

Self efficacy, Locus of Control and Perceived Stress as Factors affecting smoking behaviour and cessation.

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ABSTRACT

The study was a questionnaire investigating the relationship between Self efficacy, Locus of Control, Perceived Stress and Nicotine Dependence on smoking behaviour and cessation. A total of (N=106) participants took part. The inclusion criteria stipulated participants to be aged between 18 and 65 and to be employed at [REDACTED]. Assessments included, Fagerstrom Test for Nicotine Dependence, Perceived Stress Scale, Generalised Self Efficacy, Multidemsional Health Locus of Control Scale and general demographic questions. Results showed no significant difference between smokers and ex-smokers Perceived Stress levels or Self Efficacy levels. There was a low significant difference between smokers and ex-smokers nicotine dependence levels. There was a significant positive correlation between increased age and intention to quit smoking.

Introduction:

There has been a lot of research carried out in the area of smoking and smoking cessation. The impetus for this research has been motivated by an effort to help curb the harmful effects of smoking on an individual's health and wellbeing Doll & Hill, (1954), Peto, (1994). There have been many theories proposed over the years to explain addictive behaviour including the "moral perspective", the first disease concept, the second disease concept and then in more recent years, the theory of addiction as based on Social Learning Theory. From the moral perspective which originated in the 17th century, it is believed that what forms an addiction is excess consumption and weak moral fibre. In the disease concept perspective, most of the focus is on the addictive nature of the drug, or on the addictive nature of the person whether that be environment or genetics. This leads researchers to study these qualities in the person, and the clinician to remove personal blame and treat the addiction as a disease Shields, (1962). In Social Learning Theory, the focus is on the behaviour rather than the substance abused or the person. Addiction is both described and treated in the same manner as all other behaviours. The addictive behaviour is manipulated through conditioning (operant and classical). It takes into account cognitive issues such as self image, problem solving and coping mechanisms.

This study will attempt to ascertain which predictor variable obtained from the battery of psychological tests administered for this study, is the most likely to be an indicator of either a desire to quit smoking or smoking cessation. Research on smoking as an addictive behaviour / drug dependency has tended up to this point to be isolated to either the disease model or the social learning theory model, although there is an implicit crossover between the two, West, (2006). However there is a lack of literature addressing the relationship between drug

dependency and cognitive explanations of addictive behaviour. This study will try to elucidate on this connection, if there is one. It sets out to highlight aspects of an individual's personality such as ability to cope with stress, self efficacy and locus of control that can be manipulated through behavioural treatments, which hopefully will be helpful to those smokers who are struggling to quit.

A study was carried out in Ataturk University to analyse both the prevalence of smoking behaviour and also the degree of nicotine dependence in hospital healthcare workers. (Saglam, L, et al 2010). The study was questionnaire based and found that 36.9% of hospital workers were smokers, a larger percentage were male and ancillary staff had the highest prevalence of smokers 95% of the hospital staff were supportive of a law requiring the hospital to be smoke free.

The current study was carried out in Ireland where there is already a smoking ban in place. Of interest in this study is that a high percentage of participants are educated to a very high standard and yet still smoke which does little to explain a popularly held belief that most smokers are not well educated and come from a low socio-economic background. It is on foot of this study that the current investigation is based.

Balmford, J & Borland, R (2008) studied what does it mean to want to quit? They found through telephone interviews that many smokers believed it was necessary to want to quit in order to be successful, only a quarter believed that they could quit at any time and one third believed they were too addicted to quit.

Strongly held beliefs about smoking behaviour and cessation interventions are difficult to modify. Cessation programmes and supports are needed to help solve in this issue. The current study aims to find methods of changing the perspectives held by smokers in relation to quitting behaviour by identifying a set of variables that elucidate what values / beliefs or personal attributes allow for a person to remain abstinent from cigarettes / tobacco?

1.1 Self - Efficacy and its role in quitting behaviour.

Gwaltney, Metrik, Kahler, Shiffman, (2009) conducted a meta-analysis of 54 studies that prospectively examined the relationship between self efficacy and its ability as a predictor variable, of the outcome of an attempt to quit smoking. They controlled for smoking status at the time of the self efficacy assessment. They found that this substantially reduced the relationship between self efficacy and future smoking. The conclusion is that perhaps too much emphasis is placed on self efficacy as a predictor variable of outcome of attempts to quit smoking.

However Rollins, & Terrion, (2010) undertook a qualitative analysis on a group of cardiovascular patients who were attempting to quit smoking in an inpatient hospital programme. They investigated the self efficacy of the patients and found that the quality of the relationship between the patient and the intervention specialist can assist in boosting an individual's self efficacy to quit smoking.

A further study by Schnoll, et al (2011) aimed to examine changes in nicotine withdrawal, craving, self efficacy to quit smoking, and perceived control over withdrawal symptoms as predictors of smoking cessation following behavioural counselling and nicotine replacement

therapy. They found that perceived control over withdrawal symptoms and increased self efficacy are potential psychological predictors of abstinence following treatment for nicotine dependence. The current study will investigate what if any affect cessation aides used by the participants in the two test groups will have on successful quit attempts.

Li, Feng, Jiang, et al. (2011) undertook face to face interviews with smokers in 2006 and followed them up 16 months later. The study had n= 4732 initially, subsequently dropping to 3863 on review in 2007. They found that having higher self efficacy, previous quit attempts, more immediate intentions to quit, longer time to first cigarette upon waking, negative opinion of smoking and smoking restrictions at home were good predictor variables of quit attempts. Nicotine dependence and self efficacy seem to be more important for attempts to stay quit, rather than staying quit in a Chinese population and quitting intentions are related to both attempts and staying quit.

Lazuras , Chatzipolychroni , Rodafinos , Eiser, (2012) carried out a questionnaire based study. They found that attitudes towards quitting, self efficacy and anticipated regret significantly predicted cessation intentions, over and above past quit attempts and tobacco dependence.

The current study aims to demonstrate that in fact self efficacy will be higher in ex-smokers than in current smokers. This is postulated, mainly due to the fact that they must have confidence in their ability to remain abstinent. Through a feedback loop, their self efficacy is boosted to remain abstinent, over and above an individual who was unsuccessful and had failed at attempts to quit in the past which would lower self efficacy and self belief in their ability to quit.

