary school students (SS II) who participate in the study formed the groups in their respective towards cigarette smoking constitutes the groups. The one experimental group was to Aversion therapy treatments respectively. The students participate in (80) eighty minutes sessions which was held twice a week, for eight consecutive weeks. After eight weeks treatment and conventional counselling interaction, the Smoking Cigarette Questionnaire (CSQ) was re-administered on all the participants in both the experimental groups and control group which were regarded as post-test. The post-test scores were collected and given to the researcher for analysis and to determine the statistical difference between the experimental groups and control group scores.

The researcher put measures to avoid any form of bias that may happen during the treatment. The bias is a type of reactivity in which individual participants' improve an aspect of their behaviour

in response to their awareness of being observed (Pay, 2008). These were done by choosing different schools for the study. Emphases were focused on variables of study alone.

All the participants in the two treatment groups and those in the control group received the encouragement. Making sure that the students who participated in the pre-test experimental groups treatment and control group conventional counselling sessions are the ones that participate in the post-test.

Both the experimental and control group participate were tested in the same testing condition, except that the contents of the treatment packages were different as regard experimental group I and and control group.

Method of Data Analysis

The completed instruments were scored following the scoring instructions provided in the CSQ instrument. The data relating to the research question were analyzed using the mean. The data relating to the null hypothesis were analyzed using the analysis of co-variance (ANCOVA).

PRESENTATION AND ANALYSIS OF DATA

Research Question 1

What are the differences in the Pretest and Posttest mean scores of students' attitude towards cigarette smoking after being treated with aversion therapy and those in the conventional counseling group?

Answer to this research question is presented in Table 1

Pretest and Posttest mean scores on students' attitude towards cigarette smoking aversion therapy and conventional counselling groups

Sources of Variation	N	Pretest Mean	Posttest Mean	Lost Mean	Decision
Aversion therapy	32	57.03	35.94	21.09	Ineffective
Conventional counselling	30	59.77	53.90	5.87	

Table 1 indicates that the students treated with aversion therapy had pretest mean score of 57.03 and posttest mean score of 35.94 with lost mean 21.09 in their attitude towards cigarette smoking, while the students placed under the control who received conventional group counselling had pretest mean score of 59.77 and posttest mean score of 53.90 with lost mean 5.87 in their cigarette smoking attitudes.

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Testing the Null Hypotheses

Hypothesis 1

There is no significant difference in the Posttest mean scores of students' attitude towards cigarette smoking after being treated with aversion therapy and those in the conventional counselling control group.

Table 4:
ANCOVA on the posttest mean scores of cigarette smoking attitude of students treated with aversion therapy and those who received conventional group counselling

Source of variation	SS	df	MS	Cal. F	Crit. F	Remark
Corrected Model	6350.528	2	3175.64			
Intercept	106.500	1	106.500			
Pretest	1354.635	1	1354.635			
Treatment models	4002.196	1	4002.196	338.32	4.00	S
Error	697.940	59	11.829			
Total	130537.000	62				
Corrected Total	7048.468	61				

In Table 4, it was observed that at 0.05 level of significance, 1 df numerator and 59df denominator, the calculated F 159.06 is greater than the critical F 4.00. Therefore, the first null

hypothesis is rejected. So, there is significant difference in the cigarette smoking attitude posttest mean scores of students treated with aversion therapy and those in the control group.

Discussion of the Findings

Aversion and Cigarette Smoking

Findings from the data analyzed in this study showed that aversion therapy is ineffective in modifying students' attitude towards cigarette smoking. Specifically findings indicated that the students in experimental group 1 possessed positive attitude towards cigarette smoking before the commencement of the study as shown by their scores on the pretest. The findings also indicated that the positive attitude towards cigarette smoking was not modified after being treated with aversion therapy as shown by their scores on the post-test. This indicates that aversion therapy is ineffective in modifying positive attitude towards cigarette smoking.

This finding is in consonance with that of Hajek and Stead (2011) which reported that aversion methods were not shown to be effective in modifying positive cigarette smoking attitude. However, the finding does not reflect position of Frawley and Smith (2010) that aversion therapy was effective in the modification of positive cigarette smoking attitude.

Furthermore, findings of this study revealed a significant difference in the cigarette smoking attitude posttest mean scores of students treated with aversion therapy and those in the control group. This finding is in consonance with that of Herman (2007) which reported that aversion therapy had a significant difference in modifying students' attitude towards cigarette smoking. However, the finding is at variance with that of Hajek and Stead (2011) who reported that aversive methods did not differ significantly from control procedures.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. Aversion therapy should not be adopted by counsellors as an effective treatment for modifying cigarette smoking attitude of secondary school students in Anambra state.
2. Counsellors, psychologists and teachers and other helping professionals should endeavour to attend conferences, workshops and be acquainted with current and relevant literatures. More research should be intensified in order to proffer solution to the high rate of cigarette smoking in our entire tertiary institutions.



