

**MOOD IMPAIRMENTS IN ADULTS WITH DEVELOPMENTAL COORDINATION DISORDER**GANAPATHY SANKAR U<sup>1</sup>, MONISHA R<sup>1\*</sup>, CHRISTOPHER AMALRAJ VALLABA DOSS<sup>2</sup>, PALANIVEL RM<sup>3</sup><sup>1</sup>SRM College of Occupational Therapy, SRM Institute of Science and Technology, Kattankulathur, Chennai, Tamil Nadu, India.<sup>2</sup>College of Medicine, Imam Abdulrahman Bin Faisal University, P. O. Box 1982, Dammam 31441, Saudi Arabia. <sup>3</sup>Deanship of Quality and Academic Accreditation, Imam Abdulrahman Bin Faisal University, P. O. Box 1982, Dammam 31441, Saudi Arabia.  
Email: dreamsfuture000@gmail.com

Received: 01 February 2020, Revised and Accepted: 09 March 2020

**ABSTRACT**

**Objective:** Data on the consequences of adults with developmental coordination disorder (DCD) in their life span is in debate and there is no clear and significant data remains. The current study was done to examine the existence or absence of mood impairments with DCD adults.

**Methodology:** Beck depression and Spielberger Anxiety Inventories were used as an outcome measure to evaluate the symptoms of anxiety and depression in 20 adults diagnosed with DCD with 20 typically developed peer-group population was used as a control.

**Results:** After statistical evaluation, it has been proved that adults with DCD experience enhanced symptoms of depression, anxiety than their age-matched peers.

**Conclusion:** This finding has added evidence that adults with DCD experience psychiatric distress and there is a need for consideration of intervention in DCD.

**Keywords:** Developmental coordination disorder, Dyspraxia, Anxiety, Depression, Mood impairments.

© 2020 The Authors. Published by Innovare Academic Sciences Pvt Ltd. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>) DOI: <http://dx.doi.org/10.22159/ajpcr.2020.v13i5.37103>

**INTRODUCTION**

There is a tremendous growth of mood disorders and fluctuations among children as well as adults. However, those experiencing neurological impairment and other anxiety disorders experience tremendous levels of psychiatric illness as compared to age-matched peers. Researchers have demonstrated that children with developmental coordination disorder (DCD) experience difficulty in performing and initiating the motor task and they experience social isolation and negativism. Thus, there is a growing recognition of anxiety disorders in childhood [1].

If these children were left without any therapeutic intervention, the persisting anxiety disorder will develop as a huge burden for parents as well as caregivers. Anxiety disorders will create secondary consequences in physical and mental health. Adults with DCD when examined and assessed in detail, it has been proved that these adults were lazy and have no academic skill and have a failure in primary schooling [2]. Adults with DCD experiences motor difficulties while performing motor tasks, which involves motor planning, balance, and posture. When assessing the parents or caregivers of adults with DCD, they reported that they avoid physical activity with peer groups and prefer to rest in-home, rather than going out for a walk in green land [3].

Adults with DCD have poor self-perception of their abilities and have mental health difficulties; this is crucial for further investigation. While researchers were concerned about the problems faced by children with DCD, its impact on adults has not been studied. Substance abuse and suicidal tendency were higher among adults with DCD. However, researches among adults with DCD are limited. Adults with DCD experience difficulties in organizational skills, thus they experience an increased percentage of unemployment. Previous researches have documented increased frequency and percentage of mood impairments and low quality of life among adults with DCD [4]. When considering the negative effects of mental health impairments in adults with DCD, it is critical to developing an intervention program

for the management of negative symptoms. The current study focuses on assessing mental health disorders in terms of mood impairment by self-reported measures focusing on depression and anxiety in adults with DCD.

**METHODOLOGY**

Ten people participated in the study and the adults were previously diagnosed with DCD (henceforth, adults with DCD) and 10 typical adults were in the control group. Adults were recruited and selected based on the diagnostic and statistical manual of mental disorder (DSM) criteria for the condition. A preliminary confirmation report by a pediatrician in the past was verified by the primary investigator for the confirmation of diagnosis.

Assessments of motor skill, difficulty and difficulty in functional skills were assessed using cognitive ability assessment. Participants were selected by mailing the organization that acts as support centers for adults with impairment and the control group was recruited from the community centers in Kancheepuram.

