

RESEARCH SUMMARY REPORT – 2014/2015

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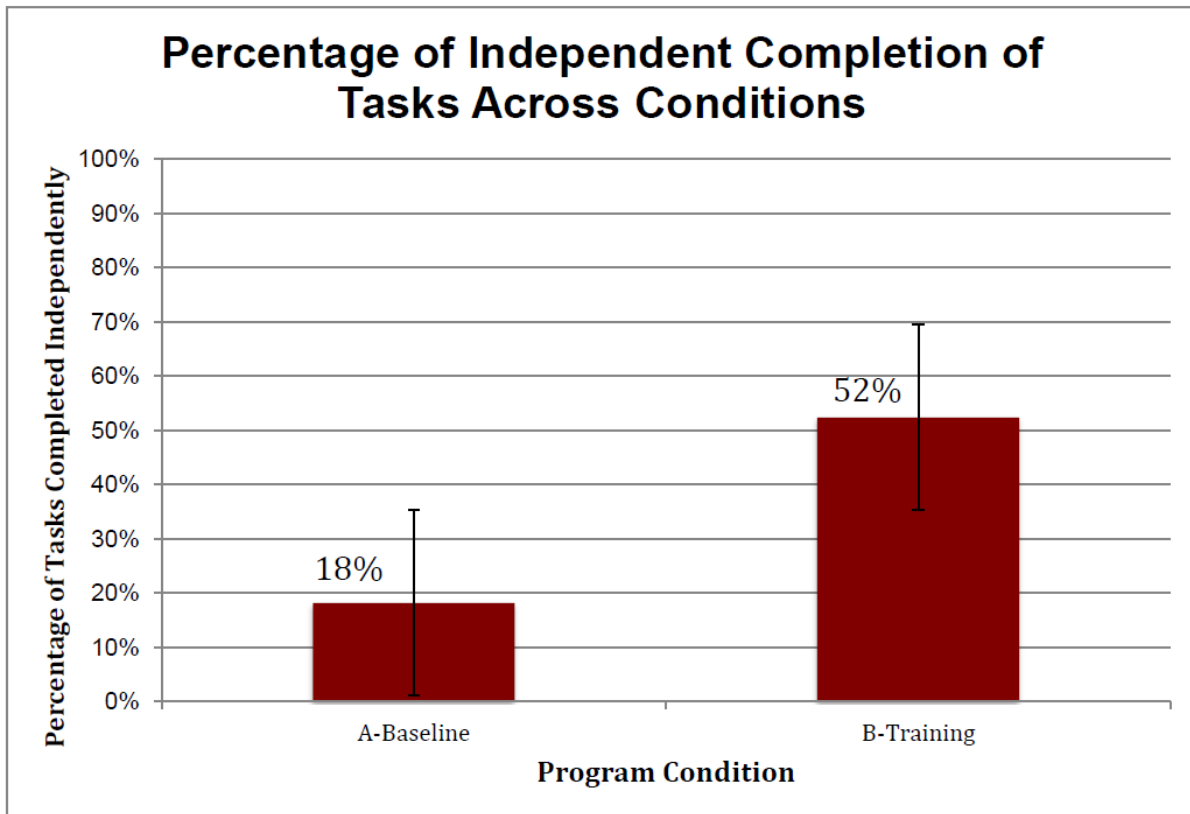
There were two main studies conducted this year at Brain Injury Services. This report provides a brief summary of the findings. Separate undergraduate thesis documents exist for each of the project which provide more details.

Educational Routines Study

As a continuation of past studies of implementing Daily Activities Schedules (DAS) in Brain Injury Services' group home settings, a focus this year was on the effectiveness of teaching staff how to conduct routines that are more educational. Two objectives were set for the study. First, to determine how well staff learned to follow effective teaching techniques, specially, so-called "prompt sequencing" direct instruction. Direct instructional prompt sequencing involves identifying a functional activity, breaking it down into its sub-tasks, and then teaching the client to do the activity by staff giving the client a fixed sequence of prompts for each sub-task, namely, **independence prompt**, followed **verbal prompt**, followed by **gestural prompt**, followed by **demonstration**, followed by **hand-over-hand instruction**. The sequence starts with the least intrusive prompt and the next prompt is given if he client does not respond correctly to the earlier prompt. The second objective was to assess how well the client's learned the functional activity when the staff were given optimal teaching.

