



ISSN Print: 2394-7500
ISSN Online: 2394-5869
Impact Factor: 5.2
IJAR 2016; 2(10): 528-531
www.allresearchjournal.com
Received: 18-08-2016
Accepted: 19-09-2016

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Effect of massage therapy on social skills among children with autism

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Abstract

The effect of massage therapy on social skills among children with autism was studied in selected autism day care centres in Coimbatore. Quasi experimental pre-test post-test with control group design was adopted. Stratified random sampling technique was adopted to choose the participants. The population was divided into two strata based on age groups (4 – 9 years) and (10 – 14 years). In both strata equal number (7) participants randomly allocated to experimental and control group. Indian scale of assessment of autism to assess the severity of autism and modified Autism Social Skill Profile to assess social skill was used. Massage therapy was applied as an intervention to experimental group children in Autism day care centres for 20 minutes regularly for 25 days. Post assessment was done using modified Autism social skill profile to assess the social skills of the participants after the therapy. The result revealed that there was significant improvement in social skill among the children with autism after massage therapy. Thus, massage therapy can be implemented as an effective therapeutic intervention in improving social skill of children with autism.

Keywords: Autism, massage therapy, social skills

1. Introduction

Autism spectrum disorder (ASD) and autism are both general terms for a group of complex disorders of brain development. These disorders are characterized, in varying degrees, by difficulties in social interaction, verbal and nonverbal communication and repetitive behaviors [1]. Autism statistics from the U.S. Centers for Disease Control and Prevention (CDC) identify around 1 in 68 American children as on the autism spectrum—a ten-fold increase in prevalence in 40 years. Studies also show that autism is four to five times more common among boys than girls. An estimated 1 out of 42 boys and 1 in 189 girls are diagnosed with autism in the United States. ASD affects over 3 million individuals in the U.S. and tens of millions worldwide. Autism statistics suggest that prevalence rates have increased 10 to 17 percent annually in recent years [1, 2]. More than 10 million children are likely to suffer from autism in India. The prevalence rate of autism in India was found to be 1 in 66 children [3].

Autism is not a disease or mental illness, but a lifelong disorder in which negative effects can be reversed into socially useful activities. The autistic children have more behavioural problem and lower level of social maturity, attention sharing behaviour than mentally challenged children. Presence of social impairment develop detrimental out comings like social failures, peer rejection, possibly leading to anxiety, depression, substance abuse and other forms of psychopathology [4]. Life for parents becomes very challenging as they struggle to cope with their child since autistic children are unable to use language properly even to express their basic needs. The interventions were mainly focused on tertiary prevention that aimed at rehabilitation of autistic children to make them actively participate in the mainstream of community life.

Therapeutic massage with consistent, safe, nurturing touch and regular sensory integration is an accepted and innovative treatment available for children and adults with autism which is being utilized by therapists and taught to parents around the country [5]. Massage helps to release oxytocin in body that helps autistic children retain their ability to evaluate the emotional significance of speech. It stimulates the vagus nerve that causes stimulation in various parts of the body on slowing the heart rate, which can increase the ability to focus [6, 7].

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A controlled study to evaluate the effectiveness of the Cignolini methodology, an original Qigong massage methodology, in treating sensory impairment in young children with autism was conducted. Thirteen children with autism between the ages of three and six received daily treatment of Qigong massage methodology for a period of 5 months. Compared with untreated children, treated children experienced significant improvement of their sensory impairment, demonstrated increased social skills and basic living skills [8]

A randomized controlled study was conducted for evaluating the effect of Qigong Sensory Training (QST), a Qigong massage intervention directed toward improving sensory impairment, digestion, and sleep in 46 children with autism under age 6. Trainers applied the intervention for 20 times over 5 months, and parents give the massage daily to their children. Improvement was evaluated in two settings, preschool and home by teachers and parents. Teacher evaluations showed that treated children had significant classroom improvement of social and language skills and reduction in autistic behaviour compared with control participants and these findings were confirmed by parent data [9]

The study focus on tertiary prevention on rehabilitation to help the autistic children and their family to achieve social integration.