1.2 Locus of control

Rosenbaum, & Argon, (1979) investigated the relationship between self-control behaviour and individual differences. Participants who were successful in self-initiated attempts to quit smoking showed a more internal locus of control than those who either a) were unsuccessful or b) never attempted a self-initiated attempt to quit. They concluded that locus of control is an important factor in developing programs to facilitate self-control based quitting attempts hence the current studies investigation into the internal/external locus of control in relation to ex and current smokers. This study also posits a question as to the possible benefits of cessation programmes tailored specifically to the individual's locus of control, as opposed to nicotine dependency or personality traits.

Eiser et al, (1989) studied by survey method 10,579 children aged 11-16 years and found that in particular smokers, compared with non-smokers showed less belief in the importance of "powerful others" or "personal control" but more belief in the importance of "chance" as an influence on health outcomes. This demonstrates agreement with the hypothesis of this study that locus of control will be external in smokers and internal in ex-smokers. Due to the age of the children in this study the findings would only be applicable to the younger demographic in the current study. Of course it also points to the notion that smokers deny responsibility for their habit and reflect the responsibility elsewhere to "chance" which further removes them from responsibility for their own health outcomes.

Burgess & Hamblett (1994) conducted a study relating to locus of control in smokers, ex-smoker and non-smokers. They found that there was no significant difference between the 3

groups tested as a whole, however when they divided the participants further into groups based on profession (nurse / not nurse) they found a significant difference between smokers and non-smokers.

1.3 Perceived stress differences between smokers and ex-smokers.

According to Hajek, Taylor, & McRobbie, (2010) many smokers believe that smoking helps them to cope with stress, and that stopping smoking would deprive them of an effective stress management tool. To investigate this they undertook a longitudinal project pre and post cessation. They used cardiac patients as participants. They found that in highly dependent smokers who report that smoking helps them cope with stress, smoking cessation is associated with lowering of stress. Whatever immediate effects smoking may have on perceived stress, overall it may generate or aggravate negative emotional states. In conclusion the results provide reassurance to smokers worried that quitting may deprive them of an effective coping strategy.

Manning et al (2005) studied the relationship between stress and the likelihood of quitting in 200 urban African American smokers enrolled in the placebo arm of a controlled randomised trial. The researchers assessed the efficacy of bupropion for smoking cessation. Higher recorded perceived stress levels were associated with not being abstinent. The null was also found to be true, in that lower perceived stress was associated with remaining abstinent. Provision of stress management techniques was suggested to help increase abstinence rates.

The above studies led the researcher of the current study to believe that the positive reinforcement of having successfully stopped smoking decreases perceived stress levels and

also alleviates some of the dependence placed on cigarettes as a tool for coping with stress by increasing self efficacy.

1.4 Self efficacy and desire to quit smoking.

One of the hypotheses of the current research is that self efficacy will be higher in those smokers who are seriously considering quitting. The research in the area shows in general that increased self efficacy in an area will help with changing or gaining more control over a certain behaviour.

Cho et al (2009), found that on a personal level perceived successful-ness of the last quit trial positively predicted self efficacy. Social communication with friends was positively associated with self efficacy. The conclusion of the study is that anti smoking communication going forward should promote positive perceptions about previous quit attempts and segment the audience in terms of their self construal to effectively enhance self efficacy.

Similarly Lim MK et al, (2012) examined the effectiveness of a telephone helpline aimed at teenagers who wished to quit smoking. They found that relapse was more likely in boys with reported low self efficacy and that by reinforcing self efficacy and enhancing the cooperative behaviours of parents or other family members, quit supporters could help adolescent smokers maintain cessation. The findings of this research would only be relevant to the younger age groups in the current study.

Research carried out recently by Van Zundert et al, (2011) has shown that daily changes in self efficacy predict lapses and relapses into smoking after quitting among adolescent daily smokers. The null of this hypothesis has also been investigated by Girma E et al, (2010). In this study the researchers set out to ascertain what factors predicted a person's intention to quit smoking. They issued a structured questionnaire to 384 participants. 57% of the participants had an intention to quit. They concluded that participants with no intention of quitting scored high on nicotine dependence and low on self efficacy. The thought behind the current study's premise is that in order to seriously consider quitting an individual needs to assess the current situation in relation to their addiction habit and how they are going to overcome it. In order to think through this stage and to progress from it, their self efficacy to quit must be higher than in the past before they began cognitive changes to decide to quit.

1.5 Gender Differences and differences in smoking behaviour and intention to quit.

Thorner (2007), attempted to discover if in fact there were any gender differences in cessation treatment seekers. They found having measured the time trajectory between initial smoke intake, daily smoking and seeking help to quit that the trajectory is shorter for women than for men.

Shiffman & Rathbun (2011) studied the immediate emotional and situational antecedents of ad-libitum smoking and found that contrary to one of their hypothesis men's and not women's smoking was influenced by negative affect.

Auguston, Barzani, Rutten & Marcus (2008) investigated gender differences in hardcore smokers. They defined hardcore smokers as someone with a 15 + cigarette a day habit. They found that male hardcore smokers were more likely to come in contact with restrictions on

their smoking behaviour both in the workplace and at home. They also found that female hardcore smokers were less dependent on nicotine than male hardcore smokers, but more dependent than other female smokers (not categorised as hardcore smokers).

This study raises some interesting questions regarding gender differences as it disagrees with Scharf & Shiffman (2004) and Torchalla, et al (2011) in that it finds that women are less dependent than men on nicotine. Perhaps this would have to do with the situational aspects of their study in that the men encountered more restrictions on their smoking behaviour than the women did and perhaps this engendered an increased feeling of dependence in the male participants. The current study aims to at least partially avoid this pitfall due to the fact that both male and female participants will be subjected to the same restrictions on smoking behaviour at least in the workplace.

Scharf & Shiffman (2004) conducted a meta-analysis of clinical trials of Bupropion SR. The purpose of the study was to discover if Bupropion SR was an effective smoking cessation aide. They found that women appeared to have more difficulty and less success in quitting than men, both on treatment, off treatment and while using a placebo. They have not discovered why this is, but in concluding recommended more gender specific studies to elucidate on this inconsistency.

Torchalla, et al (2011) completed a literature review on the different outcomes between male and female smokers. They also found that women achieve lower abstinence rates than their male counterparts while attempting to quit using nicotine replacement therapy as well as without pharmacotherapy. They proposed several explanations for this, including that women have specific genetic variants that affect pharmacokinetics and pharmacodynamics of the

medication, hormonal influences increase nicotine metabolism and withdrawal symptoms, women are more vulnerable to depression and negative mood than men, weight concerns are of greater barrier for women than men. They concluded that more gender specific research is needed to further explain this disparity and to develop gender specific smoking cessation programs.

