

The Use of Personal Hygiene Hands-On Activities to a Learner with Down Syndrome

Rizza Lyza C. Alcazaren^a, Wenefredo E. Cagape, EdD, PhD^b, Shiela Mae C. Ferolino^c, Grazel Mae O. Languido^d, Gilyn R. Meneses^e, Lhea Helena D. Rosima^f

^a rlcacazaren01948@usep.edu.ph/ ^b cagapefred@gmail.com/ ^c smcferolino01916@usep.edu.ph/ ^d gmolanguido02250@usep.edu.ph/ ^e grmenes01950@usep.edu.ph/ ^f lhdrosima02053@usep.edu.ph

^a Teacher I, Department of Education, Cotabato City 9600

^b OIC, College President City College of Davao KM 10, Catalunan Pequeno, Davao City, 8000

^c Teacher III, Department of Education, General Santos City 9500

^d Teacher I, Department of Education, Davao City 8000

^e Teacher I, Department of Education, Davao City 8000

^f Teacher II, Department of Education, General Santos City 9500

Abstract

This study uses descriptive qualitative research to describe the effect of personal hygiene as a strategy for developing fine motor skills. Previous cases typically indicate that children with Down Syndrome have delays in their fine motor skills. The ethical review group authorized the procedure. Also guaranteed were dependability and accuracy. With the aid of key informants from the SPED department in Davao City National High School, one (1) participant who was selected with Down Syndrome, and criterion sampling were able to produce thick data and vivid descriptions. Narratives are collected through interviews with the participants' two (2) teachers, and parents. Data are collected before, during, and after implementing the activities: (1) Personal Hygiene Kit Activity, (2) Tooth Brushing Activity, (3) Hand Washing Activity, and (4) Hair Combing Activity. The results are in proper compliance with ethical guidelines, and a survey checklist created by the researchers was employed. The results of this experiment showed that engagement in Hands-On Activities with the participant has minimal impact on developing fine motor skills. The result has come with challenges on the difficulty to instruct together with the sub emerging factor: (1) not familiar with the materials, and (2) not yet taught in class. While observing, there was an emerging factor of maintaining balance together with its sub emerging factor; (1) cannot grasp the object and (2) weak fine motor skills. The researchers recommend studying more on factors that affect the child with Down Syndrome during the implementation of the activity.

Keywords: Down Syndrome; Hands-On Activity; Fine Motor Skills; Personal Hygiene.

1. Introduction

Research typically indicates that children with Down Syndrome have delays in their fine motor skills (Memišević, H., & Mačak, A., 2014). Chromosome 21 is present in two copies in newborns with Down syndrome. Extra chromosomes slow the development of children's bodies and minds, and they are more likely to develop medical conditions (Hamilton, 2022). The prevailing diagnostic aspect of Down's syndrome is intellectual impairment, which affects almost all individuals with the condition to some extent (Joan Noble, 1998). The average population of a human IQ score has a normal (Gaussian) distribution with a mean of 100

and a standard deviation of 15. Of children with Down's syndrome, 10% have profound intellectual disability, 70% severe, and 20% mild or none.

In Global Vision, people with Down Syndrome can lead fulfilling lives like regular people. With the appropriate support and resources, they can fulfill their achievements, and goals, and contribute to society meaningfully. According to Sabin Chiriac and Bianca Munteanu (2016), Physical therapy is essential from the earliest months of infancy to assist in optimal neurological development. However, when a child with Down Syndrome reaches 13 and above years old, it needs support from the teachers, parents, assistive devices, and daily routines to prevent his difficulties.

Meanwhile, according to statistics, 800 out of every 1,000 newborns in the Philippines are born with Down syndrome. The parents' task of raising a child with Down syndrome is hard (Tanganim, 2017). In the study conducted by Tanganim (2017), whether parents adapt to the environmental changes of having a child with Down syndrome. The development of children's fine motor abilities is essential for their daily functioning. Fine motor skills are the capacity of a person to move their hands and fingers and are a common problem in people with Down syndrome and autism (Green, 2002).

