SUMMARY

Parasomnias are defined as unpleasant or undesirable behavioral or experiential phenomena that occur predominately or exclusively during the sleep period.

The international classification of sleep disorders stated that: " The parasomnia consist of clinical disorders that are not abnormalities of the processes responsible for sleep and awake states per se but, rather, are undesirable physical phenomena that occur predominantly during sleep ."Parasomnias in children include most commonly: sleepwalking(somnambulism), night terrors, sleep talking (somniloquy), enuresis, sleep bruxism, and body rocking.

The parasomnias are divided into two major categories: primary – those disorders that are the manifestations of the sleep state per se and secondary disorder that are symptoms originating in other organ systems and occur in or are precipitated by the sleeping state.

Parasomnias are common disturbances of sleep that may significantly affect the patient's quality of life and that of the bed partner. Most parasomnias can be diagnosed with careful history taking and polysomnography, and management is usually safe and effective.

The category of common sleep disorders known as parasomnias includes disorders of arousal, rapid eye movement (REM) sleep behavior disorder (RBD), nocturnal seizures, rhythmic movement disorder, and tooth grinding or 'bruxism'. Parasomnias are all characterized as undesirable physical or behavioral phenomena occurring during the sleep period. Although these conditions can be distressing and, in some cases, hazardous to the sleeper and his or her bed partner, it is important to recognise that parasomnias are diagnosable and treatable in the vast majority of patients. Evaluation begins with a careful clinical interview with the sleeper and a family member to elucidate the frequency, duration, description and timing after sleep onset of these behavioral events. Disorders of arousal are the most common type of parasomnia and cover a spectrum from calm sleepwalking to emotionally agitated or complex behaviors, such as dressing or driving, for which the patient usually has no memory upon awaking. 'Sleep terrors' are quite common in young children and are often outgrown. Disorders of arousal represent a partial, as opposed to a full, awakening from deep non-REM sleep, typically occurring within the first 60 to 90 minutes after sleep onset. RBD is characterized clinically by a history of dream-enacting behaviour, and the patient may recall dream content. REM sleep periods typically occur in the latter half of the night. Physiologically, RBD results from a lack of the normal muscle atonia that is associated with REM sleep. RBD has been linked to a number of other neurological conditions; thus, a careful review of systems and a physical examination are crucial. A formal laboratory sleep study or polysomnogram with an expanded electroencephalographic montage can help distinguish among non-REM and REM parasomnias and nocturnal seizures. The latter may manifest clinically as arousals from sleep associated with vocalisation and/or complex behaviours. Rhythmic movement disorder can include head banging or body rocking at sleep onset or during the night. Tooth grinding is a common sleep-related behaviour that, when severe, can result in dental injury. Hypnagogic hallucinations (experience of dream imagery at sleep onset) and sleep-onset paralysis (experience of muscle/body paralysis as one is falling asleep) are symptoms rather than diagnostic categories. These phenomena classically occur in many individuals with narcolepsy,

but also may occur in healthy sleep-deprived individuals. Safety precautions and good general sleep hygiene measures are recommended for individuals with a parasomnia, as the disorder can be exacerbated by sleep deprivation and various other factors. When the events are frequent or particularly dramatic, medication with a long- or medium-acting benzodiazepine, such as clonazepam, at bedtime is effective therapy in most cases of non-REM disorders of arousal and RBD. A dental guard may be helpful in tooth grinders. Relaxation training and guided imagery may be helpful strategies for some patients, especially those with disorders of arousal or rhythm movement disorders. There is no evidence of any association between parasomnias and psychiatric illness. Demystification of these conditions and reassurance, particularly for parents of paediatric patients, is an important aspect of clinical intervention.

Table(15) describe the sleep disorders in the parasomnias group that are found in school-aged children and shows the main symptoms associated with them. The prasomnias occur quite frequently in otherwise healthy children. Symptoms may range from a single episode to nightly events that continue for a long period of time.

Table(15) Parasomnia in children: description and symptoms

Disorder	Symptoms and Description
Problems of arousal sleepwalking	Child sits up in bed or walks in sleep, generally during first half of the sleep period; child is difficult to wake and will not remember episode when he wakes.
Confusional Arousals	Sudden arousal from sleep, generally in the first half of the sleep period. The child may moan or mumble unintelligibly or thrash about in bed; child may appear confused or disorientated, child may appear awake but does not respond; attempts to wake child make matters worse. Episodes are sudden and can be startling
Sleep Terrors	Child wakes in first third of the sleep period with a piercing scream. The child's eyes are open and dilated, his heart is beating wildly and he appears to be in a state of intense fear. The child will resist all attempts to comfort or reassure him and these may make things worse. He may get out of bed and run round the room, colliding with furniture. If woken he will be confused and disorientated. He will not remember the event the following day. Episodes last a few minutes and subside naturally.
Problems of sleep-wake transition Sleep Starts	Sudden brief muscular contractions of legs, arms, or head when falling asleep. Child may cry out or mutter
Rhythmic Movement Disorder	Rhythmic body movements head banging, body rocking, or body rolling-which occur during drowsiness or light sleep. Symptoms usually start during the first two years of life.
Sleep Talking	Talking or making sounds during sleep without being aware of it.
Parasomnias associated with REM sleep Nightmares	Long, frightening dreams that wake the child and leave her feeling anxious and afraid. Usually occurs in the last half of the sleep period. The child will be able to remember the dream.

