Introduction

Lack of awareness regarding neurogenic communication disorders generally, and cognitive-communicative disorders following traumatic brain injury (TBI) specifically has created pervasive environmental, attitudinal and informational barriers. Paradigm shifts within the rehabilitation context advocated by the ICF framework (WHO, 2001); the social model of disability; LPAA Project Group (Chapey et al, 2000), and the supported participation model (Ylvisaker, Jacobs & Feeney, 2003), emphasize removing barriers, providing social supports and enhancing life participation.

This movement towards including people with disabilities in communities is also evident in corporate contexts, with companies becoming increasingly interested in exploring ways to accommodate people with disabilities as both employees and customers. This is particularly relevant to people with TBI, many of whom experienced living and working in the community prior to their injuries. Few published communication partner training programs are evident within this field, leading Togher, McDonald, Code and Grant (2004) to advocate training uninformed sectors, to facilitate participation for individuals with TBI across a range of service encounters.

The main aim of the current study was to investigate the ability of sales-assistants from a supermarket chain to identify barriers to, and facilitators of interaction involving customers with a cognitive-communication disorder following a TBI, and the impact of training on this ability.

Method

- A control group design was used. Participants from a large South African supermarket chain were randomly assigned to the experimental and control groups. Both groups were matched, and statistical analyses revealed no significant differences between the groups.
- **Focus groups** comprising individuals with a TBI; sales-assistants; and experts were used to identify potentially difficult themes for customers with a TBI, and sales-assistants serving them.
- These themes were systematically refined into 7 professionally-produced **video scenarios** (**Table 1**). Of these, scenario 1 (photo-counter scenario) and scenario 2 (return-counter scenario) accompanied pre-and-post-questionnaire 1 and 2 administrations respectively.
- **2 pre-and-post-questionnaires** were developed and refined to determine sales-assistants' perceptions regarding 2 different sales transactions shown in video scenarios 1 and 2 respectively (**Table 1**), before and after a once-off training session presented to the experimental group only (**Table 2**).
- To statistically determine trends of responses in the 2 groups, **confidence and knowledge constructs** were formulated through item analysis of both pre-questionnaires 1 and 2. Certain questions were removed, and remaining

questions were allocated to these constructs respectively.

- A training session broadly using the ICF (WHO, 2001) was developed and refined, targeting change within the retail sector. The researcher developed a range of material specifically for the study, and collaborated with a research-assistant with a TBI during the main session of the study. Training aimed at having a group of sales-assistants increase their confidence and knowledge at identifying the barriers to, and facilitators of a range of videotaped sales interactions with customers with a TBI.

Main study

- Purposeful sampling was used to select 24 Customer Service Managers (CSM's) and 24 Customer Care Assistants (CCA's) from the 24 regional stores for training, randomly assigning them to the experimental and control groups. An additional 22 sales-assistants (Deli and Bakery) were selected, to create sufficient numbers for statistical purposes.

- The main study took place over 3 sessions:

i) Session 1: Pre-questionnaire administration to both experimental and control groups after viewing video scenarios 1 and 2.
ii) Session 2: 4 hour training session collaborating with a research-assistant with a TBI
iii) Session 3: Post-questionnaire administration to both groups after viewing video scenarios 1 and 2.

Results and Discussion

Results were analyzed on an intra-and-inter-group level: **Intra-group results** revealed high ratings for the training session across all experimental group participants. All participants completed a Confidence rating scale pre-and-post-training, indicating how confident they felt serving customers with TBI. The mean difference post-training was higher than pre-training.

Inter-group results were determined through comparing the experimental and control groups' performances on the **confidence and knowledge constructs** of pre-and-post-questionnaires 1 and 2 respectively via the Mann-Whitney U Test.

For **pre-questionnaire 1**, no significant difference was found between the experimental and control groups on both constructs, compared with a significant difference at the 10% level on the **confidence construct** of the **post-questionnaire** only. After training, experimental participants were more confident serving this kind of customer, feeling more comfortable in their presence (**Table 3**).

Comparison of the experimental and control groups on the **knowledge construct** of **pre-questionnaire 2 revealed** a significant difference at the 5% level. Before receiving training, the experimental group appeared to be more knowledgeable than their control group counterparts (**Table 4**). **Post-questionnaire 2** indicated that the experimental group was more **confident** at the 5% level of significance, and more **knowledgeable** at the 1% level of significance. Participants were more confident when approached by this customer, and less reliant on other colleagues for assistance.

On the **knowledge construct**, the experimental group improved significantly in understanding the correct amount of time required serving this type of customer; recognizing the need for repetition, or having them write requests for clarification.

Thus, on both **post-questionnaire 1 and 2** administrations, the experimental group became significantly more **confident** about interacting with this kind of customer, and only significantly more **knowledgeable** after the administration of **post-questionnaire 2** (following their once-off training session). The finding that the experimental group was already statistically significantly more knowledgeable on **pre-questionnaire 2** (before training) (**Table 4**) is surprising in view of the randomization and matching of participants in both groups. This result will be discussed in relation to various factors that could have impacted, including the composition of the experimental and control groups, as well as an in-depth examination of the difference between the two video scenarios and customers with a TBI.

