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Dimensions of personality and smoking behaviour

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Summary

The study sample comprised 688 students of a Federal College of Education. Out of this population, there were 109 smokers producing a prevalence rate of 20%. The greatest percentage of smokers fell within the age range 20-29 years. Comparison of smokers and non-smokers showed no statistically significant differences in scores on the extraversion and neuroticism scales of the Eysenck personality questionnaire. Smokers, however, scored significantly higher than non-smokers on the psychoticism scale. An association was found between marital status and smoking behaviour. It is concluded that the association between smoking behaviour and some dimensions of personality such as extraversion and neuroticism reported in some studies may be due to a third variable, most likely a social one.

Résumé

L'épreuve d'étude reformait 688 étudiants d'éducation du collège fédéral. Au dehors de cette population, il y avait 129 fumeurs présentant/produisant un taux prédominant de 20%. Le plus grand pourcentage des fumeurs se trouve entre l'âge range de 20 à 29 années. La comparaison entre les fumeurs et ceux qui ne fument pas indiquait aucunes différences importantes aux points de balance neurosée de personnalité questionnaire. Une société était établie entre le range marié et manieres fumeuses. Il est conclu que l'association entre manières fumeuses et quelques dimensions de personnalité signalée en certaines études peuvent se dépendre de la troisième variation, peut-être, la variation sociale.

Introduction

A number of studies have attempted to de-

cipher the underlying motivations for smoking, with conflicting results. Some studies have examined the relationship between smoking and various personality dimensions, particularly extraversion and neuroticism [1]. Most of these studies reported an association between extraversion and smoking. Eysenck [2], and Rae [3] found that smokers were more extraverted than non-smokers. Eysenck adduced this as evidence in support of his cortical arousal model of extraversion [4]. According to this model extraverts are individuals with constitutionally low cortical arousal and as a result are in constant search of stimulation.

Evidence of the existence of an association between smoking and neuroticism is rather uncertain. Although some studies have found a relationship, others have not. The Royal College of Physicians [5] reported that the claim of an association between smoking and neuroticism has not been substantiated. Cherry and Kiernan [6] reported that smokers were not only extraverted but had high neuroticism scores. Haines *et al.* [7] found a strong association between neuroticism scores and the number of cigarettes smoked, the relationship being a direct one. Eastwood and Trevelyan [8], on the other hand, found no significant differences between neurotic cohort and the controls for the proportion who smoked, and number of cigarettes smoked per day for either sex. Salmons and Sims [9] stated that the relationship between smoking and neurosis may be a causal factor in morbidity and mortality. Sims [10] had reported earlier a decreased life expectancy amongst individuals with a previous hospital admission for neurosis.

Eysenck *et al.* [11] in a comparative study of personality in Nigerian and English subjects, reported that the Eysenck personality questionnaire (EPQ) scores in both populations showed factor comparison indices sufficiently high to

indicate that the questionnaire measured much the same traits in the two populations. A comparative study using the EPQ should, therefore, give valid results as to the relationship between dimensions of personality and smoking.

There has been no previous study from this country on the relationship of personality characteristics and smoking behaviour. This study is a contribution to the ongoing search for determinants of smoking behaviour. In a situation where life expectancy is just a little above 40, the search for the determinants of smoking behaviour are of the utmost urgency.

Subjects and methods

The study population comprised 434 male and 254 female students of the Federal College of Education, Osiele. All the students of the college were approached through the Student Affairs Department and the Student Union in order to elicit adequate responses to the questionnaire. They were informed that the questionnaire was designed to assist in collecting some basic data on which future health plans may be rationally based. They were assured that the questionnaires offered them total anonymity and that they should not write their names on the questionnaires. This was to encourage participation and also discourage dissimulation. The questionnaire was designed to elicit the socio-demographic profile of the students, pattern of smoking and alcohol use, family background, smoking and alcohol use in other members of the family, relations and friends. Another section was devoted to questions on motivation for smoking and economic circumstances of the cohort.

The survey members also completed the EPQ [12]. The EPQs were filled in under the supervision of the author and collected. The EPQ produces scores on three dimensions of personality, namely extraversion (E), neuroticism (N) and psychoticism (P). It also provides a lie scale (L) to measure the degree of dissimulation. Eysenck and Eysenck [12] stated that the lie scale also measures some stable personality factor connected with social naivety or orthodoxy.

The students were allowed to fill sections 1-96 of the questionnaires later because of

the large number of questions and the time required. In a study of this nature it was unlikely that 100% return of questionnaires would be achieved. Several visits were made to the college and appeals made through the students' affairs officials for the return of completed questionnaires. As expected there was difficulty in tracing all the subjects before the deadline, which was set at 4 weeks.

The survey group was separated into smokers and non-smokers and compared using the following indices: age, sex, marital status and personality scores.

A smoker has been defined operationally as anyone who smoked at least one cigarette a day for the previous 6 months.