There was no bias in participants' recruitment and selection in both age and gender distribution in two groups. Demographic data are shown in Table 1. Scientific approval is obtained after the proposal presentation in SRM College of Occupational Therapy, SRM Institute of Science and Technology. All the participants were instructed to undergo physical training, which is familiar for the adults, and they have to document the frequency and duration of physical activity performed by them in green land and have to report to the primary researcher, regarding the difficulties experienced by them while performing the exercises. All the participants filled up a self-reported questionnaire, the State-Trait Anxiety Inventory form Y and the 21-item Beck Depression Inventory were used to analyze whether the adults were facing depressive episodes.

**Table 1: Demographic profile**

Characteristics	DCD adults n=10	Typical adults n=10
Gender (M:F)	7:3	8:2
Age in years – Mean	29.32	30.05

DCD: Developmental coordination disorder

**Table 2: Mean value of depression, state and trait anxiety, and physical activity**

Variables	DCD adults	Typical adults
Frequency of physical activity (h)	1.87	5.78
State anxiety	45.09	32.01
Trait anxiety	55.78	29.09
Depression	12	2.22

DCD: Developmental coordination disorder

## RESULTS

Table 2 documents the levels of state and trait anxiety and depression for adults with and without DCD. There was a significant difference in the frequency of exercise performed by the two groups ( $p < 0.001$ ). Self-reported levels of both state and trait anxiety, as well as depression, were significantly higher in the DCD.

## DISCUSSION

The study confirms that adults diagnosed with DCD confirm to suffer from depression and state and trait anxiety in comparison to their peer groups, and it also proves that there is a reported poor level of participation in physical exercise than adults without DCD. This is the first study conducted in Tamil Nadu to examine the mood impairments in adults and it should be considered when planning intervention programs [5,6]. The research was in the debate when it comes to final evaluation, whether the mood fluctuation was due to environmental stress and demands placed over the adults from society as well as from the family members. It is also clear that mood impairment is because of the stress induced by the motor skill difficulty experienced by adults with DCD during their performance in activities of daily living skills. Additional secondary manifestations of mood impairments in adults with DCD include obesity. Awareness and benefits of playground activity are needed to avoid secondary effects of mood impairments [7]. Future research was in need to analyze the relationships between motor skill defects and mood impairments in an adolescent with DCD. Clearly, this study has identified that adults with DCD experience motor impairments and they will never outgrow their symptoms and experience stress, anxiety, and depression [8-10]. Further literature should document the mood impairments in DCD and the existence of individual differences. There is a need to examine the risk factors

associated with mental health issues in adults with DCD and it should be considered in future studies.

## CONCLUSION

There is a need for creating awareness of motor difficulties in adults presenting with high levels of anxiety and depression.

## AUTHORS' CONTRIBUTIONS

Dr. Ganapathy Sankar was involved in the design and implementation of the research and Monisha R involved in the analysis of the results and to the writing of the manuscript.

## CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

## AUTHORS' FUNDING

Self.

## REFERENCES

1. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders. 4<sup>th</sup> ed. Washington, DC: American Psychiatric Association; 1994.
2. Sankar UG, Monisha R. Evaluation of cardio-vascular risk in children with developmental coordination disorder in Indian context- pilot study. *Res J Pharm Technol* 2018;11:5405-7.
3. Sankar G, Monisha R. Life impact of developmental coordination disorder: Qualitative analysis of patient and therapist experiences. *Biomed Pharmacol J* 2019;12:491-4.
4. Sankar UG, Saritha S. A study of prevalence of developmental coordination disorder (DCD) at Kattankulathur, Chennai. *Indian J Physiother Occup Ther* 2011;5:63-5.
5. Shankar UG, Monisha R. Challenges in the assessment of children with developmental coordination disorder (DCD). *Biomed J Sci Tech Res* 2018;6:5564-5.
6. Sankar UG, Monisha R. Assessment of bilateral coordination in children with developmental coordination disorder in the Indian context. *Int J Adv Res Med Pharm Sci* 2018;3:14-6.
7. Sankar G, Monisha R. Assessment of balance in children with developmental coordination disorder in Indian context. *Indian J Public Health Res Dev* 2019;10:67-70.
8. Ganapathy SU, Monisha R. Evaluation of visual proprioceptive skill in South Indian children with developmental coordination disorder. *Res Med Eng Sci* 2018;6:643-7.
9. Sankar UG, Monisha R, Doss CA, Palanivel RM. Effectiveness of vestibular stimulation in children with developmental coordination disorder. *Asian J Pharm Clin Res* 2019;13:37-9.
10. Sankar UG, Monisha R, Doss CA, Palanivel RM. Evaluating the immediate effects of deep pressure on children developmental coordination disorder: Demonstrating individual differences. *Asian J Pharm Clin Res* 2020;13:61-3.