

## **Western Michigan University**

### **HSIRB Application**

An Evaluation of Physical Activity Methods of College Students with Autism Spectrum Disorder

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#### **Abstract**

Physical activity has been proven to improve autistic conditions in areas such as motor skills and social skills (Sowa and Muelenbroek, 2011). The purpose of this study is to evaluate the different ways that physical activity affects autistic individuals. To do this, 16 individuals at the WMU Autism Services Center will be surveyed through Qualtrics. The survey will be based off of the study of Stanish and colleagues (2015). Questions will be taken from this survey and a few additional questions that do not appear in any study will be designed by the student investigator. Results will be analyzed both quantitatively and qualitatively and general trends in the data will be recorded. This study will help to fill the gaps of current research by examining the physical activity choices of college students. Many students examine physical activity trends of children but there are few current studies on teens and young adults.

#### **Purpose/Background Information**

Autism is a disorder characterized by challenges with social skills, repetitive behavior, speech, and nonverbal communication (Autism Speaks, 2017). Each year, this disorder affects 1 in 68 children (Centers for Disease Control, 2016). Because of its high impact on society, it is important that research is conducted to minimize the negative experiences of autistic individuals. One of the chief concerns among educators is increasing physical activity in students with autism spectrum disorder (ASD). Exercise can be difficult for students with ASD because they often experience diminished motor skills. Whyatt and Craig (2012) found that children aged seven to ten years experienced challenges in activities featuring “complex, interceptive actions and core balance (p. 1799)” Ball skills and static balance were identified as two motor skill deficiencies (2011).

Fewer studies represent the motor skills of college-aged students. This study will attempt to fill the gaps of research by examining the physical activity choices of college students at Western Michigan University’s Autism Services Center (ASC) through the distribution of a survey. It is important to know the exercise habits of autistic college students so that improvements can be made. Past studies have indicated that exercise can lead to enhancements in both motor skills and social skills (Sowa and Meulenbroek, 2011). It is proposed that future studies use the results of this survey to continue research on this topic.

#### **Statement of Problem**

Many students with ASD shy away from physical activity (Stanish et al., 2015). Fewer autistic adolescents enjoy team sports and physical education compared to typically developing

teens. Additionally, it was found that students with ASD perceive physical activity as too difficult to learn. They also don't see physical activity as a way of making friends. These barriers can result in isolation for autistic students and diminish their participation in activities such as weight lifting and school sports.

Diminished participation in physical activity can lead to both mental and physical health problems (Salamon, 2014). Individuals with ASD often have a higher likelihood of experiencing health conditions such as depression, anxiety, bipolar disorder, diabetes and obesity when compared to individuals without ASD. The only health effects experienced less by students with ASD are smoking and alcohol. This is thought to be because smoking and drinking are social behaviors.

### **Subject Recruitment**

The proposed study will involve WMU students who are at least 18 years old and are enrolled in the WMU Autism Services Center. All of the students recruited will have ASD. This inclusionary criterion is necessary because the study focuses on the physical activity choices of young adults on the autism spectrum. To do this, it is necessary to only recruit students with ASD. The method of research for this thesis will be a survey designed on Qualtrics. Sixteen students from the WMU Autism Services Center will be surveyed.

### **Survey**

The survey will be sent to students in the via the ASC Coordinator's email. The email will contain a discussion on the purpose of the survey, information on confidentiality, and other items for informed consent. The email will also include a link to the survey. Students interested in learning more about the survey should contact the student investigator via email. A follow up email will be sent to ASC members one week after the survey was first sent out reminding them to take the survey if they have not already. In addition, an email will be sent out thanking all survey respondents for taking the survey. There will be no rewards for participating in the survey.

### **Informed Consent Process**

The informed consent form will be included on the first page of the survey. If the survey participants continue with the survey, they are providing consent for any of the answers they provide. All survey participants will be legal adults and able to sign the consent form on their own.

### **Research Procedures**

#### **Methods of Data Collection**

The survey will be designed on Qualtrics and consist of ten questions. All of the questions will be either multiple choice or rated on a Likert scale to produce quantifiable data. Participants may stop the survey at any time and skip any questions that they do not want to answer. It is estimated that it will take each student less than five minutes to complete the survey but there is no time limit for completion. No rewards will be given to participants who complete the survey. Each survey participant's identity will remain anonymous and the results will remain confidential.

