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To Study the Comparative Effect of Disc Swing And Stretch Swing On Occupational Performance In ASD Children

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Abstract

Study Design; It is a comparative study design.
Aims & Objectives;The aimof the study was to find out the comparison between disc swing and stretch swing on the occupational performance in children with ASD.
Participants; 30 subjects were chosen based upon inclusion and exclusion criteria; they were divided into 2 groups of 15 each for respective swings.
Methods; The treatment was conducted for 12 weeks, COPM was filled through interview, they were given table top activities twice for 5 minutes alternatively and them respective swings for alternate 5 minutes each. Sessions were conducted on alternative days in a week for 3 months. After the completion of treatment protocol COPM was again filled to measure the change in occupational performance.
Result; Despite some variability in significance levels dependinguponttheoutcome measure,discswingconsistentlydemonstratedamore significant effect on the target population compared to stretch swing. Analysis of COPM components revealed notable improvements from pre-assessment to post- assessment. Performance (P1) scores increased significantly, indicating enhanced ability to perform daily activities after the intervention. Satisfaction (PS1) scores also showed a significant increase, reflecting improved satisfaction with performance in activities. Self-Perception (S1) scores demonstrated a notable rise, suggesting enhancedself-perception andconfidenceinactivity performance.
Conclusion; From the obtainedoutput of the study,itisobserved thatdisc swing has more efficiencyas it showed greater statistical values. It is more impactful on positive change in occupational performance in children having autism spectrum disorder. Analysis of componentsofCanadianOccupationalPerformanceMeasurerevealedsignificantpositive changes from pre-assessment to post-assessment. The findings reflect the effectiveness of the treatment protocol in improving functional outcomes and overall well-being amongst the target population. The significant enhancements observed in COPMcomponentsfurthersupportthepositiveimpactoftheinterventiononsubjects' performance, satisfaction, and satisfaction with performance.

Keywords;Autismspectrumdisorder,occupationalperformance,sensoryswing

Introduction:

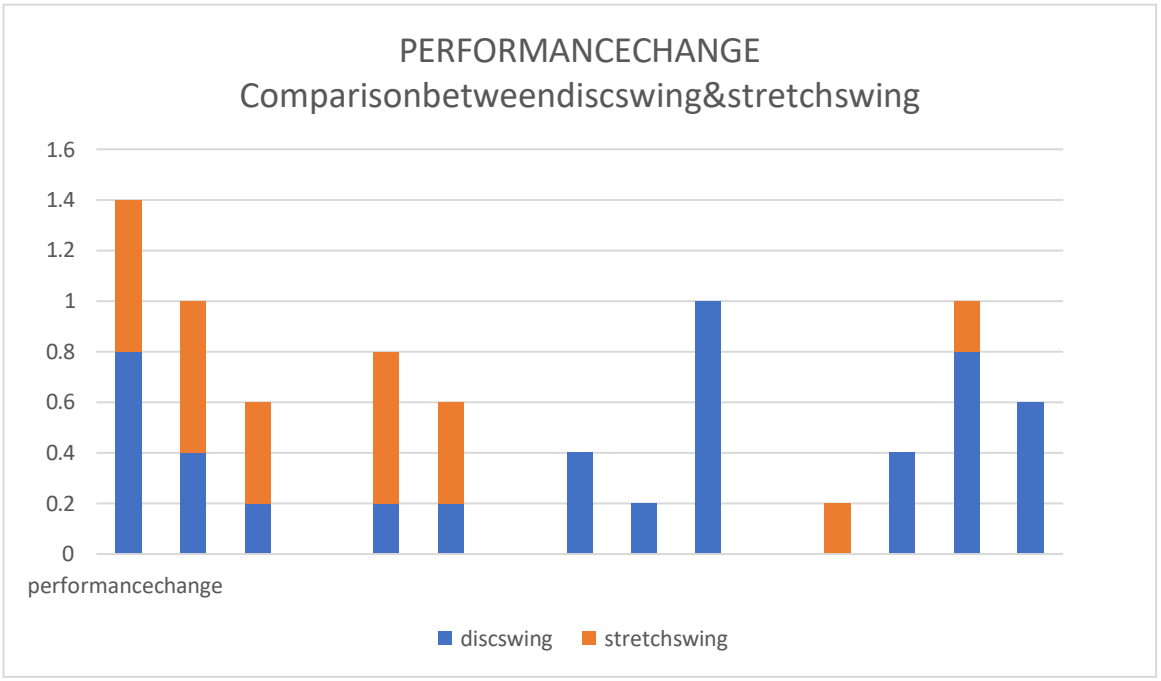
Autismis a neurological condition that affects1 in 100 children.Itis characterized by marked delays in social interaction, expression and language, as well as repetitive behaviours. Children having autism spectrum disorder may have difficulty in performing motor skills such as running, jumping, cycling, throwing, and catching. These skills are required during physical activities such as cycling, fun ball games, and many other leisure and fun activities. The vestibular and proprioceptive systems are responsible for awareness of body's position in space andits movement through space, maintaining body posture and maintaining a stable visual field. Dynamic postural control is important for swinging activities such as rotational moving on disc swing,linear swinging onstretchswing,balancingonplatformswingetc.Therapeutic activities using swings can bring out various changes in child's daily routine. Hypothesis of the study suggested that there is effect of disc and stretch swing on occupational performance in children with ASD. Article titled the effect of platform swing on theindependent work behaviours of children with autismspectrumdisorder by Linda C. Murdock et al 2014 suggested that no significant differences were evidenced between the treatment and control groups on engagement, on task behaviour, stereotyped/repetitive behaviour, or out-of-seat behaviour. However, the present study targeted on studying the comparative effects of disc and stretch swing on occupational performance of children having ASD.