2. Statement of the Problem

Effect of Massage Therapy on Social Skills among Children with Autism in Selected Autism Day Care Centres, Coimbatore

3. Objectives

- To assess the social skills of children with autism among experimental and control group.
- To assess the social skills after the massage therapy among experimental group children with autism.
- To compare the social skills among experimental group and control group after massage therapy.

4. Materials and Methods

Quasi Experimental Design Pre-test – Post-test Control Group Design was adopted in this study. The researchers used stratified random sampling technique to choose the sample. The population was divided into two strata based on age group. The first strata consist of 15 participants (4 – 9 years) of which 7 samples were excluded from the study and the second strata consist of 8 participants (10 – 14 years). Of 16 samples on lottery method from both stratum equal numbers of samples [8] were allocated alternatively to experimental and control group. The independent variable in the present study was massage therapy and dependent variable was social skills.

The following materials were used for data collection.

4.1 Demographic Data Profile

Demographic data consists of personal information about the child such as age of the child, sex, school and information about the parents such as relationship with the child, age, sex, education, occupation, family income and any special training for caring children with autism and information about the teachers such as age, education, income and experience.

4.2 Modified Autism Social Skill Profile

The scale was developed by Scott Bellini in 2006. The Autism Social Skills Profile (ASSP) is a new assessment tool that provides a comprehensive measure of social functioning in children and adolescents with ASD. The 49 items on the ASSP represents a broad range of social characteristics typically exhibited by individuals with ASD including initiation skills, reciprocity, perspective taking and non – verbal communication. ASSP has excellent psychometric properties with respect to internal consistency, test—retest reliability and concurrent validity. The scores of the tool were described as the score of 0 for never or almost never exhibits the skill or behaviour, 1 for sometimes or occasionally exhibits the skill or behaviour, 2 for often or typically exhibits the skill or behaviour and 3 for very often or always exhibits the skill or behaviour. The participants of scores <49 were interpreted as poor social skill, 50 – 98 were interpreted as average social skills and 99 – 147 were interpreted as good social skills.

4.3 Hypotheses

H₁: There is a significant difference in social skills before and after massage therapy among experimental group.

H₀₂: There is no significant difference in social skills before and after the intervention among control group.

A pre assessment was done using modified Autism social skill profile to assess the social skills of the participants among children with autism. Massage therapy was applied for 20 minutes to each participant in experimental group for a period of 25 days by the researchers in schools. There was 2 drop outs. Post assessment was done for 14 participants using modified Autism social skill profile to assess the social skills of the participants after the therapy.

A frequency table was formulated for all significant information. Descriptive and inferential statistical methods were used for data analysis. Descriptive statistics applied for demographic variable analysis. Paired ‘t’ test was used to find the effect of massage therapy on social skills among children with autism in both experimental and control group.

5. Results

The demographic characteristics of children are presented in Table 1.

Table 1: Distribution of Demographic Data of Children with Autism (N=14)

| Demographic Profile | Experimental Group | | Control Group | |
|-----------------------|--------------------|----------------|----------------|----------------|
| | No. of children | Percentage (%) | No of children | Percentage (%) |
| Age (in years) | | | | |
| 4-9 | 4 | 57 | 4 | 57 |
| 10-14 | 3 | 43 | 3 | 43 |
| Gender | | | | |
| Male | 6 | 86 | 5 | 71 |
| Female | 1 | 14 | 2 | 29 |

| Schools | | | | |
|------------------------------------|---|----|---|----|
| Amrit schools for special children | 4 | 57 | 4 | 57 |
| W.V.S School for special children | 3 | 43 | 3 | 43 |

5.1 Analysis on Effect of Massage Therapy on Social Skills of Children with Autism among Experimental Group

Paired 't' test was used to test the hypothesis to find the effect of massage therapy on social skills among experimental group.

