DISTURBED SLEEP PATTERNS AND SELF WORTH IN YOUTH: A MUSIC THERAPY INTERVENTION

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Abstract

Sleep, a vital ingredient in life, is an active and complex rhythmic state that may get disturbed by a variety of reasons. Daytime sleepiness, sleep deprivation, and irregular sleep schedules are highly prevalent among college students, as 50% report daytime sleepiness and 70% attain insufficient sleep. The study aims to evaluate the efficacy of music therapy in improving disturbed sleep patterns and low self-worth of university students. It was hypothesized that Post-intervention sleep quality scores in experimental group would be significantly better than pre-intervention scores; and Music therapy would enhance self-worth of university students. Participants in the experimental group would show improved self-worth relative to the participants in the control group. A pre-post experimental-control assessment design was adopted. The Pittsburgh Sleep Quality Index (Buysse DJ et al 1989) and Contingencies of Self Worth (Crocker & Luhtanen, 2002) were administered to identify university students having faulty sleep patterns and low self-worth. Music therapy was given for consecutive three weeks for half an hour daily. After intervention, sleep quality index and contingencies of self-worth were re-administered to see the efficacy of music therapy. Results revealed that music therapy made a significant improvement in students' sleep patterns as significant difference was observed between both experimental and control groups on Subjective sleep quality (t=1.21), Sleep latency (t=2.63*), Sleep duration (t=2.24*), Habitual sleep efficiency (t=4.64**), Sleep disturbances (t=10.46**), and Daytime dysfunction (t=3.97*). The effect of intervention was also found to be significant for self-worth domains for subjects of experimental group on physical appearance (t=2.42*), Outdoing others in competition (t=1.39*), Academic competence (t=2.16*), Being a virtuous or moral person (t=2.09*), and God's love (t=1.64*) as the difference between experimental and control group came out to be statistically significant.*

Keywords: *sleep patterns, self worth, music, music therapy*

Young adults are often being considered as ready to launch easily into college, universities, career and dynamic social scenes, yet this transition from a supportive and protected home and school environment to independent living is a bridge to adulthood that may young adults find fraught with great difficulty, confusion & profound loneliness, as a consequence youth are afflicted by challenges like identity crisis; lack of self-confidence; low self-esteem; a sense of hopelessness; confusion and ambiguity concerning moral issues; and competitiveness in education leading to stress.. This struggle for existence leads to many behavioral problems such as disturbed sleep patterns, general restlessness & lack of energy, fatigue, depression, agitated behavior and aggression. During the past few decades, the average sleep duration among adults (Bonnet &Arand, 1995, Rajaratnam& Arendt, 2001) has decreased substantially, and complaints about poor sleep quality are frequent (Heath et al., 1998; Sateia et al., 2000).The changes in sleep patterns are reflected in the common sleep related complaints of young adults, such as taking longer to fall asleep, awakening more often, and being sleepy in the day time. In 2011, two thirds of adolescents reported insufficient sleep, as did one third of young adults (Bakotic, M.et al. 2009). Insufficient sleep, inadequate sleep quality, and irregular sleep patterns are associated with daytime sleepiness, negative moods, increased likelihood of stimulant use, risk taking behaviors, poor academic performance (Steptoe, A. et al. 2006),anxiety, depression, hopelessness, low self-esteem and social inhibitions (Sadeh et al. 1995; Morrison et al. 1992).

Poor sleep quality is considered as a significant predictor of poor self-esteem (Boryana S., 2015). The academic challenges faced by students with disturbed sleep patterns put them at risk for low self-worth (Kim &Sunderman, 2005). Moreover, longer sleep duration prospectively predicted higher self-esteem in adolescents (Fredriksen K, Rhodes J, Reddy R, Way N, 2004), and adequate sleep duration and short sleep onset latency related to higher optimism in children (Lemola S, Räikkönen K, Scheier MF, et al, 2011). Haack&Mullington (2005) demonstrated that sleep deprivation resulted in a gradual reduction of self-reported optimism and sociability in young adults, which suggests a causal relation between sleep and positive personality characteristics. It is of great importance to identify the individuals at risk, since recognition and adequate treatment of their sleep problems may enhance self-worth and optimism. A variety of non-pharmaceutical interventions such as lifestyle modifications such as a regular sleep routine, decreasing caffeine intake, and making modifications to the sleep environment (Solet 2014);cognitive behavior therapy, drama therapy, music therapy, art therapy and dance therapy (Smeijsters H, 2006) are being used for improving sleep patterns and self-worth.

