Sleep Information by Telephone: Callers Indicate Positive Effects on Sleep Problems

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There is a need to develop effective interventions for insomnia that are readily accessible and not too expensive. For the reason that earlier studies have already shown that direct contact with a sleep therapist is not always needed, telephone service may be useful to give insomnia patients education and instructions about sleep and sleep hygiene. In April 1998, the 'Sleep Line' was introduced in The Netherlands. People with sleep problems could dial a telephone number for information and tips. Randomly structured interviews by telephone were held among 302 of the 10.000 people who called the line in the first nine months of its existence. The average caller of the Seep Line is a middle aged and highly educated person. Sleep onset is the main complaint. Almost all subjects have sleep complaints a few nights per week or more, with a mean duration of five years. Callers listened mostly to general information about sleep and to treatments not involving hypnotic drugs. About one quarter of the callers experienced subjective improvements in their sleep after calling the line once or twice. This means that from the 10.000 people who called the line, the subjectively experienced sleep quality of approximately more than 2500 people may be improved. It is suggested that these positive results could be explained by the information about sleep and sleep hygiene advises given to the callers. We therefore conclude that minimal intervention using the Sleep Line is a useful supplement to more time consuming and expensive forms of sleep therapy. **(Sleep and Hypnosis 2002;4(2):47-51)**

Key words: *sleep problems, insomnia, telephone line, information, sleep hygiene, subjective sleep improvement*

INTRODUCTION

Insomnia is a frequent complaint. The prevalence of insomnia has been estimated to be about 30% of the population (1-3). An international world wide study of the World Health Organisation on general healthcare showed that less than fifty percent of insomniac patients were recognised as such by their general practitioners (4). A Dutch survey indicated that only 20% of the people with sleep complaints visits a general practitioner (5). Apparently, the majority of patients do not inform their physicians about sleep complaints and the doctors do not explicitly ask about sleeping behaviour. Therefore, many subjects with insomnia do not receive any treatment for their sleep difficulties. When treatment is

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initiated, it is often limited to pharmacological therapy; a short term therapy indicated for situational insomnia. However, on the long run sleep medication has several limitations such as dependency and tolerance (6). In recent years the behaviour therapy of insomnia has proven its use (7-10). Despite substantial evidence supporting the efficacy of behavioural therapy, this treatment is still relatively unknown to the public and underused by general practitioners, while the accessibility is limited. A main disadvantage of the behaviour treatment is also that it is expensive due to the time consuming therapist-client interactions. In all, there is a need to develop effective interventions that are readily accessible and not too expensive. Up to now only a few studies has addressed minimal interventions for sleep disorders. Recently, Mimeault and Morin have studied the effects of bibliotherapy in the treatment of insomnia (11). They mailed six treatment booklets at the rate of one booklet per week and, in addition, half of the patients received minimal professional guidance by a 15-minutes weekly phone consultation. After both treatments, subjectively estimated total sleep time and sleep efficiency was significantly improved. Hauri studied the effects of a one-time consultation in chronic insomniacs and found that patients who followed a given advice, reported its usefulness to be about 70 percent (12). Riedel et al. investigated the effects of a self-help video, with education and bed-time restriction strategy, with and without the guidance of a therapist (13). The self-help insomniac group improved, but the addition of the therapist guidance enhanced the effectiveness of the treatment. The effects of treatment through mass media was studied by Oosterhuis and Klip (14,15). The training consisted of eight weekly television lessons of 15 minutes each and was broadcasted by the Dutch educational station TELEAC. From the 200.000 people who watched the television programme, a sample of 325 patients filled in a sleep log. The training appeared to be an effective means of improving sleep behaviour. The subjective sleep latency decreased and total sleep time increased. Furthermore, 40% of reacting people using hypnotic drugs ceased drug use after the training course. The results of the training course were comparable with interventions that used direct therapist-client contact. Thus, a remedy to help people with sleep problems could be by giving them education and instructions. An alternative to keep it accessible and feasible is to use the telephone to serve this goal. In April 1998 the 'Sleep Line' was introduced in The Netherlands. People with sleep problems could dial a telephone number for information and tips. The initiative was taken by the Dutch Society for Sleep-Wake Research (NSWO) and organised by the Dutch branch of the pharmaceutical company Sanofi-Synthélabo, supported by two patient associations (the Dutch Society for Narcolepsy and the Dutch Society for Sleep Apnoea Patients). Announcement of the Sleep Line was done in news papers, in billboards of train stations, in home-to-home papers as well as in magazines. To prevent from misuse, the price of the line was 55 cents per minute.

