

## Looking at the Social Activity for Adolescents with Orthopedic Impairments

Leslie Biastro<sup>1</sup>, Heather Frank<sup>1</sup>, Karen H. Larwin<sup>2</sup>

<sup>1</sup>Department of School Psychology, Youngstown State University, USA

<sup>2</sup>Department of Education Foundations & Research, Youngstown State University, USA

---

### Article Info

#### Article history:

Received Jul 14, 2015

Revised Aug 20, 2015

Accepted Aug 26, 2015

---

#### Keyword:

Adolescents

Life Satisfaction

Orthopedic Impairments

Social Activities

---

### ABSTRACT

Adolescents with identified orthopedic impairments are often less likely to participate in social activities outside of the school setting. However, the adolescents who are able to participate in activities have higher social skills, more academic successes, and show more satisfaction in their roles as family member or friend. The aim of this study was to look at adolescents with orthopedic impairments and their level of participation in social activities. Also looked at was the adolescent's report of a higher level of fulfillment in their family or friend role if they participated in social activities. Responses of adolescents from a national school-based survey were used in the study. The results revealed that students with orthopedic impairments were just as happy as their peers when they participated in social activities.

Copyright © 2015 Institute of Advanced Engineering and Science.  
All rights reserved.

---

### Corresponding Author:

Karen H. Larwin,

Department of Educ. Foundations & Research,

Youngstown State University, USA.

Email: khlarwin@ysu.edu

---

## 1. INTRODUCTION

According to the Individuals with Disabilities Education Improvement Act (IDEIA) [1], an orthopedic impairment is “a severe orthopedic impairment that adversely affects a child's educational performance. The term includes impairments caused by a congenital anomaly, impairments caused by disease (e.g., poliomyelitis, bone tuberculosis), and impairments from other causes (e.g., cerebral palsy, amputations, and fractures or burns that cause contractures)” (para. 8). Cerebral palsy (CP) is a neurological disorder that occurs in utero or early in life. It affects 2.0 to 2.5 individuals per 1,000 live births [2]. CP is characterized by an inability to move in a coordinated and purposeful way, as it affects muscle tone and motor control. Adolescents with orthopedic impairments, such as CP, often attend rehabilitation centers in order to train and strengthen their muscles, and countless programs are in place to help children acclimate to life with a physical disability.

While many studies have focused on the functional or cognitive aspect of orthopedic impairments, less research has been conducted regarding the social impact physical impairments have on an adolescent's life. As school psychologists, understanding the relationship between involvement in social activities and feelings of positive self-worth is instrumental in aiding students with orthopedic impairments. If students with physical impairments show signs of loneliness or depression, one must understand and utilize the research to develop and implement interventions to improve a student's self-esteem.

Children with disabilities are more likely to have difficulty participating in activities because of their lack of mobility [3]. The definition of participation has remained constant in many studies as “involvement in a life situation” [4], yet the context of the participation varies from study to study. Imms [4] believes that participation is both a subjective and objective experience, and participation is key for the overall health and well-being of a child. Lindsay [5] describes participation as getting life experiences through positive physical

and mental social interactions. In this study, participation will be defined as voluntary involvement in activities completed outside of the academic setting.

With the advent of IDEIA, children with disabilities became more visible within the walls of schools and classrooms. As IDEIA approaches the 40 year mark, the needs of children with physical and intellectual disabilities grow even larger, as more and more children are receiving their education in an inclusive classroom. Though these children's educational needs are being met, questions remain about the social difficulties that face children, especially adolescents with disabilities. Lindsay & McPherson [5] that children with disabilities are seen as less powerful and lacking confidence. Classmates label them as different and they run the risk of becoming socially isolated which affects self-esteem and the ability to make and keep friends. Also, Kang et al. [6] mentioned that children and adolescents with orthopedic impairments are often dependent on family members for self-care and transportation, which may limit the child's ability to participate in extracurricular activities. Children with orthopedic impairments who struggle with the physical aspect of their lives may also struggle emotionally, if they do not feel included by their peers. Conversely, social participation with friends allows children to develop meaningful relationships and competent social skills [6]. Many Quality of Life (QOL) surveys have shown that children, especially adolescents with orthopedic impairments, who are more involved with activities have more quality friendships and are more satisfied with their lives overall.

