

CASE REPORT

Positive behaviour support and supported employment for adults with severe disability

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Abstract

Background Functional assessments and supported employment procedures have the potential to enhance quality of life factors for adults who have historically been isolated.

Method Functional assessments and supported employment procedures were used to assist four adults with severe disability who exhibited challenging behaviour, to achieve community access and employment. Hypothesis-driven interventions were used to decrease problem behaviours and increase access to job-related activities in the community.

Results All participants met criterion on task analysed job performance. When participants were involved in community settings and job training, an immediate and complete absence of problem behaviour occurred within those settings.

Conclusions Findings emphasise the importance of positive behavioural supports and community access in the lives of adults who have historically been isolated.

Keywords: *challenging behaviour, adults, employment, positive behaviour support, severe disability*

Introduction

The emergence of positive behaviour support has changed how services are provided to individuals with disability and challenging behaviour. However, research related to the use of positive behaviour support has primarily focused on children with disability, with minimal attention given to the possibilities within adult populations. Known as positive approaches, positive behaviour support, or PBS, this kind of support relies on educational and systems change (environmental redesign) to minimise the occurrence of problematic behaviour by enhancing the individual's quality of life and facilitating those skills that will promote communication and social relationships.

Individuals with severe disability are typically excluded from community employment despite research indicating that even with significant behavioural challenges they have both the capability and the right to work in community settings (Bellamy,

Horner, & Inman, 1977; Bellamy, O'Connor, & Karan, 1979). According to Peters (1991), "we have perpetuated the myth that people with disabilities do not belong with society and cannot contribute to the goals of society" (p. 9), a statement also supported by O'Brien and Mount (1991). Kemp and Carr (1995) proposed that "education relevant to job skills and intervention for problem behavior can occur simultaneously . . . [and] . . . these applications of applied behavior analysis may be crucial to the achievement of the goals of supported employment" (p. 246). Despite the fact that individuals with severe disability repeatedly demonstrate success in integrated employment, the majority of individuals with severe disability do not have access to integrated jobs. Most individuals with severe disability continue to be isolated and segregated in day activity centres and sheltered workshops, or are unemployed and unserved on waiting lists. Access becomes further restricted when challenging behaviour is present.

The present project addressed the needs of four adults with a history of challenging behaviour. Participants attended a community service organisation, were not considered for supported employment services, and were in jeopardy of termination from the program based upon severity of their challenging behaviour. Agency policy mandated the reduction of challenging behaviours prior to client integration in community-based activities. As challenging behaviours continued, clients became further isolated. It was hypothesised that if meaningful life opportunities were provided, the challenging behaviours would decrease. The primary focus of intervention shifted from an agency view of behavioural reduction to changing environmental conditions that were problematic for the participants.

The main goal of this project was to engage in personnel training, vocational training, and the provision of appropriate supports based upon principles of positive behaviour support (PBS). This process was a collaborative effort among staff, clients, and support networks. Each of these entities was an integral part of the program and was encouraged to provide valuable information and feedback to ensure positive outcomes and contextual fit. Staff development opportunities and training were embedded across all phases of the project.

Method

Participants

Participants were referred based on reported staff concerns over behavioural, communication, and vocational issues. All participants had communication abilities in the form of speech, sign language, gestures, or use of picture communication symbols. Ages of participants ranged from 34 years to 41 years. Each participant lived in a group home with support staff and had limited or no contact with family members.

Adam. Adam was a 41-year-old man with a severe intellectual disability. He used several phrases and words, although he had articulation difficulties that made it difficult for others to understand him. He was described as having a good sense of humour, with an awareness of his environment. Adam enjoyed people, music, watching children, riding buses, shopping, movement and action in his environment. He performed several job tasks that he enjoyed within the agency setting. Challenging behaviours included running and yelling/clapping hands near someone's face.

Gena. Gena was a 38-year-old woman with a diagnosis of Rhatt syndrome and intellectual disability. Gena used some modified signs and gestures to communicate her needs. Gena liked to balance small objects, put puzzles together, and listen to music. Gena did well when provided with structure and order throughout her day. Gena had many allergies and seizure disorder. Gena's challenging behaviour included hitting her cheekbones, temples, and her knees. Gena had visible scarring around her cheekbone and temple area.

