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W241
Essay 2

Introduction

Up to ten (10) out of 1,000 children are affected by autism spectrum disorder (ASD), also known as autism. ASD associated characteristics include anti-social behavior, difficulties in communication, and sensitivity to sound or visual stimulation. ASD children that are identified at an early age and receive multidisciplinary treatments—such as behavioral, psychological, and communication coaching—often have less difficulty socializing in later years. Although some of the characteristics of ASD children could be identified at an earlier age, families and communities might not be able to identify these characteristics because of a lack of understanding of the characteristics of ASD children. Thus, appropriate treatment for ASD children is often delayed. Furthermore, due to a lack of understanding, these children are often subjected to social stigma, creating even more distress for ASD children. Like the other diversity and inclusion efforts recently happened in the United States, increasing public awareness of ASD characteristics is important for reducing misconceptions about ASD children, and therefore also for creating a friendlier environment for ASD children in our society.

Although public awareness of ASD has increased in the past decade, there is still room for improvement. The general public still have trouble interacting with ASD children. Understanding how ASD children behave would remove some of the barriers affecting them. Therefore, in hopes of gaining the public's awareness, different ASD advocacy groups have started publishing information on social media. However, these advocates still struggle with finding the best medium to educate the public.
The purpose of this study is to examine the effectiveness of two educational videos about ASD. The research questions for the study is as follows:
1. There are two (2) popular videos about ASD on social media. How effective are these two videos at increasing the public awareness of ASD?
2. Does one of these video have longer knowledge retention rate than the other?

Experiment

The proposed experiment is a randomized study of a large sample size to compare two different educational videos on ASD and investigate the effectiveness of

these videos. The experiment will assess participants' knowledge about autism using a pre- and post-viewing five-point Likert Scale survey. Participants will first be asked to complete a five-item survey before they watch the video about ASD. Then, we will show the participants the video about ASD. A week later, we will send the follow-up five-item survey to assess the participants understanding of ASD.

The outcome variable will be the level of comfort participant feel when they are with ASD children. The dependent variables will be the participants' pre-test comfort level determined from the pre-test survey and the videos (Video 1 or Video 2) they watch.

The following provides a proposed outline of the approach that will be used to ensure the overall validity of the study:

1. **Instrument Internal Validity**: Assess the participants' awareness of autism and how comfortable they are around ASD children.
2. **Sampling**: Assign public ASD information to each random group.
3. **Group Assignment**: Participants will be assigned into three groups:
   a. Control group: no educational video,
   b. ASD educational video 1,
   c. ASD educational video 2.
4. **Analysis:** Assess the samples' awareness of autism and the social acceptance rate of ASD children through the second survey.

Instrument Internal Validity

There will be three steps to test the internal validity of the survey about the public awareness of ASD:

1. Create and Issue a pilot survey that measure the same concept and the difference among the answers to test the internal validity of the survey items. Cronbach Alpha and correlation between the outcome and the measurement will be estimated.
2. We will delete the items that does not measure Then we derive the second survey item set according.
3. Implement the finalized survey.

Sampling

The sample will be as diverse as possible to include adults from different age groups, ethnicities, genders, and socio-economic backgrounds. Assignment to treatment or control groups will be randomized. An ideal participant group will include males and females from 20–50 years of age from diverse ethnicities and socio-economic backgrounds. If achieving equal sample sizes across all groups is not possible, a blocking procedure will be applied in the analysis stage.

In addition, possible clustering procedure will be applied to cluster different level of knowledge about ASD, comfort level with ASD, and video watched to estimate whether different video has different effect on different groups.

Analysis

The following statistical analyses will be performed after the data is collected:
1. A t-test will be used to describe the difference between means of the control group and the two treatment groups.
2. Simulated randomizations will be used to estimate the average treatment effect and distribution.
3. Evaluation of the p-value will allow us to examine whether the null hypothesis holds for each block-cluster.

Feasibility & Limitations

A potential feasibility concern is the ability to obtain a diverse sample to respond to the survey. Also, the demographic and educational backgrounds of the participants might affect the study. Another concern is a shortage of time and financial resources for the researchers. A potential solution is to recruit participants through social networking.

Google Doc link
https://docs.google.com/document/d/1ygY8Gqsc5SR7py3NOtFE7e5IXlW-HoEl6atYP_qzMS8/edit