Overcome Of Sleep Disorder with Exercises

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Abstract
Sleep is very essential for one’s need as it plays an important role in physical health. Adequate sleep ensures us a bright day long which makes us feel better and somehow reduces our stress. An optimal sleep time for adults are between 7 to 8 hours per night and it is varies in individuals. Yet, there is still some people who do not have enough time of quality sleep and half of them may have trouble to sleep. They usually feel grumpy, moody and may not doing their best in work or something. Nowadays, there are so many initiatives that can offer a better and restful sleep. For instance, stick to a sleep schedule, control stress and emotion, limit daytime naps and consume nutritious meals. In addition, exercising is one of the simplest and nature ways to promote an adequate sleep if it is only done regularly before bedtime. Simple exercises such as aerobic and Tai Chi can naturally increase body temperature for a period of five hours before bedtime. A significant drop of body temperature later is believed to be a trigger for a better sleep.

INTRODUCTION
Sleeping is a functional state that comprises a complex combination of physiology and behavioral processes that include a natural lie down for humans[1]. Moreover, sleep is multifaceted and it is characterized by a reduction in voluntary body movement and decreased awareness of the surrounding[2]. Most of us spend around 8 hours of sleep and each individual needs varies amount of sleep according to his or her preferences. In fact, babies and adolescents need a lot more sleep than adults[1]. All mammals including humans are in need of sleep as it can regulate our mood and also relates to learning and memory function. As people get older, their amount of sleep gradually drop a day because lots of responsibilities and restrains[4].

Sleeping disorder are a bunch collections of conditions that have disturbance in amount, quality and timing of sleep in which impaired daytime functioning[3]. Types of sleeping disorder include sleep apnea, insomnia, restless legs syndrome (RLS), circadian rhythm disorders, narcolepsy and parasomnias.

A good quality and enough time to sleep are paramount for a healthy and productive lifestyle. This is because sleep is important for immunity boosting[6], daily performance[5], brain maturation[7], development of body[8], increase in brain mass[9], memory consolidation[10] and regulate catecholamines in brain[6].

TYPES OF SLEEP DISORDERS
Based on American Academy of Sleep Medicine, there are 81 kinds of sleep disorders and some of them are as follows:
- Insomnia
- Narcolepsy
- Sleep apnea
- Sleep walking
- Snoring
- Night terrors
- Rapid eye movement (REM) sleep behavior disorder
- Restless legs syndrome (RLS)

Insomnia
Insomnia is known as the second common painful in primary care settings. It is the less amount of quality time to sleep and associated with difficulty to maintain sleep[1]. The symptoms that can be identified are fatigue, anxiety, tension, depression and irritability[11-13]. Patients with insomnia are associated with stress[14,15], increased frontalis and mentalis electromyogram, increased heart rate, increased finger temperature and unstable frequencies of alpha and beta in electroencephalogram[4].

Exercise for Insomniacs
One cause of insomnia is lack of physical activities in which result less productive daily style, less energy produces and decrease of body-temperature rhythm. Therefore, the best cure is aerobic exercise for only about 20 to 30 minutes, at least 4 to 5 times a week. This is believed as the best way to combat sleeplessness and gain maximum amount of oxygen into our body. Walking, dancing, swimming, jogging, stationary bicycle and kickboxing are the examples for aerobic exercises. All these activities will ensure more oxygen can be consumed to reach the blood. It is preferable to do aerobic exercises in the late afternoon or early evening. This can be explained as rise of body temperature after vigorous activity just a few hours before bed helps a lot to fall just prior to bedtime[4].

Sleep apnea
Sleep apnea is associated with overweight and the common form is known as Obstructive Sleep Apnea(OSA). About 4% of middle-aged men and 2% of middle-aged women has OSA[16-18] and suffers symptoms like loud snoring, choking sensation during sleep, extreme daytime sleepiness and morning headache[19,20].

Exercise in Sleep Apnea
Obviously, exercises that can be suggested purposely to lose weight for reducing severity of OSA. For example, aerobic and endurance exercises are effective for weight reduction. Other than that, incorporate light weight lifting and stretching pre and post workout can also be suggested.
to get the most pro benefit. Breathing exercise is a treatment used to strengthen throat muscles and reducing sleep apnea problems[4].

