

## NURSING

# The value of lavender for rest and activity in the elderly patient

R. Hudson

Odiham Cottage Hospital

**SUMMARY.** Symptoms of tiredness, lack of muscle co-ordination and dysarthria, and difficulty in maintaining attention in elderly people may be wrongly labelled as part of the ageing process and so ignored.<sup>1</sup> If adequate sleep can reduce these symptoms and restore therapeutic activity, it is of enormous value to elderly people in retaining their independence and quality of life. Safe promotion of sleep without daytime lethargy is needed. In order to test the hypotheses that *Essential Oil of Lavender* has a sedative effect, and that the resultant sleep promotes therapeutic activity, a pilot study was arranged with acutely ill elderly people. This was followed by a more detailed trial with long-term patients. The results show a positive trend towards improvement with lavender.

## INTRODUCTION

Lavender is reputed to aid relaxation and have restorative powers.<sup>2</sup> Torii et al found it to have similar sedative effects to nitrazepam and chlorpromazine without lethargy.<sup>3</sup> Tisserand vouches for its safety.<sup>4</sup> Van Toller found that any smell experienced as unpleasant does not gain access to the Central Nervous System so does not have a negative effect.<sup>5</sup>

## THE PILOT STUDY

It was proposed that the usual calming preparations for sleep would continue and, in addition, one drop of *Essential Oil of Lavendular Angustifolia*<sup>6</sup> on a pillow would be offered to promote sleep. Doctors and managers were consulted and none objected.

As our patients are admitted for acute medical reasons and usually go home, after rehabilitation, in two or three weeks, it was decided that each one would not be in hospital long enough either for their sleep pattern to be recorded prior to the use of lavender, or to omit any sedation they had been taking before admission. All patients admitted were given written details of the proposal and some preferred not to take part. Their numbers are included in the

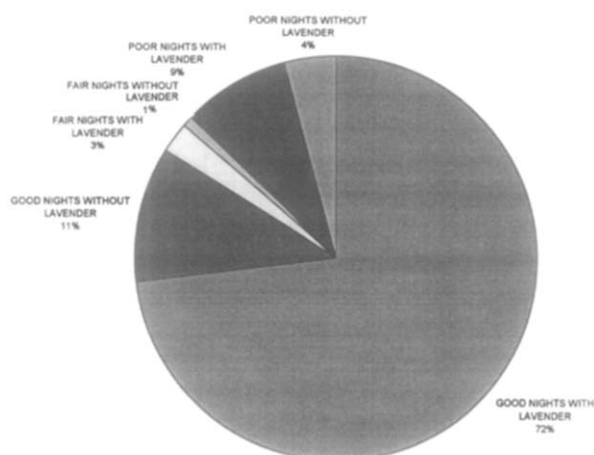


Fig. 1 Quality of nights with and without lavender.

results, but they do not constitute a control group as they were subject to the lavender vapour in the wards. All records were anonymous.

Initially, an objective survey of the patient's sleep with inhaled lavender was performed and the night nurses' comments recorded. Figure 1 shows the proportion of good nights for the first week of 36 patients' stay, this being seen as a stressful time common to all admissions. It represents 245 patient-nights: 201 (82%) slept well, 175 (72%) with lavender. It was then felt that records of daytime alertness and willingness to participate in rehabilitation would be useful. Accordingly, a month of patients' night sleep and daytime alertness inhaling

Ruth Hudson RN, Staff Nurse, Odiham Cottage Hospital and Alton Community Hospital, Odiham, Hampshire RG27 1NE, UK.