The data was analysed on an IBM micro-computer based in the Medical Statistics Unit of the College of Medicine, University of Ibadan. Initial exploration using the Survey Mate statistical package produced the frequency distribution for all the variables. Necessary tables using appropriate statistical tests were also obtained. In each case the level of statistical significance was 5%.

Results

A total of 688 students made up of 434 male and 254 (36.92%) females responded to the questionnaire out of a total student population of 958, comprising 627 male and 331 female, giving a 71.8% response rate. The proportion responding to the questionnaire from both sexes, while not a random selection, corresponds closely to the population structure of the Institution and is fairly representative of the total population. There were 129 smokers out of a total sample of 688 showing a prevalence rate of about 20%. The personal characteristics of the sample are as shown in Table 1.

The greatest percentage of smokers (44.7) fell within the age range 20-29 years. The differences in age between smokers and non-smokers was not statistically significant. Smoking was much more prevalent amongst the male population than the female population, the difference being statistically significant at the 1% level.

The marital status appeared to play a significant role in relation to smoking behaviour. There were more smokers amongst the div-

Table 1. Demographic characteristics of smokers and non-smokers among post-secondary school students

Variable	Sample No.		
	Smokers	Non-smokers	% smokers
Age			
15-19	14	393	13.1
20-26	64	255	25.1
25-29	31	127	19.6
30-34	5	22	18.5
35+		2.70	n.s. ($P > 0.05$)
χ^2_4			
Sex			
Male	96	294	24.6
Female	20	212	8.6
Unknown	13	53	19.7
χ^2_1		24.53	Sig. ($P < 0.001$)
Marital status			
Single	114	465	19.7
Married	6	63	8.7
Divorced/separated	4	3	57.1
Unknown	5	28	15.1
χ^2_2		11.59	Sig. ($P < 0.05$)

orced/separated and the single (never married) than among the married. A total of 57.1% of the separated/divorced and 19.7% of singles were smokers compared to 8.7% of the married population. This difference is statistically significant at the 5% level of probability. The summary indices of the EPO for smokers and

non-smokers are presented in Table 2.

The smoker population scored higher on the psychoticism scale than non-smokers and Student's *t*-test showed the difference was significant at the 1% level. The results also showed that non-smokers were slightly more extraverted and scored slightly higher results on

Table 2. Summary indices of smoker (S) and non-smoker (NS) scores on psychoticism (P), extraversion (E), neuroticism (N) and lie (L) scales

Scales	Mean	s.d.	n	t-value	P level	
P	Smokers	6.05	4.63	105	3.921	0.001
	Non-smokers	4.54	3.29	473		
E	Smokers	12.43	3.70	106	-0.434	0.5
	Non-smokers	12.57	2.84	486		
N	Smokers	11.21	3.26	107	-0.629	0.5
	Non-smokers	11.44	3.46	485		
L	Smokers	10.29	3.8	107	-0.025	0.6
	Non-smokers	10.30	3.79	484		

the neuroticism scale but the difference was not statistically significant. There was no difference in the scores of the two populations on the lie scale.

Discussion

The data from this survey have demonstrated no correlation between scores on extraversion and neuroticism. Eysenck and Eysenck [12] stated that the scores on the psychoticism, extraversion and neuroticism scales of the EPQ decline with age. Smoking behaviour after reaching its peak in the 30's also shows a decline with advancing years [13]. The association between neuroticism, extraversion and smoking [6] may have been a factor of age as Eastwood and Trevelyan [8] concluded that their study of a random sample aged 40-64 years gave no support to the existence of a relationship between smoking and neuroticism.

The scores on the psychoticism scale had a significant relationship with smoking. This scale has also been described as a measure of tough-mindedness. Eysenck and Eysenck [12] in their description of a high scorer on the psychoticism scale declared that 'he has a liking for odd and unusual things, and a disregard for danger'. This personality attribute is bound to be of significance in the development and sustenance of smoking behaviour taking into consideration the well-known and well-publicized health hazards associated with smoking. Smoking has been shown to be associated with disabling illnesses such as chronic bronchitis, ischaemic heart disease, and carcinoma of the lungs. Continuation of smoking in the face of all these hazards is indicative of a disregard for danger.

Although the number of divorced/separated patients is small due to the characteristics of the study population, the results suggest an association between divorce/separation, closely followed by single marital status and smoking.

The association does not necessarily imply a causal linkage. It is quite possible that both smoking and divorced/single status reflect traits

measured by the psychoticism scores or the influence of peer values and/or rejection of traditional mores. As Cherry and Kiernan [6] stated, a relationship between personality scores and smoking does not necessarily imply any causal link and the observed relationship may be due to a third variable. The conflicting reports on relationship between personality scores and smoking suggests that a third variable, most likely a social variable such as peer value or changes in attitudes and traditional values may be important factors in smoking.

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