Adolescence can be a difficult time for all children, but it presents even more challenges to children with physical disabilities. Adolescence is a time when youths are between being a child, yet not quite an adult. They are thinking about who they are and what they will become [2]. Adolescents with orthopedic impairments have even more difficulty developing a sense of self than their typically developing peers [2]. Due to a lack of mobility adolescents with orthopedic impairments run the risk of not being socially accepted by their peers. According to Lindsay and McPherson [5] social exclusion can cause many ill effects such as poor academic performance, disruptive behavior and the inability to show social competence. In addition to being socially excluded, adolescents run the risk of being bullied, which may cause anxiety, depression, and an overall lower quality of life [5]. Studies have shown that participation in activities results in better mental and physical health, including those who have orthopedic impairments [2].

A recent longitudinal study looked at the predictors of participation in leisure activities once the child was of school age. Results found that social skills and movement ability as early as the age of 2.5 are important predictors in a child's willingness to participate in leisure activities later in life [3]. Additionally, this research found that family and environmental variables, such as what daycare a child attends, could have a lasting effect on the child's participation willingness. However, families communicated some restriction when it comes to allowing their disabled child to participate in activities. Parents are a critical component in getting their child to participate in social activities. However, they see the limitations their child has and are more apt to restrict participation. Parents should not see social activities as just physical in nature.

One study found that a three-week arts-based intervention program gave children with orthopedic impairments an increase in social skills and emotional awareness [7]. Due to the fact that participation plays a large part on the child's quality of life, Agnihotri et al.'s research highlights the importance of parents considering ways of improving participation when their children are young [3].

Similarly, one study [8] examined the Gross Motor Function Classification System (GMFCS) levels of children with cerebral palsy and their levels of participation in social activities. The children with higher levels of impaired motor functions (Level III, IV, and V severity) were found to be not as active as those with lower levels of impaired motor function (Levels I and II severity). It can be understood that because of the limitations students had with mobility and movement, students with severity Levels III, IV, and V, did not participate as much. Results of this study also found that children with CP were more willing and able to participate with peers in classroom activities that involved using their cognitive and behavioral skills [8].

Studies looking at the quality of life of a child with orthopedic impairments have found that children are aware of and understand their disability, yet they are not concerned by it as much as one might think [9]. Chong et al. [9] found that children with cerebral palsy have the same rating with their quality of life as their peers do. When looking at the quality of life of a child with cerebral palsy, research found that many of them expressed the need to "participate and try out new things even if it required extra adjustments" [10]. Likewise, Frontini et al. [10] concluded that children with psychopathological symptoms, such as emotional and behavioral disorders, as well as orthopedic impairments had more of a desire to be part of a group or activity because they felt isolated and wanted the social experience that their peers were having. Research has demonstrated that partaking in social activities alleviated many of the psychopathological symptoms that were present and provided the children with a higher quality of life. In addition, children with orthopedic impairments who participated in more activities with their peers had a higher quality of life than those who did not [10].

Children and adolescents with orthopedic impairments and physical disabilities experience greater participation restriction than their non-disabled peers, and children with cerebral palsy show an even higher restriction rate among disabled children [4]. Children with orthopedic impairments struggle to participate in many of the socially accepted activities that bond children together, such as contact sports or musical and art programs, as these activities are not conducive to their specific disability [6]. The purpose of this study was to assess the participation in social activities outside of school of adolescents who identify themselves as having an orthopedic impairment and to determine if participation in social activities had a positive impact on the physically impaired adolescent's life. Based on previous research, this study expected to find a positive correlation between participation in social activities and reported feelings of positivity regarding one's life, based on the presence of an orthopedic impairment. The terms orthopedic impairment, physical disability, and physical limitations were used interchangeably throughout the study.

