Tranquillisers: prevalence, predictors and possible consequences. Data from a large United Kingdom survey

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Summary

Data related to tranquilliser/hypnotic use is presented from a large (n = 9,003) random representative United Kingdom sample of adults (18+ years). On the day of interview 4.2% of females and 2.1% of males reported current use of tranquillisers. Increased probability of current use was significantly related to female sex, older age, increased symptoms of psychological malaise and physical ill-health, elevated neuroticism scores on the Eysenck Personality Inventory, lower socioeconomic status, unemployment, current smoking in some groups, and less participation in active leisure pursuits. There was no convincing trend with standard geographical region.

Introduction

The dangers of chronic usage of prescribed tranquillisers/hypnotics (mainly benzodiazepines) are now well recognized (Lader & Petursson, 1981; Owen & Tyrer, 1983; Ashton, 1986, 1987; Committee on Safety of Medicines, 1988). The prevalence of benzodiazepine use is not known accurately, but a recent estimate (Taylor, 1987), based on a 1981 survey of 2,018 U.K. subjects (Balter *et al.*, 1984) suggested that approximately three million people took benzodiazepines for up to and around 3 months each year; 500,000 people took them for around 6 months each year, and 1.2 million people took them on a long term basis (a year or more). However, the scene is not static: total benzodiazepine prescriptions have fallen by 16% in the last 6 years (Taylor, 1987). It is well known that women benzodiazepine users outnumber men by about 2:1 and that benzodiazepine consumption increases with age

(Taylor, 1987), but there is less information about other socioeconomic and demographic factors such as geographic distribution, socioeconomic group, employment, life style, personality and health. Up-to-date information on these matters is of importance both to health policy makers and practising physicians. A recent survey (HALS, 1987) provided the opportunity to throw further light on the subject. This survey of 9,003 respondents in 1985–1986 provided data on numerous health and lifestyle variables in the U.K.; the present paper is focused on the data related to tranquilliser/hypnotic use.

Methods

Sample and Response Rate

The survey population was defined as individuals aged 18 years and above living in private households in U.K. omitting Northern Ireland. From the

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Electoral Registers 12,254 addresses were selected using standard sampling techniques (stratification by the 11 Standard Geographical Regions, by parliamentary constituency, by three population density bands, by wards, by household, one subject from each household chosen: see HALS, 1987 for more details). Total interviews achieved was 9,003 (3,905 males; 5,098 females) representing 73.5% of the 12,254 original addresses. The remainder represented refusal (19.1%), failure to contact (5.3%), other non-response (2.1%). Comparison with the 1981 Census indicates some small bias, mainly an over-representation of females which was probably due to differences in availability for interview.

Questionnaire

Details of the questionnaire are available (HALS, 1987). This questionnaire was completed by trained interviewers following set schedules in face-to-face interviews with each subject at the subject's home.

Drugs. Subjects were asked whether 'at the moment' they were taking prescribed drugs. Drugs categorized as tranquillisers/hypnotics consisted mainly of benzodiazepines. Other drug categories covered various cardiovascular and respiratory system drugs, anti-inflammatory drugs, oral contraceptives, miscellaneous preparations and nil medication. A slight under-reporting of tranquillisers/hypnotics may have occurred since subjects taking tranquillisers/hypnotics in addition to to two or more cardiovascular drugs were not included in the tranquilliser group. However the numbers involved were very small and did not alter the significance of the results when re-analysed with slightly changed base '*n*'. It is possible that there was also some general under-reporting of tranquilliser/hypnotic use, but drug use was checked by a nurse on a second visit to each respondent; agreement between nurses' and initial interviewers' findings was high (HALS, 1987).

Measures

Brief details of measures are given below, for further details see HALS (1987).

Malaise. Self-reported malaise was derived from a list of symptoms such as difficulty in sleeping, always feeling tired, difficulty in concentrating, worrying, feeling bored, lonely or under strain. These symptoms were collapsed into three cate-

gories of severity (high = 4+ symptoms; medium = 2/3 symptoms; low = 0/1 symptoms).

