Relationship Between Disengagement Beliefs, Anxiety Sensitivity and Barrier to Smoking Cessation Among Male Adults

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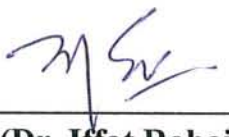

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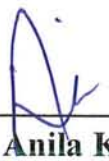

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CERTIFICATE

It is certified that M.Sc. Research report on "Relationship between disengagement beliefs, anxiety sensitivity and barrier to cessation" among male adults prepared by Iqra Banaras has been approved for submission to National Institute of Psychology, Quaid-i-Azam University Islamabad.

Saira Khan

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Dedicated to

To all those near, dear and loved ones who made it happen!

With utmost regard and gratitude...

Especially my loving parents and

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Abstract

The present research aimed to investigate the relationship between disengagement beliefs, anxiety sensitivity and barrier to cessation among male adult smokers. Employing the technique of purposive convenience sampling data was collected from *(N = 280)* adult male smoker from the area of Rawalpindi and Islamabad. The age of participants, ranged between 18-55 years. Disengagement Beliefs Questionnaire (Dijkstra, 2003) was used to assess disengagement beliefs, Anxiety Sensitivity Questionnaire (Tylor et al., 2007) was used to assess anxiety sensitivity and Barrier to Cessation Questionnaire (Macnee & Talsma, 1995) was used to assess barriers to cessation among male adult smokers. Cronbach alpha for Disengagement beliefs were .77. Anxiety sensitivity and its subscale ranged from .70 to .86 whereas reliabilities of barrier to cessation scale and its subscale ranged from.74 to .90 respectively. Initially a qualitative inquiry phase was done. 70% of individual reported that they started smoking before the age of 18. On the average 64% people reported that they smoked above 11 cigarettes per day.76% reported that they preferred to smoke with their friends rather than smoking alone. 52% people reported that they have not tried to quit smoking. 61% people reported difficulty to refrain from smoking. On the average 56% participants reported that they have more than five friends smoke cigarette. Results indicated that anxiety sensitivity, disengagement beliefs and barrier to cessation were positively related to each other. Result of multiple regression analysis indicated that anxiety sensitivity and disengagement beliefs positively predicted barrier to cessation. The overall model accounted for 21% of variance. Results of mediation analysis indicated that anxiety sensitivity mediates the relationship between disengagement beliefs and barrier to cessation among male adult smokers. Additional findings indicated that adults with high anxiety sensitivity scored higher on disengagement beliefs and barrier to cessation. Moreover adults who scored high on barrier to cessation also scored high on anxiety sensitivity and disengagement beliefs. Mean difference indicated that adults whose parents smoked scored higher on disengagement beliefs as compared to adults whose parents do not smoke. Non-significant differences were observed on anxiety sensitivity and barrier to cessation along parental smoking status. Results were discussed in the light of existing literature. The present study found that hypothesized positive association among

disengagement beliefs, anxiety sensitivity and barrier to cessation. One implication of these findings is that counselling that effectively reduce anxiety sensitivity may result in decrease in disengagement beliefs and, to the extent that this occur, adult smokers may be more motivated to quit smoking

Introduction

According to (Smith, 1998) smoking refers to the habit of inhalation and exhalation of the smoke of burning tobacco in cigarettes, cigar, pipes, and hookah. The World Health Organization (WHO, 2002) identified tobacco smoking as a major preventable risk factor for disease, disability, and death. Programs of smoking prevention and cessation based on an understanding of the psychological, social, biological, and pharmacological processes involved in smoking initiation and maintenance should be studied to reduce the rate of cigarette smoking (Leventhal & Cleary, 1990).

Cigarette smoking is major worldwide public health problem, associated with a growing number of illnesses and responsible for more than 4 million deaths annually (Global Status Report WHO, as cited in Paryski, 2001). Smoking harms nearly every organ of the body; causing many diseases and reducing the health of smokers in general. More deaths are caused each year by tobacco use than by all deaths from human immune deficiencies virus (HIV), illegal drug use, alcohol use, suicides, and murders combined. Tobacco kills through cardiovascular diseases, by triggering cancer of the lung, throat, mouth, cervix, and kidney, and by compromising lung capacity. Second-hand smoke is a major factor in sudden infant death syndrome and causes asthma attacks, heart attacks, lung cancer and breast cancer in non-smokers (Centre for Disease Control and prevention, 2002). Tobacco use in adolescence is associated with many other health risk behaviours, including higher risk sexual behavior and use of alcohol or other drugs.

Keeping in the mind that it is very important to decrease tobacco related disease around the world (especially in developing countries). It is vital to avert cigarette smoking. It is much more essential to enhance and implement tobacco control strategies that incorporate cigarette and smokeless tobacco items (Singh, Agarwal, Lata, & Kohli, 2011)

The most noteworthy psychological effect of smoking is the pleasure obtained through smoking. Smoker may use cigarettes as a source of relaxation but heavy use can result in frustration, anger, and anxiousness. Another important effect of cigarette smoking is psychological dependence. Cigarette smoking is also maintained by negative reinforcement and people who attempt to quit smoking often suffer from

withdrawal symptoms such as headache, insomnia, anxiety and irritability. Smoking cigarettes can relieve these symptoms which is why such negative reinforcement appears to be extremely powerful (McDonald, Armstrong, & Sloan, 1992).

Tobacco uses a major public health problem of Pakistan. According to the Pakistan Paediatric Association (as cited in Tabaco in Pakistan, 2002), every day more than 1,000 children between the ages of 6 and 16, start smoking. It is estimated that more than one third of the men and four percent of women in the country are smokers. It is reported that smoking prevalence in Pakistan is estimated to be 14.2% in individual aged ≥8 years and 19.4% among those aged ≥15 years. Nearly a quarter of males (25.4%) were smokers while only 3.5% of females smoked. Another recent study done by Rozi and Akhtar (2004) in Agha Khan University Karachi reports that 62% of adolescents reported their reason for smoking as enjoyment, while 18% claimed to be influenced by advertisement to begin smoking. Per capita cigarette consumption in Pakistan ranged from 650 to 700 during the decade ending in the year 2000. Tobacco production increased from 68000 ton in 1990 to 108,000 ton in 1992 (1.3 % of whole world). Around 3.1 billion cigarettes were produced in 1990 which increased to 3.66 billion in 1994.

Smokers have behaviours that are generally considered injurious to health. Smokers are more likely to experience negative emotions. Addictive behaviour, such as smoking, is often challenging. Many people can modify their attitude, which represents the way of minimum resistance, by embracing different beliefs to lessen cognitive dissonance (Hyland et al., 2004). Reducing of dissonance as rejection or alteration of a threat message can negatively impact possible willingness. Bandura called denial or distortion of threatening information "disengagement". People aim to streamline their behaviour to avoid dissonance (Bandura, Barbaraneli, Caprara, & Pasorelli, 1996)

By rationalizing smoking behaviour, smokers feel fewer psychological problems caused by discrepancies (Orculla & San, 2016). For smokers, disengagement makes the form of certain beliefs used as explanation for defence for further smoking. It was found that the disengagement beliefs at the beginning of the study are associated with the likelihood of attempting to quit smoking in the future (Dijkstra & Brosschot, 2003). Disengagement beliefs may stop smokers from really seeing the consequences of their behaviour, and may therefore lead to continuing smoking (Oakes, Chapman, Borland, Balmford, & Trotter, 2004). Research indicates

that smokers do not view smoking as harmful compared to non-smoker. Smokers also believe that water will cleanse or moisturize their lungs, and will reduce the risk of harm the lungs (Schmitt, Dowling, & Hall, 2005).

Anxiety sensitivity is the main focus of the current research. A model has been proposed to investigate how smoking and anxiety are related to each other (Zvolensky & Bernstein, 2007). Researchers found that regulative functions are affected by daily use of tobacco. Fear is basically called anxiety sensitivity; fear is a characteristic that reflects a tendency to fear anxiety. It is due to the fear of injurious physical, psychological, and social outcomes as a result of smoking. Negative emotional states are related to anxiety sensitivity, which appears to play an important role in different types of cigarette smoking. Studies are also reporting that negative emotional states are related both to smoking withdrawal and relapse (Piasecki et al., 2000).

Anxiety sensitivity mediates the relationship between disengagement beliefs and smoking behaviour (perceived barrier to smoking cessation (Zvolensky, Farris, Leventhal, & Schmidt, 2014). Disengagement beliefs because smoking which in turn increase anxiety and make cessation difficult (Farris et al., 2015). Anxiety sensitivity is related to greater negative effect, craving and abstinences during quit attempts (Johnson, Stewart, Rosenfield, Steeves, & Zvolensky, 2012; Langdon et al., 2013). Also, this research was designed to test the relationships among between disengagement beliefs, anxiety sensitivity and barrier to cessation. A review of literature showed that there is lack of research work regarding the association between anxiety sensitivity and disengagement beliefs.

Disengagement belief

Smoker disengagement can emerge in the form of certain beliefs that are used as excuses or justification for continuing smoking, e.g. smokers may downplay the adverse effects of smoking on health, or they may point out the dangers of other lifestyles. Smokers do indeed hold more of these cognitive dissonance-reducing beliefs than ex-smokers do, which may indicate that successful cessation is accompanied by the shedding of dissonance-reducing beliefs (Chapman, Wong, & Smith, 1993).These rationalizations or justifications for continuing smoking are referred to as disengagement beliefs (also known as self-exempting beliefs or permission giving beliefs).

Four types of disengagement beliefs

Bulletproof beliefs. Bulletproof beliefs are belief by cigarette smokers that they are at less risk of negative health consequences (e.g. they take into account family history and well-being, which means that they believe that they can smoke devoid of any damage to their health (Chapman et al., 1993).

Skeptical beliefs. Skeptical beliefs are illustrated by the tendency of smokers to moderate the expected harm (e.g., evidence by health specialists that smoking of cigarette connected danger is overstated (Changrani & Gany, 2006).

Jungle beliefs. Jungle beliefs are shown by inclination of smokers to minimize the risks connected to cigarette smoking because there are many dangers or risks (e.g. smoking is not any risk that many different things that people are doing) (Oakes et al., 2004).

Worth it beliefs. Focus of "worth it" beliefs on smoker risk assessment is that smoking is worth the risk. e.g. rationalizing that everyone dies from some reason so why not smoke? (Oakes et al., 2004)

Cognitive dissonance theory

Cognitive dissonance theory developed by (Festinger, 1957) states that people experience mental discomfort called dissonance, when they behave in ways that conflict with their beliefs. For example most smokers know that what they do is unhealthy, but they still smoke. There are two ways to reduce the unpleasant sense of dissonance: by changing their behaviour (stopping smoking) and changing their beliefs about the behaviour.

Cognitive dissonance theory dictates that the path of least resistance is chosen to reduce this sense of dissonance. Since it is difficult to quit smoking, many smokers will change their beliefs and not their behaviour. Smokers minimize the health risks of smoking and increase their beliefs about the benefits of smoking. This creates a feeling of discomfort that leads to a change in one's attitudes, beliefs or behaviours, in order to diminish distress (dissonance), establish harmony and so on. For instance, this occurs when individuals smoke (carrying on) and they realize that smoking can cause tumours (perception).

Festinger's (1957) cognitive dissonance theory proposes that we have an internal drive to keep belief and behaviour in concordance and to maintain a strategic distance from disharmony (or discord). An important factor is the principle of cognitive consistency, to which the theory of cognitive dissonance of Festinger (1975)

concentrates. Cognitive consistency is based on the assumption that people seek consistency in their views and behaviour in every situation even though this does not always happen.

Influential factors

The degree of dissonance humans enjoy can depend on several factors, e.g. Consisting of how much we value a certain belief and the how contradictory our reviews are. The general power of dissonance also can be encouraged by means of other factors. Cognitive factors are more private, and include beliefs about the self and generally end up causing extra dissonance. The significance of perceptions also performs a role. Things that consist of beliefs which can be noticeably strong and consonant also can play a role in how strong the emotions of dissonance are. The more extreme the dissonance, the greater the emotional distress that is experienced (Crano, 2000).

Cognitive dissonance in smokers

Theory of cognitive dissonance (Festinger, 1957) provides an illustration regarding mechanism of person's dealing with dissonance in the perspective of actions related to health. Smokers continue smoking, while knowing that it is not good for their wellbeing or health. Festinger (1957) illustrates that individuals may consider the significance (perceived positive benefits) of smoking more than health risk then and assess actions in relations to hazards and benefits.

There is another model for dealing with this conflict in which smoker minimizes the disadvantages of smoking. The person could believe that the damaging aspects of smoking related to health were exaggerated. Smokers could also calm concern about health problems by justification that every possible danger cannot be avoidable. (Festinger, 1957) proposed that the smokers believe that there are a lot of risks related to health apart from smoking.

Compensatory health belief model

When smokers experience to the temptation of smoking, a conflict could arise between their craving to smoke and their understanding of the maladaptive aspects related to smoking. This mental conflict which is due to varying cognitions or inconsistencies in cognition and behaviour can be described as a negatively excited state of cognitive dissonance (Festinger, 1957).

Cognitive dissonance can be experienced for several reasons: fear that unhealthy behaviour will lead to illness, conflict with an appreciated self –awareness

(e.g., someone who lives a healthy life), or discrepancy in self-expectations (e.g., someone who believes that living a healthy life is important), similar to adult smokers, adolescents smokers also use various cognitive coping methods to rationalize smoking (Kleninjan, Eijnden, & Engels, 2009). Thus, questions arise as to also which strategies smokers use to deal with such cognitive dissonance.

The compensatory health beliefs (CHB) model propose three self-regulatory strategies (Rabia, Knauper, & Miquelon, 2006) including attempts to resist, re-evaluation of the destructiveness of behaviour and compensating health belief (Tropes & Fishbach, 2000). Compensatory health belief is defined as beliefs that the adverse consequences of harmful behaviour can be counter balanced by another healthy behavior.

Compensatory health beliefs are automatically triggered by temptations to smoke generated after tolerance develop. According to the CHB model, the firs strategy is used when the desires for smoking are not strong and when the self-efficacy of the individual to control craving is high. The second and third strategies are used if the desired behavior cannot be prevented. While strategies 1 and 2 require self-will, strategy 3 is the easiest to follow because is permits unhealthy behavior without feelings of discomfort (Rabia et al., 2006). However compensatory healthy beliefs can be wrong because, for example adverse effect of smoking is on health, cannot be fully compensated by healthy behavior. The long term compensation may be the pathogenesis of disease (Sinner, Felsem, Harnacks, & Schmiz, 2006).

Moreover compensatory health belief does not necessarily mean that humans actually perform the intended compensatory behaviour. This initial dissonance can be weakened over time, causing the need to compensate for healthy behaviour. In this way people wanting to give up smoking are hindered by the compensatory health belief, because they can smoke without feeling guilty about the negative health effects (Rabia et al., 2006)

Anxiety sensitivity

A very important construct of anxiety is anxiety sensitivity. This is defined as a process in which a person feels fear of anxiety symptoms i.e. physiological sensations. These physiological sensations are in response to as upcoming social, psychological, and physical factor that the person believes will be negative. This reflects a stable state which is different from trait anxiety (Peterson & Reiss, 1992).

When person experiences bodily symptoms are related to anxiety such as loss of control (e.g., feeling sick might entail medical consequences), embarrassment (e.g., feeling shaky is regarded as visible to others), or additional anxiety (e.g., a fast heart rate is the cause for concern) these symptoms also are called anxiety sensitivity (Reiss & McNally, 1985). Panic disorder in childhood is rear and in adulthood panic disorder is closely related to anxiety sensitivity.

Types of anxiety sensitivity. Research has showed a clear relationship between psychological problems and anxiety sensitivity.

Physical concern. Anxiety sensitivity that creates physiological sensations is strongly correlated with panic attacks i.e. response to laboratory panic challenges and a diagnosis of panic disorder (Taylor, Koch, Woody, & McLean, 1996; Zinbarg, Barlow, & Brown, 1997; Zinbarg, Brown, Barlow, & Rapee, 2001).

