

# International Journal of Innovative Research in Science, Engineering and Technology

(A High Impact Factor, Monthly, Peer Reviewed Journal)

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Vol. 8, Issue 10, October 2019

## A Review on Occurrence, Causes, Symptoms, Diagnostic Test and Treatment of Sleep Paralysis

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**ABSTRACT:** “Sleep paralysis is a temporary disorder where the suffering person is unable to talk or move the body parts and also experience a temporary breathlessness. Patient may complain like an evil is sitting on them and making them immovable. It occurred due to the sleep disturbances during sleep while drop off to a sleep or during awaking from a sleep. Sleep paralysis may last for few seconds to minutes mostly. The main common causes for sleep paralysis are stress, sudden disturbances in sleep etc. The very common symptoms are anxiety, hallucination or paralysis which is temporary. In this article the causes and treatment for sleep paralysis are discussed.”

**KEYWORDS:** -Sleep paralysis, REM sleep, Causes, Hallucination, Night mares, Sleep wakeup cycle.

### I. INTRODUCTION

Sleep paralysis is a recurrent inability to move the body at sleep onset or upon awakening from sleep lasting seconds to a few minutes. The episodes cause clinically significant distress. The episodes cannot be better explained by another sleep disorder, mental disorder, medical condition, medication, or substance use.<sup>2</sup> Sleep paralysis is paralysis associated with sleep that may occur in healthy persons or may be associated with narcolepsy, cataplexy, and hypnagogic hallucinations.<sup>10</sup>

Sleep paralysis is a sleep disorder that results in development of the spiritual belief on evil and also development of the fear on invisible things and this condition may also decrease the self confidence.

### II. RELATED WORK

SP mostly occurs in young adulthood, but there is a lifetime prevalence.<sup>3,4</sup> Almost 8% of general population, 28% of students and 32% of psychiatric patients experience at least one episode of SP during their lives.<sup>3</sup> The sooner the SP begins, the more frequent the episodes are.<sup>5</sup>

Experiencing SP is usually unpleasant. Fear has been reported in 90% of the student sample.<sup>1</sup> In psychiatric outpatients, the clinically significant level of fear was found in 69% of cases.<sup>6</sup>

According to Cheyne,<sup>7</sup> fear arises mostly from the reaction to an inability to move or the hallucinatory content. Approximately 70% of SP episodes are accompanied by hallucinations,<sup>8, 9</sup> although some studies found their simultaneous occurrence only in 33%.<sup>10</sup> Mostly, we distinguish 3 types of hallucinations – intruders, incubus and

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vestibular–motor hallucinations. Incubus and intruder hallucinations are correlated with each other and with intense fear. Vestibular–motor hallucinations can be associated with blissful and erotic feelings.<sup>8,9</sup>



**Figure 1:-** This is how the patient feel during a sleep paralysis episode - immovable condition<sup>21</sup> that is characterised by breathlessness ,tightness in chest, but there is a slight movement of toes and fingers and this condition lasts for few minutes.

### III. DEFINITION OF SLEEP PARAYSIS

It is defined as the “A frightening form of paralysis that occurs when a person suddenly finds himself unable to move for a few minutes, most often upon falling asleep or waking up. sleep paralysis is due to an irregularity in passing between the stages of sleep and wake fullness.”<sup>23</sup>

### IV. OCCURANCE

Sleep paralysis usually occurs at one of two times. If it occurs while you are falling asleep, it’s hypnagogic or predormital sleep paralysis. If it happens as you are waking up, it’s called hypnopompic or postorbital sleep paralysis<sup>11</sup>.

In case of hypnopompic sleep paralysis. During sleep, your body alternates between REM (rapid eye movements) and NREM (non rapid eye movement) sleep. One cycle of REM and NREM sleep lasts about 90 minutes. NREM sleep occurs first and takes up to 75% of your overall sleep time. During NREM sleep, your body relaxes and restores itself<sup>12</sup>.

At the end of NREM, your sleep shifts to REM. Your eye moves quickly and dreams occur, but the rest of your remains very relaxed. Your muscles are “turned off” during REM sleep. If you become aware before the REM cycle has finished, you may notice that you cannot move or speak<sup>10</sup>.

Where as hypnagogic sleep paralysis, As you fall asleep, your body slowly relaxes. Usually you become less aware, so you do not notice the change. However, if you remain or become aware while falling asleep you may notice that you cannot move or speak<sup>10</sup>.