Illness. Self-reported illness was similarly derived from a symptoms list of commonly recorded complaints, including headache, hay fever, colds and flu, trouble with eyes, back, feet, kidneys, bladder, joints, palpitations, breathlessness, cough, gastrointestinal complaints, faints and dizziness, menstrual troubles. Categories of severity were assigned according to number of symptoms, as for malaise.

Personality. Personality was measured using the Eysenck Personality Inventory (Eysenck & Eysenck, 1964), which gives scores for Neuroticism, Extraversion and Lie Scale (an index of the extent to which people give socially desirable responses).

Socioeconomic Group. The basic classification system was that of the Registrar General's socioeconomic grouping. This was collapsed into Manual (unskilled + semi-skilled + skilled) and Non-Manual (white collar + managerial + professional), unclassifiable and Armed Forces excluded. The condensed classification was based on the current occupation of the head of the household. On this basis, the unclassifiable category represented very few cases (1%). For further details see HALS (1987).

Employment. Employment was taken as current full time employment versus unemployed and available for work. For this variable in particular, individuals in part time work or who were ill, retired, students or housewives were excluded.

Smoking. 'Non-smokers' were defined as ex-smokers and those who had never smoked; 'smokers' were occasional + regular smokers of cigarettes, cigars or pipes.

Active Leisure (Physical Exercise). This was a collapsed three-point scale produced from multiple items concerning sports, gardening, walking etc.

Results

Tranquilliser/hypnotic use on the day of the survey in various demographic and psychosocial categories and (where applicable) mean values of associated variables are shown in Tables 1 and 2. As in previous surveys (Balter *et al.*, 1984; Mant *et al.*, 1988), consumption of these drugs was highly significantly related to age and sex. Prevalence of use increased from 1.3% at 18–29 years, to 4.5% at 30–39 years, to 5.7% at 40 years and over (prevalence for 40+ years versus 18–39 years;

Table 1. *Prevalence of Sedative/Tranquilliser Use on Day of Interview (%) By Demographic Category, and Psychosocial Variable By Tranquilliser Use. Health and Lifestyle Survey (HALS) of the United Kingdom year 1985–1986 (n=9003)*

Category of of variable	% Prevalence		Statistical* significance	Summary elevated risk ratio
Age (years)	18–29 years	=1.3%		(40+ years)/18–39 years)
	30–39 years	=4.5%	0.0001	=3.7
	40+ years	=5.7%		
Sex	Female	=4.2%	0.0001	(Female)/(Male)
	Male	=2.1%		=2.0
Malaise	High	=7.5%		(High)/(Low+Medium)
(category	Medium	=1.9%	0.0001	=5.0
of scale)	Low	=1.1%		
Ill-Health	High	=5.8%		(High)/(Low+Medium)
Physical & Mental	Medium	=2.7%	0.0001	=2.5
(category of scale)	Low	=1.7%		
Socioeconomic	Manual	=3.7%	0.05	(Manual)/(Non-Manual)
Group (split)	Non-Manual	=2.7%		=1.4
Unemployment	Unemployed	=4.5%	0.001	(Unemployed)/(Employed)
(selected categories)	Full-time employed	=1.4%		=3.2
U.K. Standard	Over 11 regions			Not applicable
Geog. Region	range	=1.5%	NS	
(excluding N. Ireland)		to 4.1%		
	(mean 3.0% SD 0.8%)			
Smoking status	Smoker	=3.2%	NS†	(Smoker)/(Non-smoker)
	Non-smoker	=2.4%		=1.3
Active Leisure	Inactive	=3.9%		(Inactive)/(All active)
(physical exercise)	Active	=2.1%	0.0001	=2.1
(category of scale)	Very active	=1.7%		

*Statistical test: chi-squared (with Yates' corruption where relevant).
†Tendency is significant for some age-sex subgroups, see Table 3.

$p=\ <0.0001$). Prevalence in females (4.2%) was twice that in males (2.1%; $p=\ <0.0001$).