While music as a whole is well recognized for its entertainment value, the Indian civilization had gone a step forward to attribute the curative aspect to music (Aurora, S. & Kaur, G, 2011). The methods for applying music listening to improve sleep quality vary across studies. Generally, the intervention involves the use of pre-recorded music in relation to sleep initiation. Studies show that listening to music is often used by adults as a self-help intervention to improve sleep (Urponen 1988; Morin 2006; Aritake-Okada 2009). Participating in musical groups promotes friendships with like-minded people; self-confidence; social skills; social networking; a sense of belonging; team work; self-discipline; a sense of accomplishment; co-operation; responsibility; commitment; mutual support; bonding to meet group goals; increased concentration and provides an outlet for

relaxation (Hernandez-Ruiz, E., 2005). Music intervention also has effects on the brain function resulting in neural network activation, and ultimately leads to activation of different regions of the brain if performed regularly (Choi AN, et al. 2009). Music relaxation has been found to influence mood, stimulate memories and accelerate associations, and has been used as treatment for quite some time in a variety of medical disciplines (Marwick C., 2000). Music relaxation was efficient in improving sleep (Ziv N et al. 2008). The use of music decreased time to sleep onset and the number of nighttime awakenings (Johnson JE., 2003). Music can reduce sympathetic nervous system activity, decrease anxiety, blood pressure, heart and respiratory rate and may have positive effects on sleep via muscle relaxation and distraction from thoughts (HarmatL,et al. 2008).

Music therapy has been highly effective with individuals who typically lack crucial self-esteem and self-concept (Henderson, 1983; Johnson, 1981; Kivland, 1986). Disclosure and awareness of self has been precipitated through the music as the relationship with music, therapist and self has developed. Music provides opportunities for enhancing a sense of control over emotions through emotional catharsis (Lippin RA et al. 2006; Wiesenthal DL et al. 2003). Sausser and Waller (2006) concluded that music enhances self-expression and self-esteem. Moreno (1995) described music therapy as similar to traditional healing methods in its ability to support positive belief systems, enhance feelings of group support and individual self-esteem. Henderson (1983) found increase in self-esteem following a music therapy intervention with thirteen hospitalized patients diagnosed with 'adjustment reaction to adolescence'. Within a population of autistic children, Brunk (1999) argued that music therapy and adapted music lessons may both influence self-esteem. Music therapy can help to establish relationships and offer successful experiences that improve self-esteem (Wilson, 1964).

Using music to aid sleep transition is inexpensive, easy to implement and has potential to be beneficial for a variety of populations (deNeit et al., 2013). Most of the available research on Music Therapy in dealing with disturbed sleep pattern and self-worth has been carried out in western countries but are rarely addressed by psychologists in India despite its large toll on society. The present study has focused upon a simple, cost effective and reasonable Music Therapy intervention to improve sleep patterns and self-worth of university students. The following hypotheses were verified:

Music therapy would improve the quality of sleep. Individuals in experimental group would show better sleep quality as compared to individuals in control group. Post-intervention sleep quality scores in experimental group would be significantly better than pre-intervention scores.

Music therapy would enhance self-worth of university students. Participants in the experimental group would show improved self-worth relative to the participants in the control group. Post intervention self-worth scores of experimental group would be better as compared to the control group.

Methodology

Sample: The sample comprised of 44 university students between the age group of 18 to 25 yrs was screened on the basis of their scores on sleep quality and self-worth measures. All the screened participants were randomly assigned to experimental & control groups.

Tools Used

Independent Measure: Cassette player with head phones& a cassette having instrumental flute music in Raga 'Asavari' to build up confidence and Raga 'Darbari' for disturbed sleep patterns played by Hari Parsad Chaurasia was used.

Dependent Measures: The Pittsburgh Sleep Quality Index (PSQI) (Buysse DJ et al. 1989**)** is an effective instrument used to measure the quality and patterns of sleep. It differentiates "poor" from "good" sleep by measuring seven domains. Contingencies of Self Worth (Crocker & Luhtanen, 2002) is a 35-item measure assesses seven domains. Cronbach alpha for subscales were found between .82 and .91 & the test retest reliability coefficient range from .76 to .89.

Design and Procedure

An experimental and control assessment design was used in this study to assess the efficacy of music therapy intervention on sleep patterns and self-worth of university students. All the participants were briefed about the aim and procedure of study. The participants were screened on the basis of their scores on The Pittsburgh Sleep Quality Index and Contingencies of Self Worth scale. Then, they were randomly assigned to experimental and control groups. Experimental group was given music therapy intervention for three weeks. These participants were subjected to the instrumental flute music for half an hour daily. After intervention period, the same scales were re-administered to study the efficacy of music therapyFor Pre-post intervention comparison for both control and experimental group, t-test was applied.

