

## **Applied Behaviour Analysis for Community Living**

Final Report by:

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## **Abstract**

This study analyzed the usefulness of applied behaviour analysis (ABA) when evidence-based practices (EBPs) were taught to individuals working at developmental service agencies through hands-on learning. This training is for service providers of any individuals with developmental disabilities or those with Autism Spectrum Disorder. One hundred individuals who have taken the ABA training through Tri-County Community Support Services in Peterborough, Ontario from two community based developmental service agencies were surveyed. Six individuals from the developmental service agencies responded to the survey so I have a sample size of  $n=6$ . They were asked questions regarding their satisfaction with the training they received, the impact it has had on their job and the confidence or preparedness to do their job. Overall, the staff who participated in this survey valued the training they had received and believed that it has led them to do their job more effectively. All respondents would recommend this ABA training to others in the future. These findings highlight the need for hands-on, organization-specific training to ensure each staff member is comfortable with dealing with individuals with developmental disabilities, no matter the level of schooling they achieved before getting their job at a community based developmental service agency.

## **Introduction & Background**

Front-line caregivers are an asset in the lives of developmentally disabled individuals by finding ways to teach them to do everyday tasks and helping to manage the challenging behaviours they may experience. It is their job to optimize the care and support the person with the developmental disability is getting and to apply techniques to improve their quality of life (Kersten, Taminiau, Schuurman, Weggeman & Embregts, 2018; Jahr, 1998). To achieve this optimization and support, the staff must be provided with the tools and knowledge to do so.

Tri-County Community Support Services (TCCSS) is an incorporated non-profit organization that runs off of a volunteer Board of Directors (<https://www.tccss.org/>). They serve individuals with developmental or intellectual disabilities, whether they be children or adults (<https://www.tccss.org/>). Their mission is to provide community-based specialized support and clinical services for affected individuals, families and their service providers (<https://www.tccss.org/>). The purpose of TCCSS is to enhance the quality of life of persons with intellectual disabilities, developmental disabilities and/or Autism Spectrum Disorders (<https://www.tccss.org/>).

TCCSS had made a clinical guide for behavioral systems for residential living many years ago, but they do not use it anymore. This is in part due to research that came out suggesting that staff training can be more effective if more than one evidence-based training method is used (Jahr, 1998). They moved away from handing out a manual and hoping employees read and retained the information within it to hands-on applied behavioural analysis training. The three main reasons for doing so was because they felt that it would enable consultants and staff to communicate more effectively, they wanted to educate and increase the staffs' knowledge of evidence-based practice in autism and intellectual disabilities and they thought that it would increase adherence to recommendations made by the consultants. These reasons are based on research done by Jarh and van Oorsouw (1998; 2009).

In 2014, Deveau and McGill explored the impact of specific management styles based upon the experience of the staff working in services involving individuals with challenging behaviours or intellectual disabilities. This report is a look at how job satisfaction can link to the care that the patients receive based upon the management style (Deveau & McGill, 2014).

The purpose of this report is to portray the importance of applied behaviour analysis (ABA) in community-based developmental service agencies by distributing a survey to staff that has taken ABA training. ABA is applying interventions based on learning theory to improve behaviours (Pullen, 2017). This is done by teaching reasoning skills, verbal, social and motor behaviours to individuals with autism or other intellectual or developmental disabilities (Pullen, 2017). I used this project as a platform to determine what evidence-based practices (EBPs) exist in residential services and how the trained staff at the service agencies respond to the training they have received. EBPs are practices that rely on scientific evidence, not tradition or unproven methods. They use decision-making skills integrated with the best evidence, clinical expertise and client values. We tend to believe in research with proven methods in hopes that those methods can be recreated and used to our advantage.

I reviewed relevant literature to create this report so that it can be utilized by the employees and volunteers at TCCSS to be brought up to date on current findings and reports within the ABA field.