REFERENCES

- Abdullahi, A. S. (2013). An Evaluation of the Causes and Effects of Smoking among Muslim Youths in Keffi Local Government Area, Nasarawa State, Nigeria: Islamic Perspective. *Research on Humanities and Social Sciences*, 3(4), 1-7.
- Abdulahi, M.I., Oliagba, O., Sani, S., Umma, A. & Yunusa, U. (2014). The effect of cognitive restructuring intervention on tobacco smoking among adolescents in senior secondary school, in Zaria Kaduna State, Nigeria. *European Scientific Journal*, 11(5), 327-336.
- Abikoye, G.E., & Fusigboye, A. (2010). Gender, locus of control and undergraduate students' smoking habit: *African Journal Drug Alcohol Std.* 9(2), 71 - 80.
- Adeusi, S.O. (2012). Efficacy of cognitive restructuring and behavioural rehearsal on conduct disorder in adolescents in special correctional centres in lagos state. *Published Ph.D Dissertation*. Department of Psychology, Covenant University, Ota.
- Adeyeye, O.O. (2011). Cigarette smoking habits among senior secondary school students in Lagos, south west Nigeria. *International Journal Biological Medical Research*, 2(4), 1047 – 1050.
- American Psychiatric Association. (2000). Diagnostic and statistical manual of mental disorders (4th ed.). Washington, DC: American Psychiatric Association.
- Bandura, A. (2006). Toward a psychology of human agency. Perspectives on attitude expression. *Journal of Experimental Social Psychology*, 66. 805 - 820
- Beek, A.T. (2005) The current state of cognitive therapy: 40 years retrospective. *Arch Gen Psychiatry*, 62(9), 953.
- Behrman, W. (2000): Nelson Textbook of Pediatrics, Sixteenth Edition. Germany: W.B. Saunders Company.
- Brain, L.S. (2006). Managing stress: Principles and strategies for health and well-being (5th ed.). South Africa: Jones and Bartlett Publishers.
- Carter, B.D., Abnet, C.C., Feskanich, D., Freedman, N.D., Hartge, P., & Lewis, C.E. (2015). Smoking and Mortality — Beyond Established Causes. *N. Engl. J. Med.* 372(7): 631- 644
- Caumo, W. (2001). Risk factors for preoperative anxiety in adults. *Acta Anaesthesiologica Scandinavica*, 45(3), 298 – 307.
- Colman, A.M. (2003). Oxford Dictionary. New York: Oxford University Press.
- Cotran, R. (1999). Pathologic Basis of Disease. 6th Edition. New York: Oxford University Press.
- DiFranza, J. (1994). Tobacco Acquisition and Cigarette Brand Selection Among Youth. *Tobacco Control* 3(2), 334-38.
- Egbochukwu, E.O. & Imo, B.E. (2008). Attitude of Nigerian Secondary School adolescents toward sexual practices: Implications for counselling practices. *European Journal of Scientific Research* 22(2) 177-183.

Ekennia, C.C., Otta, F.E., Ogbuokiri, N.P. (2013). Effect of cognitive restructuring technique and multi-component therapies in the management of nocturnal enuresis among junior secondary schools. *Asian Journal of Management Sciences and Education*, 2(4), 36 – 45

Farkas, A. (1999). Does parental smoking cessation discourage adolescent smoking,” *Preventive Medicine* 28(3):213-218

Frawley, P.J., & Smith, J.W. (2010). Chemical aversion therapy in the treatment of cocaine dependence as part of a multimodal treatment programme: Treatment outcome. *Journal of Substance Abuse Treatment*, 7(2), 21-29.

Fitzpatrick, T.M., & Blair, E.A. (2000). Smoking and pulmonary and Cardiovascular Disease: Upper Airway Complications of Smoking,” *Clinics in Chest Medicine* 21(1):147-157.

Gilman, S.E. (2009). Parental Smoking and Adolescent Smoking Initiation: An Intergenerational Perspective on Tobacco Control,” *Pediatrics* 123(2): e274-e281.

Global Youth Tobacco Survey Collaborative Group (GYTSCG, 2002). Tobacco use among youth: A cross country comparison. *Tobacco Control* 11(1), 252–270

Goldman, Cecil *Textbook of Medicine, 21st Edition*. New York. McGraw-Hill.

Greenlund, K. (1997). Cigarette smoking attitudes and first use among third- through sixth-grade students: The Bogalusa Heart Study. *American Journal of Public Health* 87(8), 1345- 1348

Hajek, P., & Stead, L.F. (2011). Aversive Smoking for Smoking Cessation. The Coharane Collaboration. UK: John Wiley & Sons, Ltd.

Herman, S. (2007). The Modification of Smoking Behaviour: A Research Evaluation of Aversion Therapy, Hypnotherapy, and a Combined Technique. *Published Master Thesis*. Department of Psychology, Wilfrid Laurier University Waterloo, Ontario, Canada.