## **Instrumentation**

Participants will be invited to fill out a survey on Qualtrics. Qualtrics is a web-based survey generator that is used to conduct research. Additionally, W-Exchange (the WMU email server) will be used to send emails to members of the WMU Autism Services Center. The survey will consist of ten multiple choice and Likert scale questions that focus on the physical activity behaviors of college students. It is estimated that the survey will take less than five minutes to complete.

## **Location of Data Collection**

All data will be collected online where each participant has access to the survey link. Analyzation of the data will take place on the campus of Western Michigan University.

## **Duration of the Study**

It is estimated that it will take each participant less than five minutes to complete all ten survey questions. The overall time of completion from the obtainment of informed consent to the completion of the survey should take, at most, 20 minutes. The requested length of approval for this research project is approximately two months. This will include the period of time from the first emails to potential participants to the analyzation of the data.

## **Methodology**

### **Design**

This study's survey questions are based off of a study done by Stanish and colleagues (2015). Some of the questions were copied from the study including "How much do you like to go for a walk?"; "Are you ever too busy to do sports and exercise?"; and "Do you think sports and exercise are too hard to learn?" Because this study examines college students, some of the questions have been modified. Additionally, a few questions were designed by the student investigator that were not included in any study.

### **Analysis**

Since all of the data uses multiple choice and Likert scale questions, it is not possible to use descriptive tests. Because of this, analysis will be made both qualitatively and quantitatively. This means that general trends in the data will be observed and recorded (e.g. If this study found that most of the participants selected one answer over another, that information would be recorded).

### **Dissemination**

The results will be disseminated by student investigator Justin Vagnozzi to fulfill his thesis requirement for graduation from Lee Honors College. The information obtained in the thesis will then be used in an oral presentation for the student investigator's thesis defense.

### **Risks and Cost to and Protections for Subjects**

There are not many known risks for participation in this study. One possible risk may be loss of time spent filling out the survey. It is also possible that questions on physical activity could trigger negative feelings of body image in survey participants. In order to minimize effects

of coercion, all emails will state that each participant has a right to withdraw from the survey and are able refuse to answer any questions that they do not want to answer.

### **Benefits of Research**

Potential benefits of participating in this survey are obtaining greater knowledge in physical activity and autism. While participants will not receive any direct rewards such as gift cards, they may experience a feeling of helpfulness by providing information to help future students with ASD.

### **Confidentiality of Data**

Each student will remain anonymous throughout the survey. Efforts will be made to conceal the identity of each student with each student's name being replaced by pseudonyms such as "student 1" or "student 2." The only possible breach of confidentiality may be other students observing the survey answers on the participant's computer. There is no way to protect against this breach in confidentiality and it is implied that the participants would accept this possible breach. Files will be kept in a locked cabinet at the Disability Services for Students Building. Due to federal regulations, this information will be kept in the file for at least three years.

## References

- Autism Speaks. (2017). What is autism? Retrieved September 12, 2017 from <https://www.autismspeaks.org/what-autism>
- Centers for Disease Control and Prevention. (2016, July 11). Autism spectrum disorder (ASD). Retrieved September 12, 2017 from <https://www.cdc.gov/ncbddd/autism/data.html>
- Salamon, Maureen. (2014, May 14). Adults with autism at risk for many health problems. *HealthDay*. Retrieved from <https://consumer.healthday.com/mental-health-information-25/anxiety-news-33/adults-with-autism-at-risk-for-many-health-problems-study-687631.html>
- Sowa, M., & Meulenbroek, R. (2012). Effects of physical exercise on autism spectrum disorders: A meta-analysis. *Research in Autism Spectrum Disorders*, 6(1), 46-57. <https://www.sciencedirect.com/science/article/pii/S1750946711001516>
- Whyatt, C. P., & Craig, C. M. (September, 2012). Motor skills in children aged 7-10 years, diagnosed with autism spectrum disorder. *Pub Med*, (9), 1799-1809. <https://www.ncbi.nlm.nih.gov/pubmed/22180003>

## **Email to Prospective Participants**

Dear student,

We have begun the process of evaluating the physical activity trends of college students with autism spectrum disorder (ASD) at Western Michigan University. Information will be used to further research in this area of research.

This information will also be used to fulfill Justin Vagnozzi's requirement for graduation from Lee Honors College at Western Michigan University.