The secondary component of this project was to create a survey that was distributed to caregivers at community based developmental service agencies. This survey was submitted with the option of the participants to submit it anonymously and had questions targeted directly to the training provided. I used these results to get a sense of how the staff felt about the training, if they are using what they learned and if their ability to communicate with the behavioural consultants and adhere to their behaviour plans has improved. The intent was to build off of this literature review and the survey responses to create a quasi-experimental design in the future. A quiz-experimental design could then be analyzed to determine the difference between a developmental service agency with ABA training and one without ABA training to see if there is a different in the quality of life of the clients and in which agency the staff has an easier time communicating and delivering the skills they have learned. The importance of both of these is to be used in collaboration to ensure that all employees can be up to date on new practices to better develop individual behavioural plans for their clients.

Many people within the community are living with intellectual/developmental disabilities and/or Autism Spectrum Disorder and they need help learning life skills (everyday skills such as making coffee or taking the bus). This project is necessary to ensure that adults and youth are getting the proper care and education that they need and deserve to function within their

community living arrangements by properly educating their caregivers on how to provide the best support possible. The applied behaviour analysis training that support staff are receiving at developmental service agencies is allowing this to happen. Creating a survey to give to ABA trained care providers provided honest feedback from the frontline workers. It was important to know whether or not they feel the training had helped them in any way and if they think it is beneficial to keep teaching to up and coming care providers.

## **Literature Review**

I spent much of my time looking through scholarly articles and books that are relevant to ABA training, the effect that the mood and behaviour that the staff have on their clients and previous training that has made staff more confident with their abilities to support individuals with autism and/or developmental disabilities. Some of the literature I reviewed included many great chapters from the book *Handbook of Evidence-Based Practices in Intellectual and Developmental Disabilities*. *Evidence-Based Practices in Behavioral Health* and Rose's, Gallivan's, Wright's and Blake's work in 2014 in the *International Journal of Developmental Disabilities*; this was an article called 'Staff training using positive behavioral support: The effects of a one-day training on the attributions and attitudes of care staff who work with people with an intellectual disability and challenging behaviour'.

The articles used highlighted whether or not the researchers obtained sufficient research material data to conclude as to what best EBP for residential services is and how effective their trials were. Many of the articles I have found are from peer-reviewed journals such as the *Journal of Intellectual Disability Research*, *Journal of Applied Research in Intellectual Disabilities* and the *International Journal of Developmental Disabilities*. I used journal articles and books from 2014-2020 to keep the information recent, but many older articles that are staples in the current issues with training staff for dealing with individuals with developmental disabilities that are older, dating back to 1998. I will be analyzing over twenty articles to ensure adequate research done.

An article by Roy Deveau and Peter McGill explored the impact of specific management styles based upon the experience of the staff working in services involving

individuals with challenging behaviours or intellectual disabilities (Deveau, R., & McGill, P, 2014). This is a look at how job satisfaction can link to the care that the patients receive based upon the management style (Deveau, R., & McGill, P, 2014). This article displays how poor management can cause harm to an organization because everyone under them feels the stresses of their job even more if the individual at the top is stressing (Deveau, R., & McGill, P, 2014). I was able to tie this into my research because it displays how job satisfaction and management affect everyone and if everyone has continuous proper training, daily experience and interaction of direct staff and people with disabilities can be improved (Deveau, R., & McGill, P, 2014).

A book by Nirbhay Singh presents the reader with a diverse variation of treatment approaches for individuals with developmental disabilities (Singh, 2016). Its main focuses are evidence-based interventions for challenging behaviours, treatment and training modalities (Singh, 2016). It was extremely valuable because it evaluated diagnostic instruments and assessment techniques (Singh, 2016) and I was able to compare them to the techniques TCCSS is using and see the similarities and differences between methods and how they are working. This book works through theories, challenges that may arise while trying to implement them and suggestions to overcome them (Singh, 2016). This book has a “quality-of-life approach”, which aligns greatly with TCCSS’ vision making them very complimentary to each other and proving the book to be valuable.