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**Figure 2:-** The patients feel immovable and heaviness on chest pain that resembling to the an elephant sitting on chest with breathlessness even though it lasts for few minutes it has an impact and base to development of spiritual evil believe or fear ,anxiety , depression .<sup>22</sup>

### V. CAUSES

- Disturbances in sleep awake cycle.
- Administration of alcohol, Nicotine and other abuse substances at night.
- Psychological disorders.
- Anxiety, over whelming stress.
- Having high amounts of caffeine a few hours before sleep.
- Depression.
- Hallucination
- Jet lag.
- Sleeplessness.
- Hereditary.
- Release of GABA neurotransmitter during REM sleep.
- Use of electronics before going to bed, as it effect sleep awake cycle.
- Panic disorder
- Hallucinations.<sup>13</sup>
- Selective serotonin reuptake inhibitors {SSRI's} like Citalopram, Fluoxetine, Escitalopram, Fluvoxamine, Paroxetine, and Sertraline.
- Tricyclic antidepressants (TCAs) like Amitriptyline, Nortriptyline, Desipramine, Doxepin, Imipramine.
- Anti cholinesterase inhibitor medications like Donepezil, Rivastigmine, Galantamine ,Memantine.

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- Beta blockers like carvedilol, propranolol, metoprolol, sotalol, atenolol, bisoprolol.<sup>14</sup>

### VI. SIGNS AND SYMPTOMS

- Inability to move the body parts.
- Being consciously awake.
- Unable to speak during the episode.
- Having hallucinations and sensations that cause fear.
- Feeling pressure on the chest.
- Having difficulty breathing.
- Sweating.
- Having headaches, muscle pains and paranoia.<sup>13</sup>
- Loss of appetite.
- Fear.
- Confusion<sup>19</sup>.

### VII. INCIDENCE OF SLEEP PARALYSIS

It generally occurs in the age groups of 10-25 years commonly. About 7.6 % of world population have an experience of sleep paralysis in any part of life. And mostly about 31.9% of mental disorder patients are suffering from sleep paralysis. It occurs equally in men and women. The most common reason for sleep paralysis is fear which may be caused by watching a terrible incidence or watching horror movie or sleeping alone in a room<sup>17</sup>.

Due to this, there is a disturbance in REM sleep and due to sudden wake up the patient is unable to move their body parts but just opens the eyes. And after recognising the reality the frozen body gets relaxed and the person was able to move. Thus this condition only lasts for a few minutes.<sup>15</sup>

### VIII. DIAGNOSTIC TESTS

There are no specific diagnostic tests for sleep paralysis except self assessment or any supervision by parents or care taker or by a physician. Mainly we observe the rapid movement of eyes, leg movements or breath sounds.<sup>16</sup>

### IX. RISK FACTORS

- Risk factors are absent in sleep paralysis as it doesn't show any effect on the brain.
- Risk factors are present if the person is suffering with any other medical problems like Hypertension, Idiopathic hypersomnia, insufficient sleep syndrome, Narcolepsy, Obstructive sleep apnoea, Wilson's disease.<sup>17</sup>

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### X. TREATMENT

The treatment of the sleep paralysis is generally not required as it is self limiting and as it doesn't shows it effect on brain and it occurs temporarily. By following a simple precautions we can overcome this condition, they are as follows;

- Practicing a good sleeping habit.
- Avoiding alcohol, cigar a few hours before going to bed.
- Avoiding medicines that induces sleep paralysis, or if not possible administer the drug a few hours before sleep.
- Avoid usage of electronic devices just before going to bed.
- Avoid watching horror movies {if you scare}.
- Do daily physical exercise.
- Don't disturb your sleep cycle.
- Avoid stress.
- Develop self confidence to avoid fear.

By following the above precautions we can overcome sleep paralysis, or if needed take symptomatic treatment<sup>18</sup>, if not consult doctor for counselling and if the sleep paralysis is due to any psychological problems use anti-psychotic drugs.<sup>15</sup>

### IX. CONCLUSION

Sleep paralysis is a temporary condition that is arising due to the disturbance in sleep but it is not a night mare. And it is self limiting as it last for few minutes and it has impact on developing fear but it can be overcome by developing self confidence and by practicing good sleeping habits and daily exercise. And if condition is worsening consult your doctor or an sleep specialist for treatment .

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ISSN(Online): 2319-8753  
ISSN (Print): 2347-6710

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