Equally highly significant were the relationships between tranquilliser/hypnotic use and indices of malaise and ill health and of neuroticism. Although for brevity multiple break-downs are not given in Tables 1 and 2, these relationships applied to both sexes and over all ages. Prevalence of tranquilliser use in those with a high index of malaise was 7.5% compared with 1.9% in those with medium and 1.1% in those low indices (prevalence for high versus low+medium index, $p=\ <0.0001$). Similarly, prevalence was greater in those with high (5.8%) compared with medium (2.7%) and low (1.7%) indices of physical and mental ill health (prevalence for high versus low+medium indices, $p=\ <0.0001$). Analysis of variance, taking into account age and sex, revealed a highly significant

relationship between neuroticism score on the Eysenck Personality Inventory and tranquilliser/hypnotic use ($p=\ <0.0001$). There was also a small but significant relationship between drug use and low extraversion scores ($p=\ <0.02$). A similar link between tranquilliser/hypnotic consumption and personality variables has been found in University students (Golding *et al.*, 1983; Golding & Cornish, 1987) and in patients taking benzodiazepines (Ashton, 1984).

Among socioeconomic factors, unemployment was significantly related to tranquilliser use ($p=\ <0.001$) as was lower socioeconomic group ($p=\ <0.05$), but there were no significant geographical differences.

Of life style variables, there was a significant relationship between smoking and tranquilliser use in some subgroups (middle-aged males, older fe-

Table 2. *Personality Scale Scores (Eysenck Personality Inventory, 1964) in sedative/tranquilliser users versus non-users on day of interview*

		Mean (SD)	
Neuroticism (EPI scale)	Tranquilliser Non-tranquilliser	= 13.7 (5.3) = 9.5 (5.2)	0.0001
Extraversion (EPI scale)	Tranquilliser Non-tranquilliser	= 10.1 (4.2) = 11.4 (4.3)	0.02
Lie (EPI scale)	Tranquilliser Non-tranquilliser	= 4.3 (1.9) = 3.6 (2.0)	NS

ANOVA partialling-out for any artefactual boosting of significance by such tranquilliser related variables as age, sex, when also related to the variable under scrutiny.

males; see Table 3), but not in the population overall. The most significant factor in this category was the relationship between lack of active leisure pursuits involving physical exercise and tranquilliser/hypnotic consumption. Drug use prevalence rose from 1.7% in those who were very active, to 2.7% with medium indices of leisure activity to 3.9% in those who were relatively inactive (prevalence in inactive versus active groups, $p = <0.0001\%$).

Table 3. *Elevated Risk Ratio Among Smokers versus Non-smokers for Prevalence of Sedative/-Tranquilliser Use Broken Down by Age and Sex (ratios above 1.0 indicate increased probability of sedative/tranquilliser use among smokers: HALS 1985–1986 data, n = 9003)*

Age Group	Males	Females
18–29 years	1.3 (NS)	1.5 (NS)
30–39 years	2.8*	1.4 (NS)
40+ years	0.9 (NS)	2.42*

*$p = <0.01$ chi-squared test.
NS, not significant.

Discussion

The overall level of tranquilliser/hypnotic use found in this survey was approximately 3%. This figure contrasts with the yearly prevalence rate in Great Britain of 11.2% in 1981 reported by Balter *et al.* (1984). However, the latter inquiry included drug use for one or more days in the preceding year, while the present survey was limited to actual use on the day of the study. Thus a large number of occasional or short-term users would have been excluded, and it is likely that the majority who reported tranquilliser/hypnotic use in the present survey were long-term consumers. Assuming that

the 18 + years population is about 40 million (based on 1983 census) in the U.K., a 3% tranquilliser use translates into some 1.2 million users—a figure which coincides with Taylor's (1987) estimate of 1.2 million long-term users.

In view of the 16% fall in benzodiazepine prescription figures over the last 6 years, total prevalence of benzodiazepine use has presumably also fallen. The decrease is likely to apply mainly to short term users, estimated as 3 million in 1981 (Taylor, 1987). It appears from recent studies (Mant *et al.*, 1988; Williams, 1987) that most people prescribed benzodiazepines take them for only a short time, only about 10%–18% continuing up to and beyond 4 months. The number of new prescriptions has probably also declined. The remaining core of long term users is likely to be represented by an older population who have become dependent on these drugs; numbers in this group are unlikely to have decreased greatly, because of the difficulties of drug withdrawal (Petursson & Lader, 1981; Tyrer *et al.*, 1983; Ashton, 1984; Woods *et al.*, 1987; Tyrer, 1988). Table 1 shows that the majority of tranquilliser users were in the middle-aged to older categories and that females were more likely to be tranquilliser users. The prevalence of tranquilliser use in the age group 40 + was 5.7%, and in females over 40 it was 6.9%. The latter figure is in line with Taylor's observation that "the 13 million British women aged over 40 received almost 60% of all the benzodiazepines prescribed for the U.K. population" (Taylor, 1987, p. 14).

