

SLEEP, PERSONALITY AND MENTAL HEALTH

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SYNOPSIS

A study on the relationship between sleep, personality and mental health was carried out on 179 young healthy adults using a sleep questionnaire, the Eysenck Personality Inventory and two questionnaires on Neurosis. On the average, the subjects took 20.4 minutes to fall asleep, slept at 10.40 pm and woke up at 5.47 am, sleeping a total of 6.78 hours. Seventy four (41%) had sleep problems, mainly insomnia, of which 50 (28%) had it within the past one month. Their insomnia was mainly attributed to worries and thinking too much. The poor sleepers had significantly higher scores on neuroticism, depression and anxiety. This is consistent with similar studies in Western countries. It was concluded that mild insomnia is not uncommon and may indicate an underlying mild anxiety depressive state.

INTRODUCTION

This is a study to find out the sleep problems and sleep behaviour in young healthy adults and to relate these to their personality and mental health. Sleep disturbance is probably the most frequent symptom of mental illness. Of the sleep disturbance, insomnia is by far the most common. The type of insomnia depends on the underlying mental disorder. Patients suffering from anxiety neurosis and reactive depression often complain of difficulty falling asleep during bed time (1). Early morning awakening is a symptom of endogenous depression. Sleep disorders in acute schizophrenia usually take the form of waking up at night. In acute organic brain syndrome eg. in delirium there is a reversal of the sleep wake rhythm. The most common sleep disturbance in the "healthy" adult is an occasional inability to fall asleep during bed time.

METHOD AND MATERIAL

Subjects

This consisted of 179 newly recruited pupil assistant nurses. All the subjects had completed secondary education and passed a medical examination before recruitment. At the time of this study, they could be regarded as healthy and free from organic illness. The characteristics of the sample are described in Table 1 below.

Table 1
CHARACTERISTICS OF THE SAMPLE

Sample size	179			
Age	Mean	18.3	S D	1.85
	Mode	17-18	Range	16-26
Sex	Male	21	Female	158
Race	Chinese	74	Indians	26
	Malays	73	Others	6

Procedure

The methods of investigating sleep include: (a) continuous EEG and polygraphic monitoring, (b) continuous visual observations, (c) interviews, (d) questionnaires and (e) sleep diaries. For large-scale studies with limited resources, the most practical method is the use of questionnaire (2). In this study, all the subjects were given the following questionnaires to answer at one sitting:

- 1 Sleep Behaviour Questionnaire
- 2 Neurosis Questionnaire (see appendix I)
- 3 Eysenck Personality Inventory (3)
- 4 Middlesex Hospital Questionnaire (4)

The Sleep Behaviour Questionnaire which was similar to the one used by Bixler et al, 1975 (5) included questions on (a) sleep problems, (b) sleeping pills, (c) hours of sleep per day, (d) time of sleeping and (e) time of waking.

The Neurosis Questionnaire was self administered and consists of 30 items which cover symptoms of anxiety, depressive and somatic neurosis. It was a modified version of the Middlesex Hospital Questionnaire (4) for neurosis and was constructed to suit local patients.

RESULTS AND DISCUSSION

Sleep Behaviour

The sleep behaviour was determined by answers to

questions on the time of sleeping and waking, time taken to fall asleep and the total hours of sleep per day. The results are shown in Table 2.

Sleep Problems

Out of the 179 subjects, 25 reported having sleep problems at present (during the past one month) and 24 had sleep problems in the past. There were 25 subjects who had sleep problems both at present and in the past as shown in Table 3 below.

Table 2
SLEEP BEHAVIOUR

	Mean	Mode	Range
Time of sleeping	10.44 pm	10-11 pm	8 pm — 2 am
Time to fall asleep	20.4 min	1-10 min	1 min — over 1 hr
Time of waking	5.47 am	6.00 am	5 — 9 am
Total hours of sleep	6.78 hrs	7 hrs	5 — 9 hrs

Table 3
SLEEP PROBLEMS (PRESENT AND PAST)

Types of Problems	No.	%
No sleep problems at present or in the past	105	59
Having sleep problems at present*	25	14
Having sleep problems in the past**	24	13
Having sleep problems both present and past	25	14
Total	179	100

* present means during the past 30 days.

