

# TEACHING BEHAVIOUR ANALYSTS STATISTICAL APPROACHES TO ANALYSE EXTENDED CLINICAL DATA

Marie Chanel Morgan, BCBA, Brock University  
Nazurah Khokhar, BCBA, Brock University  
Dr. Alison Cox, BCBA-D, Brock University

## Correspondence

Marie Chanel Morgan, BCBA, Brock University – mm16ji@brocku.ca

Nazurah Khokhar, BCBA, Brock University – nk17nj@brocku.ca

Dr. Alison Cox, BCBA-D, Brock University – acox@brocku.ca

**Objectives:** In behaviour analysis, researchers have begun to explore the efficacy of using video modeling (e.g., video tutorials) to train students and certified behavioural practitioners (i.e., Board Certified Behavior Analysts) on graphing skills (Mitteer et al., 2018; Tyner & Fienup, 2015). However, evaluating the efficacy of using this strategy to teach more complex skills sets (e.g., statistics) is relatively understudied. The arrival of COVID-19 resulted in most continuing education activities shifting to virtual delivery (Kawczak et al., 2021) which has increased the research needed in effective methods. The proposed study explores the preliminary outcomes regarding the efficacy of a video modeling sequence to teach BCBAs statistical methods that may be directly relevant in practice. The training package comprised of: (1) written instructions, (2) a statistical analysis tool developed in the Shiny app, and (3) a video model, to teach Board Certified Behaviour Analysts to conduct and interpret five statistical analyses.

**Method:** We will be recruiting masters-level Board Certified Behaviour Analysts as the participants of this study. After we have a complete list of participants, we will use block randomization to assign participants to experimental groups. Both groups will receive training. The training group will complete only one dataset (case) in the no-training condition, a second dataset in the training condition, and two datasets in the post-training condition. The delayed training group will complete two datasets (cases) in the no-training (baseline) condition and one dataset in the training condition before proceeding to the training condition and one post-training dataset. For both groups, study completion will take approximately 3 hours. A minimum sample size of approximately 17 participants per group will be required.

**Results:** Results are pending; however, this study will be using a modified cross-over design. Researchers will evaluate topic proficiency by scoring participant submissions according to a structured scoring rubric.

**Discussion/Conclusions:** Results regarding skill acquisition afforded by virtual delivery will be discussed, as well as how we may further address the research gap in establishing empirically validated online training methods.

## References

- Kawczak, S., Fernandez, A., Frampton, B., Mooney, M., Nowacki, A., Yako, M., & Stoller, J. K. (2021). Observations from Transforming a Continuing Education programme in the COVID-19 Era and Preparing for the Future. *Journal of European CME*, 10(1), 1964315. <https://doi.org/10.1080/21614083.2021.1964315>
- Mitteer, D. R., Greer, B. D., Fisher, W. W., & Cohrs, V. L. (2018). Teaching behavior technicians to create publication-quality, single-case design graphs in GraphPad Prism 7. *Journal of Applied Behaviour Analysis*, 51(4), 998-1010. <https://doi.org/10.1002/jaba.483>

Tyner, B. C., & Fienup, D. M. (2015). A comparison of video modeling, text-based instruction, and no instruction for creating multiple baseline graphs in Microsoft Excel. *Journal of Applied Behavior Analysis*, 48, 701-706. <https://doi.org/10.1002/jaba.223>

## RSIG COMMITTEE GUIDELINES FOR REVIEWING ABSTRACTS

The following criteria is used to evaluate abstracts for poster and oral presentations. Each area is rated on a 4-point scale (0=Not acceptable, 1=Acceptable, 2=Good, and 3=Excellent) for a total score of 20 points.

| AREAS RATED   |
|---|
| <b>Purpose</b><br>Is the purpose or objective of the study clearly stated?<br>Is the <i>rationale</i> for the project made clear?   |
| <b>Methodology</b><br>Do the authors describe the demographics of the participant adequately?<br>Is the methodology (e.g., procedures, data analysis, and measures) described in sufficient detail?<br>Does the experimental techniques (e.g., standardized measures, etc.) aid in addressing the key research questions and hypotheses?<br>Did the authors use standardized measures/measures with adequate psychometric properties?<br>For single-subject design: Is data collected on the reliability or inter-observer agreement (IOA) for each dependent variable?<br>If employing a qualitative approach, is it described in adequate detail and is the methodology of choice appropriate for the research questions? |
| <b>Results</b><br>Are the results presented in a clear, coherent fashion?<br>Do the results verify or contradict previous findings/theories?<br>If research is in progress, do the authors describe study progress to date or preliminary results?  |
| <b>Conclusions</b><br>Is the conclusion clear and understandable?<br>Have potential limitations of the methodology been addressed?  |
| <b>Clinical/Research Implications &amp; Novelty</b><br>Is the information clinically important, relevant and/or significant?<br>What are the practical implications of the information?<br>Is this research original?   |

Abstracts are anonymized (i.e., identifiers removed) by the conference committee before review to promote fairness.