Alex. Alex was a 35-year-old man who lived in a group home. He was diagnosed with a moderate intellectual disability and cerebral palsy, which affected his fine and gross motor coordination. Others described him as very social, enjoying attention and interaction from others, especially women. Alex used several modified signs to communicate and was tube fed. Alex enjoyed repetitive work and jobs that involved social interaction. Alex would frequently fall down laughing and would push items onto the floor.

Kylie. Kylie, a 34-year-old woman, lived in a group home with several other individuals. She had a severe intellectual disability, was nonverbal and would bite her knuckles throughout the day. Kylie would also hit her head against the wall and/or floor and wore a helmet to protect her head. She was described by others as being social and appeared to enjoy animals, music, magazines, and community outings.

Ethics approval and consent

Ethics approval was granted by the University of Washington's Institutional Review Board Human Subjects Division (Washington, USA). Written informed consent was obtained from parents when possible, or persons responsible or guardians, as none of the residents was considered capable of providing their own informed consent. In addition, staff members at the agency gave written informed consent for their own participation.

Setting

The four participants attended a community-based habilitation agency 6 hours daily, Monday to Friday. The agency was a private, nonprofit organisation for people with disability and contained a large recreation room that was identified as the room for adults with severe disability. The number of adults in attendance varied across days, with a range from 15 to 30. The setting contained several different areas

and activities including vocational tasks such as sorting and assembly. Other activity areas included music, books, television, and a kitchen and laundry area. Participants who did not exhibit challenging behaviour were allowed to access community activities with agency staff and transportation.

Personnel and training

Staffing ratios in the agency were approximately 1 “trainer” to 6 consumers, and 5 trainers to 1 manager. Preliminary self-report data was provided by each staff member on the perceived strengths and needs related to their support of individuals with challenging behaviours. Group instruction in positive behaviour support was conducted over 2 weeks for a total of 4 hours. In addition, staff were provided with one-to-one training and feedback as needed on an informal basis. Instruction included information on how to conduct a functional behavioural assessment, including data collection procedures and the basic tenets and principles of the use of PBS. All training methods were interspersed with field application, where trainers accompanied and assisted the lead trainer in assessment and intervention. Meetings were held biweekly between the lead trainer and those trainers identified as job coaches to examine data, make program changes, and review program goals and progress.

Agency staff were trained on all procedures and were provided with a notebook that contained relevant, accessible data collection measures and information. All staff were provided with one-to-one mentoring and coaching during the early phases of intervention. Data were collected on PBS implementation during this phase, with two trainers present to check fidelity and reliability. Upon completion of training all staff demonstrated correct implementation of PBS procedures.

Independent variables for this study align with PBS and supported employment best practices (Carr et al., 2002). Variables for PBS included large group and one-to-one staff training on basic principles, functional behavioural assessments for all participants, behaviour intervention plans, and the creation of a notebook for each participant that support personnel could use as a resource. Variables for supported employment included community site selection aligned with client interests and strengths, training in data collection and instructional procedures for job tasks, and on-site modelling of procedures. Details on these elements are presented below.

Dependent variables that aligned with PBS included challenging behaviour, appropriate

behaviour, and community access. Variables that aligned with supported employment included community access, and independent responding on job tasks.

Positive behaviour support procedures

Multifaceted assessments of each client included an examination of existing programs and functional assessments of problem behaviour.

Functional behavioural assessment (FBA). A functional assessment included “a process whereby informed hypothesis statements are developed about relationships between events in the environment and the occurrence of a student’s behavior” (Foster-Johnson & Dunlap, 1993, p. 46). The functional behavioural assessment included: (a) collection of information that identified and defined the target behaviours, identification of events or circumstances associated with the problem behaviour, and determination of potential function(s) of the problem behaviour; and (b) the development of hypothesis statements about the function or purpose of the behaviour.

Observations, interviews, and an analysis of existing data were conducted to obtain information about each client’s behaviour. FBAs were largely conducted in the same manner for each participant, though gaps in documented history required additional observation and interviewing for some. Information generated from the interviews was condensed and summarised into a functional assessment interview summary form. This form included information on types of problem behaviours, environmental features connected with them, possible medical/psychological factors, and potential function/reinforcers.