Table 2: Mean, Standard Deviation And 'T' Value of Experimental Group (N=7)

| Social Skills Scores | Before Therapy | | | After Therapy | | | Mean Difference | 't' |
|----------------------|----------------|--------|-------|---------------|--------|-------|-----------------|-------|
| | Mean | Mean % | SD | Mean | Mean % | SD | | |
| Strata I | 19 | 12.9 | 8.08 | 40.75 | 27.72 | 9.6 | 21.75 | 8.2* |
| Strata II | 42.6 | 28.9 | 13.2 | 75 | 51.02 | 5.2 | 32.4 | 7.3* |
| Both | 29.14 | 19.8 | 13.54 | 55.42 | 37.7 | 17.21 | 26.28 | 7.51* |

*Significant at 0.05 level

Paired 't' test was used to find the effect of massage therapy on social skills of children with autism among experimental group.

Paired 't' test was used to test the hypothesis to find the effect of massage therapy on social skills among control group. Thus the statistical findings interprets that there is significant improvement in the social skill of children with autism of experimental group after massage therapy.

5.2 Analysis on Effect of Massage Therapy on Social Skills of Children with Autism among Control Group

Table 3: Mean, Standard Deviation and 'T' value OF Control Group (N=7)

| Social skill scores | Before Therapy | | | After Therapy | | | Mean Difference | 't' |
|---------------------|----------------|--------|-------|---------------|--------|------|-----------------|------|
| | Mean | Mean % | SD | Mean | Mean % | SD | | |
| Strata I | 23.5 | 15.98 | 5.79 | 22.75 | 15.47 | 7.13 | 0.75 | 0.24 |
| Strata II | 36 | 24.48 | 11.13 | 29.3 | 19.9 | 6.65 | 6.7 | 3.08 |
| Both | 28.85 | 19.6 | 6.09 | 22.14 | 15.06 | 4.53 | 6.71 | 2.76 |

*Significant at 0.05 level

Paired 't' test was used to find the effect of massage therapy on social skills of children with autism among control group children. It interprets that there is no significant difference in social skills before and after the intervention among the control group children.

respect to gender, 86% in experimental group and 71% in control group were males whereas remaining 14% in experimental group and 29% in control group were females. The findings of the present study is consistent with the report of Centres for Disease Control and Prevention (2009) which explains incidence rate of autism is four times more prevalent in boys than girls at a ratio of 4:1.

5.3 Analysis on Effect of Massage Therapy on Social Skills of Experimental and Control Group after Massage Therapy

't' test for unpaired samples were used to analyse the mean difference in social skills among experimental and control group after massage therapy.

The calculated value t is higher than the table value which interprets that there is significant difference in the social skill of children with autism among experimental group and control group after massage therapy. Hence the hypothesis "There is a significant difference among experimental group after massage therapy" is accepted. The present result is consistent with the findings by [9] on effectiveness of Qigong massage methodology in treating sensory impairment in young children with autism. The results revealed that compared with untreated control group children, treated children experienced significant improvement of their sensory impairment, demonstrated increased social skills and basic living skills on standardized measures.

Table 3: Mean, Standard Deviation, Mean Difference And 't' Value Of Experimental Group And Control Group (N=14)

| Social skill score | Mean | SD | Mean difference | 't' |
|--------------------|-------|-------|-----------------|-------|
| Experimental Group | 55.42 | 17.21 | 33.28 | 3.62* |
| Control Group | 22.14 | 4.53 | | |

*Significant at 0.05 level

The calculated value was higher than the table value which interprets that there is significant difference in the social skill of children with autism among experimental group and control group after massage therapy.

6. Discussion

In the present study 14 participants were included. Among the children, 57% children were between 4 – 9 years of age and 43% children were between 10 – 14 years. These findings were in line with the study conducted on early identification of autism, which recognised the mean age of parental concern in any problem among children in India was 23.4 months and to diagnose was 32 months [11]. With

7. Conclusion

Autism is a developmental disorder affecting all races and ethnic groups. It severely impairs the child's socialization, language and communication skills. Social skills are the ultimate determining factor in the child's future success, happiness and acceptance. Since there is no cure for autism parents seek various therapies like interventions like medications, behaviour intervention, speech therapy and occupational therapy to increase quality of life and functional independence. The researchers adopted massage therapy to improve the social skill of children with autism. The result revealed in the present study is found with

evidence that massage therapy on regular basis brings substantial improvement in the child's social skill. Hence the nurses working in different sectors like hospitals and community can adopt massage therapy as an intervention in improving the social skill among children with autism.

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