Cognitive anxiety. Perceived lack of cognitive control resulting in anxiety is correlated with depression and emerges as a non-particular measure of common suffering (Blais et al., 2001; Taylor et al., 1996; Zinbarg et al., 1997).

Social concern. Identification of social phobia and fear of negative appraisal is closely related to the factor of anxiety sensitivity (McWilliams, Stewart, & MacPherson, 2000; Zinbarg et al., 1997). In summary, the construct of anxiety sensitivity and its evaluation by mean of multidimensional judgement and features, assume that there is a relationship among anxiety sensitivity symptoms and tension related factors.

Similarities and differences between anxiety and anxiety sensitivity

Different theories proposed different views about anxiety sensitivity; some of them say that it's because of panic attacks. Another view proposed that it is resulted when an individual is directly encounter panic. The Pavlovian view suggested that anxiety sensitivity is a result of panic attacks (Goldstein & Chambless, 1978). That is, when individual is having experiences with panic, the individual reflexively responds with concern to symptoms that have preceded full-blown attacks within the past.

Anxiety

Researchers proposed that misinterpretation of physical sensations is results from the past learned experiences and from the way that individual health professionals behave (Clark & Ehlers, 1993). The first alternative is consistent with an anxiety sensitivity perspective (Reiss & McNally, 1985) and with retrospective accounts of panic patients describing how their parents had suffered attacks and

modelled illness-related behaviour (Ehlers, 1993). The second alternate is when an individual is failing to give proper explanation for the puzzling and fearful symptoms of his/her first panic attack. Lacking non harmful explanations, these people might assume the worst.

Anxiety sensitivity

In the perspective of anxiety sensitivity, people learn fears through verbal cues, from their perception and from the direct exposure with the stressor (Rach-man, 1977) another researcher also proposed that people learn the fear through direct exposure with the situation (panic) (McNally, 1990).

It is obvious that anxiety sensitivity is increased due to unanticipated panic attacks. But one needn't have fear with either sudden (Donnell & McNally, 1990) or expected (Cox, Endler, Norton, & Swinson, 1991) panic attacks to attain high scores on the Anxiety Sensitivity Index. Commonly, anxiety disorder is results because of higher anxiety sensitivity (Reiss & McNally, 1985) and it also can lead to panic disorder (McNally & Lorenz, 1987).

Affect-regulation model

From an affect regulation perspective, the degree to which smokers attribute their smoking to negative affect reduction is of central importance (Otto et al., 2004; Stewart, Samoluk, & MacDonald, 1999). Indeed, negative affect reduction smoking motives are related to increase smoking levels, greater nicotine dependence and heightened risk of smoking (O'connell & Shiffman, 1988; Pomerleau, Adkins, & Pertschuk, 1978). Although the anxiety ameliorating effects of smoking have not been fully explicated (Kaman, 2002) smokers generally believe that smoking will alleviate negative moods.

Smokers high in anxiety sensitivity relative to those low in anxiety sensitivity may be particularly likely to smoke in order to cope with anxiety related symptoms because they perceive introspective stimuli as relatively more aversive and personally threatening (Schmidt, Zvolensky, Maner, 2003). This perspective is premised on the large empirical literature that documents smokers believe that smoking, at least in part, to its mood has important mood-regulating functions (Kassel, Stroud, & Paronis, 2003).

Influential model

The influential model of drug use proposed by (Marlette & Gordon, 1985) predicts that success in refraining from smoking depends, in part, on expectancies

about both the ability to endure high risk situations without smoking and the positive outcomes associated with smoking in such situations. Smoker with ineffective strategies for coping with certain high-risk situations (e.g. those that result in negative affect) are theorized to have decreased self –efficacy or abstaining from smoking. However such decrease in self-efficacy are believed to promote the desire to smoke, contributing to smoking and perhaps relapse to quitter. Past literature also found that expectation about one's ability to refrain from smoking predict future smoking behaviour (Etter, Bergman, Humair, Perege, 200; Haaga & Stewart, 1992; Shadel & Mermelstein, 1993).

The association between anxiety sensitivity and panic vulnerability shows the potentially important role of this cognitive factor in negative affect smoking motives (Comeau, Stewart, & Loba, 2001; Stewart, Karp, Phil, & Peterson, 1997) Smokers high in anxiety may have low of confidence in refraining from smoking when experiencing anxiety related symptoms because of (1) their increased sensitivity to affect- relevant interoceptive stimuli and (2) tendency to smoke as a way of coping with such distress. Thus, there appears to be an association between anxiety sensitivity and sensitivity to affective problems when abstaining from smoking.

Barrier to cessation

Some factors interfere with quitting smoking and these are called barriers to smoking cessation. They can be varying in quantity and it depends on the perception of the individual. They can be of two types: objective and subjective. Studies proposed that barrier include increased dependence on nicotine and sensitivity, weight gain, low self-efficacy, inadequate coping strategies, and lack of social support. Studies also showed increased weight gain and dependence of nicotine in women. Barriers to cessation can also include withdrawal symptoms in dysfunction beliefs/attitude, high level of stress, and low levels of motivation (Gulick, Hayes, & Kennelly, 1991).

Health belief model

The health belief model (HBM) is based on expectancy–value theory, which proposed that the motivation of a person depends on their values and expectations. The HBM describes and anticipates behaviours that are related to health. This model is most suitable and applicable in research related to unhealthy behaviours such as smoking. It is suggested that engagement (or lack of engagement) in health-promoting behaviour can be predicted by people's perceived susceptibility (i.e., beliefs about

their risk of contracting a health condition), perceived threat (feelings concerning the seriousness of contracting an illness or leaving it untreated), perceived benefits of taking health action and barriers to action, perceived self-efficacy (i.e., beliefs about their ability to perform the action), and cues/triggers to action (Janz & Becker, 1984).

According to the HBM with regards to smoking, it would predict use of tobacco that is influenced by an individual's perceptions regarding: status of tobacco and related diseases; prices, benefits, and barriers to partaking in smoking or quitting behaviours; and triggers to vary the behaviour. A study on high school students proposed important variations in information, perceived status, benefits, self-efficacy, and cues to action between smokers and non-smokers, indicating that the HBM is also helpful in predicting smoking behaviours (Reisi, Javadzade, Shahnazi, Sharifirad & Charkazi, 2014)

In Chinese faculty students, larger perceived advantages of smoking and better perceived prices of non-smoking were related to being a past or a current smoker. In terms of quitting, high perceived susceptible ness to malady and high self-efficacy are shown to predict reductions in smoking (Stretcher, Becker, Kirscht, Eraker, & Graham, 1985).

Theory of reasoned action/theory of planned behaviour

The theory of reasoned action was formulated by Fishbein and Ajzen (1975) to explain how actions are influenced by belief and attitudes. This theory suggests that behaviour is determined by intentions to carry it out, and that intention is a function of your attitude toward your behavior and subjective norms. Intention has been defined by Fishbein and Ajzen as the cognitive representations of a person's willingness to act. Intention is the primary predictor and precursor of behaviour and is governed by three factors (Fishbein & Ajzen, 1975). Factors include the attitude of an individual about specific behaviour, the subjective norms of an individual, and perceived behavioural control.

Attitude.

Target behavior settings may be primary and secondary. A primary stance on smoking can be a general belief of a smoker as to whether or not a cessation is right for them or not a good idea. Secondary mind-set includes how strongly someone believes that peripheral outcomes happen as a result of execution of the behaviour, related to with evaluation consequences. For instance, a person may suppose that the

stopping smoking could result in undesirable weigh gain (Gibbon, Gerrard, & Lane, 2003).

Subjective norm.

A subjective norm includes individuals by which you are surrounded, more particularly how strongly a specific action is supported by them. Smokers may consider that other people rejects smoking that's why they (smokers) agree to not smoker similarly, the advice of a medical doctor to stop smoking and support actions to stop smoking. However this norm is limited by smoker' estimation about the extent to which quitting is possible or the extent to which the smoker is going to satisfy the beliefs of others about cessation (Gibbon et al., 2003)

Perceived behavioural control.

Perceived behaviour control is the self-confidence of a person to effectively perform a behavior. It takes into consideration external factors which could have an effect on the individual intention to act. Within the context of smoking, someone may keep in mind factors which can facilitate or avoid cessation .As an example, a smoker determines that withdrawal will occur after stopping smoking, but confidence in quitting helps to the smoker to continue trying to quit (Gibbon et al., 2003).

Behavioral intention.

Theory of the reasoned action and theory of the planned behavior explain that the purpose a person's to execution of actions is related to the expectation of the prevalence of the behaviour. When intention effects action strategies, the person can rely on outlook, standards, and perceived behavioural control over smoking which in turn, have an effect on intent. At the same time a study by (Godin et al., 2005) confirmed this association among intentions and performance (Gibbon et al., 2003).

Assumption and benefits

Theory of the reasoned action and the theory of planned behaviour rely on a fundamental connection among the approaches of a person to action, his goal, and the real presentation related to action. Other postulations have proposed that humans sort data and behave consequently. Studies of people who smoke show that good intentions do not always help quitting. On the other hand, analysing these concepts is useful in sorting the complex action of individual (Gibbon et al., 2003).

Research by Ajzen (1985) has shown that the theory of well –founded action was not fully informed about individual's control over their behavior .The results of this research predicted that changes in attitudes, subjective norms, and perceived

behavioural control would lead to change in behavioral intentions (Ajzen, 1985). Attitude, subjective norms, and perceived behavioural control are factors that are based on a corresponding set of beliefs. Therefore, behavioral intentions must change the beliefs that ultimately guide an individual's behavior; however, this function only relates to beliefs that are accessible in memory (Ajzen, 1985).

Using statistical data, the study showed that attitudes, subjective norms, and perceptions of behavioral control contribute to the prediction of intentions and that the predictions of intentions contributes to the perceptions of control and prediction of behavior (Ajzen, 1985). The results of the questionnaire showed that the behavior of the participants was 100% voluntary and under control. An extension of the theory was added, and thus the theory of planned behavior emerged (Ajzen, 1985).

Quitting smoking -A challenge

Conventional explanation of cigarette smoking have called it a form of psychological dependence, in which child pacifier and security blanket are rolled into one little white tube for grown up use. There are some reasons to believe that cigarette smoking reflects more a psychological need than a physiological one. But the cigarette habit is extremely patent and often very difficult either to give up or substitute with other activities. Adolescents who smoke more than one cigarette according to a British government study have only a 15% of chance of remaining non-smokers. Also after years of smoking, people try to kick the habit but they suffer from physical and psychological symptoms that persist for at least a couple of weeks and some of their afflictions, including drowsiness and craving, usually get worse after ten days or so. Most craving persists at least a month and, for about a fifth of smokers continue five to nine years after quitting (Morgan & Grube, 1989)

By now there is little doubt that the drug (nicotine) absorbed in the right way, creates a state of drug dependency. Confusion on the point arose and has persisted because nicotine is not like many other addicting substances. The objective changes associated with smoking are also those of increased arousal, even though most smokers report the subjective effect of relaxation. In general, nicotine resembles stimulants, such as caffeine and amphetamine, more than the narcotics (Pierce, Gilpin, Farkas, & Merritt, 1996).

Nicotine becomes highly addictive only when it is inhaled. What an inhaling cigarette smoker receives from his or her habit is nicotine jolts and smokers seek the jolts for two reasons. First, cigarette give an ill-defined, but generally pleasurable

sensation, and the average cigarette smoker can easily obtain 70,000 to 100,000 fixes a year as many as two to three hundred puffs on a cigarette each day. Such frequent rewards serve as powerful reinforce of cigarette smoking behaviour. Second, administering nicotine in concentrated jolts with cigarette is the best way to keep high levels of nicotine in the brain – more so even than intravenous injection, which inevitably result in dilution of the dose (Russell, 1980).

Nicotine addiction requires the smokers to accept a certain compromise. At the same time that an addict wants to raise brain levels of nicotine, he or she must guard against elevated level elsewhere in the body that can cause nausea and wooziness from peripheral effects of drug. Even though smoker's become metabolically accustomed to nicotine, they have their limits. Indeed, most seem to be more careful to stay below a maximum level of blood nicotine than above a minimum. As blood levels fall, so do brain levels and nicotine withdrawal sets in: beginning as craving and irritability, nicotine withdrawal proceeds to panoply of physiological as well as psychological symptoms (Johnson, 1993).

Once the smoking habit is well established, preventing withdrawal becomes the major motivation for continuing it, as shown in a series of studies conducted at Columbia University during the 1970's. These studies concluded that chronic cigarette smokers maintain their habit not for the pleasure it adds to their lives, though they may rationalize that they do, but rather to avoid the unpleasant that comes from not smoking.

Reasons for smoking

Smoking is considered by some author to be an oral fixation (Freudian concept, an abnormality at the oral stage of psychosexual development). Other factors have been identified that may lead a person to smoke. For example parental smoking has been identified as the most important predisposing factors in smoking among school-age children; if both parents smoke, the probability that their children will begin to smoke is several times that of children with non- smoking parents. A close relationship with smoker is also factor in finding that a high frequency of smoking exists among children with other siblings who smoke (Biddle, Bank, & Marlin, 1980).

Friends smoking have a stronger influence on smoking initiation than does parental smoking. Studies have also found that the effects of parental smoking are stronger for females than for males. Social factors are a dominating influence in starting smoking and second only to pharmacological factors in its maintenance.

Social class, academic achievements, example and perception in the family, friends, and type of schooling are all related to prevalence of smoking (Ensminger et al., 1982).

Smokers report that they felt relaxed by taking out a package of cigarette, choosing one, getting matches, lighting the cigarette, and handling it. Regular smokers report smoking cigarettes to reduce emotional problems and feelings of depression and anxiety, to stabilise mood, and for relaxation as well as relieving stress. It appears that tension reducing in certain situation is an important motivational factor in developing the smoking habit. Also ignoring the long term effects of smoking many individuals go for the immediate satisfactions or pleasure offered by cigarettes (McEwen, West, & McRobbie, 2008).

Cigarette smoking for many people is also an important source of ego strength. It yields a variety of pleasurable sensations but more important, helps the smoker cope with the demands of life, ease and promote his or her social interaction and is a valuable aid to the establishment of a sense of identity. As such, smoking is congruent with the dominant problem solving, achievement oriented values of high western society. There is little wonder that people find it so hard to give it up or that social response to the danger of smoking has been so weak (Mausher, 1973)

The smoking habit certainly conforms to the definition of drug dependence. Drug dependence arises when, as a result of repedeatly taking drug forces physiological, biochemical, or environmental factor are set up which predispose to continue drug use. There is evidence that dependence on tobacco results from the action of nicotine, which has a powerful influence on nervous system.

Psychosocial needs of the smoker

The most common reason given by teenagers for starting smoking is that they wanted to satisfy their curiosity and desires to be identified with other older people who are considered symbols of authority. Studies in both American and British school children and young adults have shown a significant association with the frequency of smoking habits of parents or siblings.

There is a group of smokers who smoke for the reason of indifference and negative attitude towards the traditional, social values, as they that think smoking is an effective way to reflect their resentful feelings. Cultural factors undoubtedly play a large role in smoking as they do in coffee drinking, taking tea, or using alcohol or other such habits. There are different ways of enjoying in different countries and it

usage is indiscriminate with few constraints from the society , its varying accessibility to minor and women, the social approval it gets, the changing pattern in different periods , all of which speak to dependence on the prevailing culture (Prochaska , DiClemente , Velicer , Ginpil, & Norcross, 1985).

There is abundant evidence that some anxious people smoke very heavily but so do some people who manifest no anxiety. In a study of Harvard graduates it seemed that heavy smoker's tended to smoke more when under pressure, but that only a minority of light smokers behaved in this way. Heavy smokers in another American group reported more neurotic symptoms and traits, indicative of anxiety than did moderate smokers (Evatt & Kassel, 2010)

Smoking effects on teenager and youngster

As a society, we have long way to go to win the fight against tobacco smoking. However if the parents are informed about the hazards of smoking, and recognize who is being pressured or is actually smoking, then they can enact a plan of successful preventive measures that will enhance the life and health of their teenager and family. Just being aware of the circumstances and pressure that influence teens to start smoking will help parents recognize the signs and start early prevention measures that can yield successful results. To help teens be aware of the negative effects of cigarette smoking, all cigarette pack have a Surgeon General Warning (Warburton, 1992).