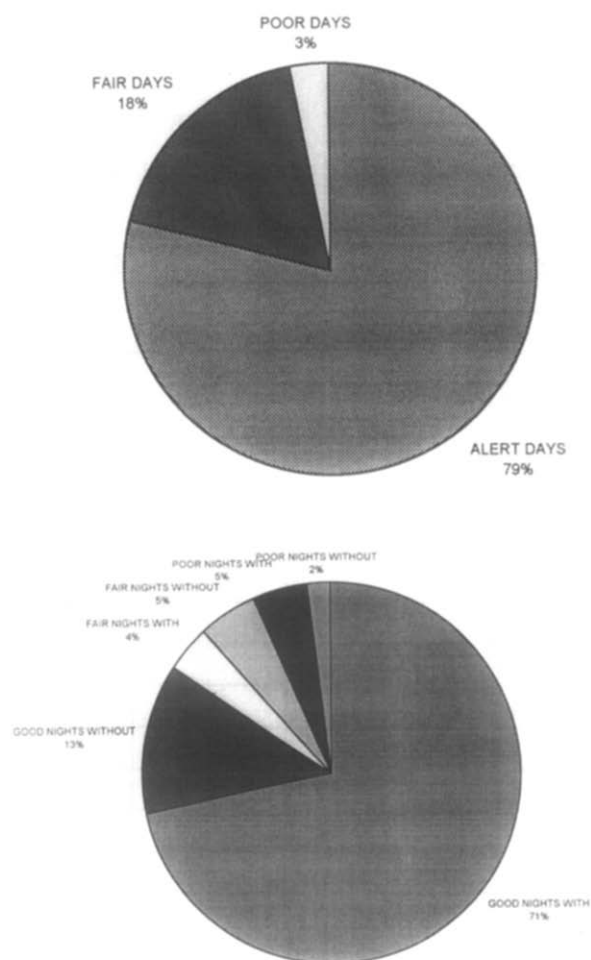


Fig. 2 (Top) Relative day quality with lavender. (Bottom) Quality of nights with lavender.

lavender as before was recorded. All patients in the hospital for more than six nights during one month were invited to take part and 15 patients (or 102 patient-nights; 103 patient-days) were included. This was a different, though broadly similar, group of patients, owing to patient turnover.

A control survey, with a further 16 patients with similar diagnoses, was then performed; objective reports of days and nights were collected as before, but with no lavender. Again, a week's results were evaluated (Fig. 2).

## RESULTS

There is a close similarity between the two surveys of sleep shown in Figures 1 and 2. Despite the difference in sample size (245 versus 103), 72% slept well with lavender in both surveys. Many patients commented that they had not slept so well for a long time and most nurses felt that the lavender oil helped with the quality of sleep; there was less restlessness at night and more activity and socializing during the day.

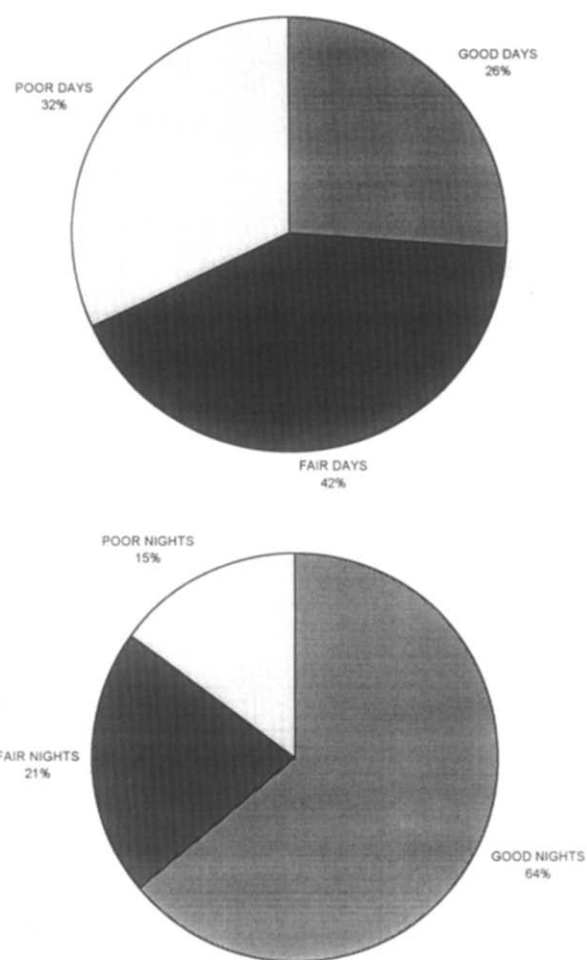


Fig. 3 (Top) Quality of days without lavender. (Bottom) Quality of nights without lavender

Figure 3 shows the results for the control group: 102 patient-nights; 103 patient-days, with no lavender. Despite the similar size of the two groups, there is a marked difference in the results. With no lavender, only 64% of patients slept well. The daytime results are even more striking, with 81 patients (79%) being reported as having a good day when given lavender at night compared to only 27 patients (26%) without lavender. There were many reports of confusion and anxiety during this time and these account in the main for the 'fair' and 'poor' days.