This survey, like Balter's (1984) study, did not distinguish between hypnotic versus anxiolytic use of benzodiazepines (many patients take them for both purposes; Ashton, 1987). It is notable that while total prescriptions for benzodiazepines have been declining, prescriptions for these drugs as

hypnotics has continued to rise (Taylor, 1987; Chaplin, 1988). Again, the population affected consists largely of elderly females: "the five million British women over 65 probably consume around 40% of all benzodiazepine hypnotics" (Taylor, 1987, p. 14). This trend is disturbing since benzodiazepines are equally likely to cause dependence, whether taken as hypnotics or as anxiolytics (Kales *et al.*, 1978; Committee on Safety of Medicines, 1988).

The highly significant correlations between tranquilliser/hypnotic use and malaise, ill-health, and higher scores for neuroticism (and lower extraversion) are interesting and have not been reported before in large populations. It has been noted in smaller clinical studies (Mellinger *et al.*, 1984; Williams, 1987; Ashton, 1987; Morgan *et al.*, 1988; Rodrigo *et al.*, 1988) that chronic benzodiazepine use is associated with high physical and psychological morbidity. Golding *et al.* (1983) and Golding & Cornish (1987) found a correlation between higher neuroticism scores (and low extraversion) and history of medically prescribed tranquillisers in normal University student populations, and high neuroticism scores were found in a small series of patients taking long term benzodiazepines (Ashton, 1984). The present survey reveals a large population of tranquilliser/hypnotic users who are in poor mental health and physical health and also score highly for neuroticism. These data suggest that people with high neuroticism traits constitute a vulnerable group who are at increased risk of being prescribed tranquillisers/hypnotics and who may develop into chronic benzodiazepine users with multiple psychosomatic symptoms. It is of course impossible to distinguish between cause and effect. Benzodiazepines are usually prescribed for psychosomatic symptoms, but it seems clear (as previously noted; Ashton, 1987) that long term use of these drugs does not control or prevent the development of morbidity, and may actually aggravate a variety of psychological and psychosomatic illnesses.

With regard to psychosocial and lifestyle factors, the correlation of tranquilliser/hypnotic use with lower socioeconomic group and with unemployment is not surprising. The morbidity associated with unemployment has been well described by Smith (1985a and b, 1987) and the relationship between tranquilliser and psychotropic drug use, social class and unemployment has been noted by Gabe & Thorogood (1986), Cafferata *et al.* (1983) and Gabe & Lipshitz-Phillips (1986).

The strong association ($p = <0.0001$) between tranquilliser/hypnotic use and lack of participation in physically active leisure pursuits was striking. Such a relationship has been reported amongst University students (Golding & Cornish, 1987) but has not previously been examined in the general population. It could be argued that people with high levels of malaise and illness are prevented by their symptoms from pursuing a lifestyle involving physical activity, and also that their personality characteristics make them less inclined to undertake the social interactions involved—so that they turn to tranquillisers instead. Nevertheless, this finding could have implications for the prevention and management of tranquilliser/hypnotic dependence. It is possible that physical leisure activity provides an alternative to the socially protective (Murray, 1981; Gabe & Lipshitz-Phillips, 1984; Gabe & Thorogood, 1986) effects of tranquillisers, and that its enouragement by health policy makers and physicians would decrease the prevalence of tranquilliser use and its attendant morbidity.

In conclusion, these survey data highlight the correlation between such factors as (female) gender, (older) age, (greater) malaise and ill-health, unemployment, more neurotic personality traits, less active leisure pursuits and sedative/tranquilliser use. This information could be useful in indentifying 'at risk' groups in society and possibly in formulating preventive policies.

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