EFFICACY OF INTEGRATED YOGA MODULE ON THE PSYCHOLOGICAL WELL-BEING OF BORDERLINE MENTALLY RETARDED INDIVIDUALS

Asha S[1] & Dr. Vijayakumar P S[2] & Sahana A U[3]
MSc Yoga Therapy[1],
BAMS, MD, MSc Clinical Psychology[2],
MSc Clinical Psychology[3]

Received: February 18, 2019 Accepted: March 23, 2019

ABSTRACT: *Mental retardation is a disorder that is characterized by significant limitations in cognitive functioning, adaptive behavior and compared to general population, people with developmental disabilities sleep less and experience higher incidence of clinical sleep disorders. The present study tends to diagnose the above problems in Border line Mentally Retarded (BMR) which are the basis of psychological well-being of a person, and to study the effect of Integrated Yoga Module (IYM) on cognitive functioning and sleep quality of BMR individuals. PSQI questionnaire to measure sleep quality, SLCT & DLST tests to measure cognitive abilities were used as instruments. The results show that Yoga is an acceptable and feasible activity with self-reported benefits to Borderline MR individual's psychological well-being.*

Key Words: *Psychological well-being, BMR, PSQI, SLCT, DLST*

INTRODUCTION

Mental retardation is a disorder that is characterized by significant limitations in cognitive functioning and adaptive behavior. (Rainer, 1966)

Mental retardation, manifests before age 18, with substantial limitations in present functioning, characterized by significantly sub-average intellectual functioning which exists concurrently with related limitations in two or more of the following adaptive skill areas: communication, selfcare, self-direction, health and safety, functional academics, leisure, home living, social skills, community use, and work.(MENTAL RETARDATION, n.d.)

The findings regarding the differences in adaptive behavioral skills of mentally challenged children with gender revealed that among both low and middle income families, gender has no role in acquiring adaptive behavioral skills among mentally challenged children, predominant reason might be the fact that children of both genders gets equally affected by disability condition and it's the disability status that may be the determining factor in the acquisition of adaptive skills. (Rashmi Upreti & Ritu Singh, 2016)

The study on the Impact of Social Class on the Behavioral Skills of Mentally Challenged Children revealed that adaptive behavior skills of MR children did not vary significantly with the social class they belonged to viz. Lower Income Group (LIG) or MIG (Middle Income Group). Whereas, mentally challenged children from LIG, irrespective of their degree of mental challenge, were significantly more violent; showed more temper tantrums; misbehaved with others; reflected higher self-injurious, odd, hyperactive and anti-social behavior than their counterparts. (Upreti & Singh, 2017). The prevalence of mental retardation in India and was found to be 1.71% in the study population with higher prevalence (3.3%) in the 6-10 years age group in the North-West region of India where the study was conducted and it is found that the prevalence of mental retardation is differentially distributed geographically, with socio-economic status being the important predictors in the study. (Sharma et al., 2016). AAMR, American Association on Mental Retardation (1992) suggests the mild, moderate, severe and profound classification in the previous definitions. Now these classifications are to be substituted according to the 'levels' of support needed by an individual: intermittent, limited, extensive, and pervasive. The borderline MR come under mild level of retardation where the IQ score range according to Wechsler Scale will be between 55 to 69. Approximate percentage of persons with mild or borderline MR is 89% among MR population.

An accurate and complete understanding of mental retardation implies that mental retardation refers to a particular state of functioning, having many dimensions, which begins in childhood, and affected positively by individualized supports. It includes the contexts and environment within which the person functions and interacts, requiring a multidimensional and ecological approach that reflects the interaction of the individual with the environment, as a model of functioning. The outcomes of that interaction are with

regard to independence, participation in school and community, relationships, societal contributions, and to personal well-being. (MENTAL RETARDATION, n.d.)

COGNITIVE IMPAIRMENT IN MR:

Due to their problems with communication, diagnosing cause of pain in children with severe cognitive impairments is difficult. For the professionals in this task, identification of risk factors for specific pain etiologies might help. Population risk factors may be helpful in structuring diagnostic investigations for individual children with severe cognitive impairments. (Breau, Camfield, McGrath, & Finley, 2004)

SLEEP ISSUES IN MR:

Compared to general population, people with developmental disabilities sleep less and experience higher incidence of clinical sleep disorders. Recent evidence finds high quality sleep promotes improves health measures, brain plasticity, and enriches quality of life. For people with developmental disabilities, sleep treatments for apnea, insomnia, restless limbs, and conditioned sleep-aversion are available, although not readily provided. This population would gain both clinical and behavioral benefits as improved sleep-monitoring, behavioral testing, and sleep-treatment technology is adapted to their needs.(Doran, Harvey, & Horner, 2006)

TREATMENT AND MANAGEMENT OF MR:

Early identification and prevention of mental retardation helps in terms of treatment for some conditions, better planning and management of cases, and counseling. To aid the child's development and personality and in helping parents adjust mentally and learning to cope with caring for the child, early identification of mental retardation is beneficial. Sometimes, it can help to limit the number and extent of the handicap. (Persha, 1992)

Yoga Therapy is found to be an effective therapeutic tool in the management of mentally retarded children. There was highly significant improvement in the IQ and social adaptation parameters in the yoga group as compared to the control group, who were not included in yoga group.(Uma, Nagendra, Nagarathna, Vaidehi, & Seethalakshmi, 1989)

The use of yoga for rehabilitation has diverse applications, Yoga practice benefited mentally handicapped subjects by improving their mental ability, also the motor co-ordination and social skills. (Telles & Naveen, 1997)

METHODS AND MATERIALS

Totally 16 Borderline MR individuals (15 boys and 1girl) with ages ranging between 12 and 31 years were recruited for the study. Those who are on sleep medication, those with visual impairment, auditory impairment, physically challenged, and those with any associated medical condition were excluded from the study. Design is experimental design - Eligible BMR subjects were selected from a residential home and were assessed before and immediately after the 3 months of IYM intervention.

INTERVENTION

The 3 months yoga module of 1 hour per day, 5 days a week was designed for participants. The participants underwent yoga intervention consisting of dynamic Yoga practices, including Standing, Sitting, Prone and Supine practices, voluntary regulated breathing (Pranayama), relaxation techniques and Yogic games once in 2 weeks.

OUTCOME MEASURES:

The Pittsburgh Sleep Quality Index (PSQI) is an effective instrument used to measure the quality and patterns of sleep in the older adult. It differentiates " poor " from " good " sleep by measuring seven domains: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleep medication, and daytime dysfunction over the last month. The client self-rates each of these seven areas of sleep. Scoring of the answers is based on a 0 to 3 scale, whereby 3 reflects the negative extreme on the Likert Scale. (Carole Smyth, 2012)

SLCT (Six Letter Cancellation Test) consists of a sheet of 22 rows * 14 columns of randomly arranged letters of the alphabet. The top of each sheet names six target letters. Subjects are given the choice of two possible strategies to cancel target letters (i) all six letters at once or (ii) selecting a single target letter at a time. It is also suggested that according to their own choice, they follow horizontal, vertical, or random paths on the test sheet. They are told to cancel as many target letters as possible in the test time of 90 secs.

DLST (Digit Letter Substitution Test) test sheet consists of 8 rows * 12 columns of randomly arrayed digits. The key at the top of each sheet pairs each of the 9 digits with 9 selected letters. Subjects

have to write the corresponding letters in the empty box below each digit. Choice of strategy for substituting letters is up-to each subject – horizontally, vertically or selecting one digit at a time. Subject have to substitute as many letters for digits as possible in the test time of 90 sec. Test supervisors timed each test on a standard stopwatch.

Assessment: Scoring for both tests counts total substitutions cancellations attempted and number of wrong substitutions cancellations. Net score was obtained by deducing the wrongly attempted score from total attempted score. Scoring was carried out by blind rater.

RESULTS

Statistical analysis was done using SPSS-10.

Normality tests were done to check for normality. Data of SLCT and DLST test were found to be normal as the significance value was more than 0.05. So, paired T tests were run on the SPSS. The data was found to be significant as the p value was less than 0.05. Data of PSQI score was not normal as p-value was > 0.05. So Non- parametric test (2 related samples) was done. The result was the data was found to be significant.

TABLE OF VALUES OF STATISTICAL SPSS TESTS (PAIRED T-TEST AND NON-PARAMETRIC TEST) FOR PSQI, DLST AND SLCT TESTS:

		Mean	Std Deviation	Std Mean Error	% change in mean	T value	P value
PSQI score	Pre-score	5.37	3.05	0.76	34.82%	1.97	0.048
	Post-score	3.5	2.03	0.5			
SLCT Test	Pre-score	6.4	2.44	0.63	53.12%	3.56	0.003
	Post-score	9.8	4.46	1.15			
DLST Test	Pre-score	5.62	4.11	1.03	62.27%	5.422	0.000
	Post-score	9.12	5.07	1.26			

For Sleep quality PSQI, the change in the mean % between pre and post intervention is 34.82% and p-value is 0.048. So, it can be seen that there is a significant improvement in the PSQI score scale, which indicates better sleep quality after yoga intervention.

SLCT (Single Letter Cancellation Test) – The change in the mean % between pre and post intervention is 53.12% and the significance value that is p value was 0.003. This shows that the data is highly significant. So, there is a significant positive change is the SLCT test conducted.

In the DLST (Digit Letter Substitution Test), the change in the mean % between pre and post intervention is 62.27% and p value was 0.000 which is highly significant. This result implies that significant positive change is there in DLST test after 3 months of yoga intervention.