The purpose of the line was hoped to be twofold. Firstly, to inform the general public about sleep disorders and, secondly, to help people with sleep problems. Information about sleep disorders and recommendations about sleep hygiene are given by a pre-recorded tape. The aim of this study was to evaluate the usefulness of the Sleep Line. The main questions were: what kind of people call the line, what type of information do they want to know and is the Sleep Line useful for the callers?

METHODS

After dialling the number of the Sleep Line you first get a word of welcome [number 0900-3005020]. After dialling a 0 to continue, you can choose between the following options by pressing the button of your telephone. Callers who press a 1 will receive an information package about sleep and sleep disorders and containing a leaflet with

Table 1. Profile of callers

Profile	n = 302
Sex	male: 43%, female: 57%
Education	high: 57%, middle: 33%, low: 10%
Age in years	< 34 years: 14%, 35-54 years: 57%, > 55 years: 29%
Callers with sleep complaints	89%*
Type of sleep complaint and Frequency of sleep complaint	sleep onset: 51%, sleep maintenance: 41%, early morning awakening: 18% almost every night: 56%, few nights per week: 38%, few nights per month: 6%
Duration of sleep complaint	5.7 years

* 11% called the Sleep Line for other reasons, yet 30% of this group had sleep complaints on closer examination. Other reasons for calling were: calling for other person with sleep complaints, curiosity, wanted to know more about sleep.

information, sleep hygiene suggestions, a sleep log and a 'self-test' for sleep problems. All callers receive the same information package. In the first six months of the existence of the Sleep Line, 62% of the callers asked for the additional information leaflet. Callers who press a 2 receive information about patient organisations (the telephone numbers of the Dutch Society for Narcolepsy and the Dutch Society for Sleep Apnoea Patients are given). Callers who dial a 3 receive recommendations about how to fall asleep ('sleep tips') and to listen to the 'tip of the week'. They can also record a personal message or advice to the line. When callers dial a 4 they get information about treatment of sleep problems with and without medicine. Option 5 implies getting tests about sleep quality and explanation about sleep disturbances, whereas option 6 gives more scientific information about sleep and sleep disturbances. It is possible to change between these options during one telephone call.

To evaluate the effects of the Sleep Line in January 1999, the NIPO (a professional and independent Dutch Institute for Market Research) held structured interviews by telephone among 569 of the 10.000 people who called the Sleep Line in the nine months of its existence. The sample of 569 callers was randomly selected in such a way that it was representative for the callers of the line. From this sample 53% of the interviews succeeded. The refuse rate was 28% (21% for principal reasons, 3% due to illness, 2% was too busy and 2% for other reasons), whereas 13% of the callers did not phone for sleep problems and 6% could not be reached. Ultimately, structured interviews were obtained from a representative sample of 302 (53%) persons.

RESULTS

During the first nine months of its existence the Sleep Line was called 1.4 times on average (84% called once, 14% called two times or more, 2% did not know anymore). The profile of the callers of the Sleep Line is summarised in Table 1. More females (57%) than males (43%) called the line. More than half of the callers were highly educated (college educated) (57%) and 86% was older than 35 years. Nine out of ten callers (89%) had a sleep complaint. The remaining 11% called the line for other reasons, although almost one third of this group had also sleep complaints on closer examination. Other reasons for calling were that a person called for another person with sleep complaints, wished to learn more about sleep, or was just curious about sleep. Difficulties with sleep onset were mentioned most often (51%), followed by difficulties in sleep maintenance (41%) and early morning awakening (18%). More than half of the callers had sleep complaints almost every night (56%), whereas the mean duration of sleep complaints was more than five years. The aetiology of the sleep disorders remains unknown.