The temptation to smoke, like many other things, is a fact of life for many teens. Many teens have smoked a cigarette at least once. For parents, the number of teenagers who smoke is impressive and alarming. Research shows that the average teen smoker begins using tobacco products at age thirteen and becomes a daily smoker by fourteen and one and a half year (Rogers & Deckner, 1975).

Smoking rates among teens continue to rise and are currently at their highest level in sixteen years. Every day three thousand children become addicted to tobacco-related disease. Research shows that more people die from tobacco related deaths from AIDS, alcohol, drugs and suicide combined. Particularly it is a fact that more than three-million young people under the age of eighteen smoke half a billion cigarettes each year and that more than one-half of them consider themselves dependent upon cigarettes. The decision to use tobacco is nearly always made in the teen years, and about one-half of young people usually continue to use tobacco products s adult (Marin, 1990).

Anxiety sensitivity with smoking

One risk issue for anxiety disorder that has received much empirical attention within the literature of smoking that is anxiety sensitivity (AS); it is defined as the worry of arousal that is related to physical and psychological sensations (McNally, 2002; Reiss & McNally, 1985). Anxiety sensitivity reflects a comparatively stable, adaptable, cognitive predisposition that based on self-report questionnaire and through empirical observation is different from the tendency to experience negative emotional states (McNally, 2002; Deacon & Valentiner, 2001; Taylor, 1999; Zinbarg et al., 1997)

Studies have shown that people who are high on anxiety sensitivity are more anxious and become more frightful, when they think about discomfort of anxiousness which affect them socially, physically, and psychologically (Taylor et al., 2007).

A theory on anxiety sensitivity proposed that anxiety sensitivity is directly related to factors that are causing anxiety symptoms and also associated with the beginning of anxiety disorders, consisting of panic attacks, panic disorder, and posttraumatic stress disorder (Feldner, Zvolensky, Schmidt, & Smith, 2008; Hayward, Killen, Kraemer, & Taylor, 2000; Li & Zinbarg, 2007; Maller & Reiss, 1992; Schmidt, Lerew, & Jackson, 1997; Schmidt, Zvolensky, & Maner, 2006).

Research on association of tobacco use and anxiety proposed that the most important element in smoking behaviour and cognitive based smoking processes is anxiety sensitivity. For example anxiety sensitivity is primarily associated with smoking to reduce negative affect (Battista et al., 2008; Gonzalez, Zvolensky, Vujanovic, Leyro, & Marshall, 2008; Leyro, Zvolensky, Vujanovic, & Bernstein, 2008; Novak, Burgess, Clark, Zvolensky, & Brown, 2003; Zvolensky et al., 2006).

Anxiety sensitivity is additionally related to findings that smoking can produce negative experience and in turn and have a negative effect on smoking reduction (Brown, Kahler, Zvolensky, Lejuez, & Ramsey, 2001; Gregor, Zvolensky, McLeish, Bernstein, & Morissette, 2008).

Anxiety sensitivity is also related to strong motivation to terminate smoking (Zvolensky et al., 2004; Zvolensky et al., 2007), as well as a larger number attempt to quit. Furthermore, low level of self-efficacy is related with higher level of anxiety sensitivity, which limit the smoking behaviour when a person is emotionally upset (Zvolensky et al., 2006) and most of the time the individual experience difficulty in terminating the smoking behaviour (Gonzalez et al., 2008; Gregor et al., 2008).

Other researcher has found that more severe nicotine withdrawal symptoms are predicted by anxiety sensitivity during the attempt of quitting (Zvolensky et al., 2004) as well as earlier lapses and relapses to smoking throughout a smoking termination trial, significantly within the first two weeks of the attempt (Brown e al., 2006; Zvolensky et al., 2007; Zvolensky et al., 2006).

Relationship of anxiety sensitivity and barrier to cessation

In adult smokers in the U.S and Mexico, anxiety sensitivity is highly related to lapse and relapse processes of treatment seeking and non- treatment seeking groups, during the trials of terminating smoking (Brown et al., 2001; Zvolensky et al., 2007).

A study proposed that anxiety sensitivity is closely related with higher risk of early smoking relapse among individuals who smoke routinely. Also more severe nicotine larger quantity of nicotine withdrawal symptoms are predicted by anxiety sensitivity during past attempt of quitting (Zvolensky et al., 2004) and highlight the perceived difficulty level in terminating smoking (Zvolensky et al., 2007). Smokers who are more anxious and sensitive face greater barriers in quitting smoking and have more withdrawal symptoms, and they find quitting smoking to be a very difficult process.

Disengagement belief and barrier to cessation

Most of the people who behave in unhealthy ways also consider their health to be important, and they know about the harmful effects of their behaviour. This process is called cognitive dissonance (Festinger, 1957).

Cognitive dissonance is generally prompted by dissonance of psychological features that mention the behaviour on one hand ('I smoke') the undesirable consequences of the behaviour on the other hand ('Smoking has negative consequences for my health'). The unpleasantness of the latter belief depends on the way in which health is valued. Because of the behavioural part (e.g. 'I smoke'), it is usually tough to vary cognitively while not fully losing contact with reality. Because of pessimistic expectation about the outcome of the behaviour, cognitive elements are mostly targeted by dissonance. Dissonance is lessened by the insensitive state of dissonance. Terminating smoking is a suitable way to lessen the dissonance, in case of tobacco use. By applying disengagement beliefs, dissonance is lessened and smoking behaviours will also reduce. Therefore, stronger disengagement beliefs are associated with a lower intention to quit and a lower probability of quitting behaviour. Four studies proposed that many smokers, who maintain disengagement beliefs, believe

that they are under less pleasure to quit (Dijkstra, Vries, Kok, & Roijackers, 1999; Dijkstra & Dijker, 2005; Johnson, 1968; Olshavsky & Summers, 1974). Two more studies proposed that the more that vigorous smokers stick to disengagement beliefs, the lower the prospect that they'd created an opportunity to quit eight months later (Dijkstra & Brosschot, 2003; Dijkstra & Dijker, 2005).

It is supposed that individuals who cope with the dissonance without terminating smoking process are stick with disengagement beliefs. Their greater stickiness with disengagement beliefs are the sign of liking, and their reaction is stronger towards disengagement beliefs. On the other hand it is not necessary that disengagement beliefs are always effective to get impressive information. However, they may work as secondary route. Another way is to lessen the dissonance is that individual quits the idea of terminating smoking and not to fight with disengagement beliefs. Reactance is a response to frightening information (Brehm, 2003). Individuals (smokers), who do not sticked with disengagement refrain the reality and try to handle dissonance with flexible behaviour.

Relationship of anxiety sensitivity with disengagement belief

Festinger (1957) proposed that, dissonance is cognitively uncomfortable and it motivates the person to reduce the dissonance. In the same way, dissonance creates tension, distress and anxiety; he proposed that there is positive relationship between dissonance and anxiety (Festinger, 1957).

Mediating role of anxiety sensitivity between disengagement beliefs and barrier to cessation

Anxiety sensitivity mediates the relationship between disengagement beliefs and smoking behaviour (perceived barrier to smoking cessation (Zvolensky et al., 2014). Disengagement beliefs are self-exempting belief that makes an individual to more likely to indulge in smoking yet underlying cognitive dissonance is there because of anxiety sensitivity. So it can be inferred that disengagement beliefs cause smoking which in turn increase anxiety and make cessation difficult (Farris et al., 2015). A researcher proposed that there is no direct relationship of anxiety and dissonance, in the presence of dissonance is cognitively uncomfortable and it motivates the person to reduce the dissonance. In the same way dissonance creates tension, distress and anxiety. Literature proposed that there is positive relationship between dissonance and anxiety (Festinger, 1957). In the same way, dissonance creates tension, distress and anxiety; which further leads to difficulties in smoking

cessation (Festinger, 1957). Studies proposed that disengagement beliefs play a vital role in initiation of smoking as they are self- exempting in nature. When addicted it leads to AS where an individual get, anxious about possible negative outcomes of quitting smoking as fear is central component of anxiety. This in turn leads to difficulty in refraining from smoking and act as barrier (Hayes, 2009).

Rationale of the study

Despite of all these facts about the dangers of smoking the rate of cigarette smoking is not decreasing in many countries. It is still very high all over the world and particularly in the under developed countries like Pakistan. There are 1.2 billion smokers in the world with the majority of them in developing countries. Most of them report smoking starting before the age of 18.

In a survey conducted by Pakistan Health Education in 1992, indicate that there are over 22 million smokers in Pakistan. In one recent study it was proposed that in Pakistan 14.2% children of 8 years of age and 19.4% of 15 year old were smokers. In October 2001 the two main cigarette companies in Pakistan started a campaign pledging not to sell cigarettes to children under 18. However, within a year, the effort was abandoned. Cigarettes are freely sold to the children of all ages at all cigarette shops. The Pakistan Paediatric association revealed the astonishing fact that 1,000 to 1,200 children between age of six and 15 years take up smoking ever day (Amin, 2001).

According to World Health Organization smoking affects more than 7 billion people every year, more than 6 million deaths as a result of extreme tobacco use, while other 890,000 are the result of second hand smoke. Active smoking is referred to person's inhaling actively by lightning up a cigarette. Passive or second-hand smoking is also related to similar health hazards but to lesser extent. Second hand smoking is the result of particles exhaled into the air by an active smoker. Each year 890,000 premature deaths occurred due to passive smoking. In 2004, 28% of the deaths of children have been attributed to second-hand smoke. In Pakistan, there are about 100,000 deaths in 2014 alone due to smoking related illness. In Pakistan, 50000 hectares of fertile land for tobacco cultivation is used. According to the Chairman of the National Alliances for Tobacco Control, Pakistan is one of the four countries where tobacco use is growing rapidly, an alarming situation (Nasir & Rehan, 2001).

Smoking leads to injurious diseases like coronary heart disease, shortness of breath, decreased lung potential and a higher risk of alcohol, marijuana and cocaine

use. It can also cause pneumonia and most cancers of the mouth, pharynx, larynx, oesophagus, belly, pancreas, cervix, kidney, and bladder, as well as persistent bronchitis and emphysema (Gao et al., 2009).

It has been established that smoking leads to negative health consequences; it is not only injurious to health it's also cause psychological and social problems e.g. for example psychological distress, psychotic disorder and oral fixation. It can also affect social life and quality of life of an individual (Kalucka, 2012). Researches showed that people smoke to reduce emotional distress like tension, anxiety, stress and to stable their temperament. Measuring mental health fame with the support of anxiety, depression, stress, and mental quality of lifestyles. Researcher's have-observed that quitting smoking can become challenging (McNamee, 2014).

The beliefs about health play important role in increasing the awareness about harmful consequences of smoking. It is believed that due to disengagement beliefs, many smokers do not give importance to the harmful effects of smoking, which leads to low level of motivation to terminate smoking (Dijkstra & Brosschot, 2003). Disengagement beliefs act as "excuse or justification" (Kleinjan, Eijnden, Dijkstra, Brug, & Engels, 2006) to continue smoking. Another view suggested that smokers think that smoking is not very risky behavioural phenomena (Oakes e al., 2004) and ignore the harmful consequences of smoking (Dijkstra & Brosschot, 2003). As an end, people who smoke with that belief are much less likely to consider quitting. A study indicates that individual who had successfully given up smoking had lower disengagement beliefs than those who smoke at present (Dijkstra & Brosschot, 2003).

Anxiety sensitivity is the main focus of the research. A model has been proposed to check how smoking and anxiety are related to each other Researchers found that regulative functions are affected by daily use of tobacco. Fear is basically called anxiety sensitivity; fear is a characteristic that reflects a tendency of sensation related to fear anxiety. It is due to the fear of injurious physical, psychological, and social outcomes.

Negative emotional states are related with anxiety sensitivity, and it also plays important role in different types of cigarette smoking. Studies are reporting that negative emotional states are related both with smoking withdrawal and relapse. Anxiety sensitivity is the main element in the causal structure. Person, who has high on anxiety fears, has more barriers for quitting as compared those who have less anxiety sensitivity (Piasecki et al., 2000).

Moreover, this research explores mediating role of anxiety sensitivity between disengagement beliefs and barrier to cessation. Through this it can be explained that disengagement beliefs cause smoking which in turn increase anxiety and make cessation difficult (Zvolensky, Farris, Leventhal, & Schmidt, 2014) Also, this research was designed to test the relationships among between disengagement beliefs, anxiety sensitivity and barrier to cessation. A review of literature showed that there is lack of research work regarding the association between anxiety sensitivity and disengagement beliefs.

In addition, the present research also aims to explore disengagement beliefs being used by the smokers. Lastly, this research can aid in planning of the activities that can be effective in designing programs to deal with growing rate of smoking among adult.

METHOD

Objectives

The present research aims to study

1 The relationship between Disengagement beliefs, Anxiety sensitivity and Barrier to cessation among male adult smokers.

2 The role of demographic variables (age, number of cigarette smoked per day and parental smoking status) on study variables.

Hypothesis

1. There will be positive relationship between anxiety sensitivity, disengagement belief and barrier to cessation among male adult smokers
2. Anxiety sensitivity and disengagement belief positively predict barrier to cessation among male adult smoker.
3. Anxiety sensitivity social concern, cognitive concern and physical concern positively predict barrier to cessation among male adult smoker.
4. Anxiety sensitivity mediates the relationship between disengagement belief and barrier to cessation among male adult smoker.
5. Adult smokers will score high on barrier to cessation as compared to young smoker
6. Individual whose parents smoke will score high on disengagement belief as compared to those whose parents does not smoke.

Operational definitions of variables

Disengagement Belief

Disengagement beliefs are those beliefs that are used to as defend or justification to continuing smoking e.g. smoker may be well aware of harmful effects of smoking on health but they continue to smoke (Chapman et al., 1993). High score on disengagement beliefs sale (Dijkstra et al., 1999) indicated that more smokers adherence to the rationalization of disengagement beliefs while lower score indicate low adherence to rationalization of disengagement beliefs (Dijkstra et al., 1999).

Anxiety sensitivity

Anxiety sensitivity can be defined as fear or amplification factor, which increase in anxiety and leads to fearfulness (Reiss, 1997). Anxiety sensitivity index 3 classified into three categories (i) Social concern (ii) Mental concern (iii) Physical concern. High scores on anxiety sensitivity scale (Taylor et al., 2007) indicate high

symptoms of anxiety whereas low scores indicate fewer symptoms of anxiety. Higher score on each subscale indicated high symptoms of anxiety (Taylor et al., 2007).

Barrier to cessation

Barrier to cessation can be defined as those factors that prevent individual from quitting smoking. In health behavior literature elements that stop individual from healthy behavior are referred as barriers. Higher score on barrier to cessation scale (Macnee & Talsma, 1995) indicate high barriers to quit smoking.

Instruments

Disengagement Belief

Disengagement beliefs were measured by using a disengagement beliefs scale consisting of twelve items (Dijkstra et al., 1999). The item consists of reason or justification why it would be okay to smoke. The item could be scored on a 5-point Likert type scale. The scoring system of each item is completely disagree = 1, disagree = 2, neutral = 3, agree = 4, completely agree = 5.The higher the scale score, the more smokers were considered to adhere to the rationalization of disengagement belief (Dijkstra et al., 1999). Reliability of disengagement belief scale was found to be .84 (Dijkstra et al., 1999).

Anxiety Sensitivity

Anxiety sensitivity was measured by anxiety sensitivity scale (Tylor et al., 2007). This sale consist 18 items which are concerned about possible negative consequences of anxiety symptoms. Five point Likert type scale was used to measure the score of items range (0 = very little, 1 = little, 2 = some, 3 = much, 4 = very much). This scale consist of three subscale (Physical, Mental and social concern). Physical scale consists of seven items, cognitive concern consists of six items and social concern consists of three items. The higher the scale score indicated high symptoms of anxiety (Peterson & Reiss, 1996). Reliability of anxiety sensitivity index III was found to be .84 (Peterson & Reiss, 1996).