***The review process will be completed by mid-February 2022 and authors will be notified immediately thereafter by email.***

Please see below for an example of an abstract

### BIOPSYCHOSOCIAL CORRELATES OF HEALTH IN CHILDREN WITH SEVERE DEVELOPMENTAL DISABILITIES

Jonathan Weiss<sup>1</sup>, Adrienne Perry<sup>1</sup>, Ami Tint<sup>1</sup>, Alvin Loh<sup>2</sup>

<sup>1</sup>York University, <sup>2</sup>Surrey Place Centre

**Objectives:** There is a growing body of knowledge highlighting higher levels of physical and mental health problems in children with developmental disabilities (DD) compared to typically developing children, related partly to inequities in health care provision. While children with severe DD often struggle with known biological risk factors that contribute to physical and mental ill-health, less is known about how psychological or social factors, such as socioeconomic status, parent health, or service use, contributes to health. The current study examines the biopsychosocial correlates of health in children with severe DD across Canada.

**Methods:** Great Outcomes for Kids Impacted by Severe Developmental Disabilities (GO4KIDDS) is an ongoing research project examining the health, wellbeing and social inclusion of children with severe DD. The current study used information from GO4KIDDS' Basic Survey. Data collection is ongoing. Thus far, data has been collected on 83 children 5-19 years of age ( $M = 11.33$ ,  $SD = 3.81$ ).

**Results:** According to parents, 42% of children were rated as 'healthy' or 'very healthy' compared to other children of the same age. Parent rating of health was correlated with the average number of monthly medical appointments,  $r(83) = -.43$ ,  $p < .001$ , and the number of times children went to the emergency room in the last year,  $r(83) = -.33$ ,  $p = .002$ . Common health problems included seizures (28%), feeding or eating difficulties (gastro-intestinal problems, feeding tubes, major allergies and sensitivities, et.; 31%), and asthma (12%). Severity of parent mental health problems was correlated with frequency of child mental health problems,  $r(83) = .49$ ,  $p < .001$ , but not related to the child's physical health rating. Child happiness was related to specific medical conditions, such as the presence of seizures,  $p = .03$ .

**Discussion/Conclusion:** The poster will elaborate on these preliminary results using multiple regression, and will discuss how biological, psychological, and social factors work together to predict child physical and mental health.

#### **Correspondence:**

Jonathan Weiss, Ph.D., C. Psych  
York University  
4700 Keele St.,  
Toronto, ON, M3J 1P3  
jonweiss@yorku.ca

### **RSIG AWARDS**

#### **1) RSIG Poster Awards**

The RSIG will still be providing **3 student poster awards; one first place award, one second place award, and a "People's Choice" award.**

The first-place recipients of the poster award will be presented with a certificate, as well as a \$150 prize at the end of the conference and **will be asked if they would like to speak for a few minutes about their research (this is optional and not required).** The second-place award winner will receive a \$100 award.

All abstracts that have been submitted for a poster presentation with a **student as the first author** will be considered for the poster award. Presenters who were not accepted for an oral presentation and who agreed to do a poster presentation will also be considered for a poster award. Posters considered

for awards will be evaluated anonymously (i.e., identifiers removed) using the abstract review guidelines to select the *top 5 student posters*. *Poster award finalists will be informed of their nomination in their acceptance letters*. **No application required.**

If nominated for a poster, the student presenter will be asked to meet with members of the RSIG conference committee on the day of the conference. The RSIG conference committee will ask the finalists to briefly discuss their poster (maximum of 2 minutes) and will score the presentation of the poster including the visual presentation of the poster (i.e. how does the poster look? Is it clear, comprehensive, and readable? Has there been consideration for accessibility?).

We will also be awarding a “**people’s choice**” poster award. All poster presentations are eligible for this award. Conference attendees will have the opportunity to review and vote for their favourite poster. The winner will receive a \$100 prize that is awarded during the awards ceremony at the conference. Winners of the RSIG poster award cannot also win the “People’s Choice” poster award for the same poster.

## **2) OADD RSIG Student Award for Excellence in Research**

This award is presented annually to one student who has made an outstanding contribution to the field of developmental disabilities through an innovative and novel piece of research. Winners of this award will receive **\$250**, plus will be invited to speak for **15 minutes at the conference**.

**Students are encouraged to self-nominate and faculty members are also encouraged to nominate worthy candidates!**

Please go to <http://oadd.org/affiliate-organizations/rsig-awards/> for more information.

## **3) Kay Sansom Scholarship**

**Three awards of \$1,000 each** and a one-year membership in OADD are available to **Ontario students with interests in the field of intellectual and/or developmental disabilities** in the following categories: medical/graduate, undergraduate, and college students.

*Please note that this award is adjudicated by OADD Board Members and presented at the OADD conference, not the RSIG Research Day.*

Please go to <http://oadd.org/scholarships-awards/awards-scholarships-overview/kay-sansom-scholarships/> for more information.

## **4) OADD-NADD Ontario Scholarship – Student Research Scholarship**

One award of \$1000 is available to a college or university student completing a research study or writing a thesis focused on intellectual and developmental disabilities co-occurring with mental health needs.

*Please note that this award is adjudicated by OADD Board Members and presented at the OADD conference, not the RSIG Research Day.*

Please go to <https://oadd.org/scholarships-awards/awards-scholarships-overview/oadd-nadd-ontario-scholarships/> for more information.

## **5) Dr. Bruce McCreary Memorial Scholarship**

One award of \$5000 is available to students enrolled full-time in an accredited clinical program of study with an emphasis on working with individuals with developmental disabilities, care providers, and families.

*Please note that this award is adjudicated by OADD Board Members and presented at the OADD conference, not the RSIG Research Day.*

Please go to <https://oadd.org/dr-bruce-mccreary-memorial-scholarship/> for more information.

**To prevent a conflict of interest, individuals on the RSIG Committee are not eligible for any of these awards for the duration of their membership.**