Hioki, H. (2001). Acute effects of cigarette smoking on platelet-dependent thrombin generation. *European Heart Journal* 22(1), 56-61.

Huppert, J.O. (2009). The building blocks of treatment in cognitive behavioural therapy. *Israel Journal of Psychiatry*, 46(1), 245-250.

Igbokwe, C.C. (2012). Knowledge and attitude of pregnant women towards antenatal services in Nsukka Local Government Area of Enugu State, Nigeria. *Journal of Research in Education and Society*, 3(1), 22 – 32.

International Council on Alcohol and Addiction (2000). Reports and research on substance use in some urban and rural areas in Nigeria: *International council on alcohol and addiction*.

Johnson, G.K., & Slach, N.A. (2001). Impact of tobacco use on periodontal status. *Journal of Dental Education*, 65(4), 313-321

- Martin, T. (2008). Nicotine withdrawal symptoms, coping with nicotine withdrawal: Health's Disease and Condition Content.Uk: John Wiley & Sons, Ltd
- Mathers C.D., & Loncar, D. (2006). Projections of global mortality and burden of disease from 2002 to 2030. *PLoS Medicine*, 3(1), 442 - 432.
- Milam, J. (2000). Perceived invulnerability and cigarette smoking among adolescents. *Addictive Behaviors*, 25(1),71-80
- Mitchell, B. (1999). Tobacco use and cessation: The adverse health effects of tobacco and tobacco-related products and primary care: *Clinics in Office Practice*, 26(3), 463 - 498.
- Ockene, I.S., & Miller, N.H. (2006). Cigarette smoking, cardiovascular diseases and stroke: A statement for healthcare professionals from the American Heart Association. *Journal of American Health Association*, 96(9): 32 - 47
- Odunukwe, J. (2002). *Basic Psychology*. Enugu: Academic Printing Press.
- Owonaro, A. P., & Eniojukan F.J. (2015). Smoking settings, intensity, influencing factors and costs among smokers in Amassoma, Nigeria. *Journal of Natural Sciences Research*, 5(22), 127 – 136
- Paavola M, Vartiainen E, Haukkala A (2004). Smoking from adolescence to adulthood. The effects of parental and own socioeconomic status. *Eur. J. Public Health* 14:417–21.
- Park, K. (2009). *Preventive and Social Medicine* (20th ed.). India: Barnasidos Bhanot Publishers.
- Peto R, Lopez AD (2001). Future worldwide health effects of current smoking patterns. In: Koop C.E, Pearson C.E, Schwarz M.R, (eds.). *Critical issues in global health*. San Francisco, Wiley (Jossey- Bass).
- Proescholdbell, R. (2000). Home smoking restrictions and adolescent smoking. *Nicotine and Tobacco Research* 2(2),159-167.
- Rose, J.E. (2001). Acute effects of nicotine and mecamylamine on tobacco withdrawal symptoms, cigarette reward and ad lib smoking, *Pharmacology, Biochemistry & Behavior* 68(2), 187-197.
- Sabiston, E. (1997). *Textbook of Surgery*. 15th Edition. New York. McGraw-Hill.
- Sargent, J. (2000). Strong parental disapproval of smoking prevents adolescents from becoming established smokers. *Pediatric Research*, 47(4), 11 - 18.
- Shobola, A.A. (2007). The study of the effects of cognitive restructuring on cigarette smoking behaviour of undergraduate students. *Ife psychologia*, 16(1), 187-197.
- Simons-Morton, B. (2001). Peer and parent influences on smoking and drinking among early adolescents. *Health Education and Behavior*, 28(1), 95-107.
- Stanton, W. (1996). Adolescents' experiences of smoking cessation. *Drug and Alcohol Dependence*, 43(2), 63-70.

Sussman, S. (1988). Adolescent nonsmokers, triers and regular smokers' estimates of cigarette smoking prevalence: when do overestimations occur and by whom. *Journal of Applied Social Psychology*, 18(7), 537-551.

Takeyama, K. (2001). Activation of epidermal growth factor receptors is responsible for mucin synthesis induced by cigarette smoke. *American Journal of Physiology: Lung Cellular & Molecular Physiology*, 280(1), 165-172

Watson, J.B. & Reyner, R. (2000). Conditioned emotional reactions. *Journal of Experimental Psychology*, 3(2), 1-14.

Whitley, A.J. (2010). Ancient Crete: From Successful Collapse to Democracy's Alternative (Book review). *American Journal of Philosophy*, 132(4), 667-670.

WHO Report on Global Tobacco Epidemic (2008). The Mpower package. Geneva, World Health Organization.

Yahaya, L.A. (2014). The Effects of cognitive restructuring on the attitude of secondary school students in Ilorin towards HIV/AIDS patients. *Ilorin Journal of Sociology* 2(1), 104-117.

Zuerev, Y. (2008). Problems of drinking among University drinking in Malawi. *Collegiumm Antropologicum*, 32(1), 27-31.