Results and Discussion

Table 1 - Pre-Intervention comparison for means scores on subscales of Sleep Patterns and Self-Worth among individuals in Control and Experimental Group

Variables	Means scores		t-ratio
	Control	Experimental	
Sleep Patterns			
Subjective sleep quality	1.05	0.95	0.49 (ns)
Sleep latency	1.85	1.94	3.72(ns)
Sleep duration	1.52	1.35	0.43(ns)
Habitual sleep efficiency	1.85	1.83	0.22(ns)
Sleep disturbances	1.35	1.42	-2.09(ns)
Use of sleep medication	0.00	0.00	0.00(ns)
Daytime dysfunction	1.74	1.91	-0.58(ns)
Self-Worth			
Others' approval	20.81	20.90	-0.05(ns)
Physical appearance	26.41	24.32	1.35(ns)
Outdoing others in competition	23.59	29.54	-4.65(ns)
Academic competence	27.90	28.09	-0.14(ns)
Family love and support	28.77	27.63	0.97(ns)
Being a virtuous or moral person	26.14	26.95	-0.52(ns)
God's love	27.91	27.86	0.03(ns)

Table 2 - Comparison of Pre and Post-Intervention means scores on Dimensions of Sleep Patterns for Control and Experimental Group

Groups	Variables	Mean Scores		t-ratio
		Pre Intervention	Post Intervention	
Control Group	Subjective sleep quality	1.05	1.03	0.23(ns)
	Sleep latency	1.85	1.82	0.16(ns)
	Sleep duration	1.52	1.35	0.38(ns)
	Habitual sleep efficiency	1.85	1.74	0.67(ns)
	Sleep disturbances	1.35	1.44	-0.27(ns)
	Use of sleep medication	0.00	0.00	0.00(ns)
	Daytime dysfunction	1.74	1.81	-0.23(ns)
Experimental Group	Subjective sleep quality	0.95	0.75	0.73*
	Sleep latency	1.94	1.13	3.08**
	Sleep duration	1.35	1.82	2.46**
	Habitual sleep efficiency	1.83	1.35	1.17*
	Sleep disturbances	1.42	1.74	3.58**
	Use of sleep medication	0.00	0.00	0.00
	Daytime dysfunction	1.91	0.05	4.75**

Table 3 - Comparison of Pre and Post-Intervention means scores on Dimensions of self-worth for Control and Experimental Group

Groups	Variables	Means scores		t-ratio
		Pre-Intervention	Post-Intervention	
Control Group	Others' approval	20.81	20.22	0.28
	Physical appearance	20.90	20.41	0.27
	Outdoing others in competition	28.77	27.90	0.68
	Academic competence	28.01	27.49	0.46
	Family love and support	26.63	25.82	0.76
	Being a virtuous or moral person	26.14	25.14	0.69
	God's love	26.41	25.73	0.44
Experimental Group	Others' approval	20.90	17.09	2.16**
	Physical appearance	24.32	20.94	2.41**
	Outdoing others in competition	29.54	28.09	1.39*
	Academic competence	28.09	26.05	2.16**
	Family love and support	27.63	27.76	0.31(ns)
	Being a virtuous or moral person	26.95	23.32	2.09**
	God's love	27.86	25.05	1.63*

Table 4 - Control & Experimental group comparison of Post-Intervention scores on Dimensions of Sleep Patterns and Self Worth

Variables	Control Group (N=22)		Experimental Group (N=22)		t-ratio
	Means	SD	Means	SD	
Sleep Patterns					
Subjective sleep quality	1.03	0.71	0.75	1.07	1.21*
Sleep latency	1.82	1.01	1.13	0.64	2.63*
Sleep duration	1.35	1.22	1.82	0.67	2.24*
Habitual sleep efficiency	1.74	0.73	1.35	0.37	4.64**
Sleep disturbances	1.44	0.59	1.74	0.64	10.46**
Use of sleep medication	0.00	0.00	0.00	0.00	0.00
Daytime dysfunction	1.81	1.51	0.05	0.58	3.97*
Self-Worth					
Others' approval	20.22	5.14	19.09	6.05	0.51
Physical appearance	20.41	5.95	20.94	4.07	2.42*
Outdoing others in competition	27.90	4.31	28.09	2.86	1.39*
Academic competence	27.49	4.39	26.05	3.56	2.16*
Family love and support	25.82	3.14	27.76	3.37	0.31
Being a virtuous or moral person	25.14	4.39	23.32	6.11	2.09*
God's love	25.73	5.06	25.05	4.37	1.64*

Individuals in experimental group scored better on all dimensions of sleep patterns sleep as compared to individuals in control group. Significant difference was observed between both groups on Subjective sleep quality (t=1.21*), Sleep latency (t=2.63*), Sleep duration, (t=2.24*), Habitual sleep efficiency (t=4.64**), Sleep disturbances (t=10.46**), and Daytime dysfunction (t=3.97*). These finding show that the intervention was effective enough in improving faulty patterns of sleep among university students. A similar trend was observed for self-worth scores. The effect of intervention was found to be significant for subjects of experimental group on physical appearance (t=2.42*),Outdoing others in competition (t=1.39*), Academic competence (t=2.16*), Being a virtuous or moral person (t=2.09*), andGod's love (t=1.64*) domains of self-worth as the difference between experimental and control group came out to be statistically significant.