A toolkit was designed to assist individuals and families as they search for and try to secure the appropriate supports and services that they may need residentially (Ontario Centre of Excellence for Child and Youth Mental, 2016). It provides information on how to begin the housing search, the rights of adults with autism, and funding for things such as housing and support services. This was of benefit to me because I tried to find other articles that have implemented these checklists, which I did not see in my research but that does not mean there are not any available. These toolkits serve as easy ways to help individuals with developmental disabilities become more independent if they are able to secure housing of their own and practice the skills they are being taught on a regular basis.



A study in the *International Journal of Developmental Disabilities* looks into the effects that staff behaviour changes can have on their behaviourally challenged patients (Rose, Wright & Blake, 2014). Attitudes were measure one week before training, immediately before and after training and two months after the training occurred (Rose, Wright & Blake, 2014). This study suggests that staff get brief positive behavioural support training before dealing with persons with intellectual disabilities so that their support can be more effective support. TCCSS incorporated positive behaviour support training into their ABA training program, teaching the staff the difference between positive and negative reinforcement, positive and negative punishment, and why all of this is important to their clients.

An article in *Research and Practice for Persons with Severe Disabilities* goes into depth on the relationship between evidence-based practices and research values in regard to people with severe disabilities. They discuss the difference between efficiency and efficacy and how implementing evidence-based practices needs a lot of work nationally. Examples of aid implementation information are given in this article. This article explained difference between efficacy and efficiency to me and what that means in a community living setting regarding research.

A book by Wang and Singer brings together the research of many individuals over the years, each with experience of their own dealing with people with developmental disabilities, whether they are loved ones, patients, clients or students (2016). This book goes into detail on how to review and synthesize the results of the experimental studies done, how to build on them to develop procedures and practices and to overall, let everyone know that there are trainings and supports out there for caregivers of developmentally disabled persons (Wang & Singer, 2016). This work helped me to get a sense of some of the practices that are already developed, and I was able to further look into how they are trying to implement them and the success of them. I was able to compare them to TCCSS' practices.

## **Methodology**

In addition to a literature review, a survey with twenty questions was developed by me and my host supervisor and distributed to 100 employees at two different community based developmental service agencies that have taken the applied behavioural analysis training provided through Tri-County Community Support Services. See Appendix I for a complete list of the survey questions distributed. The survey questions were developed after reviewing TCCSS' training presentations so we could take information that we were certain was being taught and evaluate the impact it has on the trainees through the survey questions. Ken already had some of the questions in his mind that he wanted answers to based off of the training and those were added to my ideas of questions I thought would answer my research question. The survey was developed and sent out through Qualtrics because it was easy to use, I was able to make it look formal by adding in Trent University, Trent Community Research Center and Tri-County Community Support Services logos. The survey was emailed to the director of care at both of the agencies to distribute a list of employee's work emails so they can answer it wherever they have access to that email and have free time. The survey should not have taken any longer than five minutes to complete. The email was sent out twice, the second time serving as a reminder for those who did not respond the first time, but they were only to submit one completed survey. The first survey was supposed to be sent out on or around January 29, 2020 and the second survey out on or around February 12, 2020. The organization distributed a second round of surveys. Once the survey was distributed, Qualtrics conveniently showed me how many responses had been submitted and if there were any in progress at the time. Qualtrics displayed the data from the surveys in many ways include different kinds of charts, graphs and lists to make viewing and analyzing easy.

There were no issues with analyzing the survey results since it is a multiple-choice survey with no room to misinterpret the results, they were quantified based on how often each answer was selected, excluding any chances for bias to impact the overall results. Each survey question was configured with a Likert Scale for responses, and Qualtrics produced the results into easy-to-analyze data charts that could even be transformed into pie or bar charts for a visual analysis of the data collected.

The survey questions have all been designed to answer the research question determined by my host, are the staff satisfied with the ABA training they have received, and has it made them more confident with their abilities to support individuals with autism and/or developmental disabilities? The questions that were asked focused on major factors including their confidence levels, their preparedness for their job and the usefulness of the training provided.

