

Effect of Foot Reflexology on sleep quality among Autistic children in selected special schools.

¹Ms. Amruta Gade, ²Dr Sreelekha Rajesh and ³Dr Agnes Arun Swamy

¹Student, Tehmi Grant Institute of Nursing Education, Pune -01, Maharashtra University of Health Sciences Nashik, Maharashtra, India.

²Vice Principal, Tehmi Grant Institute of Nursing Education Pune – 01, Dean Faculty Nursing Maharashtra University of Health Sciences Nashik, Maharashtra, India.

³Professor, Tehmi Grant Institute of Nursing Education Pune – 01, Maharashtra, India.

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ABSTRACT

A study was conducted on autistic individuals who commonly face challenges with sleep due to difficulties in relaxation & irregular melatonin levels, impacting the child & their families. The feet reflexology has demonstrated benefits in addressing sleep problems, this study aimed to assess the effect of feet reflexology on sleep quality among autistic children. A quantitative research approach with a quasi-experimental pretest-posttest control group design was used, convened sampling was used for the study. The study findings revealed foot reflexology intervention led a significant improvement in sleep quality in the experimental group, with notable decrease in moderate sleep problems ($P < 0.0001$) thereby the study suggest the effectiveness of foot reflexology.

INTRODUCTION

Individuals diagnosed with autism spectrum disorder commonly demonstrate challenges in social interaction & communication, coupled with repetitive or stereotypical behaviors. These children require ongoing support and supervision due to intellectual disabilities. These children also suffer from disturbed sleep. Sleep plays a crucial role in human development and maturation. Throughout sleep numerous vital functions of the human body, including cellular growth, memory consolidation and restoration of cellular function. Foot reflexology aims to induce the physiological relaxation, enhance blood circulation, maintain bodily equilibrium, and facilitate the efficient exchange of energy, within the body's organs and cell associated with these pressure points.

Need of the Study:

ASD is a complex developmental disorder characterized by a wide range and severity of intellectual and behavioral deficit. The American Psychiatric Association (2013) has outlined various types of ASD, including atypical autism, childhood disintegrative disorder pervasive developmental disorder. Preeti A Devani & Hegde A.U. (2015) conducted a study to assess the prevalence of sleep disorders in individual with autism spectrum disorder the findings revealed that the prevalence of sleep problems, particularly insomnia, was found to be higher in children with ASD compared to typically developing children, ranging from 40% to 80%. Based on researcher's personal experience with a one of family member diagnosed with autism spectrum disorder (SD), the

researcher observed that sleep disturbances are very common among autistic children.

Objective:

- To assess the sleep quality among autistic children in experimental and control group.
- To evaluate the effect of foot reflexology on the sleep quality among autistic children in experimental group.
- To determine the association between pre-intervention level of sleep quality with selected demographic variables.

Hypothesis:

H_0 - there is no significant difference in the effect of foot reflexology on sleep quality among autistic children at 0.05 level of significance.

H_1 - there is significant difference in the effect of foot reflexology on sleep quality among autistic children at 0.05 level of significance.

Ethical Consideration:

- The study proposal was sanctioned by the institutional ethical committee.
- The prerequisite was fulfilled, and the permission will be obtained from the concerned competent authorities of selected special school.
- Study was explained to the subjects and informed consent was taken from them prior to the study.
- Various strategies were adopted to meet the ethical principles of beneficence, non-maleficence, veracity, autonomy and justice.

- Confidentiality of the information maintained by utilizing code number of subjects.

Conceptual Framework:

The conceptual framework adopted in this study was based on modified Imogene King's Goal Attainment Theory.

Review of Literature:

Review of literature is one of the most important steps in the research process. It refers to an extensive and systematic examination of publications relevant to the research projects. The researcher did extrinsic work in the review of literature in order to support the study the researcher gathered various studies related to the topic. Studies related to autistic children, studies related to prevalence of sleep disturbance among autistic children, studies related to effect of foot reflexology among autistic children and studies related to effect of foot reflexology.

Research Methodology:

Research Approach: Quantitative Research approach

Research Design: Quasi Experimental non-randomized control group research design

Sample: School-age children (6-12 years)

Sample technique: convenient sampling technique

Sample size: total number of 50 school-age children

Validity: to ensure the content validity, the developed tools were given to seven experts for validation.