## CONCLUSIONS FROM THE PILOT STUDY

As each figure represents a different group of patients, the major difference between Figures 2 and 3 would seem to be whether or not lavender was given and had an effect on the quality of sleep. This suggests that *Vapourized Essential Oil of Lavendular Angustifolia* at night not only aids sleep but improves ability to perform therapeutic activities during the day, providing a much-needed morale boost in our elderly patients' lives.

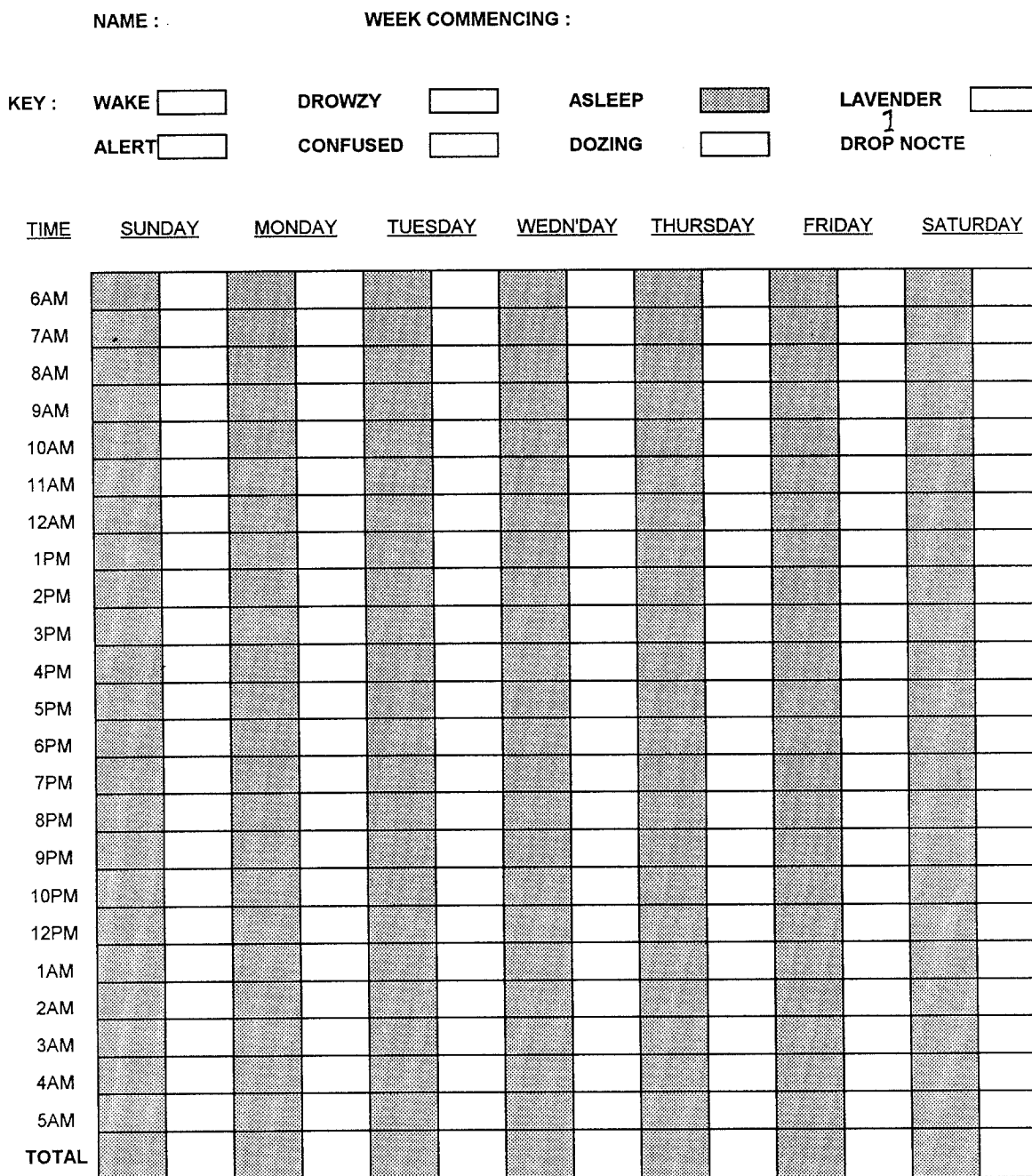


Fig. 4 24-hour sleep/wake pattern with lavender.

**THE DETAILED STUDY**

The next stage was to arrange a more detailed study with long-term patients, thereby reducing the number of variables to be considered. Twenty-four-hour charts were devised to collect data on *Sleep*, *Dozing*, *Wakefulness*, and *Alertness* for each patient, for a week of usual day-and-night behaviour, followed by a week when lavender was administered at night as before (Fig. 4). Medication, including hypnotics, was not changed. It was felt that withdrawal of hypnotics and sedatives would cause a major disruption to patients and would not be helpful at this stage. The

administration of inhaled lavender as a support to patients while withdrawing from hypnotics may be considered as a future subject of research but was not part of this trial.

Full explanations were given to patients and their relatives, since many suffered from dementia, and consent was obtained before the trial started. Records were denoted numerically and are anonymous. There was no selection process: all patients who wanted the lavender were included. Owing to the transfer of patients into nursing homes during this time, only nine people completed the two-week study: eight women and one man. All figures given are for these nine patients.

**Table 1** Weekly average for each category per patient (For 9am–8pm, 12-hour day; 9pm–8am 12-hour night)

Without lavender						With lavender				
Person	A + W Total	% of day	A as % of A + W	D + S Total	% of night	A + W Total	% of day	A as % of A + W	D + S Total	% of night
1	992	83	50	885	74	1034	86	46	913	76