Overall, all results pointed consistently to the improvement within the experimental, as compared to the control group on the post-questionnaires as compared with the pre-questionnaires, reflecting the impact of the training session on their confidence and knowledge in identifying barriers to, and facilitators of interaction with customers with a cognitive-communication disorder following a TBI (**Tables 3 and 4**). These results were further supported by the positive subjective training session evaluations, and increased confidence ratings of this group.

Implications

The current research comprised an innovative preliminary effort to deal with the apparent paucity of communication partner training programs, specifically for individuals with a TBI. Training aimed to create more facilitative and less barrier-filled communication opportunities for such individuals (Cottrell, 2001; Sarno, 1986; Sarno, 2004; Simmons-Mackie et al, in press; Togher et al, 2004; Ylvisaker, Szekeres & Feeney, 2001; Ylvisaker et al, 2003). Furthermore, training assisted the experimental group participants in using their prior in-store training and experience (Mintzberg, 2004) to consider different and new solutions with greater confidence and knowledge, through integrating new insights in relation to established beliefs and experiences (Mintzberg, 2004; Silberman, 1990; Slavin, 1996). The results support the conclusion that it would be timeous for companies interested in expanding the concept of customer service to include an acknowledgement of, and response, to customers with disability.

Aspects of the study will be evaluated including the pre-and-post-questionnaires; constructs; videos and components of the training session that led to the results. Further applied research in the field of communication partner training is advocated to broaden the evidence base of the field.

Table 1 Video scenarios used for the main study

Video scenario	Duration (once edited)	Topic	Pre-and-post questionnaire administration / training session
1	15 minutes 06 seconds	Photo counter scenario: customer endeavours to purchase an 800 ASA film.	Questionnaire 1: Pre-and-post questionnaire administration
2	8 minutes 18 seconds	Returns counter scenario: customer returns 2 expensive items without a cash receipt.	Questionnaire 2: Pre-and-post questionnaire administration
3	8 minutes 15 seconds	Buying items with R50.00: two customers given R50 to buy something to eat.	Training session
4	2 minutes 5 seconds	Customer with dysarthric speech requests items from the sales assistant and manager.	Training session
5 – 7	3 minutes 24 seconds	Customer with dysarthric speech requests items from various sales assistants.	Training session

Table 2 Description of components and examples of questions used for pre-and-post questionnaires 1 and 2

Questionnaire	Components	Examples of questions
Pre-and-post questionnaire 1	21 questions – 20 closed-ended questions, and 1 open-ended question	**Question 1**: I would feel unsure about serving this customer. **Question 4**: I would spend the same amount of time with this customer as he did in the video.
Pre-and-post questionnaire 2	15 questions – 14 closed-ended questions, and 1 open-ended question	**Question 1**: I would feel comfortable when approached by this customer. **Question 8**: I would think the customer finds it hard to understand what the sales assistant is saying.
Open-ended questions pre-and-post questionnaires 1 and 2		**Question**: If this was you, in your own words describe what you would have done differently if you were serving this same customer.

Table 3 Pre-and-post questionnaire 1: Comparison of experimental and control group responses on the confidence and knowledge construct

	PRE-QUESTIONNAIRE 1				POST-QUESTIONNAIRE 1			
	Experimental group n=30	**Control group n=33**	**P-value (Mann-Whitney U Test)**	**Effect size**	**Experimental group n=29**	**Control group n=30**	**P-value (Mann-Whitney U Test)**	**Effect size**
Confidence Construct								
Mean	2.1917	2.0682	0.3115	0.27 small	2.2414	2.0667	**0.0682***	0.44 medium
SD	0.4389	0.4519			0.4198	0.3710		
Knowledge construct								
Mean	1.7867	1.7545	0.7823	0.03 small	1.8759	1.7867	0.2834	0.27 small
SD	0.3702	0.4139			0.3651	0.4761		

* Significant at the 10% level of significance
Effect size: 0 – 0.2 = small effect size
0.2 - 0.8 = medium effect size
> 0.8 = large effect size

Table 4 Pre-and-post questionnaire 2: Comparison of experimental and control group responses on the confidence and knowledge construct

	PRE-QUESTIONNAIRE 2				POST-QUESTIONNAIRE 2			
	Experimental group n=30	**Control group n=33**	**P-value (Mann-Whitney U Test)**	**Effect size**	**Experimental group N=29**	**Control Group n=30**	**P-value (Mann-Whitney U Test)**	**Effect size**
Confidence Construct								
Mean	2.5133	2.3818	0.1090	0.30 medium	2.5724	2.3133	**0.0286*****	0.51 medium
SD	0.5138	0.3653			0.5035	0.5029		
Knowledge construct								
Mean	2.3143	2.0346	**0.0206*****	0.68 medium	2.4926	2.0857	**0.0001****	1.11 large
SD	0.3322	0.4630			0.3319	0.3945		

** Significant at the 1% level of significance
*** Significant at the 5% level of significance
Effect size: 0 – 0.2 = small effect size
> 0.2 -0.8 = medium effect size
> 0.8 = large effect size

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