Reliability: The tool reliability was assessed using Cronbach's alpha test, 12 samples were selected, reliability of the child sleep habits questionnaire on Likert scale was 0.7782 which is >0.70 indicating the tool was reliable.

Inclusion Criteria:

- Children diagnosed with mild to moderate autism by a psychiatrist
- Children aged between 6 - 12 years.
- Children experiencing sleep disturbances.

Exclusion Criteria:

- Children with foot injuries such as wounds, burns, skin or fungal problems, and foot fractures
- Children with severe autism
- Children with pathological disease condition.
- Children who have experienced any stressful events (e.g. parents' divorce, death of the first-degree family member, parental disputes, or the presence of stepparents) within the last 3 months.

Results:

To assess the effectiveness of foot reflexology on quality of sleep among autistic children in the experimental and control group:

The findings of the study suggested, In the pre-test, the data indicates that most children, specifically 23 out of 25 (92%), demonstrated moderate sleep quality, while only 2 out of 25 (8%) exhibited good sleep quality. However, in the post-test results, a noteworthy change is observed, it is evident that 19 out of 25 (76%) children maintained a moderate sleep quality, while 6 out of 25 (24%) children good sleep quality. Therefore, this suggests a positive impact of the intervention on improving sleep quality among the participants, as reflected in the shift towards a higher proportion of children experiencing good sleep quality in the posttest phase compared to pre-test.

Table 1:

Distribution of pre-test and post-test sleep quality among children with autism in the experimental group

Sleep quality Score	Pre-test percentage		Post test Percentage	
	Frequency	Percentage	Frequency	Percentage
0 - 30 (Good)	2	8%	6	24%
31 - 60 (Moderate)	23	92%	19	76%
61 - 90 (Poor)	0	0	0	0

In the experimental group all children in the pretest that is 100% demonstrated moderate sleep quality, with none of the children exhibiting poor or good sleep quality, and in the post test 96%

children maintained moderate sleep quality while 4% achieved good sleep quality. This suggest that in the control group there is no noticeable changes seen.

Table 2:

Distribution of pre-test and post-test sleep quality among children with autism in the experimental group

Sleep quality Score	Pre-test percentage		Post test Percentage	
	Frequency	Percentage	Frequency	Percentage
0 - 30 (Good)	0	0	1	4%
31 - 60 (Moderate)	25	100%	24	96%
61 - 90 (Poor)	0	0	0	0

To assess the significant difference in the pretest post test mean score regarding foot reflexology on quality of sleep among the autistic children in the experimental and control group

In the experimental group after providing the foot reflexology there was improvement in the sleep quality which was identified in the posttest. The p-value was <0.0001 the Z value was 4.24. therefore, the null hypothesis was rejected, and the alternate hypothesis was accepted.

Table 3

Effectiveness of foot reflexology on sleep quality among autistic children in the experimental group

Parameter	Pre-test		Post-test		Wilcoxon Z Value	P Value
	Mean	SD	Mean	SD		
Sleep quality score	41.84	6.768	26.60	7.890	4.24	<0.0001

H₀ - There is no significant difference in the quality of sleep after the foot reflexology among autistic children at 0.05 level of significance.

H₁ - There is significant difference in the quality of sleep after the foot reflexology among autistic children at 0.05 level of significance.

In the present study the H₀ is rejected and H₁ is accepted therefore the intervention of foot reflexology on children between 6 - 12 years of autistic children has been effective to improve the quality of sleep.

Whereas in the control group the p value was 0.007 and here the H₀ was accepted and H₁ was rejected.

Association of selected demographic variables on effectiveness of foot reflexology on quality of sleep among the autistic children in the experimental and control group.

Demographic variables like age, gender, educational qualification were taken for the association between pretest mean score, to assess the effectiveness of foot reflexology on quality of sleep among autistic children in experimental and control group, there was no association found at 0.05 level of significance.

CONCLUSION

Foot reflexology shows promise as an effective intervention for improving sleep quality in autistic children. Both parents and caregivers can use foot reflexology as an alternative therapy to alleviate sleep problems and improve the wellbeing of autistic children.

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