## 2. RESEARCH METHOD

### 2.1. Participants

Adolescents self-identified as having an orthopedic impairment, when responding to a national survey [11]. Impairments considered for inclusion in this investigation included difficulty using hands, arms, or legs, or any combination of the three. Participants who utilize a cane, walker, wheelchair or scooter as well as have difficulty in standing or using steps were also included. Lastly, participants who reported themselves as having a physical disability were included. Only students who reported having an orthopedic impairment and no other medical or mental health diagnosis were used in the study's focus group; otherwise the student who had not reported physical disability was considered as part of the control group.

### 2.2. Instrumentation

The social activities reported in the survey included weekly participation in exercise, hanging out with friends, and active sports such as baseball, softball, soccer, and swimming. Lastly, reports on feeling happy and hopeful for the future, as well as having positive answers regarding one's current satisfaction with life were included. In order to measure the survey answers, all physical limitation categories were grouped into a 'yes' or 'no' physical limitation response. Participation in any of the four social activities questions was also coded as a "yes" or "no" response on social activities. The responses regarding feelings and positive outlook regarding one's current satisfaction with life remained continuous.

## 3. RESULTS AND ANALYSIS

The current investigation examines how social activities affect the personalities of student with and without orthopedic impairments. Table 1 represents the basic descriptive analyses for current satisfaction with life and social activities of student participants ( $n = 1187$ ).

Table 1. Descriptive Data for Current satisfaction with life and Social Activities

Variable	Mean	SD	Skewness	Kurtosis
Current Satisfaction with Life Factor	2.12	0.62	0.32	0.66
Social Activities Factor	2.51	0.76	-1.49	1.56

As indicated in Table 1, current satisfaction with life and social activities data are normally distributed across the two groups. The skewness and kurtosis are in the normal range ( $|2.0|$  and  $|5.0|$  respectively). The basic breakdown of the group and frequency of social activities of the studies participants ( $n = 1176$ ) is provided in Table 2.

Table 2. Breakdown of Orthopedic impairment, Social Activities, and Current satisfaction with life

Orthopedic impairment	Social Activities	Frequency of Response
No	Not at all	27
	1-2 times	82
	3-4 times	254
	5 or more times	704
Yes	Not at all	3
	1-2 times	19
	3-4 times	28
	5 or more times	59

Current satisfaction with life of the respondents has normal levels of skewness and kurtosis (.32 and .66 respectively). The Levene's test of equality of variance indicates that there are no significant differences in the variance across the group membership and social activities,  $F(7, 1168) = 6.41, p > .01$ , therefore homogeneity of variance is deemed tenable.

The test of between subjects effects indicates a significant interaction effect between group membership and participation in social activities on the current satisfaction with life factor is significant,  $F(3, 1168) = 3.34, p = .02, \text{partial } \eta^2 = .01$ . Examination of the graphical depiction (Figure 1) of this data reveals that there is a difference between students who did not have a physical limitation and did not participate in social activities ( $M = 2.29, sd = .61$ ) and students who did have a physical limitation and did not participate in social activities ( $M = 1.33, sd = .58$ ) and their current satisfaction with life.

