Can training offered to shopping mall employees improve their knowledge about disability and perceived self-confidence in interacting with persons presenting various limitations?

Annie Rochette1,2*, Bonnie Swaine1,2, Eva Kehayia1,3, Lise Roche4, Catherine Guérard4 and Lucie Ève-Marie Bourque1

Abstract: Background: Social models of disability support environmental factors as major determinants of participation. The social environment can act as a facilitator for people with disability. The purpose was to explore if a training offered to shopping mall employees can improve their knowledge about disability and perceived self-confidence in interacting with persons presenting various limitations. Methods: A quasi-experimental design with pre and post-training and 3-month follow up measures with a control group. Participants were employees of a shopping mall working at least 3-shifts/week. Outcome was a quiz type questionnaire developed with experts to measure knowledge about disability and self-confidence in interacting with clients with various limitations. Non parametric statistics were used. Results: Whereas the control group \((n = 11)\) did not show significant differences in scores for either knowledge about disability \((p = 0.40)\) or self-confidence in interacting with people with disability \((p = 0.37)\), the experimental group \((n = 7)\) improved in knowledge \((p = 0.009)\) and in self-confidence \((p = 0.03)\) when comparing scores before training with post-training and three months later. Conclusion: These results

ABOUT THE AUTHORS
This study was part of the Rehabilitation Living Lab project which is the first interdisciplinary and multisectorial research study to explore the principal obstacles, either physical or psychosocial, to social participation and inclusion for persons with disabilities in a commercial mall environment, referred to as a Living Laboratory (www.crir-livinglabvivant.com/index.html). The Rehabilitation Living Lab project is funded by the Fonds de Recherche du Québec - Santé (FRQS) and is conducted by researchers from the Centre for Interdisciplinary Research in Rehabilitation of Greater Montreal (CRIR) and their partners. CRIR's mission is “to contribute comprehensively to the autonomy and social integration of persons with physical disabilities, through basic research as well as through clinical, epidemiological, evaluative and applied research in both the biomedical and psychosocial domains, on all aspects of the handicap production process”.

PUBLIC INTEREST STATEMENT
Individuals with disability represent the largest minority group and their number is expected to increase due to aging of the population. These individuals are facing challenges in using public services such as a shopping mall. According to the World Health Organisation, one of the upcoming challenges for an ageing society is to develop age-friendly services and settings that enable active participation. As such, the social environment (e.g. employees) can act as a facilitator of inclusion of individuals with disability in public environments (e.g. shopping mall) as this is supported conceptually and empirically. However, shopping mall employees lack knowledge and skills as to how to interact with individuals with various limitations. Results from this study has shown that a 3-h training, including theory and experimentation of what it feels like to live with a disability, increased knowledge levels and perceived confidence of shopping mall employees in interacting with this clientele.
suggest a 3-h training, including theory and experimentation of what it feels like to live with a disability, increased knowledge levels and perceived confidence of shopping mall employees in interacting with this clientele.

Subjects: Public Relations; Inclusion and Special Educational Needs; Rehabilitation Medicine

Keywords: social environment; disability; training; knowledge; self-confidence; quasi-experimental design

1. Introduction

Individuals with disability represent the largest minority group (Disability Funders Network, 2012) and their numbers are expected to increase in the coming years with the ageing of the population since disability is more prevalent with increasing age (WHO, 2011). Social models of handicap consider the inclusion of environmental factors as major determinants of participation levels (Levasseur, Desrosiers, & St-Cyr TD, 2007). According to the World Health Organisation (WHO, 2014), besides providing adequate health care, one of the upcoming challenges for an ageing society is to develop age-friendly services and settings that enable active participation.

One of these settings is the shopping mall. Indeed, the shopping mall represents an environment in the community where, besides shopping, a multitude of activities and participation take place, such as drinking and eating, moving around, socialisation, or recreation (Gilboa & Vilnai-Yavetz, 2013; Swaine et al., 2014). In a recent qualitative study aimed at documenting the usability, as well as the environmental facilitators and obstacles to participation in shopping malls, different types of participants, including individuals with physical disability (n = 15), shopkeepers (n = 9) and rehabilitation professionals (n = 15), mentioned that interaction with the shopkeeper was a major barrier or facilitator. All participants also agreed that shopkeeper training and an improved awareness of the needs of persons with disabilities would be beneficial (Swaine et al., 2014). Others have argued that there is a clear need for employee training to foster higher quality interactions between shopkeepers and individuals with physical disability (Goodrich & Ramsey, 2012). By improving communication abilities and providing education, training on the existence of different types of disability may minimise preconceptions and labeling of individuals with physical disabilities as being all the same (Baker, Stephens, & Hill, 2002).