The current study will aim to analyse any gender specific differences in order to ascertain any further factors which may affect the cessation process not currently identified in the research in this area.

1.6 Age and desire to quit smoking.

Lipkus, (2005) investigated the relationship between attitudinal ambivalence about smoking and desire to quit in teen smokers. They found that the majority of smokers have an ambivalent attitude to their smoking habit. This is when ambivalence is defined as conflicting thoughts and feelings about their smoking. They found that in both cross-sectional and prospective analyses smokers who felt increasingly ambivalent reported a stronger desire to quit. This would suggest that ambivalence would be a useful aide if it were able to be experimentally induced to increase the desire to quit in a cessation candidate.

A lot of the research in the area of age (older/younger) being a predictor of cessation is conflicting. Ismailov & Leatherdale (2009) in Canada reviewed data collected from the 2006 Canadian Tobacco Use Monitoring Survey to more correctly identify factors associated with long-term abstinence from smoking. They found that being older and having children younger than 15 living in the household were significant predictors of long-term abstinence.

In Korea however, a study by Myung SK, (2012) contradicts the findings in the Canadian study. Factors they found to be good indicators of intention to quit smoking were younger participants who smoked less and had higher income, who were more educated, had high religious beliefs, had less alcohol consumption, high self efficacy beliefs in relation to quitting, believed that smoking damaged their health and that smoking was forbidden at home. From an age specific point of view these finding are entirely contradictory.

1.7 Intention to quit smoking in smoking participants

Ajzen and Fishbein, (1980) formulated the theory of reasoned action (TRA). This research was initiated by investigating attitude research from the Expectancy Value Models. Ajzen and Fishbein formulated the TRA after trying to analyse the difference between attitude and behaviour. The resultant theory was related to voluntary behaviour. Subsequent to this theory behaviour appeared not to be 100% voluntary and under control. This resulted in the addition of perceived behavioural control. Following this addition the theory was called the Theory of Planned Behaviour. This theory predicts deliberate behaviour, because behaviour can be deliberative and planned. The current study aims to incorporate aspects of the Theory of Planned Behaviour in order to analyse participant's intention to quit smoking.

Macy, Middlestadt, Seo, Kolbe & Jay, (2012) found that smoke-free air policies have been shown to reduce smoking behaviour. They discovered that one mechanism behind this is that by placing a smoking ban in a city the normative perceptions of the inhabitants change, furthermore their attitude to smoking changes. Smoking becomes something that is seen as not being the norm, which elicits a change in attitude and people plan to not smoke in these

areas. The relevance to the current study is that perhaps more regulation and restrictions on smoking would increase intention to quit.

Hoie, Moan, & Rise, (2010) found that there was a high correlation between smokers who had attempted to quit frequently in the past and having a higher intention to quit than those who had not engaged in a previous quit attempt. They explain this in two ways, one being that the participants who had had many previous attempts at quitting felt that over a given course of time they would intend to quit again based on past experience of their smoking/quitting behaviour in a comparable time period. The other explanation is that the predictive power of past behaviour has increased the participant's confidence in their ability to quit and therefore they are more likely to try again.

Method:***Materials:***

The study used five existing psychological measures and collected demographic information. The demographic information collected at the start of the questionnaire covered gender, age, whether participants had children under 15 living with them, which, if any smoking aides they had used in the past, and whether they were successful with them. Finally, their smoking status at the time of filling out the questionnaire was covered.

Two questions on an ascending 7 point scale ranging from “unlikely” to “likely” were administered measuring intent to stop smoking and willingness to try and stop smoking over a 6 week period. Two questions on a ascending 7 point scale ranging from “false” to “true” were administered to measure both the construct “decided” and “determined” to stop smoking over the coming 6 weeks. These questions were administered to obtain an idea of the participant’s desire to quit smoking at the time of the questionnaire and were only filled in by those participants who were categorised as smokers.

The Multidimensional Health Locus of Control Scale (MHLC) scale (Form B used in the study). It was developed by Wallston, Wallston & DeVillis (1978) and is an 18 item questionnaire with a 6 point Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree). Scores are summed under 3 internal subscales, (Internal, Chance and Powerful Others) with 6 items per subscale. Scores range for 6-36. The MHLC scale has a Cronbach alpha in the 0.60 – 0.75 range and test-retest stability coefficients ranging from 0.60 – 0.70.

The General Self Efficacy Scale (GSE) was created by Schwarzer & Jerusalem. The German version was developed in 1979 and later revised and adapted into 26 languages by various co-authors, Schwarzer, R., & Jerusalem, M. (1995). The scale was created to assess a general sense of perceived self efficacy with the aim in mind to predict coping with daily hassles as well as adaptation after experiencing all kinds of stressful life events. It is a 10 item questionnaire scored with a 4 point Likert scale ranging from 1 (not true at all) to 4 (exactly true). It has a Cronbach alpha range of 0.76 – 0.90. It is a uni-dimensional scale.

The Fagerstrom Test for Nicotine Dependence (FTND) was developed by Heatherton, Kozlowski, Frecker & Fagerstrom (1991) following a revision of the Fagerstrom Tolerance Questionnaire, Fagerstrom (1978). It is a 6 item scale assessing an individual dependence on nicotine. Each question is given a score ranging from 0 – 3, a total score of 5 or more indicates a high dependence and a score of 4 or less indicates a low to moderate dependence on nicotine. In the article “A Psychometric Evaluation of the Fagerstrom test for Nicotine Dependence in PTSD smokers”, Buckley, Mozley, Holohan, Walsh, Beckham & Kassel (2005) found that the FTND had a test-retest reliability coefficient of 0.82 (df = 74; $p < 0.01$).

The Perceived Stress Scale (PSS) was developed by Cohen, Kamarck & Mermelstein (1983) in their paper on “A global measure of perceived stress”. It is a 10 item, 5 point Likert scale questionnaire which is a measure of perceived stress in daily life. It is scored by reversing the score of items 4, 5, 7 and 8 and summing across all questions. They reported a coefficient alpha reliability result of between 0.84 and 0.86 in the samples tested in the 1983 study. According to its author it has evidence for validity in a failure to quit smoking sample.

The questionnaires were administered along with a cover letter explaining the purpose of the study and a consent sheet with a unique identification number. A copy of the questionnaire and the cover letter are attached in the appendix.