2	607	51	0	1021	85	334	28	36	1118	93
3	934	78	46	967	80	894	75	55	929	77
4	810	68	51	997	83	912	76	39	982	82
5	1037	86	78	723	60	1113	93	92	828	69
6	1146	96	93	959	80	1183	99	99	978	82
7	930	78	70	815	68	1094	91	49	872	73
8	465	39	37	949	79	662	55	10	1091	91
9	759	63	69	715	60	819	68	91	643	54

Abbreviations A: alert; D: dozing; W: wake; S: sleep.

Nurses were asked to tick the appropriate box on each chart for each hour according to whether the patient was awake or asleep, and to write 'A' if *Alert*, or 'D' if *Dozing*. They were also asked to denote *Confusion* as 'C', and to leave blanks if they were not able to make the recording. Because there were some blanks, all recordings were evaluated as percentages of the total recordings for that hour.

At the end of the week, after recording usual patterns of *Sleep* and *Wakefulness*, and including *Alertness*, *Dozing*, and any *Confusion*, the first charts were replaced and the administration of lavender oil started: one drop on a pillow at night for each patient. Twenty-four-hour recordings continued as before and any omissions noted for each category: *Sleep*, *Dozing*, *Wakefulness* and *Alertness*. These were totalled at hourly intervals and calculated as percentages of the total recordings for that hour, for each week.

*Confusion* was noted and included in the totals of *Wakefulness*.

For one patient, two hours of *Confusion* were noted during both weeks. For the only other patient for whom recordings of *Confusion* were made, none was observed during the week with lavender, compared to five recordings during the previous week.

Totalled hours of *Sleep* and *Awake* throughout the twenty-four hours varied for each patient, but did not always show a great deal of difference between the two weeks. However, any change in *Sleep* and *Awake* patterns must fit in to the subject's social environment for them to have therapeutic value and be acceptable to their community. Accordingly, the results were evaluated for a twelve-hour day: 9 am–8 pm; and a twelve-hour night: 9pm–8am, as patient's rhythms seemed to change round about these times.