It can be observed that in control group no significant difference was observed between pre and post score on sleep patterns and self-worth. However, Post intervention scores on subjective sleep quality (M=0.75), Sleep latency (M=1.13), Sleep duration, (M=1.82), Habitual sleep efficiency (M=1.35), Sleep disturbances (M=1.74), and Daytime dysfunction (M=0.05) in experimental group showed marked improvement as compared to pre intervention scores on subjective sleep quality (M=0.95), Sleep latency (M=1.94), Sleep duration, (M=1.35), Habitual sleep efficiency (M=1.83), Sleep disturbances (M=1.42), and Daytime dysfunction (M=1.91) and this difference was found to be highly significant. Similar findings were observed for sub-dimensions of self-worth. It can be stated that intervention had significant effect on participants' self-worth.

Discussion

The results of this research provide support for the efficacy of music therapy in bringing about significant changes in specific sleeping patterns of students with low self-worth. After receiving music therapy intervention, individuals in experimental group have shown significant improvement in their sleeping patterns than those in control group. It highlights the success and significance of music therapy intervention in dealing with quality of sleep.The results are in line with previous findings that music intervention is beneficial for reducing anxiety and improving mood under different conditions (Saarikallio, S., 2007). The use of sedative music for transitioning to sleep has positive effects on sleep quality (i.e., duration, perceived restfulness), however, how this music directly impacts human physiology and the sleep cycle is poorly understood (deNeit et al., 2009; Chang, Lai, Chen, Hsieh, & Lee, 2012). It is suggested that mental arousals related to stress and anxiety prior to sleep onset are largely responsible for sleep disturbances. Thus, music acts

as a tool for relaxation and distraction (deNeit et al., 2013; Chan, 2011). Relaxing classical music is an effective intervention in reducing sleeping problems (Harmat L, Takács J, Bódizs R, 2008).

The precise mechanisms underlying these influences are not fully understood (Behrens, 1988; Hodges, 1980) but the possible mechanism includes relaxation effect (Lindblad F, Hogmark A, Theorell T., 2007), which may modulate the endocrinal responses and stabilize autonomic nervous systems (Freeman LW , 2001; Suzuki M et al., 2004; Watkins GR, 1997). Music may impact neural pathways in the brain and associated brain centers, affecting emotions, cognition and physiological processes, which influence sleep (Watkins, 1997). These effects also produce better physical and psychological function, and therefore have beneficial effects on stress responses; reducing anxiety, improving mood and lessening pain perception and improving sleep cycle (Hillecke T, Nickel A, Bolay HV, 2005; Sacks O. 2006).

Montello and Coons (1998) findings also support the second hypothesis that music therapy can facilitate self-expression and provide a channel for transforming frustration, anger, and aggression into the experience of creativity and self-mastery. Music therapy has also been highly effective with clients who typically lack crucial self-esteem and self- concept (i.e., Henderson, 1983; Johnson, 1981; Kivland, 1986; etc.). The results are supported by previous researches that music therapy can help to establish relationships and offer successful experiences that improve self-esteem (Crocker, 1957; Wilson, 1964; Gaston, 1968).A community choir program aimed at recognizing and rechanneling disturbed behavior patterns was found to foster the development of decision-making skills and to increase self-esteem (Ragland &Apprey, 1974). Private music lessons were found to increase self-esteem in a cottage treatment center (Singer, 1962).

The process of acquiring a self-concept can be full of confusion and uncertainty resulting in the display of negative attitudes. Music therapy facilitates in aiding this process and in enhancing self-concept and self-esteem. Johnson (1981) found that structured, successful experiences, clear and specific reinforcement, and dealing with concrete subject matter through involvement in music-related activities enhanced the self-concept of juvenile delinquents. Kivland (1986) found music therapy to be an effective tool in increasing self-esteem of a 12-year-old boy with conduct disorder. Through learning communication techniques and new skills (i.e., piano playing) the subject displayed fewer negative self-statements and was highly motivated to achieve as his musical accomplishments continued. Clendenon-Wallen (1991) also found music therapy to have an empowering effect on children and adolescents in promoting theirself-confidence & self-esteem. Gaining musical skills, working toward a group music performance, and participating in listening and writing activities aimed at greater self-awareness can all contribute to increased self-esteem. They can transfer these more desirable behaviors to other areas of their lives. The results of the present research clearly indicate that music therapy has an ultimate and magical effect on the university students suffering from disturbed sleep patterns and poor perceived self-worth.

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