With the alarming difficulties of children with Down Syndrome, the researcher is focused on providing a strategy for developing the fine motor skills of a child with Down syndrome to address the problems brought by it.

1.1. Review of Related Literature

This chapter is a compilation of readings collected by the researchers from books, journals, periodicals, and the internet which provides the background for identifying the gaps in the study.

History of Down Syndrome

The history of Down syndrome research is comparable to the development of human genetics. The first description of Down syndrome, the most prevalent genetic cause of intellectual impairments, dates back to 1866. Down syndrome was first characterized as "Mongolism" in 1866 by British physician John Langdon Down, after whom the syndrome is now called. Children back then needed support systems desperately since they were less like modern humans. They are initially locked up so that society won't notice them.

In recent years, the condition of children born with Down's syndrome has grown (Brookes & Alberman, 1996). Children with Down Syndrome have congenital abnormalities, congenital heart defects, gastrointestinal defects, intellectual disabilities, etc. Survival rate over the years for children with Down Syndrome has a 44% of live births survive to age 60.

Personal Hygiene Hands-on Activities.

Children's physical and mental health may be improved in an environment that promotes good hygiene habits (Arifiyanti, N., & Prasetyo, 2018). Giving a child with Down syndrome information about personal hygiene can have a big impact on how clean they are. According to studies done inside of instructional teaching that focused on school-based hygiene education, students can improve their propensities for cleanliness by following the instructions of teachers or parents during lessons or exercises (Lopez et al., 2021 & Schmidtke and Drinkwater, 2021 & Santhosh et al., 2021). A child with Down syndrome benefits from having this as part of their everyday routine at home. According to child brain research, parents should not just model good behavior for their kids but should also engage them in activities that will help them grow and develop (Kaisser, 2017). According to a study, preschool teachers have not made appropriate efforts to include several health-related topics in early childhood education (Obeng, 2008). Some educators who were questioned claimed that tooth brushing was not easy. A parent or dentist was in charge of giving a task for practicing and maintaining oral hygiene.

Engagement of Children with Down Syndrome. According to Adamson, L. B., Deckner, D. F., & Bakeman, R. (2010), Children with Down Syndrome and Children with Autism differ in balance to their interest in new objects and old objects presented to them. The appeal of a child is patterned to rapid decline,

sustained interest, and strengthening interest. More time spent unproductively was linked with less interest in new things, but only for children with autism and Down syndrome, not for typically developing children.

Considering the delay in fine motor abilities in children with Down Syndrome cited the taking the whole part of gaps. Children with Down Syndrome commonly display muscle hypotonia, which influences their fine motor abilities and aptitudes by diminishing muscle tone and quality (de Oliveira et al., 2017). Ligamentous laxity contributes to joint precariousness and challenges in accuracy hand development (Ulrich et al., 2011). Tactile handling challenges affect fine motor expertise procurement in children with DS, influencing their capacity to prepare and coordinate tangible data (Kashikar et al., 2019). Cognitive disabilities related to DS can hinder the advancement of complex fine-engine aptitudes (Baranek et al., 2018).

Each child's response to sensory stimuli differs therefore the child needs to be closely monitored at this stage (MacLean et al. 1986; Fisher and Bundy 1989). However, shortages of motor skills will impact the coordination that executes a fragile skill task in children with DS (Lemons et al., 2016).

Down Syndrome's Fine Motor Skills.

Considerations reliably appear for delays in fine motor skills in children with Down Syndrome. These delays include grasping, getting up, cognitive control, and precise hand development. (Cameron et al., 2012; Özkan et al., 2019). Troubles hold on all through childhood and youth, affecting exercises such as composing, drawing, and self-care errands (Shields et al., 2019). This troubles a child with Down Syndrome growing up in a society full of engagement through fine motor since Fine motor abilities are significant for children's everyday work. They are fundamental for a few self-care exercises such as dressing, nourishing, showering, holding objects, cutting, etc. Other than this, fine motor skills are related to cognitive, social, and scholarly capacities in youthful children (De Luca et al., 2013). It has been noticed from a developmental standpoint that impairment in motor abilities and motor planning persist throughout time (Mon-Williams et al. 2001; Jobling 1999).