Individual comparisons were made for each patient for each week. The calculations are given in percentages and are averages over each week of the twelve-hour day: *Awake* and *Alert* between 9 am and 8 pm, and average twelve-hour night of *Sleep* and *Dozing* from 9 pm to 8 am. Each patient received

some benefit from the administration of lavender at night. (See Table 1) Each patient is identified by a numeral:

1. *Overall Wakefulness* increased by 3% in the day and sleep at night improved by 2%.
2. *Alertness* increased by 36% in the day and sleep at night improved by 8% sleeping longer into the early morning.
3. *Alertness* increased by 9% in the day and though the amount of sleep decreased, there were fewer breaks.
4. *Overall Wakefulness* increased by 8%. The patient's hours of night sleep were similar but the periods of sleep were longer with the lavender.
5. *Alertness* increased by 14% while *Wakefulness* increased by 7%. The patient's *Nocturnal Sleep* improved by 9% and was more consistent. She experienced two hours of *Confusion* in both weeks.
6. *Wakefulness* increased by 3%, and *Alertness* by 6%. *Nocturnal Sleep* improved by 2%, mainly in the early morning.
7. *Overall Wakefulness* increased by 13%, and *Sleep* by 5%. *Confusion* dropped from five hours to none when given lavender.
8. *Wakefulness* increased by 16% during the day, and *Sleep* by 12%, sleeping longer into the early morning.
9. [The only man]. Though his sleep decreased, his *Alertness* improved by 12% while his *Wakefulness* increased by 5%.

These improvements in both day and night are due to shorter or fewer periods of dozing during the day and fewer wakeful episodes at night.

**Table 2** All patients' total recorded hours showing percentage of each status at each hour shown

Wake and alert daytime												
Without lavender						With lavender						
Time	Sleep	Dozing	Wake	Alert	Total hours recorded	Time	Sleep	Dozing	Wake	Alert	Total hours recorded	
9	6 15%	11 28%	12 30%	11 28%	40 100%	9	7 11%	13 21%	21 33%	22 35%	63 100%	
10	6 16%	8 21%	14 37%	10 26%	38 100%	10	5 9%	6 11%	21 39%	22 41%	54 100%	
11	2 5%	5 12%	17 41%	17 41%	41 100%	11	8 13%	7 11%	18 29%	30 48%	63 100%	
12	1 2%	3 7%	14 31%	27 60%	45 100%	12	5 8%	11 17%	17 27%	30 48%	63 100%	
13	2 5%	5 13%	10 26%	21 55%	38 100%	13	5 10%	10 19%	11 21%	26 50%	52 100%	
14	11 25%	11 25%	7 16%	15 34%	44 100%	14	7 15%	10 22%	12 26%	17 37%	46 100%	
15	9 33%	1 4%	3 11%	14 52%	27 100%	15	8 13%	9 15%	13 21%	31 51%	61 100%	
16	4 9%	8 18%	11 25%	21 48%	44 100%	16	8 13%	5 8%	18 29%	32 51%	63 100%	
17	5 9%	8 15%	17 32%	23 43%	53 100%	17	9 14%	10 16%	17 27%	27 43%	63 100%	
18	2 4%	4 8%	17 32%	30 57%	53 100%	18	6 10%	1 2%	22 35%	34 54%	63 100%	
19	3 6%	8 15%	17 31%	26 48%	54 100%	19	4 6%	5 8%	18 29%	36 57%	63 100%	
20	11 17%	16 25%	22 35%	14 22%	63 100%	20	7 11%	11 17%	16 25%	29 46%	63 100%	
Average for day		29%	43%			Average for day		28%	47%			
Combined average % wake and alert			72%				Combined average % wake and alert			75%		

Though in some instances the quantity of the night's sleep was reduced during the week with lavender, in each of these instances there was some improvement in the daytime.

Each patients experienced some benefit from the lavender at night.

Of the two people who had some *Confusion* in the first week, one had no change, and the other improved by 100%.

### THE AVERAGE PATIENT

The totals in each category for all nine patients for each hour and expressed as percentages were tabulated for both weeks and the averages calculated. The totals and average percentages for *Awake* and *Alert* for the same twelve hours as before were recorded (See Table 2).

Overall *Wakefulness* increased by an hourly average of 3%, from 72% of the days when no lavender was given to 75% of the days with lavender.