Existing data on challenging behaviour for each participant were collated. Freeman et al. (2005) suggested that an “important consideration for strategic planning is the development of easy and efficient data collection systems that can be used by planning teams to implement organisation-wide interventions, staff development processes, and individual PBS planning systems” (p. 116). Trainers were encouraged to continue use of their antecedent-behaviour-consequence (A-B-C) charting format, with additional instruction provided during formal training opportunities. Feedback was solicited by trainers to ensure that data collection methods were easy to use.

Motivation Assessment Scale. The Motivation Assessment Scale (MAS), developed by Durand (1988),

was used with each participant to help identify variables that may be perpetuating challenging behaviour. Two raters, familiar with each client, were asked to complete the scale. Durand and Carr (1991) identified four classes of variables involved in the maintenance of injurious behaviour: social attention, tangible consequences, escape from unpleasant situations, and sensory consequences. The MAS was designed to assess the influence of these variables on behaviour through a 16-item questionnaire.

Informal measures. File reviews and home observations were also conducted for each participant. A combined interview and observational format was used with clients while at home, providing information on behaviour and routines within a familiar environment. For some participants, additional time was required for these measures in order to address gaps in documented history.

Evaluation of the behavioural support plan. Methods for data collection and analysis were identified by the team. Specific measures were implemented to evaluate the following areas for each participant: reduction of problem behaviours, and increased alternative skills.

Supported employment procedures

Vocational assessment data from the centre were reviewed for each participant and included in the PBS process. These consisted of an Inventory for Client and Agency Planning (ICAP), an interest inventory, work preference assessment using generalised skill testing (based upon Reid, Parsons, & Green, 1998) and futures planning documentation (O'Brien, 1987). Home staff were also consulted about tasks that might be most meaningful or reinforcing for each participant. These assessments, along with observations of clients and FBA interviews, provided information on each client to determine work preferences.

Community site selection. A list of potential employment training sites was generated from the vocational assessment review process. Positions were not paid during the course of this study. Time at community sites started at 10 hours per week. Employers who agreed to be involved participated in a series of meetings designed to disseminate project information and familiarise them with the participants.

Two employment training sites—a community association and a community family centre—were established where clients performed a variety of tasks. Both sites were community-based

organisations that provided resources and assistance to those in need. Each site distributed a weekly flyer to local community establishments that documented upcoming workshops and programs. Clients had the opportunity to familiarise themselves with each site and with employers before choosing to perform specific jobs.

Once jobs were selected, the lead trainer collaborated with agency trainers and developed a task analysis for each job routine. Each task analysis varied in number of steps and time for completion.

Jobs. Adam distributed flyers on an established route twice weekly. Adam's routine consisted of going to the office and picking up the weekly flyers for distribution with a 6-step task analysis. He would then walk into the designated building with his folder full of flyers, go to the appropriate area, open the folder, take out the flyer, place the flyer in the specified location, and leave the site with folder in hand. Kylie's routine was similar to Adam's in that she distributed flyers and followed a similar task analysis with 5 steps. Kylie, however, had a wider distribution route that required her to be driven to specific locations. She distributed flyers to local elementary schools, expressing a specific preference for sites with children present and where she could walk around.

Gena and Alex worked for the family centre. Alex followed a 10-step task analysis to wash tables in the childcare room at the centre. Alex's routine consisted of carrying the bucket to the table, setting the bucket on the floor, taking out the spray bottle, spraying the entire table surface, placing the bottle back into the bucket, taking out the towel, wiping the entire surface, placing the towel back into the bucket, and putting the bucket away. Gena's task at the family centre was similar to Kylie and Adam's flyer distribution. Gena had a specific route that she followed and a routine established with appropriate levels of assistance provided. Gena would follow a 5-step task analysis to go into stores and pin up flyers.

Baseline and assessment procedures. Baseline was conducted across 3 days where each participant was given the task to perform without assistance. Each participant was unable to complete any steps of the task analysis independently. Next, the participant's level of performance on each step of the routine was assessed.

During the assessment phase, prompts were provided using an increasing assistance (or least-to-most) procedure. Three days of assessment data were taken to determine the type of assistance required on each step of the routine in order to

evoke the desired response within the allowable latency.

Instruction. During the instruction or intervention phase, assistance was provided to ensure that clients achieved the critical effect of routines with as few errors as possible. The prompts were systematically faded using time delay fading methods.