Barrier to cessation

Barrier to cessation was measured by barrier to cessation scale consist of 19 items (Macnee & Talsma, 1995) rated on four point liker type scale (0 = not a barrier, 1 = seldom barrier, 2 = sometime of barrier, 3 = large barrier). Barrier to cessation scale classified into three subscales (i) addictive barrier (ii) external barrier (iii) internal barrier. Addictive barrier consist of eight items, external barrier consist of

seven items and internal barrier consist of three items. High score on barrier to cessation scale indicated that the person has more barriers to quit smoking while low score on barrier to cessation scale indicated that the person has fewer barriers for quitting (Macnee & Talsma, 1995). Reliability of barrier to cessation scale were found to be .81-.84 as well three subscales .71-.84 (Macnee & Talsma, 1995).

Research design

Correlation cross sectional design is used in present study. Data were collected through survey method and analyses were quantitative in nature.

Phase 1: Try-out phase

Objectives. Try out phase was carried out to determine the role of cultural appropriateness and ease of comprehension of the instruments used in research i.e. Disengagement belief (Dijkstra et al., 1999) Anxiety sensitivity (Tylor et al., 1986) and barrier to cessation (Macnee & Talsma, 1995) questionnaire respectively. This was done keeping in consideration of sample of adolescents and adults smoker's.

Procedure

In order to follow research ethics for utilizing the instrument of Disengagement belief (Dijkstra et al., 1999) Anxiety sensitivity (Tylor et al., 1986) and Barrier to cessation (Macnee & Talsma, 1995) survey separately, it was necessary to obtain the consent do so from the author of each instrument. For this purpose author of each scale were contacted via email. All authors showed their support in the matter and granted their consent to use the instruments in the research.

To obtain the sample opinion of 30 smokers were approached in their setting. The age of the sample ranged from 18 to 55. Each individual was explained the purpose of the study and their consent to participate was taken. Participants was given verbal and written instructions to give their opinion on cultural appropriate and ease of comprehension of all four scales. The participants were assured that the collected information will be kept confidential and will be used for the research purpose. The participants rated the entire scale at minimum level of difficulty and scales were reported to be culturally appropriate as well.

Phase 2: Main study

Objective

To test the proposed objectives related to hypotheses and study relationship between disengagement belief, anxiety sensitivity and barrier to cessation. Further

mediation analysis was conducted to confirm the mediating role of anxiety sensitivity between the relationship of disengagement beliefs and barrier to cessation.

Sample

Using the technique of convenience and snow ball sampling 280 adolescent and adult smokers were approached from area of Islamabad and Rawalpindi. Adolescent and adult smokers from different socio-economic -status and different educational level were included. The inclusion criteria were that the individual must be above 15 year of age and are able to understand and read English language. Exclusion criteria was that the smoker must not be using any other drug except nicotine

Table1

Frequencies and Percentages of Demographic Variables (N=280)

Demographic variable	*f* %	Demographic variable	*f* %
Age		**Father occupation**	
18-25	130(46.4)	Unemployed	237(84.6)
26-55	150(53.6)	Employed	43(15.4)
Education		**Family system**	
Intermediate	114(40.7)	Nuclear	166(59.3)
Graduate	140(50)	Joint	114(40.7)
Postgraduate	26(9.3)		
Smoking status of parents		**Siblings smoking status**	
With parent's smoking	152(54.3)	Yes	164(68.4)
Without parents smoking	128(45.7)	No	112(40.0)

In table 1 demographic variables and frequencies along with their percentages has been summarized. 46.4% of sample comprised of adult smoker between the age 15-25 where 53.6% comprised of smoker between the age 26-55. 50% had education level of graduation. 54.3% sample comprised of individuals whose parents are smoked. 68.4% sample comprised of individual whose siblings are smoked as well.

Procedure

Participants of the study approached from the different areas of Rawalpindi and Islamabad using the technique of purposive convenient and snow ball sampling. For the purpose of data collection, participants were informed about the study purpose. Consent to participate in the study was acquired from them after providing verbal instruction, participants were asked to fill demographic sheet along with instruments measuring study variables. Participants were assured that the data provided by them will be kept confidential. The inclusion criteria were that the individual must be above 18 year of age and are able to understand and read English language. It was assured that smoker was not using any other drug along with nicotine. On average, participants took 10-15 minutes for filling questionnaire 350 questionnaire were distributed 280 were received. At the end participants were thanked for their cooperation.

RESULTS

The aim of the present research was to study relationship between disengagement beliefs, anxiety sensitivity and barrier to cessation. The impact of these variables was computed across demographics. Appropriate statistical procedures were used to analyse the data.

The frequencies and percentage of the demographic profile of the sample was computed. The alpha reliability coefficient of the instrument and their respective subscales was also computed. To check the normality of the data for the present study descriptive statistics (mean, standard deviation, and skewness) were computed. Correlation was computed to explore the relationship between and disengagement beliefs, anxiety sensitivity and barrier to cessation with its subscales. To explore the predicting effect of disengagement beliefs, and anxiety sensitivity for barrier to cessation regression analysis was carried out. To analyse mediating role anxiety sensitivity in relationship between disengagement beliefs and barrier to cessation mediation was used. To explore differences along age, smoking status of parents and number of smoker per day categories independent sample t-test was computed. The results are present in the form of graphs for qualitative part of the data whereas rests of the results were displayed in tabular form.

Table 2

Cronbach's Alpha Reliabilities Coefficient of the Study Variables (N=280)

					95%CI			
Measure	*Item*	*α*	*M*	*SD*	*Actual*	*Potential*	*Skewness*	*Kurtosis*
DBT	12	.77	42.98	7.45	12-60	12-60	-.83	1.79
AST	18	.86	44.66	10.94	11-72	0-90	-.49	.33
ASSC	3	.62	9.47	3.15	0-16	0-15	-.56	0.11
ASGC	6	.68	14.66	4.12	1-24	0-30	-.32	0.10
ASPC	7	.70	20.52	5.24	2-28	0-35	-.57	0.24
BTCT	19	.90	48.31	7.90	17-57	0-76	-1.41	1.56
BTCE	6	.69	17.82	2.89	7-21	0-24	-1.08	1.31
BTCA	8	.74	20.38	3.31	6-21	0-32	-1.11	1.41
BTCI	3	.74	10.01	2.09	2-12	0-12	-1.71	0.85

Note. ASSC = Anxiety sensitivity social concern; ASGC = Anxiety sensitivity cognitive concern; ASPC = Anxiety sensitivity physical concern; BTCI = Barrier to cessation internal; BTCE = Barrier to cessation external; BTCA = Barrier to cessation Addictive; AST = Anxiety sensitivity total; BTCT = barrier to cessation total; DBT = Disengagement belief total

Table 2 represents descriptive of all the scales along with their subscales. In the present study reliability of disengagement beliefs (DB) was .77. Reliability of anxiety sensitivity scale was found to be .86. Moreover, reliability of all subscales of anxiety sensitivity ranged from .70 to .62 while for barrier to cessation subscales (BTCT) ranged from .74 to .69.

Table 3

Pearson Correlation Among Study Variables (N =280)

		1	2	3	4	5	6	7	8	9
1	**DBT**	-	.32**	.20**	.31**	.25**	.24**	.25**	.22**	.17**
2	**AST**		-	.69**	.92**	.90**	.45**	.46**	.42**	.37**
3	ASSC			-	.46**	.44**	.33**	.34**	.33**	.22**
4	ASGC				-	.81**	.41**	.41**	.36**	.36**
5	ASPC					-	.40**	.41**	.37**	.34**
6	**BTCT**						-	.98**	.96**	.86**
7	BTCE							-	.96**	.78**
8	BTCA								-	.73**
9	BTCI									-

Note. ASSC = Anxiety sensitivity social concern; ASGC = Anxiety sensitivity cognitive concern; ASPC = Anxiety sensitivity physical concern; BTCI = Barrier to cessation internal; BTCE = Barrier to cessation external; BTCA = Barrier to cessation Addictive; AST = Anxiety sensitivity total; BTCT = barrier to cessation total; DBT = Disengagement belief total

Table 3 demonstrated Pearson product moment correlation among study variables that includes Anxiety sensitivity scale and its subscales; anxiety sensitivity social concern, anxiety sensitivity cognitive concern and anxiety sensitivity physical concern. Significant positive correlation was apparent among anxiety sensitivity, barrier to cessation and disengagement belief.

Significant positive correlation was apparent among anxiety sensitivity subscales (anxiety sensitivity social concern, anxiety sensitivity cognitive concern, anxiety sensitivity physical concern) with barrier to cessation subscales (barrier to cessation external, barrier to cessation addictive and barrier to cessation internal. Strong positive correlation was present among disengagement beliefs and barrier to cessation.

Table 4

Multiple Regression Analysis Showing the Effect of Anxiety Sensitivity and Disengagement Beliefs on Barrier to Cessation (N=280)

			95% CI	
Variables	*B*	*S.E*	*LL*	*UL*
Constant	36.10**	2.65	24.66	35.12
AST	.67**	.04	.22	.38
DBT	.11**	.06	.00	.23
R^2	.21			
F	38.12**			

Note. AS= Anxiety sensitivity; S.E = standard error; LL = Lower limit; UL = upper limit

In the *Table 4* multiple regression analysis was used with disengagement beliefs and anxiety sensitivity as predictors of barrier to cessation among male adult smokers. Results indicated disengagement beliefs and anxiety sensitivity positively predict barrier to cessation. The overall model accounted for 21% of variance.

Table 5

Multiple Regression Showing the Effect of Anxiety sensitivity Social Concern on Barrier to Cessation (N=280)

			95% CI	
Variables	*B*	*S.E*	*LL*	*UL*
Constant	12.35**	.65	11.06	13.06
ASSC	.16**	.05	.05	.27
ASGC	.11**	.06	.01	.24
ASPC	.11**	.05	.00	.23
R^2	.21			
F	24.92**			

Note. ASSC = Anxiety sensitivity social concern; ASGC = Anxiety sensitivity cognitive concern; ASPC = Anxiety sensitivity physical concern.

In the *Table 5* multiple regression analysis was used with subscales of anxiety sensitivity (social concern and physical concern and cognitive concern as predictors of barrier to among adult male smoker. Results indicated that anxiety sensitivity subscales i.e. social concern, cognitive concern and physical concern predicted barrier to cessation. The model accounts for 20% of variance.

Mediation

A mediation model is the one that seeks to identify the mechanism or process that underlies the observed relationship between independent variables (x) and dependent variable (Y) via the inclusion of third variable, known as mediator (M).mediating role of anxiety sensitivity in predicting barrier to cessation. Mediation is hypothesized causal chain in which one variable (barrier to cessation) effected by second variable (Anxiety sensitivity) and in turn, affects a third variable (disengagement belief).The intervening variable is mediator.it mediate the relationship. Mediation can only base on assumptions proposed by Barron and Kenny (Kenny, 2014), that all three intervening variables must be significantly related with each other, either positively or negatively.

The mediation process stated below occurred below due to significant relationship among variables. The dependent variable Y (Barrier to cessation) has been tested in model 1 to see direct effect of independent variable X (Disengagement beliefs) as mediation process (X→Y) with mediator (anxiety sensitivity). Whereas, in model 2 anxiety sensitivity was tested to check its indirect effect (X →M → Y) on the relationship between disengagement beliefs and barrier to cessation

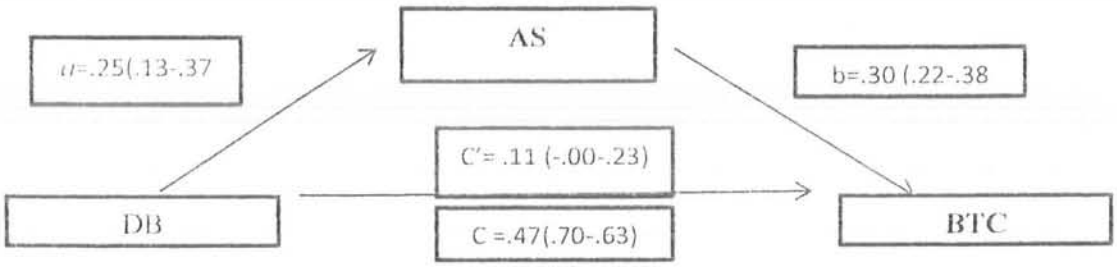
Table 6

Mediation Role of Anxiety Sensitivity Between Disengagement Belief and Barrier to Cessation (N=280)

Model	*B*	*SE*	*p*	*LL*	*UL*
Model without Mediator					
Constant	24.41	3.63	.000	17.25	1.57
DB---BC *(c)*	.47	.08	.00	.30	.63
R^2 *(Y,X)*	.04				
Model with Mediator					
Model 1: DB as dependent variable					
Constant	37.28	2.65	.000	31.98	42.59
DB ----AS *(a)*	.25	.00	.00	.13	.37
R^2	.03				
Model 2: AS Dependent variable					
Constant	29.89	2.65	.000	24.61	35.12
AS---BC *(b)*	.30	.04	.000	.22	.38
DB---BC *(c')*	.11	.05	.05	-.00	-.23
Indirect effect	.14	.03		.08	.21
R^2 *(Y, M, X)*	.12				

Note. AS = Anxiety sensitivity; BTC = Barrier to cessation; DB = Disengagement belief. (Sobel z=-2.12, p>.05).

Table 5 shows mediating effect of disengagement beliefs on barrier to cessation. The first part of table (without mediator) depicts that barrier to cessation was significantly predicted by disengagement beliefs ($B = .47$, $p<.05$). The R^2 values shows that 4% of variance in barrier to cessation by disengagement beliefs. Model 1 show that anxiety sensitivity significantly predict barrier to cessation. The R^2 value shows 3% variance explained by anxiety sensitivity in barrier to cessation. Model 2 shows that anxiety sensitivity is significantly predicts barrier to cessation in the presence of disengagement beliefs. The variance accounted for this model is 12% which is different from model without mediator. Since sobel effect showed indirect effect ($B = .14$), the standard error associated *z*- score ($z = .03$) and p-value (.00). It shows significant indirect effect of Anxiety Sensitivity.



Note. DB = Disengagement belief; AS = anxiety sensitivity; BTC = barrier to cessation

Figure 1 shows the mediating role of anxiety sensitivity and disengagement beliefs and barrier to cessation. According to Kenny and Judd (2014) Difference of Coefficient Approach, the indirect effect (ab) or the amount of mediation is equal to the reduction of the effect of the dependent variable on the outcome or ab = c (total effect) c' (direct effect).

Table 7

Mean Difference in Smoke Year Among Study Variable (N=280)

	Below2 year (*n*=128)		Above3 year (*n*=152)				95% *CI*		
variables	*M*	*SD*	*M*	*SD*	$t_{(278)}$	*p*	*LL*	*UL*	Cohen's *d*
DBT	42.53	11.63	43.51	7.18	.29	.19	-2.91	.51	-
AST	43.53	11.63	45.60	10.26	.57	.11	-4.6	.51	-
ASSC	9.35	3.38	9.57	2.95	.58	.56	-.96	.52	-
ASGC	14.14	4.27	15.09	3.96	.90	.56	-1.91	.02	-
ASPC	17.67	4.82	18.44	4.63	.34	.18	-1.87	.35	-
BTCE	17.46	3.10	18.11	2.67	.87	.06	-1.33	.03	-
BTCA	17.38	3.31	17.94	2.91	.51	.31	-1.29	.16	-
BTCI	9.86	2.21	10.30	1.97	.73	.08	-.92	.05	-
BTCT	47.31	8.54	49.16	7.25	.97	.05	-3.71	-0.0	-

Note. ASSC = Anxiety sensitivity social concern; ASGC = Anxiety sensitivity cognitive concern; ASPC = Anxiety sensitivity physical concern; BTCI = Barrier to cessation internal; BTCE = Barrier to cessation external; BTCA = Barrier to cessation Addictive; AST = Anxiety sensitivity total; BTCT = barrier to cessation total; DBT = Disengagement belief total

Non-significant differences were observed on all study variables.