Methods:

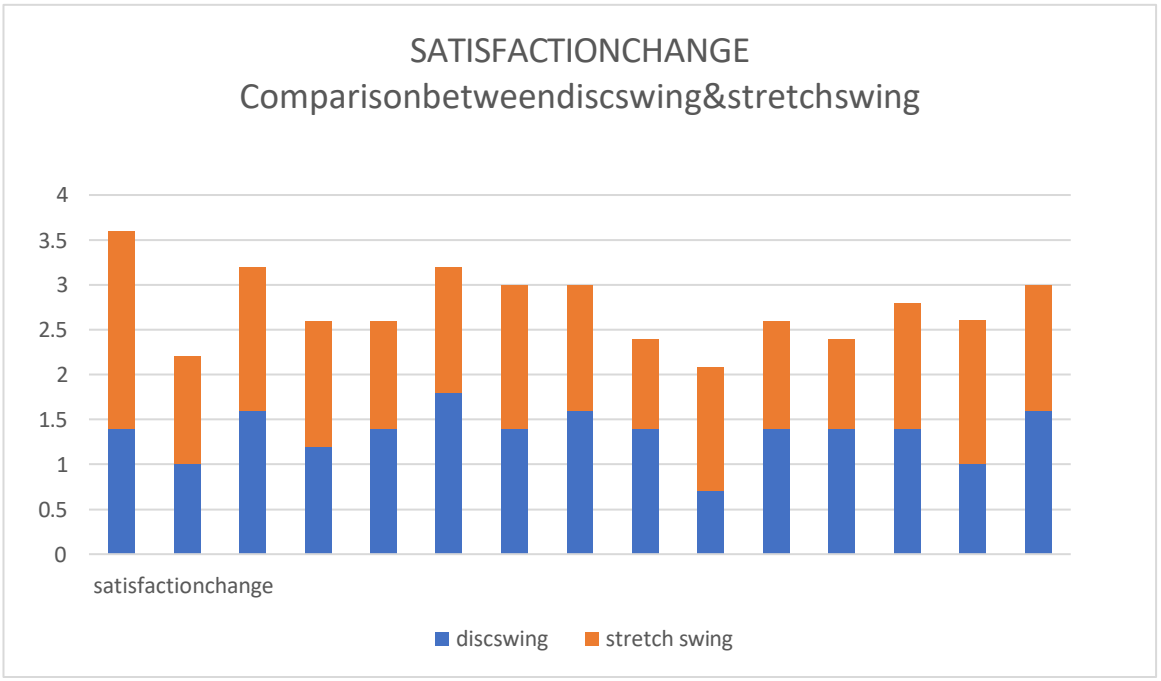
Itwas a comparativestudywhich was completedin 12 weeks oftreatment where30subjectswerechosenanddividedintogroupsof15each.Datawascollected fromRahatOccupationalandSpeechTherapyCentre, Delhi.CanadianOccupational Performance Measure was filled to assess the present occupational performance. They were given table top activities twice for 5 minutes alternatively and them respectiveswingsforalternate5minuteseach.Sessionswereconductedonalternative days in a week for 3 months. After the completion of treatment protocol COPM was again filled to measure the change in occupational performance.