According to the motor learning hypothesis (Croce & DePaepe, 1989), skills are developed through a series of activities that will be repeated until it is mastered. This overview of motor learning about hand skills in children is provided by Exner and Henderson (1995).

Intervention

Several measures have been taken to improve the condition of children with Down syndrome. One is an occupational therapy intervention focused on improving hand strength, manual dexterity, hand-eye coordination, and motor planning in children with DS (Ulrich et al., 2011). Through occupational therapy, children with Down syndrome can increase their independence in daily activities such as sleeping, hygiene, dressing, cooking, self-catering, working, traveling, going to school, and toileting (Frank K., 2022). Playful exercises and sensory integration techniques are often used (Shields et al., 2019). Giving hands-on activity has an impact on the fine motor development of a child with Down syndrome.

Early intervention programs, such as individualized treatment plans and home activities, have shown promising results in the acquisition of fine motor skills in children with Down Syndrome (Shields et al., 2019; Marques et al., 2020). The use of assistive technology, such as adapted tools and writing instruments, can improve functional skills in children with Down Syndrome and promote independence in schoolwork and everyday tasks (Cameron et al., 2012). But studies show that assistive technology is not available on the other side of the country. Cooperation between occupational therapists, parents, and educators is essential to support the development of fine motor skills in children with Down Syndrome. Therefore, Consistent strategies and therapeutic activities are integrated into their daily life at home and the school can improve progress (Marques et al., 2020).

1.2. Research Objectives

This study aims to help Ryan cope with his fine motor skills thru personal hygiene and provide knowledge about personal hygiene:

1. Describe the challenges encountered by the participant in developing fine motor skills,
2. Observe the participant's responses to the implemented activities, and
3. Describe how the participant responded to the implemented activities.

2. Methods

This chapter presents a brief description of the research design that will be used in this study, the Participants of the Study, Data Collection, Data Analysis, Research Rigors, and Ethical Considerations.

2.1 Research Design

The researchers used a descriptive qualitative design to determine the challenges faced by a child with Down syndrome in developing its fine motor skills by using strategies of personal hygiene hands-on activities. A single case exploration design will explore the participant's development through Hands-On Activities using personal Hygiene Aspects.

2.2 Research Respondents

The study deals with one (1) participant, who is now schooling at Davao City National High School. The participant has Down Syndrome with autism. The participant was determined by the researchers through pre-test tracing activity and a criterion sampling method was used for the selection of the informant. This study will utilize a single case in describing the response of the participant's Fine Motor Skills to the hands-on activities. The activity is composed of 4 booklets about Identifying Personal Hygiene Kits, Handwashing, Grooming, and Toothbrushing.

2.3 Data Gathering Instrument

The researchers come up with a checklist from different Personal Hygiene Hands-on Activities. The data will be drawn from a checklist which is the behavior and responses before, during, and after the introduction of the hands-on activity. The researchers will measure the participant's responses to the activity that greatly affects the development of his fine motor skills.

The Checklist has two sections. Section A was items on the activities that the participant needed to accomplish. Section B identified responses that are being narrated before, during, and after the activity was introduced. Questions for the interview are about the challenges encountered by the participant.

2.4 Data Collection

The researchers secured permission from the selected high school participant to experiment. The researchers will personally do the checklist during the class, before and after introducing the Hands-On activity. The activity will be conducted through one on one teaching after the participant's Class. There are gathered pictures and videos for making the narrative. The activity will be given to the participant for the development of fine motor skills that the participant will finish. The modified items in the researchers' checklist will be the result of the study. The method repeatedly observes the behavior and measures students' engagement and participation level to determine if it affects the students within 2 days. Video Recordings and Interviews are also applied to this study for further understanding.

Another part of collecting data is a leading question that was created and used in this study's semi-structured interview after receiving peer assessment. Prior to the scheduled interview, the informant will receive this. It is divided into three sections: lead questions, exploratory questions, and introduction questions.