Table 8

Mean Difference on Smoking Initiation Along Study Variables (N =280)

	Less than two years (*n*=197)		More than three years (n=82)				95% *CI*		
Variables	*M*	*SD*	*M*	*SD*	$t_{(278)}$	*p*	*LL*	*UL*	Cohen's *d*
DBT	42.95	7.38	43.19	7.61	.4	.81	-2.16	1.69	-
AST	43.85	11.19	46.74	10.06	.01	.04	-5.58	-.18	.27
ASSC	9.21	3.23	10.01	2.89	.10	.36	-1.64	-.08	-
ASGC	14.36	4.23	15.43	3.76	.00	.47	-2.09	-.06	-
ASPC	17.88	4.85	18.69	4.32	.31	.19	-2.02	.40	-
BTCE	17.68	4.85	18.18	2.56	.32	.18	-1.25	.24	-
BTCA	17.55	3.23	18.03	2.79	.18	.23	-1.28	.32	-
BTCI	10.04	2.14	10.31	1.91	.01	.31	-.81	.26	-
BTCT	47.92	8.25	49.34	6.96	.36	.17	-3.45	.63	-

Note. ASSC = Anxiety sensitivity social concern; ASGC = Anxiety sensitivity cognitive concern; ASPC =Anxiety sensitivity physical concern; BTCI = Barrier to cessation internal, BTCE = Barrier to cessation external; BTCA = Barrier to cessation Addictive; AST = Anxiety sensitivity total; BTCT = barrier to cessation total; DBT = Disengagement belief total

Table 8 illustrated group differences among adolescents and adults. Significant mean differences were observed only on anxiety sensitivity where adolescents scored higher as compared to adults. Non-significant differences were observed on all other study variables.

Table 9

Mean Difference in Closest Friends Among Study Variable (N=280)

	Below5 (*n*=123)		Above6 (*n*=157)				95% *CI*		
Variables	*M*	*SD*	*M*	*SD*	$t_{(278)}$	*p*	*LL*	*UL*	Cohen's *d*
DBT	44.55	6.88	41.77	7.67	3.13	.00	1.03	4.51	.38
AST	45.26	11.09	44.19	10.83	.81	.41	-1.52	3.66	-
ASSC	9.41	3.02	9.52	3.26	.30	.76	-.86	.63	-
ASGC	14.86	4.29	14.47	3.9	.83	.40	-.56	1.39	-
ASPC	18.43	4.79	17.82	4.67	1.05	.29	-.51	1.72	-
BTCE	18.12	2.80	17.58	2.95	1.54	.12	-.14	1.22	-
BTCA	18.03	2.87	17.42	3.26	1.63	.10	-.12	1.34	-
BTCI	10.13	2.85	10.07	2.03	.24	.80	-.43	.55	-
BTCT	49.02	7.76	47.75	7.99	1.38	.18	-.06	3.13	-

Note. ASSC = Anxiety sensitivity social concern; ASGC = Anxiety sensitivity cognitive concern. ASPC = Anxiety sensitivity physical concern. BTCI = Barrier to cessation internal. BTCE = Barrier to cessation external. BTCA = Barrier to cessation Addictive. AST = Anxiety sensitivity total. BTCT = barrier to cessation total. DBT = Disengagement belief total

Table 8 illustrated group differences among closest friends. Significant mean differences were observed only on disengagement beliefs. Non-significant differences were observed on all other study variables.

Table 10

Mean Difference in Smoke per day Among Study Variables (N=280)

	Below10 (n=99)		*Above11 (n=191)*				*95%CI*		
Variables	*M*	*SD*	*M*	*SD*	$t_{(278)}$	*p*	*LL*	*UL*	*Cohen's d*
DBT	43.33	7.43	42.80	7.47	.57	.56	-3.39	2.00	-
AST	44.21	11.38	44.90	10.7	.50	.61	-3.39	2.00	-
ASSC	9.12	3.20	9.67	3.11	.40	.16	-1.36	.22	-
ASGC	14.56	4.38	14.66	3.98	.01	.99	-1.02	1.61	-
ASPC	17.96	5.08	18.16	4.53	.32	.74	-1.35	.97	-
BTCE	17.52	3.14	17.98	2.74	.26	.20	-1.16	.25	-
BTCA	17.29	3.43	17.90	2.90	.58	.11	-1.37	.15	-
BTCI	10.01	2.37	10.15	1.93	.55	.58	-.66	.37	-
BTCT	47.55	8.70	48.72	7.42	.18	.23	-3.11	.77	-

Note. ASSC = Anxiety sensitivity social concern; ASPC = Anxiety sensitivity cognitive concern; ASPC = Anxiety sensitivity physical concern; BTCI = Barrier to cessation internal; BTCE = Barrier to cessation external; BTCA = Barrier to cessation Addictive; AST = Anxiety sensitivity total; BTCT = Barrier to cessation total; DBT = Disengagement belief total

Non- significant differences were observed on all study variables.

Table 11

Difference on the Base of Parents Smoking on Study Variables (N=280)

	With smoker parents (n=158)		Without smoker parents (n=122)				95%CI		
Variables	*M*	*SD*	*M*	*SD*	$t_{(278)}$	*p*	*LL*	*UL*	*Cohen's d*
DBT	43.50	6.33	42.31	8.67	1.31	.19	-.57	2.95	-
AST	44.24	10.90	45.19	11.01	.90	.36	-3.54	1.64	-
ASSC	8.99	3.25	10.01	2.90	3.08	.00	-1.85	-.37	.37
ASGC	15.55	4.13	14.80	4.12	.63	.52	-1.23	.72	-
ASPC	18.31	4.59	17.81	4.96	. 68	.49	-.62	1.62	-
BTCE	17.72	3.01	17.95	2.73	.74	.45	-.91	.45	-
BTCA	17.68	3.21	17.69	2.98	.16	.87	-.75	.72	-
BTCI	9.90	2.24	10.36	1.87	1.78	.07	-.95	.04	-
BTCT	17.95	8.38	48.77	7.25	.93	.34	-2.70	1.05	-

Note. ASSC = Anxiety sensitivity social concern; ASGC = Anxiety sensitivity cognitive concern; ASPC = Anxiety sensitivity physical concern; BTCI = Barrier to cessation internal; BTCE = Barrier to cessation external; BTCA = Barrier to cessation Addictive; AST = Anxiety sensitivity total; BTCT = barrier to cessation total; DBT = Disengagement belief total

Table 11 indicated differences on the basis of smoking status of parents. Results indicate significant difference was also observed on anxiety sensitivity social concern where individual whose parents do not smoke scored higher. Non-significant mean differences were observed on all other study variable.

Keeping in view of past literature, two groups were formulated on anxiety sensitivity i.e. high vs low. Based upon range obtained description, Mean value was find out and below it individual were categorize as low on AS and above it as High. Further t-test was conducted along study variables.

Table 12

Mean Difference in Anxiety Sensitivity Among Study Variables (N=280)

	Low AS (n = 59)		High AS (n = 222)				95%*CI*		
Variables	*M*	*SD*	*M*	*SD*	$t_{(278)}$	*p*	*LL*	*UL*	Cohen's *d*
DBT	38.94	7.80	44.06	6.99	4.87	.11	-7.18	-3.05	0.6
BTCE	15.50	3.28	18.43	2.44	7.57	.01	-3.69	-2.16	1.01
BTCA	15.40	3.78	18.29	2.59	6.84	.00	-3.72	-2.06	0.8
BTCI	8.76	2.65	10.46	1.76	5.84	.00	-2.27	-1.12	0.7
BTCT	42.16	9.33	49.95	6.59	7.32	.00	-9.87	-5.69	0.96

Note. DB = Disengagement beliefs; BTCT = Barrier to cessation; BTCE = Barrier to cessation external; BTCA = Barrier to cessation additive; BTCI = Barrier to cessation internal

Table 12 illustrated group difference among anxiety sensitivity. Significant mean differences were observed on Barrier to cessation i.e. internal, externals, and additive. where smoker score high on high level of anxiety sensitivity. Non-significant differences were observed on disengagement beliefs.

Keeping in view of past literature, two groups were formulated on anxiety sensitivity i.e. high vs low. Based upon range obtained description. Mean value was find out and below it individual were categorize as low on AS and above it as High. Further t-test was conducted along study variables.

Table 13

Mean Difference in Disengagement Beliefs Among Study Variable (N=280)

	Low DB (n =47)		High DB (n = 233)				95%CI		
Variables	*M*	*SD*	*M*	*SD*	$t_{(278)}$	*p*	*LL*	*UL*	Cohen's *d*
AST	38.25	11.03	45.95	10.48	.23	.00	-11.02	-4.36	0.7
ASSSC	8.46	3.14	9.86	3.12	.88	.01	-2.19	-2.3	0.4
ASGC	12.48	4.13	15.09	3.99	.32	.00	-3.87	-1.34	0.6
ASPC	15.48	5.36	18.61	4.42	.08	.00	-4.57	-1.68	0.6
BTCT	43.87	6.39	49.21	7.89	.27	.00	-2.94	-1.18	0.7
BTCE	16.01	2.40	18.16	2.86	.98	.00	-3.15	-1.26	0.8
BTCA	15.85	2.76	18.09	3.05	.92	.00	-1.51	-.21	0.7
BTCI	9.38	2.11	10.24	2.06	.47	.01	-11.02	-4.36	0.4

Note. DB = Disengagement beliefs; BTCT = Barrier to cessation; BTCE = Barrier to cessation external; BTCA = Barrier to cessation additive; BTCI = Barrier to cessation internal

Table 13 illustrated group difference among disengagement beliefs. Significant mean differences were observed on Barrier to cessation i.e. internal, externals, and additive, and anxiety sensitivity i.e. Physical, social and cognitive concern, where smoker score high on high level of disengagement beliefs.

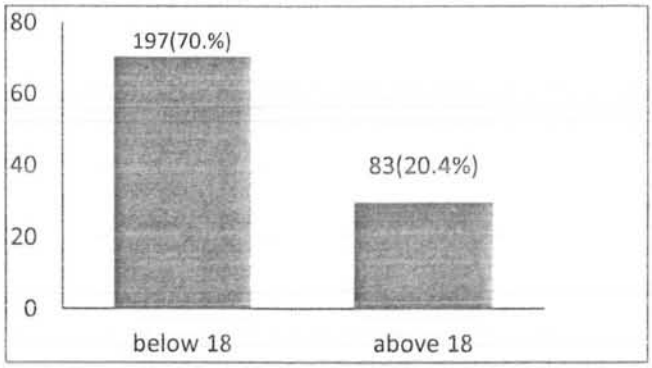


Figure 2. Staring age of smoking cigarette

Figure 2 illustrated the age at which adult smokers smoked first cigarette. 70% reported that they started smoking before 18 year of age. 20.4% of people reported that the started smoking at 18 year or more

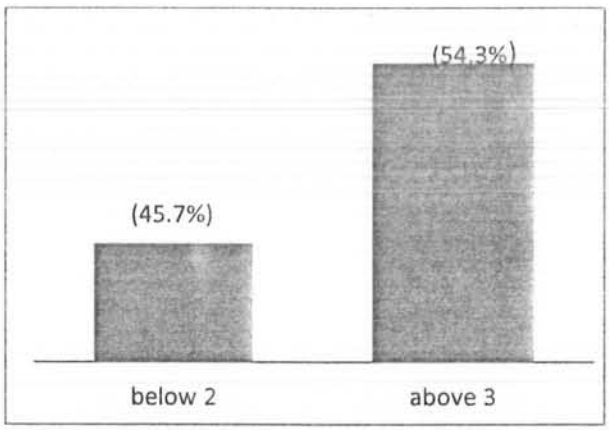


Figure 3. Smoking history

Figure 3 illustrated that 54.3 % people reported that they have been smoking since more than 3 years while 45.7% reported that they have been smoking since 2 year or below 2 year.

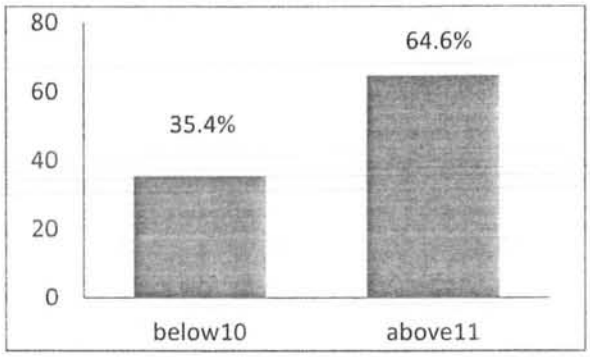


Figure 4. Number of friends smoke cigarette

Figure 4 illustrated that 64.4% reported that they have more than eleven friends who smoke. Whereas 35.4% reported that they have less than ten smoker's friends.

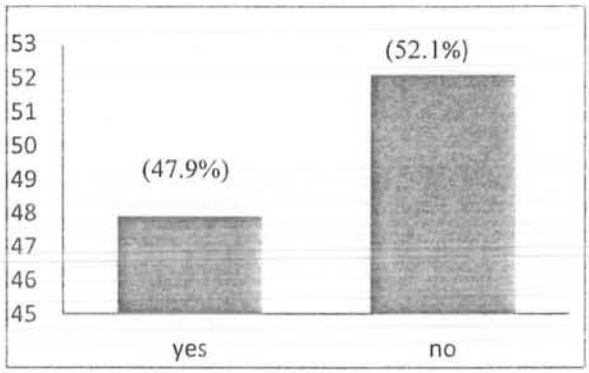


Figure 5.First cigarette after wake up

Figure 5 illustrated the percentages of taking first cigarette in morning. 52.5% reported that they take cigarette after 12 minutes or more than 12 minutes in first hour of morning. While 47.7% people reported that they take cigarette less than 10 minutes in first hour of morning.

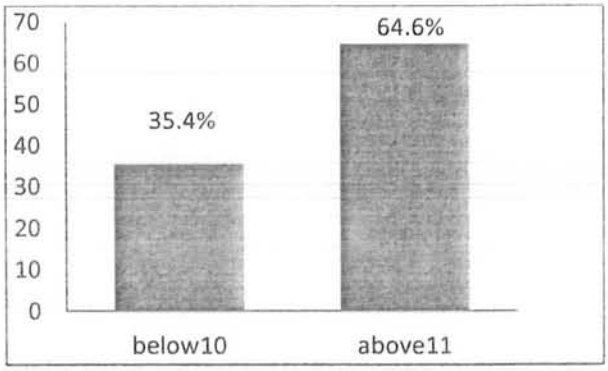


Figure 6. Number of cigarette smoke per day

Figure 6 illustrated number of cigarette per day consumed by adult smokers 64.6% reported that they consumed more than eleven cigarettes per day while 35.4% reported that they consumed less than ten cigarettes per day.

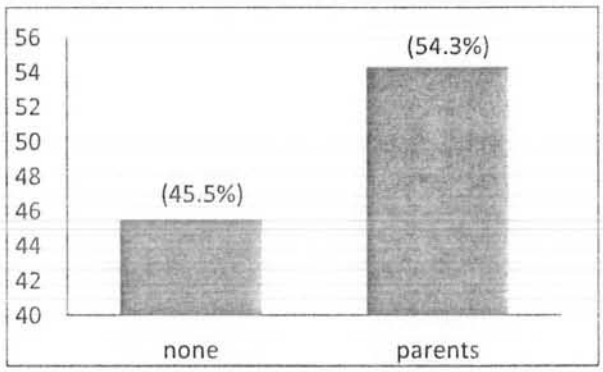


*Figure 7.*Smoking status of parents

Figure 7 illustrated smoking of parents among adult smokers. 54.3% reported that their parents smoke cigarette. While 45.5% reported that none of parents smoke cigarette

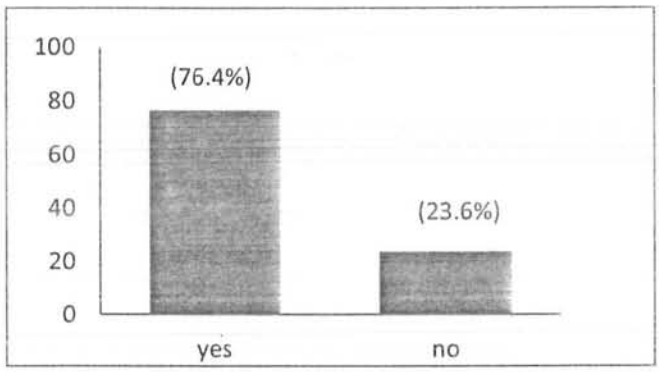


Figure 8. More smoking with friends

Figure 8 illustrated that 76% people reported that they prefer to smoke cigarettes along with their smoker's friends. While 23.6% people reported that they don't smoke cigarettes along with their friends.