Other parasomnias Sleep Bruxism	The child's teeth make a loud grinding noise during sleep without the child being aware of it; sometimes there is muscle of face pain or headache. Episodes occur in about of 5-15s and may be repeated many times during the night.
Sleep Enuresis	Bedwetting after the age of 5, at least one episode per month.

(Quine, 2001)

Disorder of Arousal

Disorders of arousal (DOA) are the most impressive and most frequent of the NREM sleep phenomena. Sleepwalking, confusional arousals, and sleep terrors are different clinical phenomena that share a common alteration or exaggeration of a normal eletrophysiological sleep pattern. These disorders of arousal (or partial arousal states) were discovered over 30 years ago by the use of electroencephalographic measurements during sleep. The neurological event in the brain that has been associated with parasomnia is ,in fact, an exaggeration of the physiological arousal state that is known to occur periodically through the night between deep (non-rapid eye movement{non-REM} and lighter{REM}sleep. DOA occur on a broad spectrum ranging from confusional arousals to sleepwalking (somnamblulism) to sleep terrors (also termed pavor nocturnus and ,erroneously incubus).

The diagnosis is often made by means of a thorough history. An extensive work-up is seldom necessary.

Confusional arousals are most common when the child is overtired ,the schedule is altered, or the child is upset or ill.

Although confusional arousals are often labeled "sleep terrors", they are actually a variation. usually seen in infants and toddlers and, to a lesser degree, in school-age children, these arousals may seem quite bizarre and even frightening to observing parents. An arousal usually starts with some movement and moaning, progressing to insensible crying and perhaps calling out often associated with very intense thrashing about in the bed or crib, sleep drunkenness is probably a variation on this theme.

Somnambulism is an arousal parasomnia consisting of a series of complex behaviours that result in large movements in bed or walking during sleep. It occurs in 2-14% of children and 1.6-2.4% of adults.

The behavior actually takes place during a transition from deep sleep to waking, usually at the end of sleep cycle, ends when the arousal is complete and full wakefulness is reached , and generally is followed by rapid return to sleep. Sleepwalking may be either calm or agitated, with varying degrees of complexity and duration "Sleepwalking may be associated with falls, injures and ...walking out of a door into the street".

One of the most upsetting sleep problems for parents is sleep terrors, which are disordered arousals from stage III or IV that occur after 60 to 90 minutes of sleep. Night terrors can occur in association with the other arousal disorder that are associated with deep sleep.

Sleep-Wake transition Disorders occur while falling asleep, Sleep-wake transition disorders are especially common among preschoolers because they have NREM at the beginning of sleep.

Rhythmic movement disorder (RMD) applies to a group of stereotyped movements occurring at sleep onset or at the end of sleep. It has been seen to arise from all stages of sleep, and may occur in the transition from wake to sleep. These movements occur on a broad spectrum, including head banging, head rolling, and body rocking. Head banging is the most prominent form, very common, occurring in 3% to 15% of children, often after an initial history of head rolling that started at 6 months of age.

The REM sleep behavior disorder (RBD) is a recently described syndrome; the existence of which was predicted form animal experiments over 25 years age. Although, it is disorder of middle age and elderly yet its onset of symptoms is frequently reported since late childhood and adolescence, also some patient with RBD had histories of childhood sleepwalking or sleep terrors. Patients with this disorder often present with a history of sleep-associatd injuries to themselves or a sleeping partner.

Acute and chronic forms of RBD exist. The acute form of RBD can emerge during withdrawal from ethanol or sedative-hypnotic abuse and with anticholinergic and other drug intoxication states.

Because parasomnias are sleep disorders characterized by abnormal polysomnography and episodic nature, they are considered to be a reflection of central nervous system (CNS) immaturity. Thus, tey are more common in children than in adults and are generally outgrown with time.

Genetic and developmental factors are the most important constitutional determinants of partial arousals, but amount of sleep, schedule regularity, and psychologic factors must be considered. The nature of the genetic factors is not known.

The objective study of sleep is a relatively recent phenomenon. While confined mostly to research laboratory studies in the early 1950's and 60's, the recording of human sleep has now emerged as a major clinical tool for the diagnosis and management of specific illnesses related to sleep and wakefulness. The full evaluation of patients with complaints of sleep disorders is multi-faceted, involving a detailed history/physical examination, extensive questionnaires, sleep diaries/logs, and often, psychological testing. Many patients are referred for formal sleep studies, which include all-night polysomnography(PSG),and physiologic measures of daytime sleepiness (Multiple Sleep Latency Test-MSLT, or its variant the Maintenance of Wakefulness Test - MWT). Treatment of parasomnias depends on the identified etiology. Once the proper diagnosis is established, the vast majority are treatable by either behavioral or pharmacologic means.

Environmental safety measures may be needed (securing doors, sleeping on the first floor , the use of door/window alarms, and removal of furniture with sharp corners from the bedroom).The potentially adverse psychologic or pharmacologic consequences of erroneous diagnosis and treatment may be significant (i.e., psychotherapy for enuresis due to nocturnal seizures or obstructive sleep apnea, or chronics administration of anticonvulsant medication for "spells"
Representing disorders of arousal).