2.5 Data Analysis

Schematics analysis is used to summarize the participant's observed responses and provide a concise and clear presentation of a text's important components.

To extract, arrange, and evaluate the data gathered during the interview, Colaizzi's analytical method was applied. Researchers were given well-founded insights into the responses of the child with Down syndrome during the activity. Finally, the researchers returned all base structures to the informants to see if they had recorded the results.

Research Rigor. Each informant in this study underwent semi-structured interviews. The consistency of informant responses, facial expressions, and nonverbal clues was carefully observed. The credibility of the study is increased by ongoing observation of the interview procedure and informants' responses. According to Lincoln and Guba (1985), prolonged observation leads to depth while long-term participation provides latitude.

Ethical Considerations. Informants were given consent forms, which researchers asked them to complete with their identities as study participants, their signatures, and the consent date. Data pertinent to the study were included on the signed form. Confidentiality was guaranteed to informants. Consequently, their identity is kept a secret. They were instead given a code name, which they used all through the interview.

3. Results

The researchers presented, analyzed, interpreted, and discussed the result of the data gathered. The findings focused on four sections namely: (1) Results of every activity given to the participant, (2) Challenges that occurred during the observation, (3) Responses of the participant during the observation, and (4) interview results to parents and teachers. The following are the results of every activity given to the participant.

Personal Hygiene Kit Activity. On his first encounter with the materials, 0 out of 6 indicators in the task checklist were performed. There was a solid refusal to complete the activity. Attempting to move away from the instructional materials. But during the follow-up session and repetitive exposure of the activity he was able to perform successfully on all the indicators stipulated in the checklist.

Handwashing Activity. Same as with PHK Activity, the participant was showing resistance to engage in the activity at first. Every time handed the instructional material he would walk away and avoid performing the task. During the follow-up sessions with hand washing, it is observable that he was having a hard time gripping the acetate and moving it sideways. Though he tried to do the task only 4 out of 6 indicators in the checklist were successfully performed.

Hair Combing Activity. The hair combing activity was an easy task for the participant for he is accustomed to the material. He knew where to use it and how to use it. He instantly engages in the task given to him. 3 out of 4 indicators in the checklist were successfully done during the first implementation of the activity.

Tooth Brushing Activity. The participant was hesitant at first to engage in the tooth brushing activity but was curious about the big picture of the teeth. After demonstrating how to do the activity and several attempts to make him perform the activity, 3 out of 5 indicators in the checklist were performed.

Figure 1 presents the challenge that occurred during the observation of a child with Down syndrome.