The role of the general practitioner was also determined. Two thirds of the callers (66%) with

Table 2. Advice that was followed after calling the Sleep Line

Advice	Percentage that followed the advice (%)
Create favourable sleep environment (light, noise, temperature, comfort)	29
Avoid caffeine (coffee, tea, cola) in the evening	25
Heavy exercise is better during the day than during the evening	25
Avoid alcohol before bedtime	24
Restrict the time in bed: do not read, eat or watch television in bed	22
Have a constant sleep window: every night the same amount of hours	19
Do not worry in bed	19
Do not nap during the day	19
Take your meals every day at the same time	19
Persons who did not follow any recommendation (including those persons who did not remember the advice)	43 (35% male, 48% female)
Persons who experienced improved sleep after calling the line	27 (33% male, 23% female)

sleep complaints had visited their general practitioner before consulting the Sleep Line. Women visit the doctor more often than men (73% females; 55% males). From the people who visited a physician for their sleep complaints, 82% ever received a hypnotic drug on prescription. Nearly half of those people (47%) had stopped the medication at the time of the interview. Only 6% of the callers went to their doctor after calling the Sleep Line; most of them to discuss the sleep information package they had received. Callers listened mostly to general information about sleep (48%), next, to the treatment of sleep disorders without hypnotic drugs (32%) and, finally, to the sleep tips (17%). Only 9 percent wanted information about hypnotic drugs and 25% did not remember to which information they had listened.

Most of the recommendations and advises on the Sleep Line were simple and well-known (Table 2). The most followed advice was 'create a favourable sleep environment' with respect to light, noise, temperature and comfort (29%). A quarter of the callers with sleep complaints followed the suggestions 'avoid caffeine in the evening (coffee, tea and cola)' (25%), 'heavy exercise is better during the day than during the evening' (25%) and 'avoid alcohol before bedtime' (24%). Sleep behavioural recommendations like: 'restrict the time in bed; do not read, eat or watch television in bed' (22%); 'have a constant sleep window; every night the same amount of hours' (19%); 'do not worry in bed' (19%) and 'do not nap during the day' (19%) are followed less often than the other sleep hygiene advises. Nearly half of the patients did not follow an advice or could not remember the recommendations anymore (43%). More women (48%) than men (35%) did not follow any advice. A quarter of the callers with sleep complaints indicated an improvement of their sleep after calling the Sleep Line (27%, 33% male and 23% female).

DISCUSSION

The present study showed that the average caller of the Sleep Line is a middle-aged, highly educated woman. Sleep onset is the main problem and the mean duration of sleep complaints is five years. This is comparable with the results of an epidemiological study in the Netherlands that showed that adult women sleep less well than adult men and sleep onset is the main problem (16). However, while in our study highly educated woman call more often, the epidemiological study showed that less educated women sleep less well. It seems that highly educated woman actively seek information and advises for their sleep as were given by the Sleep Line.

Generally, people calling the Sleep Line want to receive more information about sleep and treatments without hypnotics. The study revealed

in 27% of the cases a positive effect on their sleep problem. This means that from the 10.000 people who called the line, the subjectively experienced sleep quality of approximately 2700 people apparently has improved. Of course, there is the problem with 'socially desirable' answers when asking the opinion of people. On the other hand, the telephone interviews are anonymous and the research institute is known as a reliable and independent institute. This may help callers to answer freely.

It remains remarkable that more than a quarter of the subjects with long lasting sleep problems reported a positive result on their sleep problems after just one or two phone calls. These positive results could be explained by the information about sleep and the sleep hygiene advises from the line itself and the leaflet they received after calling the line. Information about sleep and sleep hygiene advises, specially the ones concerning sleep behaviour, are also important elements of more intensive behavioural therapy, with or without a therapist. In the study of Hauri (12) patients who tried a given suggestion, generally reported its usefulness to be about 70%. In the present study, 43% did not follow and 57% did follow a given advice. Of the latter 57% of callers, 27% report a positive effect. This implies that the usefulness of the intervention increases from 27% till 47% if we only look at persons who tried a given advice. This is still lower than the 70% usefulness of Hauri's intervention. Nevertheless, when taking into account that in the latter study advises were individually given after a consultation while in our study a public advice by telephone is given, this is a fairly positive result.

In summary, it is concluded that the Sleep Line by telephone is a useful supplement to more time consuming and expensive forms of sleep therapy.

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