** past means beyond 30 days.

The sleep problems were mainly confined to insomnia. Their breakdown is shown in Table 4 below.

Table 4
TYPE OF SLEEP PROBLEMS

Problems	No.	%
Cannot fall asleep	22	29.7
Wakes up in the night	13	17.6
Wakes up early	6	8.1
Nightmares	4	5.4
Sleep too much	1	1.4
Two or more of the above	15	20.3
Others — did not specify	13	17.5
Total	74	100.0

There were a total of 74 subjects (41%) who reported having sleep problems. Out of these 74 subjects, 56 (76%) reported having insomnia — mainly in the form of inability to fall asleep or waking up at night, and 15 (20%) had more than one complaint.

The majority of the sleep problems consisted of difficulties in falling asleep. This is a symptom of tension and anxiety state. Bixler et al, 1975 (5) found that tension was a more frequent complaint in those who had difficulty falling asleep. In our study, most of the subjects gave 'worries' (37%) and 'thinking too much' (15%) as the cause of their insomnia (see Table 5

below). As these two complaints are important symptoms of anxiety state, it is likely that many of the subjects were suffering from a mild anxiety state. This is not unexpected as the subjects were newly recruited pupil assistant nurses.

Table 5
CAUSES OF INSOMNIA

Causes	No.	%
Worries	27	36.5
Think too much	11	14.9
Work stress	6	8.0
Personal problems	5	6.8
Environmental discomfort	5	6.8
Not stated	20	27.0
Total	74	100.0

The sleep problems appeared relatively mild as only 2 subjects (1.1%) reported taking 'sleeping pills' in the form of diazepam 2 to 5 mg at night. The diazepam was obtained from registered medical practitioners. The prevalence of sleep problems in this study is similar to the results found in surveys on the general population and on selected groups in other countries. Bixler et al, 1979 (5) in a survey of adults in Los Angeles found 22.2% of young adults (age 21-29) complaining of insomnia. Sweetwood et al, 1976 (6) reported that 25% of non-patients had sleep disturbance. However, the proportion of the subjects taking 'sleeping pills' in this study (1.1%) was very much lower than in Western European countries (7) which returned figures of 10-17% (7).

Sleep Problems and Personality

The subjects' 'personality' was assessed by the Eysenck Personality Inventory (3) which measures two personality dimensions — extraversion and neuroticism. There was no significant difference between the good sleepers (those without sleep problems) and poor sleeper (those having sleep problems) for extraversion, but the poor sleepers had a significantly higher mean score for neuroticism as shown in Table 6 below.

Table 6
PERSONALITY AND INSOMNIA

Personality Dimension	Poor Sleepers N = 74	Good Sleepers N = 105	t	p
Extraversion (mean score)	10.33	10.41	0.13	NS
Neuroticism (mean score)	13.35	9.58	5.37	0.001

These findings were similar to the results of a study by Clift, 1975 (8) on subjects who complained of sleep disturbance. His subjects showed a higher score for neuroticism than the control group. Using the Eysenck Personality Inventory, the neuroticism scores for his subjects were 14.1 compared to 10.5 for normal controls ($P < 0.001$). However, Tune, 1976 (9) found that neuroticism (measured by Heron's Inventory) was not significantly associated with any of the measures of sleep disorder, but introversion (unsociability) was related significantly with reduced sleep and early awakening.

Sleep Problems and Mental Health

Poor sleepers had significantly higher mean scores on the two questionnaires measuring neurotic symptoms. The differences were more marked for subscales measuring anxiety and depression (see Table 7).