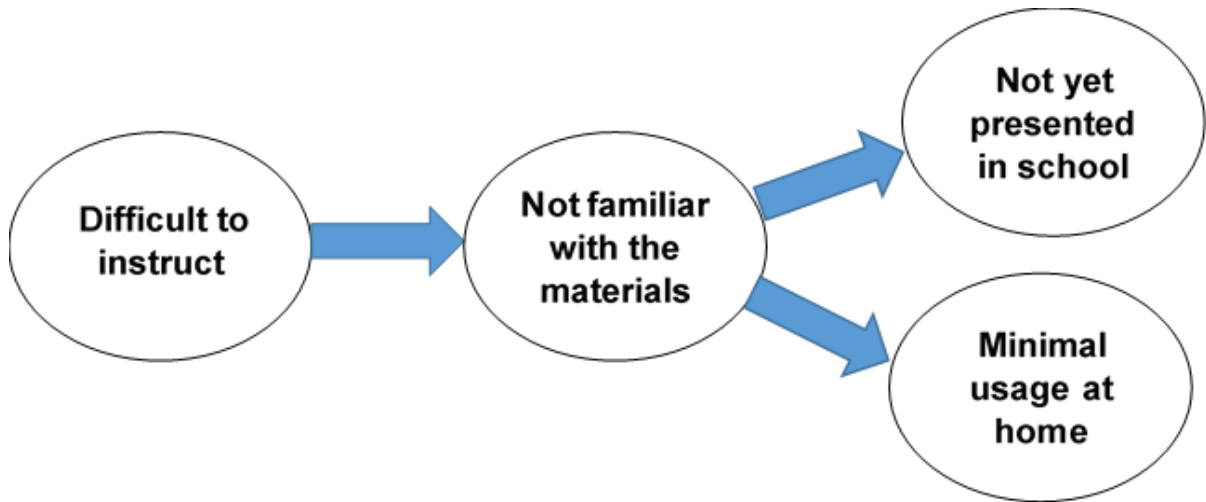


Figure 1 shows the challenges encountered by the participant during the observation. As the activity was demonstrated, there is difficulty in giving instructions to the participant since the activities were not familiar to the participant. Herby, two significant factors point out that; (1) Activities were not yet presented in the school, and (2) Minimal engagement at home.

Figure 2 presents the observed responses of the participant

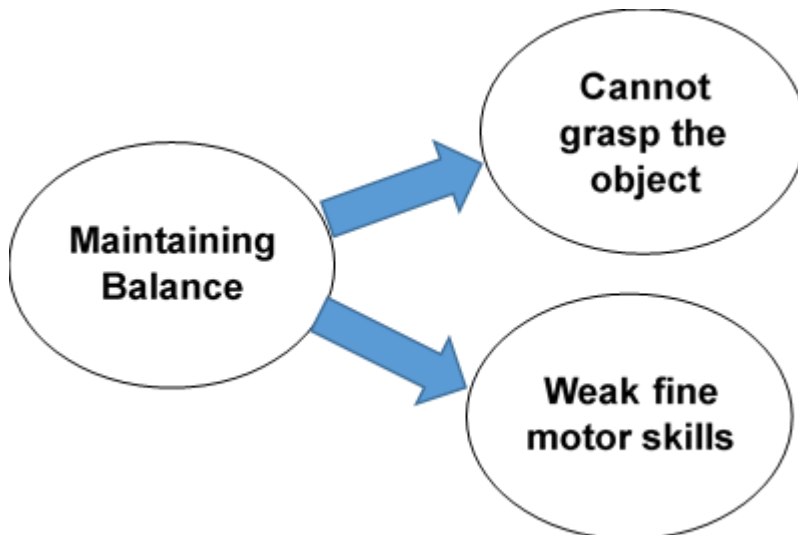


Figure 2 indicates the responses of the participant while implementing the activities. The major theme reveals that there is minimal development of the participant's fine motor skills caused by maintaining

balance. It provides a significant difference in the impacts of personal hygiene between cannot grasp the object and has weak fine motor skills.

Interviews with parents and two teachers have three emerging themes; (1) Keeping the student's attention, (2) Maintaining rapport, and trust with the child, and (3) Span of the activity. These themes support the study in defining the challenges and responses during the observation.

Keeping the student's attention. Concentration was affected both positively and negatively by participating in the said activity. Prior knowledge about Personal Hygiene is a factor to consider in the participant's case. The informant made this statement:

“ When I introduced the combing and tooth brushing kit, the participant attentively performed the task. I observed that he did it correctly. He performed the checklist completely. He was already familiar with combing and toothbrushing. When the handwashing and hygiene kit was laid down, the participant became unattentive and did not perform the activity. The checklist was not accomplished. The material was new to him.” (P1)

According to Adamson et al., (2010), new objects introduced to children with Down Syndrome can provide rapid decline which strengthens the interest of the participant. Each child's response differs in attention and interest.

Maintaining Rapport, Respect, and Trust with the child. A good relationship, mutual trust, and respect between the student and the teacher will impact the student's learning outcome positively. The informant made this statement:

“During the implementation, some challenges were inevitable. Dealing with the participant's unpredictable behavior requires patience, understanding, compassion, and the right strategies to pacify him.” (P1)

Span of Activity. This factor is very important to children with Down Syndrome. They need more time to cope with the new object introduced to them. Since new objects balance their interest.