DISCUSSION

The aim of my present study was to study if yoga helped to improve the quality of sleep in borderline MR individuals and in improving their sustained attention and concentration, thereby improving their psychological well-being. The study showed significant improvement in the scores of SLCT and DLST and PSQI of borderline MR individuals (p=0.001).

The present study is aligned with the earlier findings of studies on Yoga. Yoga provides relaxation to body, when yoga postures are performed with a gap in between, and ultimately enhances cognition. Previous studies on yoga techniques which consisted of sequence of yoga postures and with relaxation techniques, found improvement in selective attention, and inhibition of the cortical region. Surya Namaskar, when performed with rhythmic breathing develop internal awareness which might have influenced the cognitive outcome measures in the present study. (Ganpat et al., 2014)

Yoga for Rehabilitation , a study suggests that yoga practice benefited mentally handicapped subjects by improving their mental ability, also the motor co-ordination and social skills when they practiced yoga for three weeks, while a program of physical activity had no such effect. (Telles & Naveen, 1997)

A one-year controlled study was conducted using integrated approach of yoga as a therapeutic tool for mentally retarded. Children with mental retardation of mild, moderate and severe degree were selected from four special schools in Bangalore, India in the year 1989. There was highly significant improvement in the IQ and social adaptation parameters in the yoga group as compared to the control group. This study

shows the efficacy of yoga as an effective therapeutic tool in the management of mentally retarded children. (UMA et al., 1989)

Findings of this study is in support of earlier studies indicating positive effect of yoga in improving the sleep quality and sustained attention and concentration of borderline MR individuals and thereby improving their psychological well-being.

CONCLUSION

Individuals with borderline Mental Retardation showed improvements in their quality of sleep and sustained attention and concentration after participation in 3 months yoga program. Yoga is an acceptable and feasible activity with self-reported benefits to Borderline MR individual's mental and physical health.
Conflict of interest: None

Financial aid: Nil

ACKNOWLEDGEMENT:

The authors acknowledge the staff and MR individuals of the Sri Sai Vathsalya Residential School for Mentally Retarded Individuals for their co-operation in participating in this study.

REFERENCES

1. Breau, L. M., Camfield, C. S., McGrath, P. J., & Finley, G. A. (2004). Risk factors for pain in children with severe cognitive impairments. Developmental Medicine and Child Neurology, 46(6), 364–371. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/15174527
2. Carole Smyth. (2012). The Pittsburgh Sleep Quality Index (PSQI) The Pittsburgh Sleep Quality Index (PSQI). New York, 29(6), 1–2. https://doi.org/10.1007/978-1-4419-9893-4
3. Doran, S. M., Harvey, M. T., & Horner, R. H. (2006). Sleep and Developmental Disabilities: Assessment, Treatment, and Outcome Measures. Mental Retardation. https://doi.org/10.1352/0047-6765(2006)44[13:saddat]2.0.co;2
4. Ganpat, T., Pailoor, S., Prithvi, A., Ramarao, N., Arun, K., & Deshpande, S. (2014). Suryanamaskara exercise enhances sustained attention. Saudi Journal of Sports Medicine, 14(1), 31. https://doi.org/10.4103/1319-6308.131610
5. MENTAL RETARDATION. (n.d.). Retrieved from http://www.rehabcouncil.nic.in/writereaddata/mr.pdf
6. Persha, A. J. (1992). Early identification and prevention of mental retardation. ICCW News Bulletin.
7. Rainer,J.D.(1966).Mental retardation. Journal of Heredity. https://doi.org/10.1093/oxfordjournals.jhered.a107472
8. RASHMI UPRETI & RITU SINGH. (2016). A STUDY OF DIFFERENCES IN ADAPTIVE BEHAVIORAL SKILLS OF MENTALLY CHALLENGED CHILDREN WITH GENDER. International Journal of Humanities and Social Sciences (IJHSS).
9. Sharma, S., Raina, S., Bhardwaj, A., Chaudhary, S., Kashyap, V., & Chander, V. (2016). Prevalence of mental retardation in urban and rural populations of the goiter zone in Northwest India. Indian Journal of Public Health. https://doi.org/10.4103/0019-557x.184545
10. Telles, S., & Naveen, K. V. (1997). Yoga for rehabilitation: an overview. Indian Journal of Medical Sciences.
11. UMA, K., NAGENDRA, H. R., NAGARATHNA, R., VAIDEHI, S., & SEETHALAKSHMI, R. (1989). The integrated approach of yoga: a therapeutic tool for mentally retarded children: a one-year controlled study. Journal of Intellectual Disability Research. https://doi.org/10.1111/j.1365-2788.1989.tb01496.x
12. Upreti, R., & Singh, R. (2017). Impact of Social Class on the Behavioural Skills of Mentally Challenged Children. Journal of Human Ecology. https://doi.org/10.1080/09709274.2016.11906957