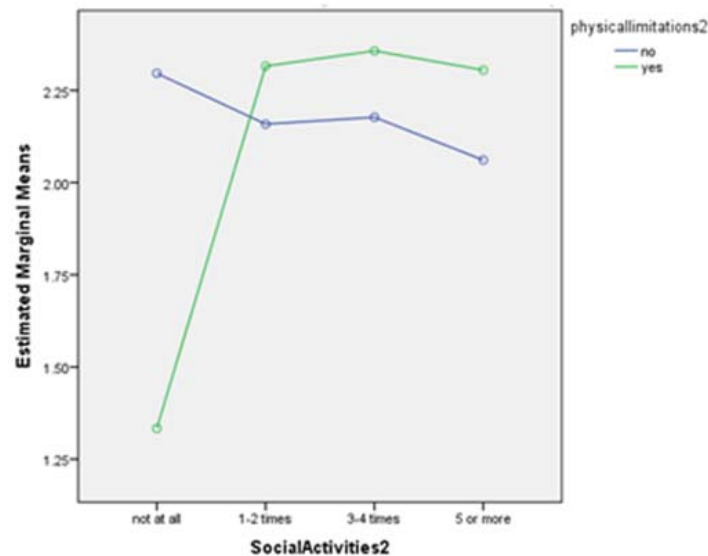


Figure 1. Reported Mean of Current Satisfaction with Life and Social Activities

As indicated in Figure 1, a Bonferoni analysis reveals a significant difference between students who participate in social activities 3-4 times a week and who participate in social activities 5 or more times a week ( $Md = .12, p = .04$ ). There was no significant difference with the “not at all” group due to small numbers of participants.

Based on the statistical results, it was found that students with orthopedic impairments, who participated in one or more activities throughout the week, reported more positive feelings of self-worth and happiness. Students who did not have any reported orthopedic impairment retained their feelings of happiness and self-worth, even without participating in social activities.

#### 4. DISCUSSION

As demonstrated by the results, the more active a student is, the happier they report being, no matter their group membership. The current investigation reveals that students with orthopedic impairments were happier than their peers without orthopedic limitations. However, these results must be considered in light of the measurements present in the study.

The physical measurement variable was a combination of various physical disabilities from the orthopedic impairment section of the questions. This variable, once compiled together, was changed to two answers: the individual indicated “yes” or “no” to having any of the physical limitation. A limitation to this variable was that the extent of the student’s physical handicap was unknown, therefore the severity, for example, of a limitation such as cerebral palsy, is not known. Therefore, the self-reported orthopedic impairments could vary in severity and may have an effect on results. Considering the severity of the orthopedic impairments should be incorporated into future research.

The social activities measurement variable was a combination of activities the student could participate in throughout the week. The variable did not differentiate between student organizations or school sports, and most of these were team activities, such as skateboarding, basketball, karate, etc. While students

with a higher severity level may not participate in contact sports, they could still be active in student organizations such as Key Club, Student Council, etc. The analysis was not able to distinguish a difference between active sports, student organizations, or hobbies, so further research is needed to determine which activities may cause a student with an orthopedic impairment the greatest feelings of positivity towards their life.

As found in the previous research, the students in our study who had orthopedic impairments expressed a level of happiness that was consistent with their peer [10]. Our research found that the physically impaired students who were able to take part in social activities alongside their able bodied peers were able to report higher levels of happiness in their lives. Overall, the statistical evidence in this study supported the research hypothesis of the current investigation as well as earlier research [9], [10].

## 5. CONCLUSION

The current investigation found that students who had an orthopedic impairment and reported participating in social activities with their peers reported being as happy as their peers. The more often a student participated in a social activity, the higher the reported level of happiness.

Future research should consider if different types of social activities have a differential impact on students current satisfaction with life. Additionally, research should be conducted in order to investigate what social activities may be best suited for students with orthopedic impairments. Specific orthopedic impairments (such as cerebral palsy, amputations, or bone tuberculosis, etc.) may be looked at individually, and how specific impairments affect social activity and feelings of happiness. Finally, the severity of a student's orthopedic or physical disability should be examined and compared to participation in activities and feelings of happiness.