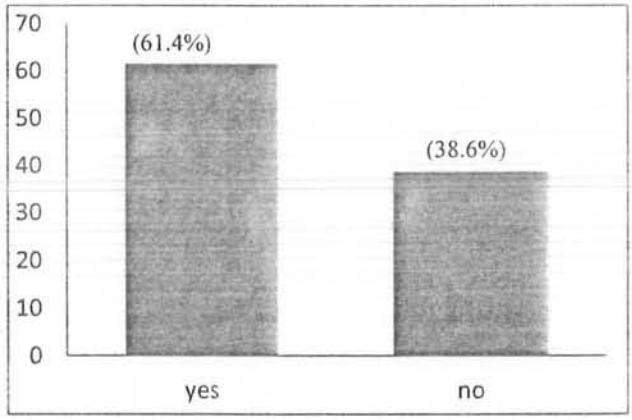


Figure 9. Difficulties to refrain from smoking

Figure 9 illustrated 61.4% people reported difficulty to refrain from smoking in area when it is forbidden. Whereas 38.6% reported that they don't feel any difficulty to refrain from smoking when it is forbidden

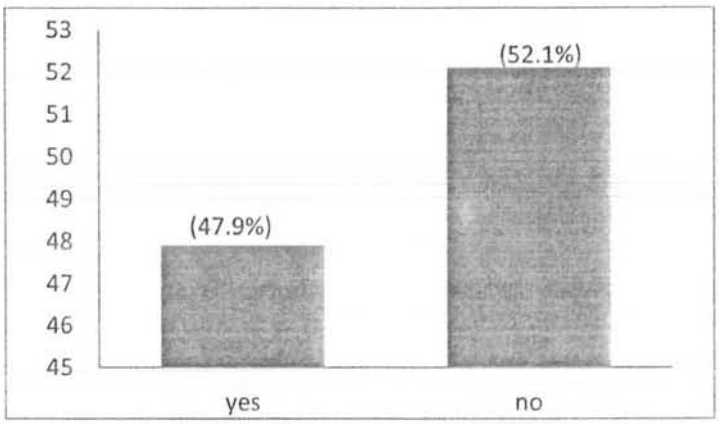


Figure 10. Previous attempt to quit smoking

Figure 10 illustrated that 52.1% people reported that they have not tried to quit smoking. While 47.9% reported that they have tried to quit smoking in past.

DISCUSSION

The present study aims to identify the relationship between disengagement belief anxiety sensitivity, and barrier to cessation. It also aimed to test the mediating role of anxiety sensitivity between the relation of disengagement belief and barrier to cessation. It's additionally meant to investigate the relationship study of variable with demographic variable i.e. smoking status of parents, age and number of smoke per day.

In the present study correlation research method was utilized. Data has been collected by purposive and convenience sampling technique from adult male smokers living in area of Rawalpindi and Islamabad. The age ranged from 15 to 55. In order to find out relationship between variables studied in the population, Pearson product moment correlation, multiple regression and t-test along with mediation analysis.

To determine the soundness of scale with regards to psychometric factors used alpha reliabilities were computed in the study. Evidently, reliable values of all the scales and their subscales in this study were psychometrically sound ranging from .90 to .62 (*see table 2*) which shows scales are reliable and internally consistent. The values of skewness and kurtosis lies between absolute values of ±2 therefore data can be considered as normally distributed (Jondeaua & Rockinger, 2003).

In order to test hypotheses on the basis of existing literature, the very first objective is to test the relationship between the study variables. *Hypothesis* 1 states that disengagement belief, anxiety sensitivity and barrier to cessation will positively related to each other. Pearson product moment correlation indicated significant positive relation between disengagement beliefs, anxiety sensitivity and barrier to cessation. Previous studies already showed that disengagement beliefs are positively related with both barriers to cessation. (Dijkstra, 2003; Dijkstra & Brosschot, 2003; Dijkstra et al., 1999; Oakes et al., 2004; Olshavsky & Summers, 1974) and attempts to quit (Dijkstra, 2003; Dijkstra & Brosschot, 2003; Dijkstra et al., 1999). Disengagement beliefs may prevent smokers from seriously thinking about, or considering the consequences of their behavior, and that could therefore lead to stagnation in the progression towards quitting (Oakes et al., 2004).

Past literature also confirm these findings too. High anxiety sensitivity is positively related with barrier to cessation. Anxiety sensitivity is associated with

the tendency to perceive quitting as more difficult, because high on anxiety sensitive smoker have fear if they quit smoking their life become more stressful and depressed (Guillot, Leventhal, Raines, Zvolensky & Schmidt, 2016; Langdon, Farris, Hogan, Grover, & Zvolensky, 2016). Anxiety sensitivity is positively related with disengagement belief (*see table 2).* A researcher proposed that there is no direct relationship of dissonance, in the presence of dissonance is cognitively uncomfortable and it motivates the person to reduce the dissonance. Thus acting as a bridge or mediator.In the same way dissonance creates tension, distress and anxiety. Literature proposed that there is positive relationship between dissonance and anxiety (Festinger, 1957). Festinger (1957) proposed that, dissonance is cognitively uncomfortable and it motivates the person to reduce the dissonance. In the same way, dissonance creates tension, distress and anxiety; which further leads to difficulties in smoking cessation (Festinger, 1957).

Hypothesis 2 states that anxiety sensitivity and its subscales (social, cognitive and physical concern) and disengagement beliefs will positively predict barrier to cessation. Results revealed that anxiety sensitivity and disengagement beliefs significantly predict barrier to cessation. Recent researchers have found that higher levels of anxiety sensitivity were positively predicting barrier to cessation. High anxiety sensitive smoker consider smoking has positive effect on mood (Wong et al., 2013). Prior researcher has also found smoking reduces anxiety in high anxiety sensitive smokers who smoked during a stressful situation (Evatt & Kassel, 2010). From a cessation perspective, smokers higher in anxiety sensitivity, relative to those lower, perceive quitting as more difficult (Zvolensky et al., 2007) and experience more intense nicotine withdrawal during early phases in quitting (Johnson, Rosenfield, Stewart, Steeves, & Zvolensky, 2012; Langdon et al., 2013).

Perceived barriers to smoking cessation also appear to be higher among those with, higher anxiety (e.g., Buckner, Jeffries, & Schmidt, Zvolensky, 2014). Smokers often report concerns about anxiety, insomnia, or weight gain as barriers to quitting smoking. In the general population, smokers who perceive more barriers to smoking cessation are less motivated to quit (Krishnan, McKee, Malley, Salovey, & Mazure, 2005), experience more severe withdrawal symptoms after they quit and relapse more quickly following a cessation attempt (Toll et al., 2008). Disengagement beliefs are related with forward sage progress and stronger disengagement belief are characteristic of less stopping smoking. Past examinations indicating positive

relations between both disengagement beliefs and barrier to quit (Dijkstra, 2003; Dijkstra et al., 1999; Oakes et al., 2004; Olshavsky & summers, 1947) and quit attempts. Hence disengagement beliefs have positive relationship with barrier to cessation (Festinger, 1957).

Further findings indicated that anxiety sensitivity mediate the relationship between disengagement beliefs and barrier to cessation. Results of mediated analysis showed that anxiety sensitivity has positive indirect effect on barrier to cessation (as high score on barrier to cessation scale indicate more barriers). These findings are consistent with past literature which shows that anxiety sensitivity was strongest mediator (Zvolensky et al., 2014). Studies proposed that disengagement beliefs play a vital role in initiation of smoking as they are self- exempting in nature. When addicted it leads to AS where an individual get, anxious about possible negative outcomes of quitting smoking as fear is central component of anxiety. This in turn leads to difficulty in refraining from smoking and act as barrier (Hayes, 2009).

Adult's smoker scored high on barrier to cessation as compared to adolescents. Past literature confirms these finding too. For adult smokers, it has been proposed that those who are highly resistant to quit, and continue to smoke despite their knowledge of the hazardous effects of smoking, experience forms of cognitive dissonance reduction (Chapman et al., 1993, McMaster & Lee, 1991). In adult samples, disengagement beliefs were found to have a significant negative effect on several aspects of smoking cessation, such as the motivation to quit, the likelihood of undertaking a quit attempt and actual smoking cessation (Bandura, 1986; Bandura et al., 1996; Dijkstra et al., 1999; Dijkstra & Brosschot, 2003; Johnson, 1968; Kleinjan et al., 2006; Oakes et al., 2004; Olshavsky & Summers, 1974).

With smoking parents score high on disengagement belief as compared to without smoking parents. Independent t- test has been conducted to see mean difference on study variables (Disengagement belief, Anxiety sensitivity, Barrier to cessation) along the demographic variable that is smoking status of parents. Result showed that smoker whose parents smoke cigarette scores high on disengagement belief with respect to smoker whose parents does not smoke hereby supported our 6th hypothesis. Findings of the present research are confirmed with the past literature. Study conducted in Pakistan found a significant association between youngsters' smoking and, smoking by family friends (Rozi et al., 2005). Smoking of parents is observed to add a main role in starting and growing habits of smoking (Tyas &

Pederson, 1988).Researcher also have found that those children are more prone to smoke who have at least one parent who smoke as compared to non-smoker parents (Murry, Swan, Bewley, & Johnson, 1983).

High anxiety sensitivity smoker score high on barrier to cessation (*see table 12*). Previous literature also supports this assumption. According to the previous literature holding strong beliefs about the smoking, that help in reduction of negative effects can cause barriers to quit smoking. Higher anxiety sensitive smoker have become more anxious when they tried to quit smoking (Buckner et al., 2014). Higher disengagement beliefs score high on barrier to cessation *(see table 13).* According to the previous literature those who have high self-exempting or disengagement beliefs about smoking, they considered that is okay to be smoke even they well aware of the harmful consequences of smoking. Self-exempting beliefs about the smoking cause more difficulties for smoker to quit (Chapman et al., 1993).

Graphs were used for efficient representation of qualitative part of data set comprising of different questions related to smoking. In present study 70.4% of male reported that they started smoking before age 18 year *(see figure 1*). Adolescence is critical time period for different health risk behavior for example, cigarette smoking (Jessor, 1991). So high percentage of people starting cigarette smoking before age 18 can be attributed to high risk taking element and impulsivity of adolescents.

Figure 3 illustrated that 56.1% reported that they have more than five smoker's friends. Whereas 43.9% reported that they have less than five smokers' friends (*see figure 3).* Adolescent are vulnerable to get influence by social and environmental factor, family history, friendship, personal characteristic, and psycho-social and psycho- pathological issues might inspire adolescent to smoke (Park, 2011). These children are less likely to quit smoking as well (Mak, Ho, & Day, 2012).

54.3% individual reported that their parents smoke cigarette (*see figure 5*). A few investigations suggest that adolescent with least one parent smoking are at greater risk of initiation of smoking habit (Jackson, 2010). Studies describe adolescents whose parents smoke are more prone to smoking as compared to those whose parents do not smoke (Murry et al., 1983). Studies conducted in Pakistan have established that individuals whose parents or guardians smoke are at higher risk of smoking. Some attribute it to underling genetic vulnerability while other attributes it to learning. Children at an early age learn to imitate behavior of parents as consequences they start smoking (Rozi et al., 2005).

61.4% reported difficulty to refrain from smoking when it is forbidden. Whereas 38.6% reported that they don't feel any difficulty to refrain from smoking (*See figure 9).* The underling anxiety sensitivity present among smoker makes it difficult for them to refrain from smoking. This is why smoker become addicted. Although anti-smoking laws for public regions have only currently come into the limelight, and even they are no longer being well applied regardless of the endorsement of the Ban of smoking and protection of Non-smokers health ordinance 2002, it is yet to be applied via the Islamabad capital Territory (ICT). Still both men and women can be seen smoking freely at public places (Ahmed, Rashid, & Ahmed, 2004).

Conclusion

Present study explores the role of disengagement beliefs, anxiety sensitivity and barrier to cessation among male adult smoker. Findings of the present study revealed that both anxiety sensitivity and disengagement beliefs predict barrier to cessation positively. More anxiety sensitivity mediates the relationship between disengagement beliefs and barrier to cessation.

Limitation and suggestion

Present study encountered with the some limitations which are follows:

- First of all the technique of sampling which was used in the study is purposive convenient sampling that's why we cannot generalize the finding of this study on whole population.
- The size of sample is very small. Comparatively bigger size sample might give more extensive and more generalizable findings.
- Data was only taken from male sample. Females were not willing to cooperate on this. Further studies conducted to make comparison among gender.
- The data represent only two cities, representatives is needed to generalize the findings of the study.

Implications

The present study found that hypothesized positive association among disengagement beliefs, anxiety sensitivity and barrier to cessation.

In addition, mediation analysis showed that anxiety sensitivity mediated the effects of disengagement beliefs on barrier to cessation. One implication of these

findings is that counselling that effectively reduce anxiety sensitivity may result in decrease in disengagement beliefs and, to the extent that this occur, adult smokers may be more motivated to quit smoking. Another implication of the current study is that disengagement beliefs and barrier to cessation also should be addressed in counselling to assist smokers who lack confidence, motivation, skills, or resources to quit smoking.

REFERENCES

Ajzen, I. (1985). The theory of planned behaviour. *Organizational Behavioural and Human Decision Process, 590*(2), 170-211.

Ahmed, R., Rizwan-ur-Rashid, M. P., & Ahmed, S. W. (2008). Prevalence of cigarette smoking among young adult in Pakistan. *Journal of Pakistan Medical Association, 58*(11), 597-601.

Amin, A. (2001). Moving on: institutionalism in economic geography. *Environment and Planning, 33*(7), 1237-1241.

Bandura, A. (1986). Perceived self-efficacy in the exercise of control over AIDS infection. *Evaluation and Program Planning, 13*(1), 9-17.

Bandura, A., Barbaranelli, C., Caprara, G. V., & Pastorelli, C. (1996). Multifaceted impact of self-efficacy beliefs on academic functioning. *Child Development, 67*(3), 1206-1222.

Battista, S. R., Stewart, S. H., Fulton, H.G., Steeves, D., Darredeau, C., & Gavric, D. (2008). A further investigation of the relations of anxiety sensitivity to smoking motives. *Addictive Behaviours, 2*(4), 1401-1408.

Bernstein, A., Zvolensky, M. J. (2007). Anxiety sensitivity: Selective review of promising research and future directions. *Expert Review of Neurotherapeutics, 7*(2), 97-101.

Biddle, B. J., Bank, B. J., & Marlin, M. M. (1980). Parental and peer influence on adolescents. *Social Forces, 58*(4), 1057-1079.

Blais, M. A., Otto, M. W., Zucker, B. G., McNally, R. J., Schmidt, N. B., Fava, M., & Pollack, M. H. (2001). The anxiety sensitivity index: Item analysis and suggestions for refinement. *Journal of Personality Assessment, 77*(2), 272-294.

Brehm, P. (2003). Mortality among Danish drug users released from prison. *International Journal of Prisoner Health, 2*(1), 13-19.