This email is to inform you of your opportunity to participate in groundbreaking research. If you have any questions about participation in this survey, please contact Justin Vagnozzi at (517-643-1082), Dr. James Lewis at (269-387-2697), or Dr. Kourtney Bakalyar at (269-387-4349). The participant may also contact the Chair, Human Subjects Institutional Review Board (387-8293) or the Vice President for Research (387-8298) if questions or problems arise during the course of the study.

If you are interested in learning more about the study, please click on the following link

[https://wmichcas.qualtrics.com/jfe/form/SV\\_3sHWw5R7I0kpIXf](https://wmichcas.qualtrics.com/jfe/form/SV_3sHWw5R7I0kpIXf)

Please note that your participation does not require you to answer any question that you do not want to answer. You can withdraw from the survey at any time and skip any question that you do not want to answer.

Thank you for your consideration,

Justin Vagnozzi

**Informed Consent Form**  
**Western Michigan University**

**Please read this consent information before you begin the survey.**

You are invited to participate in a research project entitled "An Evaluation of Physical Activity Methods of College Students with Autism Spectrum Disorder" designed to investigate the physical activity choices of college students on the autism spectrum. The study is being conducted by Dr. James Lewis, Dr. Kourtney Bakalyar and Justin Vagnozzi from Western Michigan University, Department of Recreation. This research is being conducted as part of the thesis requirements for Justin Vagnozzi.

This survey is comprised of 10 multiple choice and Likert scale questions and will take under 5 minutes to complete.

Your replies will be completely anonymous. When you begin the survey, you are consenting to participate in the study. If you do not agree to participate in this research project simply exit now. If, after beginning the survey, you decide that you do not wish to continue, you may stop at any time. You may choose to not answer any question for any reason. If you have any questions prior to or during the study, you may contact Dr. James Lewis at (269-387-2697), Dr. Kourtney Bakalyar (269-387-4349), Justin Vagnozzi at (517-643-1082), the Human Subjects Institutional Review Board (269-387-8293) or the vice president for research (269-387-8298).

This study was approved by the Western Michigan University Human Subjects Institutional Review Board (HSIRB) on (date). Please do not participate in this study after (four months after approval).

Participating in this survey online indicates your consent for use of the answers you supply.

## Survey to ASD Students

Survey Link:

[https://wmichcas.qualtrics.com/jfe/form/SV\\_3sHWw5R7I0kp1Xf](https://wmichcas.qualtrics.com/jfe/form/SV_3sHWw5R7I0kp1Xf)

Start of Block: Default Question Block

Q1 What is your class standing?

- Freshman (1)
  - Sophomore (2)
  - Junior (3)
  - Senior (4)
  - Graduate Student (5)
- 

Q2 Have you ever played on a high school or college sports team?

	No (1)	Yes (2)
Click to write Statement 1 (1)	<input type="radio"/>	<input type="radio"/>

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Q3 How many minutes per week do you participate in vigorous exercise? This is when your breathing is deep and rapid, you develop sweat after only a few minutes of physical activity, and you can't say more than a few words without pausing for breath.

- Under 20 Minutes (1)
  - 20-40 Minutes (2)
  - 40-60 Minutes (3)
  - Over 60 Minutes (4)
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Q4 Are you ever afraid of getting hurt doing sports and exercise?

	Not at all (1)	Sometimes (2)	All the time (3)
Click to write Statement 1 (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Q5 Do you think sports and exercise are hard to learn?

	Not at all (1)	Sometimes (2)	All the time (3)
Click to write Statement 1 (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Q6 Select all of the activities outside of physical activity that you participate in.

Video games (1)

Reading (2)

Watching Television (3)

Other (4)

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Q7 Do you think that sports and exercise are a way to make friends?

	No (1)	Maybe (2)	Yes (3)
Click to write Statement 1 (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Q8 Are you ever bothered by how you look while doing sports and exercise?

	Never (1)	Sometimes (2)	All the time (3)
Click to write Statement 1 (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Q9 Does exercising with another person increase the likelihood of working out?

	No (1)	Maybe (2)	Yes (3)
Click to write Statement 1 (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Q10 Select all of the types of exercise that you engage in.

Weightlifting (1)

Running (2)

Sports (3)

Other (4)

End of Block: Default Question Block

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Thank you for taking this survey!