Recordings of *Confusion* were also noted: of the patients experiencing this, there was a 50% decrease during the week with lavender.

Table 3 shows *Nocturnal Sleep* and *Dozing* during the week with lavender increased by an hourly average of 2%: from 75% of the nights when no lavender was given, to 77% of the nights with lavender. Periods of sleep were more sustained. During the week with no lavender, from midnight to 6 am there was 7% *Wakefulness*, compared with 4% during the week when lavender was administered.

### CONCLUSION

Though there is an inherent problem with making objective observations – individual nurses' views of degrees of *Wakefulness* or *Alertness*, *Dozing* or *Asleep* may vary – the consistent pattern over the two weeks cannot be ignored.

The evidence from this trial shows a trend towards an improved quality of daytime wakefulness and more sustained sleep at night after the administration of inhaled *Essential Oil of Lavender*. It showed a consistent improvement for every patient who received it and suggests that all elderly patients would benefit from its inhalation.

Table 3 All patients' total recorded hours showing percentage of each status at each hour shown

Sleep and dozing nighttime											
Without lavender						With lavender					
Time	Sleep	Dozing	Wake	Alert	Total hours recorded	Time	Sleep	Dozing	Wake	Alert	Total hours recorded
21	18 29%	12 19%	14 22%	19 30%	63 100%	21	11 17%	12 19%	13 21%	27 43%	63 100%
22	50 79%	2 3%	3 5%	8 13%	63 100%	22	47 75%	5 8%	1 2%	10 16%	63 100%
23	54 86%	1 2%	2 3%	6 10%	63 100%	23	53 84%	2 3%	2 3%	6 10%	63 100%
24	54 86%	6 10%	0 0%	3 5%	63 100%	24	60 95%	0 0%	2 3%	1 2%	63 100%
1	56 89%	2 3%	3 5%	2 3%	63 100%	1	59 94%	2 3%	0 0%	2 3%	63 100%
2	56 89%	4 6%	1 2%	2 3%	63 100%	2	60 95%	1 2%	0 0%	2 3%	63 100%
3	58 92%	1 2%	3 5%	1 2%	63 100%	3	56 89%	3 5%	0 0%	4 6%	63 100%
4	54 86%	2 3%	4 6%	3 5%	63 100%	4	53 84%	3 5%	1 2%	6 10%	63 100%
5	53 84%	0 0%	8 13%	2 3%	63 100%	5	55 87%	2 3%	2 3%	4 6%	63 100%
6	36 67%	0 0%	16 30%	2 4%	54 100%	6	41 76%	6 11%	7 13%	0 0%	54 100%
7	11 20%	7 13%	23 43%	13 24%	54 100%	7	10 19%	13 24%	25 46%	6 11%	54 100%
8	9 20%	7 16%	17 38%	12 27%	45 100%	8	5 9%	9 17%	17 31%	23 43%	54 100%
				69%						69%	
				6%						8%	
				Combined average % for sleep and dozing						75%	
										Combined average % for sleep and dozing	
										77%	

The hypotheses that inhaled *Essential Oil of Lavendular Angustifolia* has sedative properties and that the resultant sleep promotes more wakefulness in the day for therapeutic activities to take place, is supported by the results in this trial.

#### REFERENCES

1. Fordham M. Sleep and rest. In: Redfern S J, ed. Nursing elderly people. Edinburgh: Churchill Livingstone, 1991.
2. Davis P. Aromatherapy: an A-Z. Saffron Walden, Essex: CW Daniel, 1988.
3. Toril S, Fukuda H, Kanemoto H et al. Contingent negative variation and the psychological effects of odour. In: Van Toller S, Dodd G H, eds. Perfumery, the psychology and biology of fragrance. London: Chapman & Hall, 1988.
4. Tisserand R. The essential oil safety manual. Brighton: Tisserand Institute, 1988.
5. Tisserand R. Essential oils as psychotherapeutic agents. In: Van Toller S, Dodd G H, eds. Perfumery, the psychology and biology of fragrance. London: Chapman & Hall, 1988.
6. Buckle J. Which lavender oil? Nurs Tim 1992; 88(32): 54-55.