“ *Maam kung basehan nato sa time murag labo magkaroon development*” (T2)

supported with:

“The next time around when I let him repeat the handwashing and hygiene kit activities, he willingly did all the activities. ” (T1)

According to the research study of the motor learning hypothesis, a series of activities must be introduced repeatedly to show development. Especially to children with Down Syndrome who show a delay in coming to fine motor skills.

4. Discussion

This study aimed to describe the responses of the participant before and after introducing the Hands-On Activity for the development of fine motor skills.

Overall, the result of this study creates a profile for children with Down Syndrome and Autism that is to some extent similar to international and national research findings in this area.

It showed that during the implementation of the Activity, the participant had very low performance, wherein there was a strong refusal to perform the activity. Adamson, L. B., Deckner, D. F., & Bakeman, R. (2010) research study shows that there is a rapid decline in new objects shown to a child with Down Syndrome and Autism. There was more engagement in activities that the participant is familiar with. Among the Four activities, almost half are engaged. It shows more engagement in a subject that the participant is knowledgeable about. This is so because of the presence of daily routine activities.

The participant's fine motor skills show minimal development to the activity since the researchers only give two sessions to the participant. Another is, the participant has weak fine motor skills, and cannot grasp the object. According to Cameron et al., (2012), a research study reflects the fine motor skills in

children with Down Syndrome which appear to delay in motor development. The researchers provide a pre-test tracing activity to compare with the post-test tracing activity of the participant for the development of fine motor skills. The result shows that there is a minimal difference between the tests.

5. Conclusion

The findings of the study confirmed that Hands-On Activity could improve a child with Down syndrome's fine motor development. In any community, it is far too frequently seen as a way of life for a child with Down Syndrome. Activity shows positive exercises that provide improvement to children with Down Syndrome. In the participant's case, he experienced declining objects and had no interest in new objects for the first session. However, during the second session, there is minimal interest in the activity. Looking at the fine motor skills of the participant, after the activity, the researcher provided a tracing activity, there was minimal improvement to the lines. Since the activity was provided only for two days, further exploration to the participant and a longer time frame for the activity.

6. Recommendation

In view of the conclusion of the study, the following are recommended; (1) There should be a long time for the activity for children with Down Syndrome, (2) The activity used must be well disseminated to settle cases of children having difficulty in grasping objects and has weak fine motor skills, (3) Provide real or concrete objects to a child with Down Syndrome when it comes with activities in daily living, (4) Parents and Teachers must be fully functional in all tasks and responsibilities, and (5) Parents should provide follow up activities when at home.

Acknowledgments

The completion of this case study would never be possible without the guidance and support of several people who in one way or another share their knowledge, time, effort, and assistance. First and foremost, we would like to thank Doctor Wenefredo Cagape, a Professor at the University of Southeastern Philippines, Graduate School of Education who shared his expertise, experiences, and knowledge to assist us in our journey in understanding and responding to our learners with special needs. To the SPED Coordinator of Davao City National High School, Ma'am Rosida Caridad M. Maglasang for granting us the opportunity to conduct our study in their school. To our research informants, his teachers and parents who gave their trust and cooperation in the conduct of the study. To the class of SPED 201 and MSNED-ID 7125 for the camaraderie and encouragement throughout the semester. To our respective families for their never-ending support and understanding may it be spiritually, morally, and financially. Above all, we would like to thank God for his guidance, protection, strength, wisdom, and love. With all these, we gain and continually retain our ability to finish our work.

References

- Adamson, L. B., Deckner, D. F., & Bakeman, R. (2010). Early interests and joint engagement in typical development, autism, and Down syndrome. *Journal of Autism and developmental disorders*, 40(6), 665–676. <https://doi.org/10.1007/s10803-009-0914-1>
- Anne Shumway-Cook, Majorie H. Woollacott, Dynamics of Postural Control in the Child with Down Syndrome, *Physical Therapy*, Volume 65, Issue 9, 1 September 1985, Pages 1315–1322, <https://doi.org/10.1093/ptj/65.9.1315>