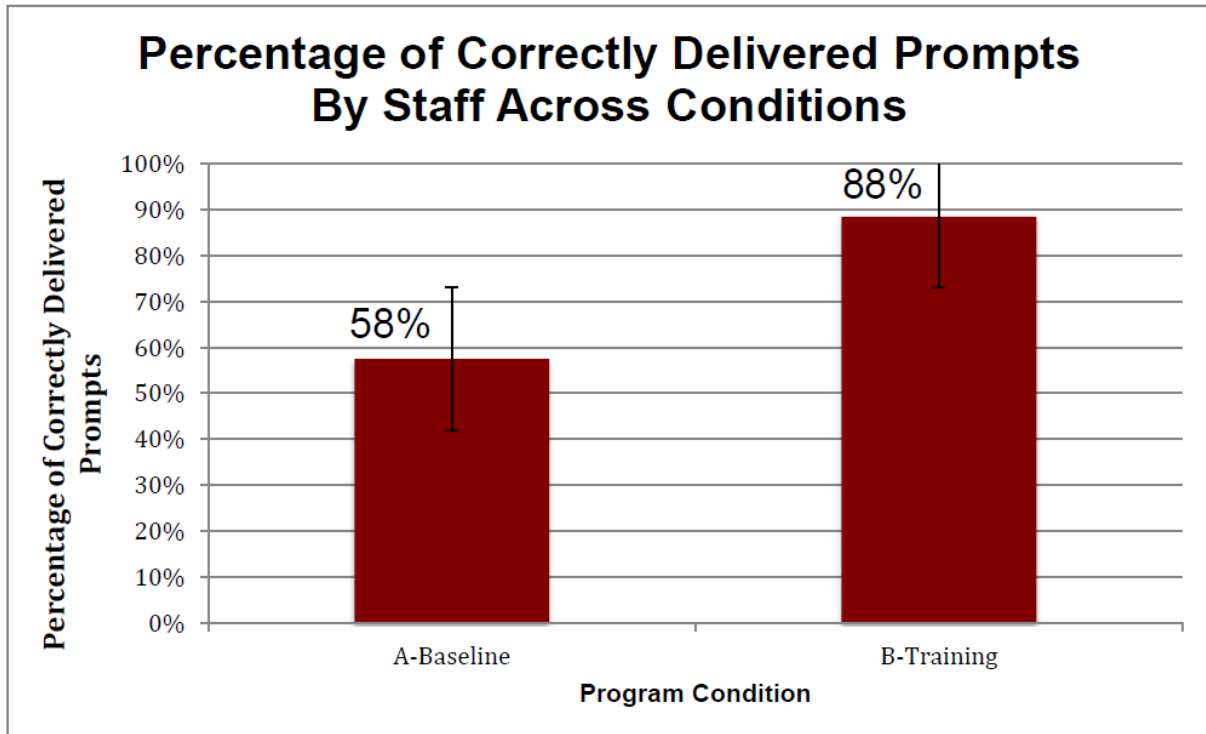
Two group homes were selected. The Behaviour Therapist (BT) served as the teacher of the staff on how to provide prompt-sequencing direct instruction. All training was provided by the BT on-the-floor during the selected activity. Videotapes were taken of staff and client skills before training began, and after 8 to 10 weeks of weekly sessions. Different combinations of ten clients participated in the training of four meal preparation tasks and a room cleaning task. The videotapes were scored by a trained scorer who had demonstrated reliable scoring.

The success of the clients in learning independent functional skills can be seen in the figure below for all skills and clients combined.



As can be seen, there was a significant increase in client skills from an average 18% subtasks done independently to 52% independence 8 to 10 weeks later.