Result:

Comparison between disc swing and stretch swing depicted paired samples t-tests revealed significant differences between both the swings across various outcome measures. For Swing 1, the t-valuesranged from-4.133 to -20.000, with all p-valuesbelow0.001,indicatinghighlysignificanteffects.Incontrast,swing2showed t-values ranging from -3.090 to -25.935, with p-values ranging from 0.008 to <0.001. Despite both swings demonstrating significant effects, swing 1 consistently exhibited higher absolute t-values and lower p-values, suggesting a more pronounced impact on the measured variables. Independent samples t-tests further supported these findings,showingthatswing1generallyelicitedgreatersignificantlevelscomparedto swing 2 across outcome measures. Despite some variability in significance levels dependinguponthe outcome measure, discswingconsistentlydemonstratedamore significant effect on the target population compared to stretch swing. Analysis of COPM components revealed notable improvements from pre-assessment to post-assessment. Performance (P1) scores increased significantly, indicating enhanced ability to perform daily activities after the intervention. Satisfaction (PS1) scores also showed a significant increase, reflecting improved satisfaction with performance in activities. Self-Perception (S1) scores demonstrated a notable rise, suggesting enhanced self-perception and confidence in activity performance. Moreover, Satisfaction with Self-Performance (SS1) scores exhibited significant improvement, indicating greater satisfaction with one's ability to perform activities. These findings underscoretheeffectivenessoftheinterventioninimprovingfunctionaloutcomesand overall well-being among the target population. The significant enhancements observedinCOPMcomponentsfurthersupportthepositiveimpactoftheintervention on clients' performance, satisfaction, self-perception, and satisfaction with self- performance.



Graph1:Changeinperformancescorebetweendiscswing&stretchswing



Graph2:Changeinsatisfactionscorebetweendiscswing&stretchswing

Discussion:

Thepresentstudyinvestigatedthecomparisonofdiscswingandstretch swing on occupational performance of children with autism spectrum disorder. The purposeofthisstudywastoevaluatethecomparativeeffectofdiscswingandstretch swing on occupational performance of children having autism spectrum disorder. Previous research conducted by Vidya Pingale et al (2019) concluded that sensory diets administered in brief sessions in the school day appear to be effective in improving children's sensory processing, psychosocial, and classroom engagement behaviours and may have a continued beneficial effect.Another study conducted by Babak Kashefimehr et al (2017) suggested that the effectiveness of SITin improving occupational performance in children with ASD as a health-related factor was supported by their findings. Data analysis of this study revealed that disc swing had significantimpactonoccupationalperformanceascomparedtostretchswing.Despite both swings demonstrating

significant effects, swing 1 consistently exhibited higher absolute t-values and lower p-values, suggesting a more pronounced impact on the measured variables. The significant enhancements observed in COPM components further support the positive impact of the intervention on clients' performance, satisfaction, self-perception, and satisfaction with self-performance.

Conclusion:

Fromtheobtainedoutputofthestudy,itisobservedthatdiscswinghas moreefficiencyasitshowedgreaterstatisticalvalues.Itismoreimpactful onpositive change in occupational performance in children having autism spectrum disorder. Analysis of components of Canadian Occupational Performance Measure revealed significant positive changes from pre-assessment to post-assessment. The findings reflect the effectiveness of the treatment protocol in improving functional outcomes and overall well-being amongst the target population. The significant enhancements observedinCOPMcomponentsfurthersupportthepositiveimpactoftheintervention on subjects' performance, satisfaction, and satisfaction with performance.

Limitations:

The study was done on small sample size.The study was completed in shorterduration. Subjects were chosenfromsmalleragerange. Subjects were taken from only one place. Only 2 swings were compared.

Future Recommendations: The study can be conducted on bigger sample size. Subjects can be taken from various areas. Comparison can be done between other sensoryswings.Othersensoryintegrationcomponentscanbecovered.Subjectscan be chosen from bigger age range. Subjects can be chosen from severeASD cases.

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