- Brookes ME, Alberman E. Early mortality and morbidity in children with Down's syndrome diagnosed in two regional health authorities in 1989. *J Med Screen* 1996;3:7–11.
- Case study of a 15-year-old with Down syndrome. (n.d.). Case Study of a 15-Year-Old With Down Syndrome. <https://www.mirarehab.com/blog/case-study-of-a-15-year-old-with-down-syndrome/>
- C. Barrantes, J. K., Villafranca, M. R., Tanganim, V. C., & Cusi, K. J. (n.d.). *Sa Ugoy ng Duyan: Mothers Raising a Child with Down Syndrome*. Philippine EJournals| Sa Ugoy Ng Duyan: Mothers Raising a Child With Down Syndrome. <https://ejournals.ph/article.php?id=12476>
- Douglas-de-Oliveira, D. W., Vitor, G. P., Silveira, J. O., Martins, C. C., Costa, F. O., & Cota, L. O. M. (2018, April). Effect of dentin hypersensitivity treatment on oral health-related quality of life — A systematic review and meta-analysis. *Journal of Dentistry*, 71, 1–8. *Intensive behavioral treatment for a toddler at high risk for autism - PubMed*. (2002, January 1). PubMed. <https://doi.org/10.1177/0145445502026001005>
- Lemons, C. J., King, S. A., Davidson, K. A., Puranik, C. S., Fulmer, D., Mrachko, A. A., Partanen, J., Otaiba, S. A., & Fidler, D. J. (2015, August 1). Adapting Phonological Awareness Interventions for Children With Down Syndrome Based on the Behavioral Phenotype: A Promising Approach? *Intellectual and Developmental Disabilities*, 53(4), 271–288 <https://doi.org/10.1352/1934-9556-53.4.271>
- Memišević, H., & Mačak, A.. (2014). Fine motor skills in children with Down syndrome. in Specijalna edukacija i rehabilitacija Univerzitet u Beogradu - Fakultet za specijalnu edukaciju i rehabilitaciju., 13(4), 365-3 <https://doi.org/10.5937/specedreh13-7465>
- Mon-Williams, M., Tresilian, J., Bell, V., Coppard, V., Jobling, A., & Carson, R. (2001, November). The preparation of reach-to-grasp movements in adults with Down syndrome. *Human Movement Science*, 20(4–5), 587–602. [https://doi.org/10.1016/s0167-9457\(01\)00069-0](https://doi.org/10.1016/s0167-9457(01)00069-0)
- Nemutlu, E., Orgul, G., Recber, T., Aydin, E., Ozkan, E., Turgal, M., Alikasifoglu, M., Kir, S., & Beksac, M. S. (2019, May 27). Metabolic Infrastructure of Pregnant Women With Trisomy 21 Fetuses; Metabolomic Analysis. *Zeitschrift Für Geburtshilfe und Neonatologie*, 223(05), 297–303. <https://doi.org/10.1055/a-0877-7869>
- Obeng, C. S. (2008, May 6). Personal Cleanliness Activities in Preschool Classrooms. *Early Childhood Education Journal*, 36(1). <https://doi.org/10.1007/s10643-008-0253-4>In-Text Citation: (Obeng, 2008
- Schmidtke, K. A., & Drinkwater, K. G. (2021, July 21). A cross-sectional survey assessing the influence of theoretically informed behavioural factors on hand hygiene across seven countries during the COVID-19 pandemic. *BMC Public Health*, 21(1). <https://doi.org/10.1186/s12889-021-11491-4>
- Shields, N., Dodd, K. J., & Abblitt, C. (2009, October). Do Children with Down Syndrome Perform Sufficient Physical Activity to Maintain Good Health? A Pilot Study. *Adapted Physical Activity Quarterly*, 26(4), 307–320. <https://doi.org/10.1123/apaq.26.4.307>
- Ulrich, D., Burghardt, A., Lloyd, M., Tiernan, C. & Hornyak, J. (2011). Physical activity benefits of learning to ride a two-wheel bicycle for children with down syndrome: A randomized trial. *Physical Therapy*, 91(10), 1463- 1477. Retrieved from: <https://academi.coup.com/ptj>