Staff also improved their skills in implementing prompt-sequencing direct instruction prompts, as can be seen below. At baseline only 58% of prompts were delivered correctly which improved to a statistically significantly higher 88%.



This study confirms the effectiveness of BT on-the-floor coaching as a training technique for teaching staff to provide effective direct instruction during educational routines.

Future studies will focus on replicating these findings in other group homes, with other functional daily living skills, and other trainers.

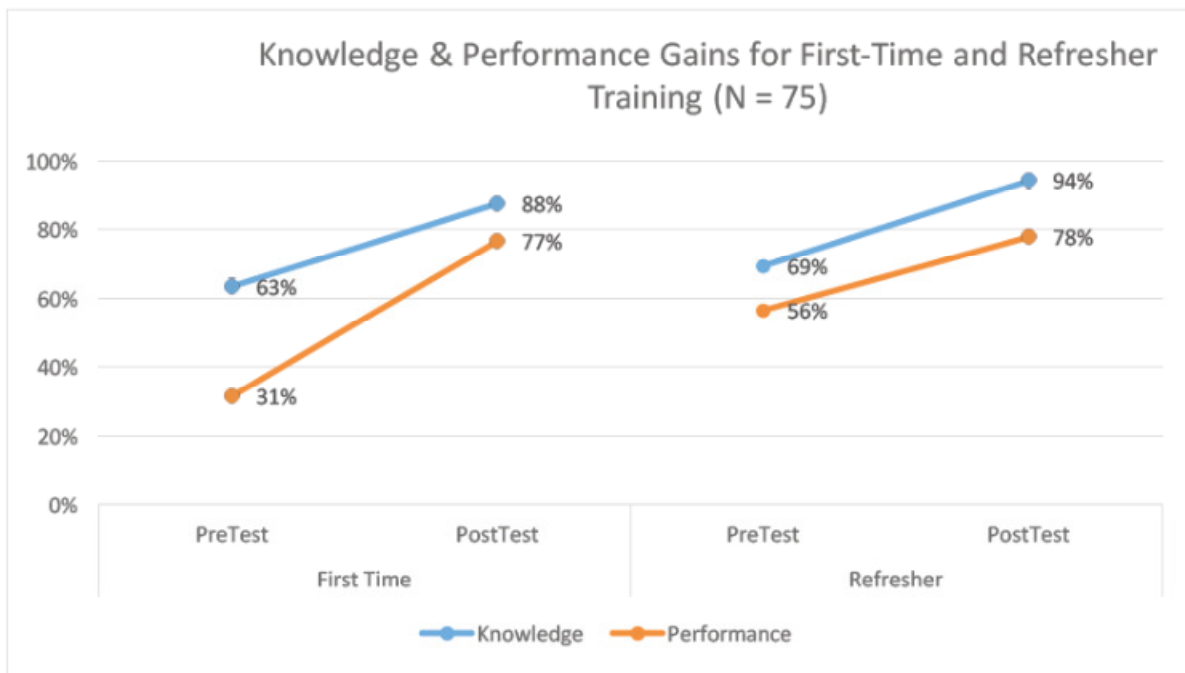
Safe Management Group Training Study

BRAIN INJURY SERVICES provides mandatory training in crisis intervention by following the Safe Management Group Inc.'s training program. This program has been approved by the Ministry of Community and Social Services' (MCSS) Long-Term Care and Developmental Disabilities sector, and is also used in many Ontario hospitals. Despite the extensive use of crisis intervention training, there are no peer-reviewed published studies demonstrating the effectiveness of training in boasting **performance competencies**. This study focused on this objective for original training and so-called yearly 'refresher' training. A total of 99 BRAIN INJURY SERVICES staff participated over 2 years.