**BREATHING EXERCISES IN SLEEP DISORDERS**

**Quiet mind and body**
Performing a deep breathing exercise help to clear mind from worrisome thoughts and often feels backward to many people as it needs concentration to master. When in calm with clear mind sends signals to take slow deep breathes and so it turn down heart rate and nervous activity[4].

**Breathe Quietly**
Breathing in a correct way can ensure lung to fully expand and compressed. This is by allowing diaphragm to contract when inhalation and then allow it to relax during exhalation. Lung will get compressed and so air is pushed outside thoracic cage as in exhalation occurs[4].

**Nasal Breathing**
Physiologically, breathing via nose gives more comfort and relaxing because the nasal cavity is designed to warm or cool air when inhales. It also functions to filter the air by removing big particles in which the mouth does not have these same structures. Therefore, it is important to breathe through nose so that air can be efficiently inhaled and exhaled from body. This also helps to slow down activity of heart and nervous system[4].

**MECHANISMS THAT MAY EXPLAIN THE EFFECTS OF EXERCISE ON INSOMNIA**

**Thermogenic Effect**
Home and colleagues found out that acute exercise in physically active men had increase in slow-wave sleep and this could be explained by thermogenic effect[20,21]. New evidence also suggested that a decline of body temperature in the evening can stimulate sleep onset which is regulated by the increase of blood flow into periphery skin. It can be explained that an increase of temperature due to acute exercise can be a trigger for sleep onset[22,23].

**Anxiety Reduction**
Since anxiety is one of the factor of insomnia, reducing it could be plausible to treat insomnia, suggested by Youngsted[25]. Besides, doing aerobic exercise can also reduce anxiety. This correlation could improve insomnia[26]. In a recent study, older adults that practice Tai Chi exercise had experienced good quality of sleep and anxiety reduction as well[27].

**Antidepressant Effects**
According to Reid[28] older adults with chronic insomnia showed positive outcome after having 16 weeks program of aerobic exercise. They had established a mutual connection between a reduction in global Pittsburgh Sleep Quality Index (PSQI) and a reduction in depressive symptoms. A 6-months aerobic exercise program was done in elders with chronic insomnia and the effect of this program was evaluated.

The result shows a decrease in Profile of Mood States (POMS) with a significant improvement of sleep diary measures of sleep quality, Sleep Onset Latency (SOL). POMS is a measure of tension and anxiety[29].

**Effect On Mental Health**
Table 1: Effects of exercise on mental health

<table>
<thead>
<tr>
<th>Decreasned Anxiety</th>
<th>Decreased Depression</th>
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</thead>
<tbody>
<tr>
<td>Aerobic exercises give best result</td>
<td>Regular exercises gives better result</td>
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<tr>
<td>Patient with high anxiety to start with respond earlier</td>
<td>Regular exercises at several times a week shows better result</td>
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<tr>
<td>Patients with low fitness level to start with give better result</td>
<td>Strenuous exercises have better result</td>
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<tr>
<td>Performing a long period of regular exercise shows better result</td>
<td>Patients with high depression to start with gives better results</td>
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**BENEFITS OF EXERCISES IN SLEEP DISORDERS**

I. Exercises regulate body temperature accordingly to its need by increasing body temperature followed by a compensatory drop after that. The low body temperature later is important to sleep easily and stay asleep[4].

II. It acts as physical stressor, which initiates the brain to compensate for physical stress by providing a deep sleep[4].

III. Regular exercises improve lung capacity thereby it will be easier to breathe in and out. Otherwise, lung capacity falls over time to a level full capacity is normal breathing and in fact, normal breathing will be difficult[4].

IV. A regular exercise with correct nasal breathing can ensure breathing muscles become more toned and not easily collapse[4].

V. As we get older, the body becomes less flexible and aching frequently. Simple exercises such as Tai Chi and yoga can improve to support breathing muscles and increase flexibility[4].

VI. Endorphin is likely more secreted within the brain and nervous system. It is a hormone that can improve our mood and reduce anxiety, which could interrupt in sleep[4].

**SUMMARY**

Exercise has been suggested as one of the best cures to treat sleep disorder, as it gives no harm potential side effects to health and wellbeing of an individual. It a positive kind of modification tool to improve sleep quality in all range of ages. In addition, regular exercises with long duration is plausible to bring about improvement if sleep quality. However, an exercise just before bedtime may cause negative effect to body and quality of sleep [36].
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