Withdrawal of feedback to job coach. Another goal of this project was to empower agency staff to implement programs in community-based settings (Carr et al., 1999), and a systematic plan was developed to transfer training to the job coach. The lead trainer conducted baseline, assessment, and beginning intervention phases, with the job coach participating in each step of the process. Once participants achieved stable performance with prompts being systematically faded, transfer of training was solely given to the job coach(es).

Data analysis

Data were collected on independent responses, correct responses, and incorrect responses for all four participants. Two types of correct responses were recorded: independent responses and correct responses. Independent responses were recorded as unprompted correct responses where the client initiated and completed a step of the task analysis before the prompt. Correct responses were recorded when a client initiated and completed a response within 5 seconds of the prompt. Only independent responses counted toward criterion. Incorrect responses were recorded as topographical errors, duration errors, and latency errors. Criterion for each job task was 100% correct independent responding across all steps of the task analysis for one session.

Results

Positive behaviour support. Information generated from the functional behavioural assessment process assisted in the development of a behavioural support plan for each participant. Table 1 summarises specific hypotheses generated from the functional behavioural assessment process and mean frequency of problem behaviour for one month prior to intervention. Agency staff had collected data on challenging behaviour for each participant while in the residential setting. No data were collected for community settings, as participants were not allowed access given the frequency and intensity of challenging behaviour. The lead trainer was provided with the mean frequency of problem behaviour for one month and was allowed to review daily behavioural data.

Table 2 provides an overview of support plan components for each client based upon the functional behavioural assessment process. In addition, necessary staff support included learning individual communication systems and prompting/fading techniques, crisis management techniques, team meetings to discuss progress, and further in-service training on relevant components.

Supported employment. Figure 1 presents the number of independent correct responses for each client during each job training session. No independent correct responses were observed for any participant during baseline sessions across task and procedures. All participants met criterion to perform independently on their respective job tasks. Gena had a task analysis that contained 5 steps and she performed all steps independently and correctly at session 15. Kylie had a task analysis that also contained 5 steps and she performed all steps independently and correctly at session 14. Adam followed a task analysis

Table 1. Specific hypotheses regarding the problem behaviour

Client	Mean monthly frequency of problem behaviour	Problem behaviour and hypothesis
Kylie	21.3	Maintaining variable: attention. Hits head against wall and floor and/or scratches others to gain attention. Bites knuckles throughout day to reduce anxiety. Behaviour typically results in attention through immediate affection and attention.
Adam	19.4	Maintaining variable: escape and attention. Yells and claps hands when overwhelmed or to greet others, and/or runs away in avoidance. Behaviour typically results in attention/escape.
Alex	27.8	Maintaining variable: attention. Falls down laughing and knocks items to the floor for attention/interaction from others, specifically females. Behaviour typically results in attention.
Gena	22.4	Maintaining variable: order and control. Obsession escalating to self-injurious behaviour (i.e., hitting cheekbones, temples and knees). Behaviour may create sense of order and control. Escalation usually occurs when something is out of place, and typically results in staff placing items in the desired location.

Table 2. Overview of behavioural support plan components

		Kylie	Adam	Alex	Gen	
Antecedent strategies	Anticipate and intervene with points of possible escalation/fear.	X	X	X		
	Use of identified key phrases prompting appropriate communication.	X		X		
	Provide opportunities to make choices throughout day.	X	X	X	X	
	Include more preferred/reinforcing activities in day with participant input.	X	X	X		
	Provide access to quiet area for anxiety/escape.	X	X		X	
	Avoid extremely noisy environments.		X			
	Allow for processing time following a request.		X			
	Provide tasks at the appropriate skill level.			X		
Alternative skills taught	Provide access to preferred people.			X		
	Provide consistent visual schedule/predictable environment for daily activities.				X	
	Use of portable communication system (pictures/sign language).	X	X	X	X	
	Use of quiet area when anxious.	X				
	Relaxation techniques.		X		X	
	Teach independent skills and appropriate use of materials.				X	
	Reinforcement of alternative skills	Give immediate attention to use of communication system/honour requests.	X	X	X	X
		Provide high frequency of verbal praise.	X	X	X	X
Access to tangible reinforcers.			X		X	
Consequences/crisis management	Prevent injury to self or others, with minimal attention and no verbal feedback.	X			X	
	Provide prompts to use picture communication system.	X	X			
	Redirection to a different activity.		X	X	X	
	Address environmental irritant if possible.		X			
Long-term prevention	Ignore problem behaviour.			X		
	Futures planning process.	X	X	X	X	
	Foster opportunities for preferred community-based experiences.	X	X	X	X	
	Provide opportunities to make choices throughout day.	X	X			
	Identify/provide more preferred/reinforcing activities (including employment).	X	X	X	X	
	Establish consistent, long-term communication strategy and skill development.		X	X	X	
	Leisure skill development.		X			
Expand social relationships and use of natural supports.			X	X		
Regular communication and needs assessment with group home.				X		