Participants:

106 participants took part in this study of them 50 were smokers and 56 ex-smokers. 68 were female and 38 were male. All participants were in employment in ██████████ Hospital ██████████ ██████████. Inclusion criteria specified that they were employed at the hospital with age ranging from 18 – 65 and that they were currently smokers or had been in the past. No incentives were offered.

Design:

This study was a correlational questionnaire based design. The criterion variable is smoking behaviour of an individual. The predictor variables were: Gender, age, self efficacy, locus of control, perceived stress, nicotine dependency, and desire to quit smoking.

Procedure:

The researcher attained permission from the participants by way of a consent form. The participants were informed of the purpose of the research through a cover sheet attached to the study (Appendix A). The instructions for each questionnaire were provided to the participants and clarified by the researcher if the participants had any difficulty with filling out the questionnaire. The participants who were still smoking were instructed to fill out the questions on “intention to quit smoking” and the participants who had successfully quit were requested not to. With this exception all participants responded to the same questions. The participants were given as much time as necessary to fill out the questionnaire and were assured confidentiality by the researcher by being asked not to sign their name on the consent

form, but rather place an (x) in the provided place and to remember their identification number which could later be used if they wished to pull out of the study or to request individual comparative statistics should they wish at the completion of the study.

Results:

The raw data was analysed using descriptive and inferential statistics based on the hypotheses of the study.

Locus of control will be internal in ex-smokers and external in smokers.

An independent samples t-test showed a statistically reliable difference between the two groups (smoker/ex-smoker) for levels of Internal Locus of Control.

Smoker (m=23.48, s = 5.64)

Ex-smoker (m=26.71, s= 5.47)

T (104) = -2.996, p = 0.003 a = 0.05)

Older smokers will have a greater desire to quit than younger smokers.

Independent samples t test were carried out on the four questions relating to desire to quit smoking using age grouped by the mean of 39 (mean age group). Statistically significant results were found across 3 of the 4 questions with “try” , “decided” and “determined to variables showing a significant difference in mean across the age groups tested.

You intend to stop smoking over the next 6 weeks.

39 and over (m=3, s = 2.36)

39 and under (m= 1.64, s = 1.47)

t(50) = 2.387, p = 0.021

You have decided to stop smoking over the next 6 weeks.

39 and over (m=2.36, s=2.28)

39 and under (m=1.18, s=0.39)

t(50) =2.403, p=0.020

You are determined to stop smoking over the next 6 weeks.

39 and over (m=2.47, s = 2.21)

39 and under (m=1.18, s = 0.39)

t(50) = 2.690, p = 0.010

Self efficacy will be higher in those smokers who are seriously considering quitting.

A Pearson's correlation was carried out and it shows a significant positive correlation at the 0.05 level between the variables "you have decided to stop smoking over the next 6 weeks and "Generalised Self Efficacy Scores". There was a moderate correlation between the two variables. [r= 0.299, n = 52, p = 0.031]

Self Efficacy will be higher in ex-smokers than in smokers

Descriptive statistics showed that the mean response for smokers was 30.58 and for ex-smokers was 30.93. This was not thought to be significant but a t-test was carried out and showed no significant difference between the two smokers and non smokers levels of self efficacy

Smoker (M=50, s = 3.70) , Ex-smoker (m=30.93, s= 3.03)

T (104) = -0.533, p = 0.595 (two tailed) a = 0.05)

Smokers will have higher levels of perceived stress than ex-smokers.

An independent samples t-test shows no statistically reliable difference between perceived stress levels in smokers as compared with ex-smokers. The hypothesis is rejected. This is illustrated in table 1 below.

Smoker (m=15.06, s = 6.50)

Ex-smokers (m= 14.75, s = 5.78)

t(104) = 0.260, p = 0.795

Table 1

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Perceived Stress	Equal variances assumed	.840	.361	.260	104	.795	.31	1.19	-2.05	2.67
	Equal variances not assumed			.258	98.738	.797	.31	1.20	-2.07	2.69

Table 1 above shows that there is no significant difference between the perceived stress of smokers when compared with ex-smokers.

Children under 15 at home.

A cross tabulation of the participants showed that of the 30 respondents who had children at home under 15 years of age, 66% of them were ex-smokers with 33% still being smokers. In the group that did not have children at home under 15 years of age of the 76 respondents, 52.6% of them were smokers and 47.3% of them were ex-smokers. This shows that significantly more participants successfully quit smoking when there was a child under 15 living at home.

Quit aides

A crosstabulation was carried out for quit aides and gender having split the file between smokers and non-smokers. It was found that in the smoking participants only 10 of the 50 participants had tried to quit by going cold turkey, however in the ex-smokers category 34 of the 56 participants managed to quit successfully by going cold turkey.

This is displayed in figure (a) and figure (b) below. Figure (a) shows a percentage pie chart of the quit aides used by ex-smokers and figure (b) shows be percentage pie chart the frequency of quit aides used by current smokers to try to quit. There is a very marked difference in the responses of smokers and ex-smokers.

fig.a

% of ex-smokers and quit aides used

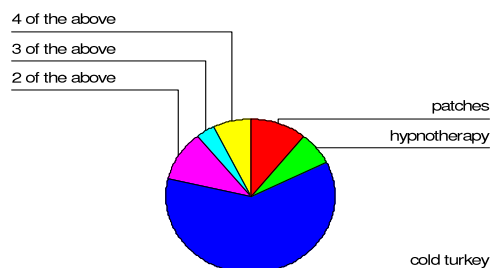
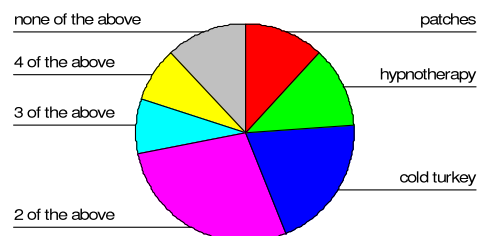


fig.b

% of smokers and quit aides used



Gender differences

Ex-smokers were selected and a t test performed on male and female levels of nicotine dependence a significant difference was found between male and female participants. Women had a lower mean FTND score than men.

$T(42) = 0.021$ ($m=2.00$, $s= 2.19$) (female)

$T(42) = 0.021$ ($m=3.89$, $s = 3.05$) (male) at 0.05.