This research project required me to get a police check including vulnerable sectors. It was crucial that I signed and upheld a confidentiality agreement for the Tri-County Community Support Services because I was in the office where they have client files and names are being dropped. This was to ensure the safety and privacy of all of the patients working with TCCSS. Taking it a step further, I only mention community-based developmental service agencies in my report, the names of the agencies who we are providing the survey to are only known to my supervisor and I to try to secure another layer of anonymity to the results in the final report. I was required to submit an ethics proposal on ROMEO through Trent University since I developed a survey to be distributed to individuals within the community. I submitted my application on January 6, 2020 and it was approved by Trent University's Forensics Ethics Committee on January 9, 2020. I was not required to submit an ethics proposal to TCCSS' board since I was analyzing the survey without the aid of TCCSS employees and it was not distributed to TCCSS stakeholders. "Ministry directed surveys, and other external partner surveys where TCCSS staff are not involved in creating the survey or analyzing the results, do not require a submission to CQI for approval before being distributed to staff, and fall beyond the scope of this policy.", "Any individual or group wishing to conduct a survey on a sample of TCCSS stakeholders are required to submit a proposal to the Continuous Quality Assurance (CQI) committee for feedback and approval." (TCCSS Policies and Procedures Manual, 2017).

## **Results/Major Findings**

Of the people who responded to the survey (n=6), 50% were full-time staff and 50% were part-time staff. Their educational background in ABA ranged from taking a workshop that was two hours to a full day in length to multiple courses offered on ABA, whether they be college, university, or other. Two of the respondents participated in a workshop that was 2 hours to a full day, one respondent took more than one course in applied behaviour analysis and three of the individuals did not respond to that question about their previous education in ABA.

There was no negative feedback given on the survey; there was no disagreeing or strong disagreeing on any of the statements made in the survey pertaining to personal improvements within the job. Table 1 highlights some of the key personal improvement areas that could lead to them being more effective in their roles as caregivers, contributing to the quality of life for the individuals under their care.

**Table 1:** All questions are in response to how the employees feel about given situations after they have taken the training when working with individuals with developmental disabilities.

Survey Question	n	% neither agree nor disagree	% agree	% strongly agree
I feel more confident	6	0	80	20
I feel safer	6	50	33.33	16.67
I am able to implement procedures more effectively	6	0	66.67	33.33
It is easier to communicate with behavioural consultants	6	0	83.33	16.67
I feel better equipped to teach like skills	6	33.33	33.33	33.33
I feel better prepared	6	16.67	50	33.33

Most of the participants apply the training they have received in their daily jobs and all of them would be open to taking more workshops or courses on applied behaviour analysis to maximize their effectiveness in the field.

## **Discussion & Conclusion**

Based on the results obtained from the survey, the ABA training provided gave evidence to suggest a significant improvement of the confidence levels of the employees when it comes to working and interacting with individuals with developmental disabilities throughout their shift, but there was no consensus on how well they thought that it equipped them to teach life skills to those individuals.

Although there is no literature on “best” evidence-based practice training, the data obtained from the survey seems to show that the training provided had a good response rate for effectiveness, mean that the ABA training has done what it was supposed to do to make communication between clients, staff and behavioural consultants easier while improving the independent function of individuals with developmental disabilities and the ease of staff interacting with them. Many different studies have shown that combining specific evidence-base practice components can lead to an improvement in the effectiveness of interactions between clients and the staff and results more effectively than applying them individually (Jahr, 1998). The components can include instructional procedures, role-playing, modeling, feedback and self-management (Jahr, 1998; Kazdin, 1988). Tri-County Community Support Services incorporates instructional procedures, role-playing, modeling and feedback into their ABA training. Instruction procedures are didactic approaches that teach the classroom portion of the training. It encompasses lectures and discussions about treatment procedures and methods (Jahr, 1998). During the role-playing aspect of the training, the supervisor usually models the procedure on a staff member acting as a client and then the staff member will switch roles with the supervisor (Jahr, 1998). Modeling is similar with the supervisor demonstrating proper application of therapeutic techniques, before allowing the staff to try (Jahr, 1998). At TCCSS, role-play and modeling are incorporated into the same step in their training method but is only done on a case-by-case basis after the in-class training had been completed. It could be contrived or in-vivo. The final step at TCCSS is getting feedback from behavioural consultants and ongoing feedback from group home supervisors. This is typically presented in an oral or written form and it designed to improve staff performance by analyzing their behaviour and suggesting areas to improve on (Jahr, 1998).