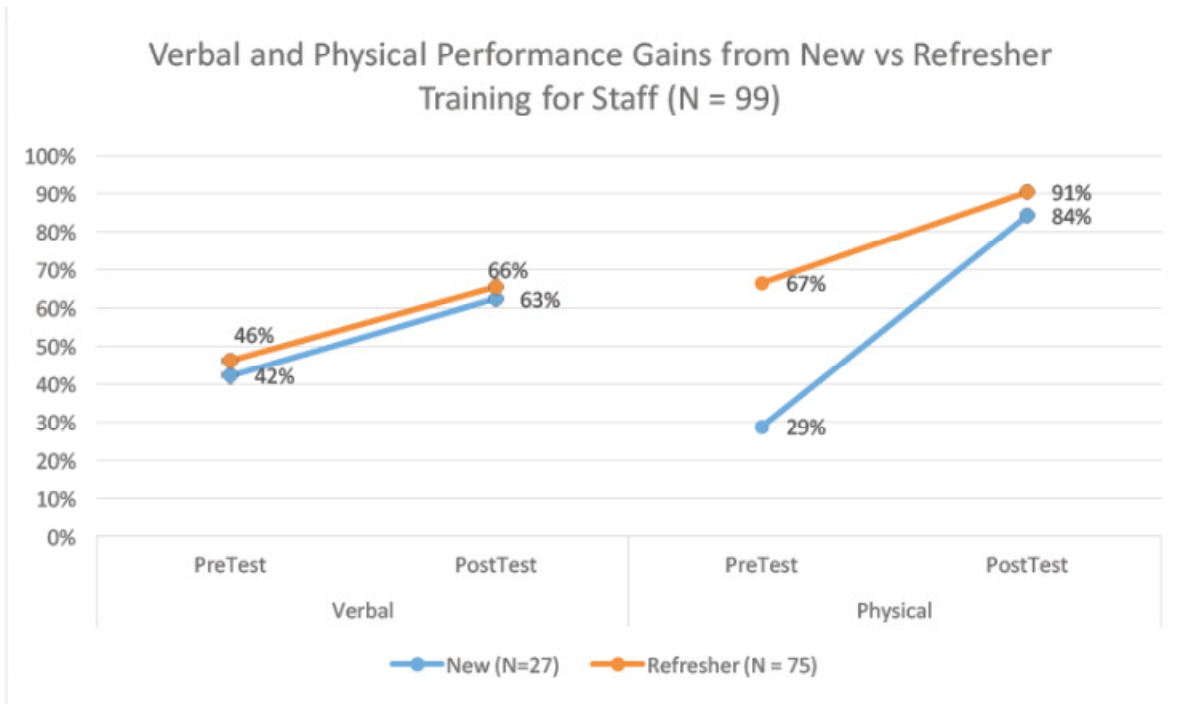
SMG training was conducted by BRAIN INJURY SERVICES certified trainers. New staff were given the 2-day introduction course, and already-trained staff were given the 1-day 'refresher' training course which was to insure their original skills were maintained. Training involves, among other things, in how to **verbally de-escalate** an

agitated and potentially physically aggressive client and how to **physically defend against and contain** a physically aggressive client. Written, multi-choice, knowledge tests were administered to measure program “knowledge”. Videotapes of 4 standardized role-plays were scored to measure program “performance competency” and were conducted before and after training. A student was trained in implementing the role-plays and in scoring the videotapes reliably according to a standardized scoring rubric.

As can be seen below, Knowledge and Performance skills were enhanced significantly during First Time training. Loss in Knowledge and Performance skills was seen on the Refresher pretests when compared to the First Time post-tests. All knowledge gains were lost over the year, and about 50% of performance skill gains were lost. This highlights the need for improved practice of skill over the course of the year intervening between formal training and refresher training.



A comparison of verbal de-escalation and physical intervention skills can be seen below. Verbal skills are learned less well in original training to only about 60% competency; whereas, physical skills are learning to 80 to 90% competency. In addition, all verbal skills learned in original training is lost over the year; whereas, only about 1/3rd of performance skills are lost. These data suggest the need for more effective verbal de-escalation training and practice.



Future studies will attempt to improve these results through enriched training and practice.