Female ex-smoker nicotine dependence ($m=2.00$, $s= 2.19$)

Male ex-smoker nicotine dependence ($m=3.89$, $s = 3.05$)

$T(42) = -2.395$, $p=0.021$ $\alpha=0.05$

People with a low intention to quit have high nicotine dependence and low self efficacy

This premise was investigated using descriptive statistics and it was discovered that conversely in the current sample the participants in the current smoker category who reported that they would have no intention to quit had a relatively average level of self efficacy (31.00) where ($m = 30.76$) and a low level of nicotine dependency (2.48) where 5 and above is considered a high level of dependency.

Percentages of participants who intend to stop smoking over the next 6 weeks are shown in Table 2

Table 2

You intend to stop smoking over the next 6 weeks					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	unlikely	30	28.3	57.7	57.7
	mostly unlikely	6	5.7	11.5	69.2
	little unlikely	5	4.7	9.6	78.8
	little likely	1	.9	1.9	80.8
	mostly likely	6	5.7	11.5	92.3
	likely	4	3.8	7.7	100.0
	Total		52	49.1	100.0
Missing	System	54	50.9		
Total		106	100.0		

Table 2 above shows the likelihood of current smoker's intention to quit smoking over the coming 6 weeks. The highest percentage is "unlikely" which is 57% of participants who are still smoking. Only 7.7 % of participants were likely to stop.

Table 3

		Correlations					
		Perceived Stress	internal locus	chance locus	important others	Generalised Self efficacy	Fagerstrom Nicotine Dependence
Perceived Stress	Pearson Correlation	1.000	-.168	-.029	-.316(**)	-.072	.050
	Sig. (2-tailed)	.	.085	.766	.001	.463	.629
	N	106	106	106	104	106	94
internal locus	Pearson Correlation	-.168	1.000	.206(*)	.164	.051	-.064
	Sig. (2-tailed)	.085	.	.034	.096	.606	.537
	N	106	106	106	104	106	94
chance locus	Pearson Correlation	-.029	.206(*)	1.000	.312(**)	-.248(*)	.132
	Sig. (2-tailed)	.766	.034	.	.001	.010	.204
	N	106	106	106	104	106	94
important others	Pearson Correlation	-.316(**)	.164	.312(**)	1.000	.072	-.037
	Sig. (2-tailed)	.001	.096	.001	.	.469	.726
	N	104	104	104	104	104	92
Generalised Self efficacy	Pearson Correlation	-.072	.051	-.248(*)	.072	1.000	.027
	Sig. (2-tailed)	.463	.606	.010	.469	.	.797
	N	106	106	106	104	106	94
Fagerstrom Nicotine	Pearson Correlation	.050	-.064	.132	-.037	.027	1.000

Dependence	Sig. (2-tailed)	.629	.537	.204	.726	.797	.
	N	94	94	94	92	94	94
** Correlation is significant at the 0.01 level (2-tailed).							
* Correlation is significant at the 0.05 level (2-tailed).							

Table 3 above illustrates the correlations between Perceived Stress, Internal Locus of Control, Chance Locus of Control, Important Others Locus of Control, Generalised Self-Efficacy and Fagerstom Nicotine Dependence when grouped by gender. There is a moderately significant negative correlation between Perceived Stress and Important Others which means that as Perceived Stress increases, Important Others locus decreases. There is a low - moderately significant negative correlation between Chance Locus of Control and Generalised Self Efficacy. This means that as Chance Locus of control increases, Generalised Self Efficacy decreases.

Table 4

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Generalised Self efficacy	Between Groups	3.209	1	3.209	.284	.595
	Within Groups	1175.894	104	11.307		
	Total	1179.104	105			
Fagerstrom Nicotine Dependence	Between Groups	12.379	1	12.379	1.720	.193
	Within Groups	662.227	92	7.198		
	Total	674.606	93			
Percieved Stress	Between Groups	2.538	1	2.538	.068	.795
	Within Groups	3903.320	104	37.532		
	Total	3905.858	105			
Internal locus	Between Groups	276.318	1	276.318	8.975	.003
	Within Groups	3201.909	104	30.788		
	Total	3478.226	105			
Chance locus	Between Groups	93.503	1	93.503	3.965	.049
	Within Groups	2452.534	104	23.582		
	Total	2546.038	105			
Important others	Between Groups	38.454	1	38.454	1.281	.260
	Within Groups	3061.306	102	30.013		
	Total	3099.760	103			

Table 4 (previous page) reports an ANOVA illustrating that there is no significant difference between smokers and non-smokers levels of self efficacy it also shows that there is no difference between non-smokers and smokers levels of perceived stress

It shows that there is a significant variance between non-smokers and smokers levels of nicotine dependence this is to be assumed as non-smokers should have a low level of nicotine dependence.

There is a significant difference between smokers and non-smokers for internal locus of control

There is a significant difference between smokers and non-smokers for internal locus of control.

There is a significant difference between smokers and non-smokers for important others locus of control.

Discussion:

The overall aim of this study is to discover what effect if any, levels of self efficacy, perceived stress and locus of control have on a person's ability to stop smoking.

The researcher investigated the differences between smokers who can quit successfully and those who cannot. The aim of the study was to try and isolate any particular personality trait that allows an individual to gain control over their addiction to smoking/ nicotine and to use this information to help people to give up smoking more successfully.

In order to do this the researcher focused on a number of psychological variables namely, perceived stress, nicotine dependence, locus of control and self efficacy. These particular variables were chosen as they have appeared in the current literature quite frequently and were hypothesised by the researcher to possess good reliability as predictor variables of smoking behaviour and cessation. The results were analysed mainly following division of the raw data into two groups, smokers and ex-smokers.

Of the five main hypotheses on which the study is based, three of the five showed statistically significant results. The first one to be discussed is that "locus of control will be internal in ex-smokers and external in smokers". An independent samples t-test showed a statistically reliable difference between the two groups (smoker/ex-smoker) for levels of internal locus of control with ex-smokers having on average higher levels of internal locus of control. This result confirms the alternate hypothesis and partially supports the study carried out by Burgess & Hamblett (1994), in that it demonstrates that ex-smokers have a higher internal locus of control.

The second statistically significant finding was that “older smokers will have a greater desire to quit than younger smokers. In order to ascertain this, the researcher performed an independent samples t-test, dividing the groups into age (+/- 39) which was the mean age of the smoking sample as the grouping variable, and then tested the 4 questions (appendix a) relating to desire to quit smoking. The results were as expected statistically significant and showed that the older the participant was the more likely they were to have a stronger desire to quit smoking than the younger participants.