## REFERENCES

- [1] US Department of Education, "IDEIA", 2010. Retrieved from <http://idea.ed.gov/explore/view/p/%2Croot%2Cregs%2C300%2CA%2C300%252E8%2Cc%2C8%2C>.
- [2] Cussen, A., Howie, L., Imms, C., "Looking to the future: adolescents with cerebral palsy talk about their future - a narrative study", *Disability and Rehabilitation*, vol. 34, pp. 2103-2110, 2012.
- [3] Bult, MK., Verschuren, O., Lindeman, E., Jongmans, MJ., Westers, P., Claassen, A. Ketelaar, M., "Predicting leisure participation of school-aged children with cerebral palsy: longitudinal evidence of child, family, and environmental factors", *Child: Care, Health, & Development*, vol. 39, pp. 374-380, 2013.
- [4] Imms, C., Reilly, S., Carlin, J., Dodd, K., "Diversity of participation in children with cerebral palsy", *Developmental Medicine and Child Neurology*, vol. 50, pp. 363-369, 2008.
- [5] Kang, L.J., Palisano, R.J., King, G.A., Chiarello, L.A., Orlin, MN., Polansky, M., "Social participation of youths with cerebral palsy differed based on their self-perceived competence as a friend", *Child: case, health, and development*, vol/issue: 38(1), pp. 117-127, 2011.
- [6] Lindsay, S., McPherson, AC., "Strategies for improving disability awareness and social inclusion of children and young people with cerebral palsy", *Child: care, health, and development*, vol/issue: 38(6), pp. 809-816, 2011.
- [7] Agnihotri, S., Gray, J., Colantonio, A., Polatajko, H., Cameron, D., Wiseman-Hakes, C., Keightley, M., "Two case study evaluations of an arts-based social skills intervention for adolescents with childhood brain disorder", *Developmental Neurorehabilitation*, vol. 15, pp. 284-297, 2012.
- [8] Schenker, R., Coster, W., Parush, S., "Participation and activity of students with cerebral palsy within the school environment", *Disability and Rehabilitation*, vol. 27, pp. 539-552, 2005.
- [9] Chong, J., Mackey, A., Broadbent, E., Stott, NS., "Children's perceptions of their cerebral palsy and their impact on life satisfaction", *Disability and Rehabilitation*, vol. 34, pp. 2053-2060, 2012.
- [10] Frontini, R., Crespo, C., Carona, C. Canavaro, MC., "Health-related quality of life and its correlates in children with cerebral palsy: an exploratory story", *Journal of Developmental & Physical Disabilities*, vol. 24, pp. 181-196, 2012.
- [11] ADHealth, "National Survey of Adolescent Health", 2015. Retrieved from [www.cpc.unc.edu/projects/addhealth](http://www.cpc.unc.edu/projects/addhealth).

**BIOGRAPHIES OF AUTHORS**

Leslie Biastro, M.Ed. earned her B.A. in Child Development and Education from Washington and Jefferson College in 2005. While teaching at the elementary level for 8 years, she acquired a M.Ed. in Curriculum and Instruction from Gannon University. A M.Ed. in Intervention Services was earned in 2015 from Youngstown State University, where she is a student in the School Psychology Program. She is currently an Academic Support Specialist at the Marion G. Resch Center for Student Progress at Youngstown State University and sits as secretary for the student organization of the School Psychology Program.



Heather Frank, M. Ed., received her Master's Degree in Education in Intervention Services in 2015 at Youngstown State University and her Bachelor's of Science in Education from Ashland University in 2012. She is currently a student in Youngstown State University's School Psychology Program. She hopes to work with students with disabilities, with a focus with students who live in low socio-economic homes. Heather is currently a member of the Youngstown Association of Student School Psychologists, Ohio School Psychologists Association, and the National Association of School Psychologists.



Karen Larwin, PhD. acquired her Ph.D. from Kent State University in Evaluation, Measurement, and Statistics in 2007. She currently serves as a professor at Youngstown State University. Dr. Larwin has participated as the evaluator on multiple federal and statewide grant supported projects over the past decade. Her primary teaching focus is in the area of research methods, quantitative methods, evaluation, and measurement. She is currently a Chair for the American Evaluation Association's Quantitative Methods: Theory and Design TIG.