that contained 6 steps and he performed all steps independently and correctly at session 15. Alex had a task analysis that contained 10 steps and he performed all steps independently and correctly at session 15.

When participants were involved in community settings and job training, an immediate and complete absence of problem behaviour occurred within those settings.

Discussion

A critical factor in participant success was in understanding the function of problem behaviour so that supports could be provided to replace it with appropriate alternatives. This was a key factor which contributed to the immediate and complete absence of problem behaviours while participants were involved in community settings and job training. Another key factor may have been the influence of job placement within community settings. The community setting may have contributed to behaviour decreases, as participants were motivated to perform jobs within community-based sites. Staff

training may also have been associated with achieving positive outcomes, as it provided a means for staff to experience participants contributing as valuable members to their community. Only when we understand the function that a behaviour serves for an individual can we develop an intervention that can produce meaningful change in an effective, humane manner. Carr et al. (2002) identified a primary intervention strategy as one that "... involves re-arranging the environment to enhance lifestyle and improve quality of life rather than operating directly on reducing problem behavior" (p. 7). In the present program, we focused on systems change within the organisation and re-engineered the environment to meet the needs of the four participants.

Staff training was developed to assist in effective implementation over time and across program elements. Charts were developed for each participant and trainer that identified recommended strategies to assist in providing appropriate supports. The plan identified antecedent events to prevent challenging behaviour, alternative skills to achieve the same function as the challenging behaviour, and guidelines to reinforce those skills. In addition, several strategies