In order to gain a different perspective from a statistical point of view on the above findings, the variable “intend to quit smoking” was recoded into replies ranked 4 and above as seriously intending to quit and less than 4 as not seriously intending to quit. These scores were then compared with age. From descriptive statistics it was found that the mean age of those participants who were classed as seriously intending quitting was 47.00 and the mean age of those not seriously intending quitting was 37.68 this shows almost a 10 year age gap. When analyzed using an Independent Samples t-test, this was also found to be statistically relevant. The analysis of this data concurs with Ismailov & Leatherdale (2009) findings that desire to quit smoking was higher in older participants. It also supports the hypothesis of the current study.

In order to test that self efficacy will be higher in those smokers who are seriously considering quitting, a Pearson’s correlation was carried out. It showed a significant positive correlation at the 0.05 level between the variables “you have decided to stop smoking over the next 6 weeks” and “Generalised Self Efficacy Scores”. There was a low to moderate positive correlation between the two variables of [$r= 0.299$, $n = 52$, $p = 0.031$]. This would indicate that as the participants want and desire to give up smoking

goes up, so too do their feelings of self efficacy to do so. It is hard to tell which construct in this correlation is the one driving the relationship and this could warrant further research to decipher the direction of this relationship. The implication of these findings are for treatment intervention programmes. By introducing talking therapies they could boost self efficacy in people who are identified as seriously considering quitting smoking.

According to Gwaltney, Metrik, Kahler, Shiffman, (2009) who examined self efficacy as a predictor variable through meta-analysis of the outcome of quit attempts and found that perhaps too much emphasis is placed on self efficacy as a predictor variable of smoking behaviour. In this context of this research two hypotheses were posed in relation to self efficacy in the current study. One is that self efficacy will be higher in smokers who are seriously considering quitting and two in that self efficacy will be higher in ex-smokers than in smokers. The first hypothesis was confirmed through analysis of the current study's raw data, however the null of the second hypothesis was found to be true. Perhaps to be considered a good predictor of smoking cessation self efficacy needs to be modulated by other variables which correlate with it, such as desire to quit, or other motivations to quit that are bolstered and increased by increased self efficacy. This is supported by Cho et al (2009) who found that perceived successfulness of the last quit trial positively predicted self efficacy. Van Zundert et al, (2011) demonstrated that daily changes in self efficacy predict lapses and relapse into smoking after quitting among adolescent daily smokers. In hindsight this research also raises questions as to the constant nature of the construct, self efficacy. The question must be raised if daily changes in self efficacy can be observed, is any static test in the form of a once off questionnaire reliable as a measure to be used as a predictor of any behaviour? This question serves to highlight a potential limitation of the current study.

Girma E et al, (2010) studied what factors predicted a person's intention to quit smoking. They issued a structured questionnaire to 384 participants. 57% of the participants had an intention to quit. They concluded that participants with no intention of quitting scored high on nicotine dependence and low on self efficacy. In the current study the sample result was very different. Of the 106 participants 52 responded to this section of the questionnaire. Of these 57.7% were unlikely to quit in the coming 6 weeks and a mere 7.7 % were likely to quit in the coming 6 weeks. This was further analysed by descriptive statistics and it was discovered that conversely in the current sample, the people who responded that they would have no intention to quit had a relatively average level of self efficacy (31.00) where ($m = 30.76$) and a low level of nicotine dependency (2.48) where 5 and above is considered a high level of dependency. This entirely refutes the earlier premise of the current study, that in order to seriously consider quitting an individual needs to assess the current situation in relation to their addiction habit and how they are going to overcome it. In order to think through this stage and to progress from it, their self efficacy to quit must be higher than in the past before they began cognitive changes to decide to quit.

In relation to the second hypothesis on self efficacy in that it will be higher in ex-smokers than in smokers. The Researcher carried out descriptive statistics which showed that the mean response for smokers was 30.58 and for ex-smokers was 30.93. This was not thought to be significant, but nonetheless a t-test was carried out and it too showed no significant difference between the two groups, smokers and non smokers levels of self efficacy.

These findings go against the alternate hypotheses. It could be that because the questionnaire for self efficacy, as opposed to being specifically orientated towards smoking behavior is generalised. Therefore the participants self efficacy score for the purposes of this study could

be rendered irrelevant. The current study therefore supports the findings of Gwaltney, Metrik, Kahler, Shiffman, (2009) who found that too much emphasis is placed on self efficacy as predictor of outcome of successful attempts to quit smoking.

A further hypothesis was that Smokers will have higher levels of perceived stress than ex-smokers. An independent t-test was carried out to ascertain if this was true. The results of the t-test were not significant. Descriptive statistics revealed that there was little or no difference in the two groups as indicated by the t-test. Perceived stress was positioned on the last page of the questionnaire and perhaps wasn't always answered honestly due to time constraints or boredom. The findings of the current study therefore are not supportive of research by Hajek, Taylor, & McRobbie, (2010) who found that quitting smoking significantly reduces stress in the sample of Cardiac patients that they studied. This could be explained by the fact that Hajek, Taylor & McRobbie's sampled a clinical population and the current study was carried out on a non-clinical sample. The clinical nature of the Hajek sample would introduce other more imminent health related motivations to quit than the sample in the current study, in that their population would be more likely to be more stressed at not being able to quit for health reasons. Manning et al (2005) studied the relationship between stress and the likelihood of quitting. They found that lower perceived stress was associated with remaining abstinent. This is not supported by the current study and could be explained by the fact that there was a pharmacological treatment aspect to this study which is not present in the current study. Perhaps in future studies a selection of psychological and pharmacological treatments could be instigated and a test / re-test design implemented to see if the introduction of a treatment component would elicit a change in stress levels between those who are successfully adhering to the treatment and those who are having difficulty with it. Another explanation could be that while a smoker has access to cigarettes and nicotine the perceived stress scale

will only allow for a baseline score. Perhaps further research could be done in this area utilising a test / re-test methodology and removing access to cigarettes for those participants in the smokers group, which could possibly augment the scope of the current study and provide more substantial and significant results.

Additionally the Researcher would like to further investigate the potential triadic relationship between smokers, non-smokers and ex-smokers and perhaps re-design the current study based around a 3 group structure as opposed to the current one of the relationship between smoker and ex-smoker. The addition of a non-smoker group would provide further baseline information about the potential changes and natural variances that would occur between an individual who had never smoked, who had smoked in the past and that was continuing to smoke now. A version of this method was previously carried out by Burgess & Hamblett, (1994).

