



Received: 25-11-2024  
Accepted: 05-01-2025

## International Journal of Advanced Multidisciplinary Research and Studies

ISSN: 2583-049X

Letter to the Editor

### Role of REM Sleep in Dealing with Low Intensity Trauma as Natural/biological & Informal Therapy

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DOI: <https://doi.org/10.62225/2583049X.2025.5.1.3655>

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#### Background:

Significant progress has been made in understanding the role of Rapid Eye Movement (REM Sleep) during the main sleep cycle.

Sleep to remember/Sleep to forget hypothesis entails that the events in the day time of a persons life are repeated/represented during REM sleep which is the last one third part of the sleep duration at night time. This is also described as the dream part which happens in the early morning hours just before a person wakes up.

The Sleep to forget hypothesis entails that the painful emotions are removed from the memory of the actual event in the day. The memory only is then stored in the hippocampal part of the temporal region/lobe.

The role of neocortex is very important in this regard. A simple way to describe is that it is like a garbage machine which takes the garbage in but then removed the unnecessary items and filters the beneficial items. Another example is that an office worker sort out the files in the office and stores only pertinent files in the wreck/drawers.

This natural and biologically inherent way of dealing with minor emotional/mental trauma can be used as informal therapy by enhancing sleep hygiene and imparting psychoeducation to the patient.

#### Clinical Study & Sample Size

##### Method:

1. A Total of 10(ten) patients were identified in an outpatient Psychiatry clinic in a district General Hospital setting in Isle of Man (UK) over the span of two years. Local permission was sought to collect the data after taking consent from the patients. All patient data was kept anonymous and confidential.
2. The main presenting symptom of patients during the triage process was anxiety/emotionally upset after sustaining low intensity trauma which remained unresolved after weeks of the occurrence.
3. Low intensity trauma was defined as the one which did not need referral for CBT (cognitive Behavioral Therapy) for Trauma or EMDR (Eye movement Desensitization Reprocessing therapy).
4. Psychoeducation on the basic principles of Sleep Hygiene which was used for added benefits of sleep as anti-trauma process.
5. Screening of patients was completed after being referred by primary care/General practice in IOM. HAD(Anxiety & Depression scale) was used to measure anxiety/Depressive symptoms after patient sustained an unpleasant incident.
6. The antidepressant and anxiolytic characteristics of normal night time sleep is a well-known established scientific observation which was considered as a confounder.
7. For above mentioned observation Brief Trauma Questionnaire (BTQ) & potential stressful events Interview(PSEI) was used to monitor the score from baseline (start of therapy) to the end where symptoms of emotional distress lessened or disappeared.

#### Main Results from the study/Trial

A-7 out of 10 patients benefitted from intervention in terms of sleep hygiene.

B- 2 patients benefitted partially and needed further intervention in form of trauma management/CBT for trauma.

C- One patient left the clinical session after partial recovery.

D-Four patients needed night sedation for initial 4 weeks to improve the quality & quantity of sleep. This was tried after first trying the basic principles of sleep hygiene.

E-Age group was between 30-50 years.

F- The ethnic profile was mainly Caucasians and gender profile was 7 male & 3 female patients.

### Broader Discussion:

Sleep has always been a fascinating phenomenon and undiscovered territory in many ways. True functions of sleep have not been understood yet in deep details.

It is common observation that humans feel better after a good night sleep. Sleep not only refreshes a person but helps him/her process their thoughts via dreams. Dream interpretation has been a vast topic. True functions of dream are still unknown.

The dream happens during the last one third part of the total sleep duration. REM (Rapid Eye movement) Sleep mainly falls in the last one third part of sleep cycle.

During REM sleep body goes through paralysis of voluntary muscles of limbs which is a natural phenomenon to avoid enacting the dreams which can happen during sleep disorder like sleep walking etc. The Muscles are paralysed at the brain stem level.

Sleep to remember/Sleep to forget hypothesis entails that over series of successive night time sleep episodes, the emotional tone of the memory is toned down whilst the content of the memory is uncoupled & enhanced.

That is the reason why a painful event does not remain as painful after few days/possibly weeks as compared to the day of happening of the traumatic event.

This gift of mother nature has been used as a therapeutic tool to deal with low intensity trauma. Examples of low intensity trauma are argument at home or work place, road rage, minor road accident etc.

Sleep hygiene principles are setting a set time to go to sleep. To avoid any stimulants after going to sleep eg Tea/Coffee/smoking.

To set temperature and lighting in the room to a comfortable level.

To avoid painfully waiting to go to sleep. Instead getting involved in an activity for example reading a book or taking a hot drink e.g. milk etc. The reason is that the drowsiness lasts for 15-20 minutes before sleep goes away. One has to wait for another 90 minutes to get back to the same stage in sleep cycle.

The ideal sleep duration is between 6-8 hours for an adult. As the age increases both quality & quantity of sleep starts declining. Newborns can sleep upto 20 hours while older adults can cope with 4-5 hours of total sleep including power naps in the day time.

During the study/Trial, sleep hygiene was used as a primary tool as successive successful night sleep is thought to tone down the emotional content of the painful memory. It is also thought that longer REM sleep would consolidate the memory in the neocortex after first registering and processing in the hippocampal region of temporal lobe.

- Four out of Ten patients needed night sedation despite a trial of one month of practicing sleep hygiene guidelines. NICE guidelines for prescribing night sedation were followed in this regard.
- Outcome assessment was based on improvement in the screening questionnaire.

### Conclusion:

It is well established human observation that successive good night sleep cycles can help reduce the tiredness/emotional turmoil of the day time related activities /events and human to human interaction.

Sleep to forget hypothesis has implied that it is the function of REM sleep during dream part of sleep. It divides the emotion from an event which is then stored in the relevant memory areas of the Brain.

It was a small clinical study/Trial and more extensive research studies with bigger patient pool needs to be done before establishing sleep hygiene as a tool for therapy for low intensity trauma.

**Keywords:** REM Sleep, CBT (cognitive Behavioral Therapy), Brief Trauma Questionnaire (BTQ)

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