Brown, R. A., Kahler, C. W., Zvolensky, M. J., Lejuez, C. W., & Ramsey, S. E. (2001). Anxiety sensitivity: Relationship to negative affect smoking and smoking cessation in smokers with past major depressive disorder. *Addictive Behaviors, 26*(6), 887-899.

Buckner, J. D., Zvolensky, M. J., Jeffries, E. R., & Schmidt, N. B. (2014). Robust impact of social anxiety in relation to coping motives and expectancies, barriers to quitting, and cessation-related problems. *Experimental and Clinical Psychopharmacology, 22*(4), 341.

Center of disease control and prevention (CDC) (2002). Use of Cessation method among smokers aged 16-24 years- United States, 2003. *Morbidity and Mortality weekly Report, 55*(9), 1351-1354.

Changrani, J., & Gray, F. (2006). Paan and gutka in the United States: An emerging Threat. *Journal of Immigrant Health, 7*(2), 103-108.

Chapman, S., Wong, W. L., & Smith, W., (1993). Self- exempting beliefs about smoking and health. Difference between smokers and ex-smokers. *American Journal of Public Health, 83*(1), 215-219.

Clark, D. M., Salkovskis, P. M., Öst, L. G., Breitholtz, E., Koehler, K. A., Westling, B. E., ... & Gelder, M. (1997). Misinterpretation of body sensations in panic disorder. *Journal of Consulting and Clinical Psychology, 65*(2), 203-208.

Cohen, A., Young, R. W., Velazquez, M. A., Groysman, M., Noorbehesht, K., Ben-Shahar, O. M., & Ettenberg, A. (2009). Anxiolytic effects of nicotine in a rodent test of approach avoidance conflict. *Psychopharmacology, 204*(3), 541-549.

Comeau, N., Stewart, S. H., & Loba, P. (2001). The relation of trait anxiety, anxiety sensitivity, and sensation seeking to adolescent motivation for cigarette, marijuana use. *Addictive Behaviors, 26*(2), 803-825.

Cox, B. J., Endler, N. S., & Swinson, R. P. (1991). Clinical and nonclinical panic attacks: An empirical test of a panic-anxiety continuum. *Journal of Anxiety Disorders, 5*(1), 21–34.

Crano, W.D. (2000). Milestones in the psychological analysis of social influence. *Group Dynamics, 4*(1), 68-80.

Deacon, B. J., & Valentiner, D. P. (2001). Dimensions of anxiety sensitivity and their relationship to non-clinical panic. *Journal of Psychopathology and Behavioral Assessment, 23*(1), 25-33.

Devine, H., Stewart, S. H., & Watt, M. C. (1999). Relations between anxiety sensitivity and dimensions of alexithymia in a young adult sample. *Journal of Psychosomatic Research, 47*(2), 145-158.

Dijkstra ,A., Tromp, D., & Conjn, B. (2003). Stage specific psychological determinants of stage transition. *British Journal of Health Psychology, 8*(4), 423-437.

Dijkstra, A. (2003). Working mechanisms of computer-tailored health education: Evidence from smoking cessation. *Health Education Research, 20*(5), 527-539.

Dijkstra, A., & Brosschot, J. (2003). Worry about health in smoking behaviour change. *Behaviour Research and Therapy, 41*(9), 1081-1092.

Dijkstra, A., & Dijker, L. D. (2005). Physical threat and self- evaluative emotions in smoking cessation. *Journal of Applied Social Psychology, 35*(2), 1859-1878.

Dijkstra, A., Vries, H. D., Kok, G., & Rouackers, J. (1999). Self-evaluation and motivation to change: Social cognitive constructs in smoking cessation. *Psychology and Health, 14*(4), 747-759.

Donnell, C. D., & McNally, R. J. (1990). Anxiety sensitivity and panic attacks in non-clinical population. *Behavioral Research and Therapy, 28*(1), 83-85.

Ehlers, A. (1993). A 1- year prospective study of panic attack: Clinical course and factors associated with maintenance. *Journal of Abnormal Psychology, 104*(1), 164.

Ensminger, M. E., Brown, C. H., & Kellam, S. G. (1982). Sex differences in antecedents of substance use among adolescents. *Journal of Social Issues, 38*(2), 25-42.

Etter, J.F., Bergman, M. M., Humair, J. P., & Perneger, T. V. (2000). Development and validation of a scale measuring self-efficacy of current and former smokers. *Addiction, 95*(6), 901-913.

Evatt, D. P., & Kassel, J. D. (2010). Smoking, arousal, and affect: The role of anxiety sensitivity. *Journal of Anxiety Disorders, 24*(1), 114-123.

Farris, S. G., Paulus, D. J., Gonzalez, A., Mahaffey, B. L., Bromet, E. J., Luft, B. J., ... & Zvolensky, M. J. (2015). Anxiety sensitivity mediates the association between post-traumatic stress symptom severity and interoceptive threat-related smoking abstinence expectancies among World Trade Center disaster-exposed smokers. *Addictive Behaviors, 51*(1), 204-210.

Feldner, M. T., Zvolensky, M. J., Schmidt, N. B., & Smith, R. C. (2008). A prospective test of anxiety sensitivity as a moderator of the relation between gender and posttraumatic symptom maintenance among high anxiety sensitive young adults. *Depression and Anxiety, 25*(3), 190-199.

Fishbein, M. & Ajzen, I. (1975). Belief, attitude, intention and behaviour: An introduction to the theory and research. Reading, MA: Addison-Wesley.

Garey, L., Kauffman, B. Y., Neighbors, C., Schmidt, N. B., & Zvolensky, M. J. (2016). Treatment attribution: Associations with negative affect smoking motives and barriers to quitting among treatment-seeking smokers. *Addictive Behaviors, 63*(1), 165-171.

Goldstein, A. J., & Chambless, D. L. (1978). A reanalysis of agoraphobia. *Behavior Therapy, 9*(1), 47-59.

Gonzalez, A., Zvolensky, M. J., Vujanovic, A. A., Leyro, T. M., & Marshall, E. C. (2008). An evaluation of anxiety sensitivity, emotional dysregulation, and negative affectivity among daily cigarette smokers: Relation to smoking motives and barriers to quitting. *Journal of Psychiatric Research,* 43(2), 138-147.

Gregor, K. L., Zvolensky, M. J., McLeish, A. C., Bernstein, A., & Morissette, S. (2008). Anxiety sensitivity and perceived control over anxiety-related events: Associations with smoking outcome expectancies and perceived cessation barriers among daily smokers. *Nicotine and Tobacco Research,* 10(4), 627-635.

Guillot, C. R., Leventhal, A. M., Raines, A. M., Zvolensky, M. J., & Schmidt, N. B. (2016). Anxiety sensitivity facets in relation to tobacco use, abstinence-related problems, and cognitions in treatment-seeking smokers. *Addictive Behaviours,* 56(1), 30-35.

Gulick, E. E., Hayes, J. D., & Kennelly, L. F. (1991). Smoking among women: A life cycle perspective on which to base prevention/cessation interventions. *Oncology Nursing Forum, 18*(2), 91-102.

Haaga, D.A., & Stewart, B.L. (1992). Self- efficacy for recovery from a lapse after smoking cessation. *Journal of Consulting and Clinical Psychology, 60*(1), 24-28.

Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication Monographs, 76*(4), 408-420.

Hayward, C., Killen, J. D., Kraemer, H. C., & Taylor, C. B. (2000). Predictors of panic attacks in adolescents. *Journal of the American Academy of Child & Adolescent Psychiatry, 39*(2), 207-214.

Hyland, A., Li, Q., Bauer, J., Giovino, G. A., Steger, C., & Cumming, C. (2004). Reduction in amount smoked predicts future cessation. *Psychology of Addictive Behavior, 19*(2), 221-225.

Jackson, C. (1998). Cognitive susceptibility to smoking and initiation of smoking during childhood: A longitudinal study. *Preventive Medicine, 22*(5), 129-134.

Janz, N. K., & Becker, M. H. (1984). The health belief model: A decade later. *Health Education Quarterly, 11*(1), 1-47.

Johnson, K. A., Stewart, S., Rosenfield, D., Steeves, D., & Zvolensky, M. J. (2012). Prospective evaluation of the effects of anxiety sensitivity and state anxiety in predicting acute nicotine withdrawal symptoms during smoking cessation. *Psychology of Addictive Behaviors, 26*(2), 289-394.

Johnson, R. E. (1968). Smoking and the reduction of cognitive dissonance. *Journal of Personality and Social Psychology, 9*(3), 260.

Kalman, D. (2002). The subjective effects of nicotine: Methodological issues, a review of experimental studies, and recommendation for future research. *Nicotine and Tobacco Research, 4*(3), 25-70.

Kenny, D. A., & Judd, C. M. (2014). Power anomalies in testing mediation. *Psychological Science, 25*(2), 334-339.

Kleinjan, M., van den Eijnden, R. J., & Engels, R. C. (2009). Adolescents' rationalizations to continue smoking: The role of disengagement beliefs and nicotine dependence in smoking cessation. *Addictive Behaviors, 34*(5), 440-445.

Kleinjan, M., van den Eijnden, R. J., Dijkstra, A., Brug, J., & Engels, R. C. (2006). Excuses continuing smoking: The role of disengagement beliefs in smoking cessation. *Addictive Behaviors, 31*(12), 2223-2237.

Krishna, S., Mckee, S. A., Malley, S.S., Salovey, P., & Mazure, C. M. (2005). Perceived risk and benefits of smoking cessation: Gender specific predictors of motivation and treatment outcome. *Addictive Behaviours, 30*(2), 423-435.

Langdon, K. J., Farris, S. G., Hogan, J. B., Grover, K. W., & Zvolensky, M. J. (2016). Anxiety sensitivity in relation to quit day dropout among adult daily smokers recruited to participate in a self-guided cessation attempt. *Addictive Behaviours, 58*(1), 12-15.

Langdon, K. J., Leventhal, A. M., Stewart, S., Rosenfield, D., Steeves, D., & Zvolensky, M. J. (2013). Anhedonia and anxiety sensitivity: Prospective relationships to nicotine withdrawal symptoms during smoking cessation. *Journal of Studies on Alcohol and Drugs, 74*(3), 469-478.

Leventhal, A. M., Waters, A. J., Moolchan, E. T., Heishman, S. J., & Pickworth, W. B. (2010). A quantitative analysis of subjective, cognitive, and physiological manifestations of the acute tobacco abstinence syndrome. *Addictive Behaviors, 35*(12), 1120-1130.

Leyro, T. M., Zvolensky, M. J., Vujanovic, A., & Bernstein, A. (2008). Anxiety sensitivity and smoking motive and outcome expectancies among adult daily smokers: Replication and extension. *Nicotine and Tobacco Research, 10*(6), 985-994.

Li, W., & Zinbarg, R. E. (2007). Anxiety sensitivity and panic attacks: A 1-year longitudinal study. *Behavior Modification, 31*(2), 145-161.

Macnee, C. L., & Talsma, A. (1995). A development and testing of barrier to cessation scale. *Nursing Research, 44*(11), 214-219.

Mak, K. K., Ho, S. Y., & Day, J. R. (2012). Smoking of parents and best friend—independent and combined effects on adolescent smoking and intention to initiate and quit smoking. *Nicotine and Tobacco Research, 14*(9), 1057-1064.

Maller, R. G., & Reiss, S. (1992). Anxiety sensitivity in 1984 and panic attacks in 1987. *Journal of Anxiety Disorders, 6*(3), 241-247.

Marin, G. (1990). Cultural difference in attitude toward smoking: Developing messages using the theory of reasoned action. *Journal of Applied Social Psychology, 20*(6), 473-493.

Mausner, B. (1973). An ecological view of cigarette smoking. *Journal of Abnormal Psychology, 81*(2), 115-126.

McEwen, A., West, R., & McRobbie, H. (2008). Motives for smoking and their correlates in clients attending stop Smoking treatment services. *Nicotine & Tobacco Research, 10*(5), 843-850.

McKee, S. A., O'Malley, S. S., Salovey, P., Krishnan-Sarin, S., & Mazure, C. M. (2005). Perceived risks and benefits of smoking cessation: Gender-specific predictors of motivation and treatment outcome. *Addictive Behaviors, 30*(3), 423-435.

McMaster, C., & Lee, C. (1991). Cognitive dissonance in tobacco smokers. *Addictive Behavior, 16*(5), 349-353.

McNally, R. J. (2002). Anxiety sensitivity and panic disorder: *Biological Psychiatry*, 52(12), 938-946.

McNally, R. J., & Lorenz, M. (1987). Anxiety sensitivity in agoraphobics. *Journal of Behavior Therapy and Experimental Psychiatry, 18*(1), 3-11.

McWilliams, L. A., Stewart, S. H., & MacPherson, P. S. (2000). Does the social concerns component of the Anxiety Sensitivity Index belong to the domain of anxiety sensitivity or the domain of negative evaluation sensitivity?. *Behaviour Research and Therapy, 38*(10), 985-992.

Murray, M., Swan, A.V., Bewley, B.R., Johnson, M.R. (1983). The development of smoking during adolescence--the MRC/Derbyshire Smoking Study. *International Journal of Epidemiology, 12*(2), 185–192.

Nasir, K., & Rehan, N. (2001). Epidemiology of cigarette smoking in Pakistan. *Addiction, 96*(12), 1847-1854.

Novak, A., Burgess, E. S., Clark, M., Zvolensky, M. J., & Brown, R. A. (2003). Anxiety sensitivity, self-reported motives for alcohol and nicotine use, and level of consumption. *Journal of Anxiety Disorders, 17*(2), 165-180.

Oakes, W., Chapman, S., Borland, R., Balmford, J., & Trotter, L. (2004). "Bulletproof skeptics in life's jungle": Which self-exempting beliefs about smoking most predict lack of progression towards quitting?. *Preventive Medicine, 39*(4), 776-782.

O'Connell, K. A., & Shiffman, S. (1988). Negative affect smoking and smoking relapse. *Journal of Substance Abuse, 1*(1), 25-33.

Olshavsky, R.W., & Summers, J.O. (1986). A study of the role of beliefs and intention in consistency restoration. *Journal of Consumer Research, 1*(2), 63-70.

Orcullo, D. J. C., & San, T. H. (2016). Understanding cognitive dissonance in smoking behaviour: A qualitative study.. *International Journal of Social Science and Humanity, 6*(6), 481-488.

Otto, M. W., Safren, S. A., & Pollack, M. H. (2004). Internal cue exposure and the treatment of substance use disorders: Lessons from the treatment of panic disorder. *Journal of Anxiety Disorders, 18*(1), 69-87.

Paryski, P. (2003). The negative Effect of smoking on bone, joints and healing: Centres for disease Control and Prevention. *Annals of internal medicine, 133*(9), 726-37.

Peterson, R, A., & Reiss, S. (1992). Anxiety sensitivity, anxiety frequency and the prediction of fearfulness. *Behaviour Research and Therapy, 24*(1), 1-8.

Peterson, R. A., & Reiss, S. (1996). The sensitivity theory of motivation: Implications for psychopathology. *Behaviour Research and Therapy, 34*(8), 621-632.

Piasecki, T. M., Niaura, R., Shadel, W. G., Abrams, D., Goldstein, M., Fiore, M. C., & Baker, T. (2000). Smoking withdrawal dynamics in unaided quitter. *Journal of Abnormal Psychology, 104*(4), 74-86.

Pierce, J. P., Choi, W. S., Gilpin, E. A., Farkas, A. J., & Merritt, R. K. (1996).Validation of susceptibility as a predictor of which adolescents take up smoking in the United States. *Health Psychology, 15*(5), 355-362.

Pomerleau, O., Adkins, D., & Pertschuk, M. (1978). Predictors of outcome and recidivism in smoking cessation treatment. *Addictive Behaviors, 3*(2), 65-70.

Prochaska, J. O., DiClemente, C. C., Velicer, W. F., Ginpil, S., & Norcross, J. C. (1985). Predicting change in smoking status for self-changers. *Addictive Behaviors, 10*(4), 395-406.