Another finding of interest is that in the current sample an aspect of Ismailov & Leatherdale's (2009) study carried out in Canada was replicated. Their finding of interest to this study was that having a child under 15 living in the household was a significant predictor of long-term abstinence. In the current study a cross tabulation of the participants showed that of the 30 respondents who had children at home under 15 years of age, 66% of them were non-smokers with 33% still being smokers. In the group that did not have children at home under 15 years of age of the 76 respondents, 52.6% of them were smokers and 47.3% of them were non-smokers. This shows that significantly more participants successfully quit smoking when there was a child under 15 living at home.

From a cultural differences point of view two particular studies focusing on age are of special interest. Ismailov & Leatherdale, (2009) and Myung, (2012). Ismailov & Leatherdale found that being older and having a child under the age of 15 living at home were good predictors of long-term abstinence. The current study found similar trends in that having children under 15 living at home significantly increased the chances that the participant had quit smoking when compared with households that didn't have a child under 15 resident, and two different statistical methods demonstrated that participants who were older than the mean of the group were more likely to have a desire to quit. This conflicts with the study by Myung, (2012) who found that participants who were younger amongst other things were more likely to quit. It would be interesting in the future to look further into why there is such a obvious divide between the responses across different cultures. Perhaps educational level has something to do with it, or socio-economic status? This would be an area the researcher would have an interest in further investigating as the current study represented a missed opportunity to gather such demographic data, which could have more clearly shown a link or indeed a reason for this cultural difference by bridging a gap between the Canadian study and the Korean Study.

From a gender specific viewpoint when ex-smokers were selected and a t-test preformed on male and female levels of nicotine dependence a significant difference was found between male and female participants. Women had a lower mean FTND score than men. In relation to the previous literature this finding is in agreement with Auguston, Barzani, Rutten & Marcus (2008) who found that female hardcore smokers were less dependent on nicotine than male hardcore smokers. However there was no significant difference found between the two groups when the smoker category was analysed. The current study refutes Torchalla, et al

(2011) as they found that females achieve lower abstinence rates than their male counterparts while attempting to quit using nicotine replacement therapy as well as without pharmacotherapy. The findings of the current study need to be qualified however as the current study has no treatment intervention component.

From a practical perspective, based on the results of the current study, further investigation is indicated in the area of age related smoking cessation. There seems to be a trend towards older people being more likely to succeed in quitting than younger people. The motivations for this need to be further investigated as if they could be made clear they could have a beneficial effect for younger smokers who are considering quitting through education of what the elder smokers considered important reasons to quit.

Another significant finding of the current study is that smokers who are seriously considering quitting have higher levels of self efficacy. From a therapeutic perspective this finding is of some importance. Further investigation directed towards discovering the dynamics of the interactions between these two variables would be warranted in any further research in this area. The findings of these studies could then be used in smoking cessation treatment interventions. Treatment could be focused on increasing self efficacy and encouraging desire to quit which in combination should lead to a more considered successful quit attempt.

Over the course of the study many issues came up which would be of interest in further studies. One such example of this was in the demographic part of the questionnaire. A series of questions were asked, the first being “have you used any aides to quit smoking in the past”? This was followed up with “were you successful in quitting”? and finally a question ascertaining “current smoking status”. Of the respondents who answered the question relating

to having quit successfully using quit aides, 4 participants said that they had been successful in quitting but then answered that they were currently smokers. It would be interesting to find out what classifies in a smokers opinion as a successful quit attempt? The researcher would have considered that a successful quit attempt would be that the participant was currently an ex-smoker as opposed to having quit successfully for a period of time and the relapsed.

While analysing the raw data, the Researcher felt that another aspect of smoking behaviour should have been incorporated more fully into the study. The Researcher did question the participants on their usage of quit aides in the past and on cross-tabulation it was found that in the smoking participants only 10 of the 50 participants had tried to quit by going cold turkey, however in the ex-smokers category 34 of the 56 participants managed to quit successfully by going cold turkey. In light of the substantially different pattern that emerges between the two groups tested the researcher feels that there is a need for further investigation into this. Also to more fully investigate which quit aides proved the most successful and why. This could present another branch of study as an option for further research. Also previous research has suggested that prior quit attempts are good indicators of propensity to try again in current smokers. On discussing the study post-hoc with some of the participants, further research in this area would be of great interest to them as smokers.

Another issue which arose was that participants reported negative feelings about answering the questions posed in the questionnaire regarding perceived stress. They felt that the questions were very personal in nature and also not related to smoking. This could perhaps be avoided by the development of a questionnaire relating purely to smoking related stress, which would remove any direct personality questions, which were felt to be intrusive in the

questionnaire. From a gender specific perspective it was mostly the male participants who had issue with the perceived stress aspect of the questionnaire. This would be of research interest in the future.

Relating to the questionnaire also there were issues with how long it was, and the time needed to complete it. The researcher found that due to the length of time taken to complete the questionnaire, participants may not necessarily have completed it properly, either not filling out questions which were applicable or filling out questions which were not applicable. This in turn has rendered some of the data gathered invalid however it is impossible to prove which data specifically is invalid.

A further issue that arose was specific to the location in which the study was carried out. The hospital is currently reviewing the smoking policy. At the moment employees are permitted to smoke in one area of the hospital and in order to make the hospital a smoke free hospital this area will need to be abolished. Many potential participants were wary of this and therefore were not willing to participate as they felt that the hospital had commissioned the study. While the Researcher explained the purpose of the study there may have been an element of bias in their responses due to the fear and paranoia associated with the outcome of the study.

In conclusion, while the current study has found elements of its hypotheses to be significant it has also more importantly highlighted potential directions for further research. The researcher feels that perhaps a more individual qualitative approach to smoking cessation research could have better outcome for providing assistance to people attempting to quit smoking. Due to the personal nature of addiction a more thorough and individualistic case history of every

participant should be attained in order to fully understand the individual's motivation for smoking and their motivations to quit smoking. The percentages of the individuals studied who are still smoking who have tried to quit are 98% which definitively shows that anyone who is smoking wishes to quit in some way or other should provide a stimulus if nothing else for further research in the area to be carried out. Also more ex-smokers were included in the study than current smokers which, demonstrates that not only do the current smoking population wish to quit but that it is possible to quit.

Perhaps the area of smoking cessation is too large and in depth to be covered by a questionnaire based study, but it is still an important tool going forward if nothing else to show a general trend of behaviour within the smoking population.

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*Appendix A***Smoking behaviour and Cessation Questionnaire**

The study is looking at how certain personality traits in successful ex-smokers could be analysed and identified and subsequently utilised in helping smokers to quit by looking at ways to enhance and improve the personality traits that appear to be indicate the ability to be a successful quitter.