Table 7
INSOMNIA AND NEUROSIS (MENTAL HEALTH)

Middlesex Hospital Questionnaire	Poor Sleepers N = 74	Good Sleepers N = 105	t	p
Depression	8.08	6.59	3.33	0.001
Anxiety	7.00	5.37	3.20	0.01
Obsession	9.14	7.63	2.01	0.05
Hysteria	7.43	6.66	1.78	NS
Phobia	6.61	6.22	0.91	NS
Hypochondriasis	6.16	5.22	0.76	NS
Total Score	44.42	37.69	3.08	0.01

Neurosis Questionnaire	Poor Sleepers N = 74	Good Sleepers N = 105	t	p
Depression	8.53	5.66	4.58	0.001
Anxiety	7.71	5.16	3.68	0.01
Somatic	5.04	3.07	3.91	0.001
Total Score	21.28	13.89	4.65	0.001

The results showed a positive relationship between insomnia and neurosis. This is expected as anxiety and depression are the most common psychiatric syndromes causing insomnia (1). The inability to sleep is one of the most frequent complaints made by psychiatric patients (10). Moreover, insomnia and sleep disturbance are important items in all instruments measuring anxiety or depression. Similar results showing elevated scores for depression and psychasthesia (anxiety) were also obtained in studies on insomnia subjects using the Minnesota Multiphasic Personality Inventory (MMPI) (6, 11, 12).

CONCLUSION

Insomnia, in its milder form, appears to be a fairly common phenomenon even amongst young healthy individuals as shown in this survey. Its presence probably indicates mild underlying anxiety and depression as the study shows a close relationship between insomnia and these two conditions. Since insomnia is relatively clear-cut and quantifiable, a detailed enquiry into sleep behaviour should form part of a routine psychiatric examination. The prevalence of insomnia also reflects on the mental health status of a community and this can be confirmed by doing a survey. Such a survey had been carried out and a positive relation between insomnia and neurosis was found (13).

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NEUROSIS QUESTIONNAIRE

APPENDIX I

Name _____ Age _____ Date _____

INSTRUCTIONS: Here are some statements about your health and the way you feel during the past one month. Circle the answer that applies to you after each question.

QUESTIONS		ANSWERS		
1	I blame myself when things go wrong.	often	sometimes	no
2	I have bad dreams which upset or frighten me when I wake up.	often	sometimes	no
3	I suffer from headache.	often	sometimes	no
4	I wish I were dead.	often	sometimes	no
5	I feel frightened for no reason.	often	sometimes	no
6	I suffer from stomachache.	often	sometimes	no
7	I have poor appetite.	often	sometimes	no
8	I find it hard to fall asleep.	often	sometimes	no
9	I have chest pain or chest discomfort.	often	sometimes	no
10	I enjoy what I do.	often	sometimes	no
11	I worry about my health.	often	sometimes	no
12	I have difficulties in breathing.	often	sometimes	no
13	I wake up very early in the morning (eg. at 4 am) and remain awake.	often	sometimes	no
14	I worry about my future.	often	sometimes	no
15	My legs feel weak.	often	sometimes	no

QUESTIONS		ANSWERS		
16	I feel unhappy or downhearted.	often	sometimes	no
17	I feel tense or uneasy.	often	sometimes	no
18	I suffer from backache.	often	sometimes	no
19	I feel like crying.	often	sometimes	no
20	I have attack of sweating even when it is not hot.	often	sometimes	no
21	My hands or legs feel very numb.	often	sometimes	no
22	I feel guilty for things I have done in the past.	often	sometimes	no
23	I have fainting feelings.	often	sometimes	no
24	I feel tired or weak.	often	sometimes	no
25	I feel myself a useful person.	often	sometimes	no
26	My heart jumps or beats very fast for no reason.	often	sometimes	no
27	I suffer from nausea or vomiting.	often	sometimes	no
28	I cannot think quickly or clearly as I used to.	often	sometimes	no
29	I suffer from giddiness.	often	sometimes	no
30	I suffer from bone pains.	often	sometimes	no

Scoring: often = 2, sometimes = 1, no = 0
 Depression: 1, 4, 7, 10, 13, 16, 19, 22, 25, 28
 Anxiety: 2, 5, 8, 11, 14, 17, 20, 23, 26, 29
 Somatic: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30