Rabia, M., Knäuper, B., & Miquelon, P. (2006). The external quest for optimal balance between maximizing pleasure and minimizing harm: The compensatory health beliefs model. *British Journal of Health Psychology, 11*(1), 139-153.

Rac-hman, S. (1977). The conditioning theory of fear acquisition: A critical examination. *Behaviour Research and Therapy, 15*(5), 375-387.

Reisi, M., Javadzade, S. H., Shahnazi, H., Sharifirad, G., Charkazi, A., & Moodi, M. (2014). Factors affecting cigarette smoking based on health-belief model structures in pre-university students in Isfahan, Iran. *Journal of Education and Health Promotion, 3*(1), 23-33.

Reiss, S., & Havercamp, S. (1996). The sensitivity theory of motivation: Implications for psychopathology. *Behaviour Research and Therapy, 34*(8), 621-632.

Reiss, S., & McNally, R. J. (1985). Expectancy model of fear. *Journal of Theoretical Issues in Behavior Therapy,* 64(3), 107-121.

Rockinger, M., Jondeau, E., 2003. Entropy densities with an application to autoregressive conditional skewness and kurtosis. *Journal of Econometrics, 106*(1), 119–142.

Roger, W., & Deckner, C. (1975). Effects of fear appeals and physiological arousal upon emotions, attitude and cigarette smoking. *Journal of Personality and Social Psychology, 32*(2), 222-230.

Rozi, S., & Akhtar, S. (2004). Smoking among high school adolescents in Karachi, Pakistan. *International Journal of Epidemiology, 33*(3), 613-614.

Schmidt, N. B., Zvolensky, M.J., & Maner, J.K. (2003). Anxiety sensitivity: Prospective prediction of panic attacks and Axis I pathology. *Journal of Psychiatric Research, 40*(3), 691-699.

Schmidt, N.B., Lerew, D.R., & Jackson, R. J. (1997). The role of anxiety sensitivity in the pathogenesis of panic: Prospect evaluation of spontaneous panic attacks during stress. *Journal of Abnormal Psychology, 106*(2), 355-364.

Schmidt, N.B., Zvolensky, M. J., & Maner, J.K. (2006). Anxiety Sensitivity: Prospective prediction of panic attacks and axis I psycpathology. *Journal of Psychiatric Research, 40*(9), 691-699.

Schmitt, E. M., Tsoh, J.Y., Dowling, G. A., & Hall, S. M. (2005). Older adults and adolescents mangers perceptions of smoking and smoking cessation. *Journal of Aging and Health, 17*(6), 717-733.

Shadel, W. G., & Mermelstein, R. J. (1993). Cigarette smoking under stress: The role of coping expectancies among smokers in a clinic-based smoking cessation program. *Health Psychology, 12*(2), 443-450.

Singh, N., Agarwal, A.K., Lata, A. and Kohli, R.P. (2011). Evaluation of 'adaptogenic' properties of Withania somnifera. *Indian Pharmacological Society, 17*(2), 223-234.

Sinner, P., Folsom, A. R., Harnack, L., Eberly, L. E., & Schmitz, K. H. (2006). The association of physical activity with lung cancer incidence in a cohort of older women: the Iowa Women's Health Study. *Cancer Epidemiology and Prevention Biomarkers, 15*(12), 2359-2363.

Stewart, S. H., Karp, J., Phil, R.O., & Peterson, R. A. (1997). Anxiety sensitivity and self- reported reasons for drug use. *Journal of Substance Abuse, 9*(1), 223-240.

Strecher.V.J, Becker.M.H, Kirscht.J.P, Eraker. S.A, & Graham-Tomasi R.P. (1985). Psychosocial aspects of changes in cigarette-smoking behaviour. *Patient Education and Counselling, 7*(3), 249–62.

Taylor, S. (1999). Anxiety sensitivity: Progress, prospects, and challenges. Anxiety sensitivity: *Theory, research, and treatment of the fear of anxiety*, *4*(1)339-353.

Taylor, S., Koch, W. J., Woody, S., & McLean, P. (1996). Anxiety sensitivity and depression: How are they related?. *Journal of Abnormal Psychology, 105*(3), 474-478.

Taylor, S., Zvolensky, M. J., Cox, B. J., Deacon, B., Heimberg, R. G., Ledley, D. R., ... & Coles, M. (2007). Robust dimensions of anxiety sensitivity: Development and initial validation of the Anxiety Sensitivity Index-3. *Psychological Assessment, 19*(2), 176-179.

Toll, B. A., Salovey, P., O'Malley, S. S., Mazure, C. M., Latimer, A., & McKee, S. A. (2008). Message framing for smoking cessation: The interaction of risk perceptions and gender. *Nicotine & Tobacco Research, 10*(1), 195-200.

Trope, Y., & Fishbach, A. (2000). Counteractive self-control in overcoming temptation. *Journal of Personality and Social Psychology, 79*(4), 493.

Tyas, S. L., & Pederson, L. L. (1998). Psychological factors related to adolescents smoking: A critical review of literature. *Tobacco Control, 7*(4), 409-420.

World Health Organization. (2002). *The world health report 2002: Reducing risks, promoting healthy life*. World Health Organization.

Warren, C. W., Jones, N. R., Peruga, A., Chauvin, J., Baptiste, J. P., de Silva Costa, V., ... & Asma, S. (2008). Global youth tobacco surveillance, 2000-2007. Morbidity and mortality weekly report. Surveillance summaries (Washington, DC: 2002), 57(1), 1-28.

Wartburton, D.M. (1992). Smoking within reason. *Journal of Smoking Related Disorder, 3*(9), 55-59.

Westermann, R. (1989). Festinger's theory of cognitive dissonance. In *Psychological Theories from a Structuralist point of view* (pp. 33-62). Springer, Berlin, Heidelberg.

Wong, M., Krajisnik, A., Truong, L., Lisha, N. E., Trujillo, M., Greenberg, J. B., ... & Leventhal, A. M. (2012). Anxiety sensitivity as a predictor of acute subjective effects of smoking. *Nicotine & Tobacco Research, 15*(6), 1084-1090.

Zinbarg, R. E., Barlow, D. H., & Brown, T. A. (1997). Hierarchical structure and general factor saturation of the Anxiety Sensitivity Index: Evidence and implications. *Psychological Assessment, 9*(3), 277.

Zinbarg, R. E., Brown, T. A., Barlow, D. H., & Rapee, R, M. (2001). Anxiety sensitivity, panic attack, depressed mood: A reanalysis teasing apart the contribution of the two levels in the hierarchical structure of Anxiety Sensitivity. *Journal of Abnormal Psychology, 110*(3), 372-377.

Zvolensky, M. J., & Bernstein, A. (2007). Cigarette smoking and panic psychopathology. *Current Directions in Psychological Science, 14*(6), 301-305.

Zvolensky, M. J., Baker, K.M. ,Feldner, E.W., Bonn-Miller, M.O., Feldner, M.T., & Brown, R. A.(2004) Association with intensity of retrospective –rated smoking related withdrawal symptoms and motivation to quit smoking. *Cognitive Behavior Therapy, 33*(2), 114-125.

Zvolensky, M. J., Bonn-Miller, M. O., Feldner, M. T., Leen-Feldner, E., McLeish, A. C., & Gregor, K. (2006). Anxiety sensitivity: Concurrent associations with negative affect smoking motives and abstinence self-confidence among young adult smokers. *Addictive Behaviours, 31*(3), 429-439.

Zvolensky, M. J., Farris, S. G., Leventhal, A. M., & Schmidt, N. B. (2014). Anxiety sensitivity mediates relations between emotional disorders and smoking. *Psychology of Addictive Behaviours, 28*(3), 912-916.

Zvolensky, M. J., Lejuez, C.W., Kahler, C.W., & Brown, R. A. (2004). Non-clinical panic attack history and smoking cessation. *Addictive Behaviours, 29*(9), 825-830.

Zvolensky, M. J., Vujanovic, A. A., Miller, M. O. B., Bernstein, A., Yartz, A. R., Gregor, K. L., ... & Gibson, L. E. (2007). Incremental validity of anxiety sensitivity in terms of motivation to quit, reasons for quitting, and barriers to quitting among community-recruited daily smokers. *Nicotine & Tobacco Research, 9*(9), 965-975.

Zvolensky, M.J., Bernstein, A., Jurado, S. C., Colotla, V. A., Marshall, E.C., & Feldner, M. T. (2007). Anxiety Sensitivity and early relapse to smoking: A testing among Mexician daily, low level smokers. *Nicotine & Tobacco and Research, 9*(5), 483-491

Annexure A

Informed consent

I am student of MSc at National Institute of Psychology, Quaid –i-Azam University, Islamabad, National institute of psychology is center of excellence where research projects are related to various aspects of life are being conducted. Current research is undertaken for the partial fulfilment of my Master's degree. I invite you to be part of this study that is aimed to determine the role of Disengagement belief, smoking motives, Anxiety sensitivity and barrier to cessation

In this regard your valuable opinion is required, it is assured that your identity will be kept confidential. However your participation in the present study is completely voluntary. You have to right to quit at any stage of filling the questionnaire.

I hereby, assure you that information will only be used for this particular research. If you are willing to participate. Please indicate with your signature on the space below that you understand your rights and agree to participate in the study

I would be obliged to you for your kind support in my research project

Signature

Regards

Iqra Banaras khan

National institute of Psychology

Center of excellence

Quaid –I-Azam University Islamaba

Annexure B

DEMOGRAPHIC INFORMATION SHEET

Gender:
Male ☐ Female ☐
Age: _____ **Birth Order:** _____
Education:
Intermediate ☐ Graduate ☐ Postgraduate ☐
Marital Status:
Married ☐ Unmarried ☐
Father Occupation: _____ **Mother Occupation:** _____
Family System:
Nuclear ☐ Joint ☐
Family Income:

1.	**How old were you when you smoked cigarette for the first time?** _____Years
2.	**Who smoke cigarette in your parents?** Mother_____ Father_____ None of them_____
3.	**How many of your siblings smoke cigarette?** _____
4.	**Do you take any other drug/drugs along with cigarette?** Yes_____ No_____ If YES then specify_____
5.	**Have you ever been pressurized by your friends to smoke cigarette?** Yes_____ No_____
6.	**Since how long have you been smoking?** _____ Years
7.	**How many of your closest friends smoke cigarette?** _____
8.	**Do you smoke more cigarettes when you are with your friends?** Yes_____ No_____
9.	**Do you smoke more cigarettes when you are alone?** Yes_____ No_____
10.	**Which brand of cigarette you smoke?** _____
11.	**How soon you smoke cigarette after you wake-up?** _____ Minutes
12.	**Do you find it difficult to refrain from smoking where it is forbidden?** Yes____ No_____
13.	**How many cigarettes you smoke per day?** _____
14.	**Do you smoke cigarette even if you are ill and you are on bed most of the day?** Yes____ No_____
15.	**Have you ever tried to quit smoking?** Yes____ No_____
16.	**Do you believe that smoking cigarette is injurious?** Yes____ No_____
17.	**Why do you continue smoking cigarette despite knowing it is injurious fo health?**

Annexure C

Disengagement Beliefs Scale

You are requested to read each statement carefully and answer it as it represents you. Please note that there are no right and wrong answers. Against each statement, provide your answer by choosing from the following scale:

Completely disagree, 1 **Disagree 2** **Neutral 3** **Agree 4** **Completely agree 5**

S no.	Items	Completely disagree	disagree	Neutral	Agree	Completely agree
1	I would rather live a short and good life than a long and boring life.					
2	Medical scientists will find some cure in the future.					
3	I know heavy smokers who lived long.					
4	You are exposed to many risks in your life.					
5	Not all smokers get ill because of smoking.					
6	If smoking was really that bad, it would be banned.					
7	You have to die from something					
8	Everything is unhealthy these days.					
9	Health is not the only thing in life.					
10	For the rest I live a healthy life.					
11	Air pollution is just as unhealthy as smoking.					
12	Everybody does something unhealthy					

Annexure D

Anxiety Sensitivity Scale

You are requested to read each statement carefully and answer it as it represents you. Please note that there are no right and wrong answer .Against each statement, provide your answer by choosing from the following scale; for each item please answer using the following scale.

		Very little	A little	Some	Much	Very much
1	It is important for me not to appear nervous.	0	1	2	3	4
2	When I cannot keep my mind on a task, I Worry that I might be going crazy.	0	1	2	3	4
3	It scares me when my heart beats rapidly.	0	1	2	3	4
4	When my stomach is upset, might be Seriously ill.	0	1	2	3	4
5	It scares me when I am unable to keep my mind on a task.	0	1	2	3	4
6	When I tremble in the presence of others, I fear what people might think of me.	0	1	2	3	4
7	When my chest feels tight, I get scared that I won't be able to breathe properly.	0	1	2	3	4
8	When I feel pain in my chest, I worry that I'm Going to have a heart attack.	0	1	2	3	4
9	I worry that other people will notice my Anxiety.	0	1	2	3	4
10	When I feel "spacey" or spaced out I worry that I may be mentally ill.	0	1	2	3	4
11	It scares me when I blush in front of people.	0	1	2	3	4
12	When I notice my heart skipping a beat, I worry that there is something seriously wrong with me.	0	1	2	3	4
13	When I begin to sweat in a social situation, I fear people will think negatively of me.	0	1	2	3	4
14	When my thoughts seem to speed up, I worry that I might be going crazy.	0	1	2	3	4
15	When my throat feels tight, I worry that I could choke to death.	0	1	2	3	4
16	When I have trouble thinking clearly, I worry that there is something wrong with me.	0	1	2	3	4
17	I think it would be horrible for me to faint in public.	0	1	2	3	4
18	When my mind goes blank, I worry there Something terribly wrong with me.	0	1	2	3	4

Annexure E

Barrier to cessation

You are requested to read each statement carefully and answer it as it represents you. Please note that there are no right and wrong answer .Against each statement, provide your answer by choosing from the following scale; for each item please answer using the following scale

S# no	Statements	Not a Barrier (1)	Seldom Barrier (2)	Some of the time barrier(3)	Large barrie (4)
1.	Withdrawal symptoms (e.g. sweating ,nausea and constipation)				
2.	Miss the companionship of cigarettes				
3.	Thinking about never being able to smoke again				
4.	Thinking about cigarettes all the time				
5.	Not knowing for how long it will be very hard not to smoke				
6.	Being addicted to the cigarettes				
7.	Fear of failing to quit				
8.	Feeling lost without cigarettes				
9.	No encouragement or help from friends				
10.	Family members or significant others encouraging you to smoke				
11.	No encouragement or help from family members or significant others				
12.	Friends encouraging you to smoke				
13.	No encouragement at work for not smoking				
14.	Lack of understanding from family and significant others about what it is like to quit smoking				
15.	Seeing things or people which remind you of smoking				
16.	Having strong feelings such as anger or feeling upset when you are by yourself				
17.	Feeling less in your control of your moods				
18.	Having strong feelings such as anger, or feeling upset when you are with other people				
19.	Fear of weight gain				

Gmail steven sss@ctri.wisc.edu

Compose

Inbox 805

Starred

Snoozed

Sent

Drafts 27

More

iqra

Make a call

Also try our mobile apps for Android and iOS

Date: Wed, May 23, 2018 at 1:57 PM
To: STEVENS S SMITH <sss@ctri.wisc.edu>

Sir, she said that she is not the publisher of this scale,the original author was died.Its a re published.Talsma said that she is not the actual publisher she told me to tell you to share Thank you

---

From: **STEVENS S SMITH** <sss@ctri.wisc.edu>
Date: Wed, May 23, 2018 at 2:04 PM
To: iqra banaras <pareezakhan577@gmail.com>

The 1995 Barriers to Cessation Scale article is attached. The article notes that the resea of the U.S.-government funded National Institutes of Health (NIH). Under most circum free to use the scale. If you are concerned about permission to use the scale, it seems you permission, but I don't think her permission is required.

From: iqra banaras [mailto:pareezakhan577@gmail.com]
Sent: Wednesday, May 23, 2018 3:38 PM

From: **iqra banaras** <pareezakhan577@gmail.com>

OK No thanks