It should take approximately 15-20mins to complete.

By placing an (x) in the space marked below you are giving permission for the information enclosed in this questionnaire to be analysed for the purposes of an undergraduate psychology thesis for DBS with the knowledge that the information will be used and disposed of with the upmost confidentiality assured

No names will be recorded for the study. You have the right to pull out of the study at any time. In order to do this you will be given a number on accepting to do the questionnaire, this will be recorded on the questionnaire page and if you wish to pull out of the study you can contact me and ill will give you back your entry and remove your information from the study.

I hereby give my consent and agree to participate _____
My record number is: _____

Appendix A

Demographic Questions:

- 1) Gender
Male / Female
- 2) Age _____
- 3) Do you have children under 15 living at home with you?
Yes / no
- 4) In the past or when you tried to quit smoking did you use any of the following
aides.
(circle whichever are relevant)
patches / tablets / counselling/ hypnotherapy/ cold turkey.
- 5) Did you quite successfully with them?
Yes/no
- 6) Are you a
 - a) Smoker
 - b) Non-smoker currently? (circle a or b).

Appendix A

Instructions: Each item below is a belief statement about your medical condition with which you may agree or disagree. Beside each statement is a scale which ranges from strongly disagree (1) to strongly agree (6).

For each item we would like you to circle the number that represents the extent to which you agree or disagree with that statement. The more you agree with a statement, the higher will be the number you circle. The more you disagree with a statement, the lower will be the number you circle. Please make sure that you answer **EVERY ITEM** and that you circle **ONLY ONE** number per item. This is a measure of your personal beliefs; obviously there are no right or wrong answers.

1= STRONGLY DISAGREE (SD)	4= SLIGHTLY AGREE (A)
2= MODERATELY DISAGREE (MD)	5= MODERATELY AGREE (MA)
3= SLIGHTLY DISAGREE (D)	6= STRONGLY AGREE (SA)

		SD	MD	D	A	MA	SA
1	If I become sick I have the power to make myself well again.						
2	Often I feel that no matter what I do, if I am going to get sick, I will get sick.						
3	If I see an excellent doctor regularly, I am less likely to have health problems.						
4	It seems that my health is greatly influenced by accidental happening.						
5	I can only maintain my health by consulting health professionals.						
6	I am directly responsible for my health						
7	Other people play a big part in whether I stay healthy or become sick.						
8	Whatever goes wrong with my health is my own fault						
9	When I am sick, I just have to let nature run its course.						
10	Health professional keep me healthy						
11	When I stay healthy, I'm just plain lucky						
12	My physical well-being depends on how well I take care of myself						
13	When I feel ill, I know it is because I have not been taking care of myself properly.						
14	The type of care I receive from other people is what is responsible for how well I recover from an illness.						
15	Even when I take care of myself, its easy to get sick						
16	When I become ill, it's a matter of fate.						
17	I can pretty much stay healthy by taking good care of myself.						
18	Following doctors orders to the letter is the best way for me to stay healthy.						

Appendix A

Please read the sentences below and select an answer for each statement which indicates how much the statement applies to yourself.

1 = Not at all true

2 = Hardly true

3 = Moderately true

4 = Exactly true .

1	I can always manage to solve difficult problems if I try hard enough	
2	If someone opposes me, I can find the means and ways to get what I want	
3	It's easy for me to stick to my aims and accomplish my goals.	
4	I am confident that I could deal efficiently with unexpected events	
5	Thanks to my resourcefulness, I know how to handle unforeseen situations.	
6	I can solve most problems if I invest the necessary effort.	
7	I can remain calm when facing difficulties because I can rely on my coping abilities.	
8	When I am confronted with a problem, I can usually find several solutions.	
9	If I am in trouble, I can usually think of a solution.	
10	I can usually handle whatever comes my way.	

*Appendix A***Intention to quit smoking (only answer if you are still smoking)**

Read the below statements and circle the number most appropriate to your current feelings in relation to quitting smoking)

1. You intend to stop smoking over the next six weeks

Unlikely :__1__:_2__:_3__:_4__:_5__:_6__:_7__ : *Likely*

2. You will try to stop smoking over the next six weeks

Unlikely :__1__:_2__:_3__:_4__:_5__:_6__:_7__ : *Likely*

3. You have decided to stop smoking over the next six weeks

False :__1__:_2__:_3__:_4__:_5__:_6__:_7__ : *True*

4. You are determined to stop smoking over the next six weeks

False :__1__:_2__:_3__:_4__:_5__:_6__:_7__ : *True*

Appendix A

Please answer the following questions by circling whichever statement applies most to your current smoking habit. (or your smoking habit just prior to quitting if you have stopped smoking)

- 1) How soon after you wake up do you smoke your first cigarette?

Within 5 mins
6-30 mins
31-60 mins
After 60 mins

- 2) Do you find it difficult to refrain from smoking in places where it is forbidden (e.g. in church, at the library, cinema, etc) ?

yes
No

- 3) Which cigarette would you hate to give up?

The first one in the morning
All the others

- 4) How many cigarettes per day do you smoke?

10 or less
11- 20
21- 30
31 or more

- 5) Do you smoke more frequently during the first hours after waking than during the rest of the day?

Yes
No

- 6) Do you smoke if you are so ill you are in bed most of the day?

Yes
No

Appendix A

The questions in the scale ask you about your feeling and thoughts during the last month. In each case, you will be asked to indicate by circling how often you felt or thought a certain way.

0 = Never 1= Almost never 2 = sometimes 3= fairly often 4 = very often

1) In the past month, how often have you been upset? **0 1 2 3 4**

2) In the past month, how often have you felt you were unable to control the important things in your life? **0 1 2 3 4**

3) In the past month, how often have you felt nervous and stressed? **0 1 2 3 4**

4) In the past month, how often have you felt confident about your ability to handle your personal problems? **0 1 2 3 4**

5) In the past month, how often have you felt that things were going your way? **0 1 2 3 4**

6) In the past month, how often have you felt that you could not cope with all the things you had to do? **0 1 2 3 4**

7) In the past month, how often have you been able to control irritations in your life? **0 1 2 3 4**

8) In the past month, how often have you felt That you were on top of things? **0 1 2 3 4**

9) In the past month, how often have you been angered because of things that were outside of your control? **0 1 2 3 4**

10) In the past month, how often have you felt difficulties were piling up so high that you could not overcome them? **0 1 2 3 4**

All done, thank you for your time !