One of the major limitations of my research is that the anticipated amount of responses to the survey was not received, so there was not a vast amount of data to base the results on. This still gives a basis to let the organization know that they are on the right track with the training and there are employees out there who find the Applied Behaviour Analysis 101 training useful and effective, but the results cannot speak for the majority. It would be beneficial for the researcher to have direct communication with the community based developmental service agencies in the future to take out any middleman and chances for miscommunication or lack thereof. This could ensure an increased response rate because tasks would be carried out more efficiently and reminders could be sent out in line with the researcher's set scheduled timeline.

The next step in this project to ensure the effectiveness of the ABA training provided is effective is to perform a quasi-experimental design. This would involve observing one facility with the ABA training provided through TCCSS and one without and evaluate the differences in the standard of care to successfully support adults and youth with intellectual/developmental disabilities within their community living arrangements. The next step after this would be to evaluate the quasi-experimental design. This step could involve sending out more surveys to participants and see what they are feeling regarding their level of education on applied behaviour analysis and their ability to adequately increase the quality of life for individuals with developmental disabilities while decreasing problem behaviours.

It would also be very beneficial to break up any future studies into effects the training had directly on the staff versus the clients, and whether or not the trained staff could see any improvements in the quality of the lives of the individuals they are supporting.

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## **Appendix I**

Below are the exact questions that were used on the survey distributed to the two community-based developmental service agencies and the introduction message that went along with it.

This letter serves to inform you, the participant, about completing this survey. This survey is designed to help a Trent University Student, Jennifer Feeney, complete a research project at Tri-County Community Support Services in hopes to determine the overall effectiveness of the applied behavioural analysis training that was provided through TCCSS. This survey is completely anonymous and none of the information provided can be traced back to any individual employee or organization. Your participation is voluntary, although much appreciated. Answering and submitting the survey is you consenting for the data to be used throughout the duration of the research project.

### **Applied Behavioural Analysis Training Survey Questions**

1. Are you classified as a full-time, part-time or relief employee? (Full-time will be defined as working 31-44 hours a week, part time will be working up to 30 hours a week with no minimum requirement and relief is being on call and working when needed)
2. Have you taken similar Applied Behaviour Analysis previously?
3. After taking the training, I feel more confident in my abilities to work with people with Intellectual Disabilities.
4. Did taking the training make you feel safer when working with people with Intellectual Disabilities and challenging behaviours?

5. I felt better equipped to teach life skills to others after taking the training. (E.g. taking the bus, making a cup of coffee, etc.)
6. Because I took this training, communicating with consultants is easier in regard to understanding behavioural terms and definitions.
7. When the behavioural consultant gives me recommendations, I am able to understand exactly what they mean and how to implement them.
8. I was able to use the training on “Functions of Behaviour” to change how I work.
9. Do you feel that Applied Behaviour Analysis is necessary when working as a direct care professional in a residential program?
10. Is the training in Applied Behaviour Analysis appropriate for your job?
11. I was able to implement procedures and programs based on the training at my job.
12. Did this training help you adhere to the behavioural support plan?
13. Did taking the training make you better prepared when working with people with Intellectual Disability?
14. After taking the training I have a better understanding of why I take data and how it is used to help the people I support.
15. I use positive reinforcement more frequently after taking the training.
16. I am better able to understand possible triggers to the challenging behaviour that is occurring.

17. I use the information I learned in the Applied Behaviour Analysis training at work.
18. Taking the Applied Behaviour Analysis resulted in a decrease in challenging behaviours at work.
19. Do you find there is a smoother transition when changing shifts, for both patients and staff, now that specific training has been provided?
20. Would you take additional training in Applied Behaviour Analysis?