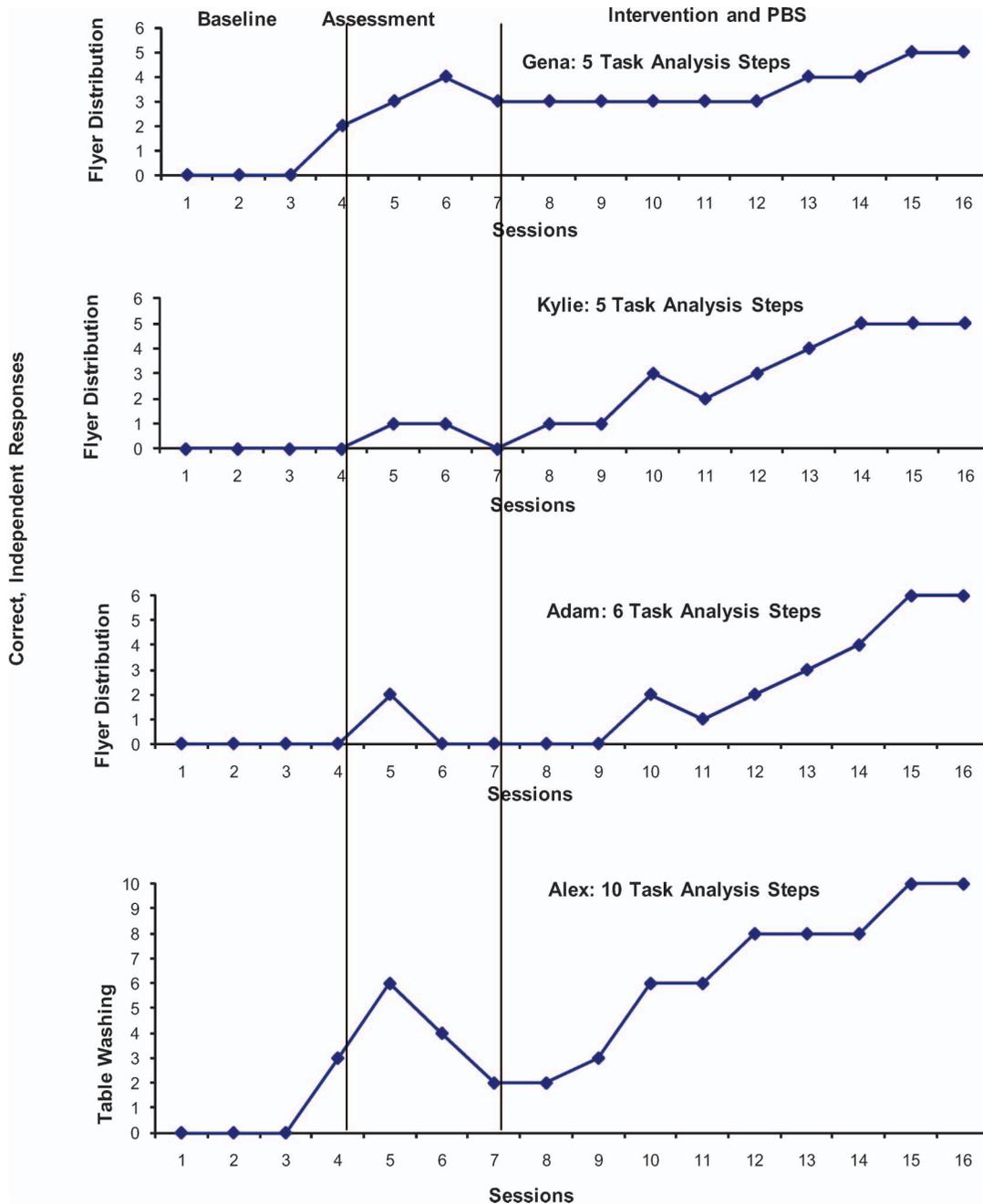


Figure 1. The number of independent correct responses for each client during each job training session.

were suggested for long-term prevention of the behaviours, and to increase opportunities for community integration.

The lead trainer consulted with staff regularly around efficiency and effectiveness of the program and all elements. In addition, the program maintained a focus on remediating problem contexts and provided environments that were stimulating and appropriate based upon participant, individual preference. Participants moved from isolation to active engagement in community-based, supported

employment that reflected their preferences and strengths, and produced positive lifestyle changes. For example, prior to this program Adam spent his day at the agency with limited opportunities for social interaction and communication. Agency staff reported that Adam was very social and when provided with opportunities would communicate. A skill that was naturally embedded across job training for Adam was the use of communication (his words) to greet people in his environment. Adam was provided with a map of his flyer distribution route

and systematic instruction to navigate the map and perform the routine. Trainers were instructed to fade themselves behind Adam while walking to increase his independence. Adam began to spontaneously say “hello” to those he encountered in his environment and quickly achieved criterion, independent and correct responding across steps of the task analysis. Personnel at the flyer distribution sites engaged with Adam and he would respond appropriately. Adam appeared very motivated to be out in the community and interact with others. Adam moved from isolation to active engagement in community settings.

The elimination of problem behaviour in community for participants in this study raises the issue of increasing opportunities for those with challenging behaviour, rather than maintaining or increasing their isolation. The very activity that staff reported caused them the most fear (i.e., being out in the community with an adult who exhibited challenging behaviour), appeared to naturally reinforce appropriate behaviour for participants.

Limitations

It is important to determine sustainability of programs to ensure that behaviour change has endured. Staff continued to collect data using the notebook format and the lead trainer performed a check-in approximately once a month for 3 months post-study. This data reflected sustained behavioural changes when participants were in community settings and continued access to community-based supported employment. However, given the turnover in staff, a more comprehensive follow-up over time to target and ensure sustainability of the programs would have been beneficial. In addition, during the intervention agency staff collected behavioural data in community settings which reflected a complete absence of challenging behaviour for participants when they were accessing these environments. Limited data on challenging behaviour were collected during time at the residential setting. This data would have provided a more comprehensive picture of behaviour change or lack thereof across environments.

Additional limitations include the lack of interrater reliability checks for both residential and community measures of problem behaviour and social validity measures. Social validity measures should have been utilised as a central theme of this project. It would have been beneficial to obtain the opinions of direct service providers, employers, and family as to the efficacy of the intervention. Anecdotal reports from staff and interviews were used to guide intervention

selection, implementation and revision; however, a more comprehensive process for obtaining the data may have generated additional insights.

Author note

This research was unfunded and the authors have no conflicts of interest to report.

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