As such, efficient communication and openness to differences are essential characteristics of shopkeepers for optimal interactions with a diversity of consumers. Good communication relies on building adequate knowledge, as well as necessary attitudes and skills required by the different situations (Carraccio, Englander, Wolfsthal, Martin, & Ferentz, 2004; Tardif, 2006). One way to operationalise attitudes and skills could be by using the concept of self-efficacy, described as one’s level of confidence in performing a task or specific behavior (Bandura, 1977; Korpershoek, van der Bijl, & Hafsteinsdóttir, 2011).

In summary, there appears to be an urgent need to offer training to shopkeepers to develop their competence level (knowledge and self-confidence) in interacting with individuals with disability. We also know this type of training is offered in many cities worldwide, mainly by community organisations advocating for the rights of people with disability (e.g. www.disabilitytraining.com), third sector or social enterprises. However, when looking at the scientific literature, we could not find any study specifically investigating the efficacy of educating members of a social environment to act as facilitators and thus enhance the participation of people with a disability.

1.1. Study objective

The purpose of this study was to explore the impact of a group training program, on the knowledge and perceived self-confidence of employees working in a shopping center specifically targeting how to better welcome people with functional limitations (community organisation offering the training is: www.altergo.ca).
2. Methods

2.1. Study design
An exploratory quasi-experimental design was used (Morgan, Gliner, & Harmon, 2000) as randomisation was not feasible in the context where the study took place. The experimental group received the training whereas the control group was composed of individuals who were also offered the training, but who were not available when the training was provided. To document the impact of training on knowledge and self-efficacy, a questionnaire developed specifically for this study was used at three measurement times: Time 0 (T0) right before training for the experimental group (i.e., in the first minutes upon arrival to the training session) or one week before training for the control group; Time 1 (T1) right after training for the experimental group and four to six days post T0 for the control group (i.e., before training to avoid potential contamination of trained employees working with control group participants), and Time 2 (T2) three months post-training to document retention for both groups. Informed and signed consent was obtained at T0 for both groups and the study was approved by the Research Ethics Committee of the Centre for Interdisciplinary Research in Rehabilitation of Greater Montreal (CRIR 954–0414).

2.2. Outcome measures
The questionnaire was developed by the team members having complementary expertise in the rehabilitation of persons with disability and was pretested (pre and post training) with a group (n = 29) who received a training session conducted before the study. Participants were asked to answer questions, as well as to comment or circle any words or phrases they found confusing. The pre-test sample characteristics were similar to those of the study sample. After the pre-test, two questions relating to knowledge of disability were deleted as they lacked clarity. The final version of the questionnaire was composed of two sections. The first section was composed of nine “True/False or I don’t know” questions, aimed at documenting knowledge levels. Examples of questions were: “To assist an individual with a vision problem, I take their arm to guide them” or “If a person seems to have a problem at the cash, I offer my assistance to help with payment”. Correct answers were given one point and the total score, out of nine, was transformed into a percentage to provide a “knowledge score”. The second section also contained nine questions and documented perceived self-confidence. Responses were provided using a 10 point visual analog scale where 0 meant “not at all confident” and 10 meant “extremely confident”. Examples of questions were: “I am confident I could identify individuals with special needs” or “I am confident I would be able to communicate well with a person with special needs”. The mean of all responses was also transformed into a percentage of “confidence level”. While developing the questions, there was an effort to include those that document confidence in screening-assessing needs as well as in using strategies with individuals who present a variety of special needs. Socio-demographic characteristics (age, gender, schooling, employment type and mother tongue) were collected for sample description.

2.3. Recruitment procedure
Recruitment was on a voluntary basis. To be eligible, individuals had to have worked at the participating shopping mall a minimum of three 4-h shifts in the week preceding the first measurement (T0). Excluded were individuals who felt they were not fluent enough to follow the training in French. Managers and shopping mall personnel were first contacted by phone to check for eligibility and then met in person to further explain the study. A letter from the mall’s managerial team attested their support for the study. Participants in the experimental group were provided a modest compensation for the hours missed at work to participate in the training. While initially, 17 individuals had registered for the training, only seven could actually attend due to difficulty in finding a replacement for their shift at work.
2.4. Characteristics of the intervention
The intervention consisted of a three-hour group training session provided by two individuals with visible disabilities (e.g., low vision and a lower limb amputation). The room in which the training was given had to be accessible to individuals with reduced mobility, have good air circulation and lighting (www.altergo.ca). Training content comprised experimenting with a disability and acquiring knowledge about disabilities. During the first part of the training, participants were asked to perform concrete actions such as getting a coffee or going to the bathroom while simultaneously imitating having multiple or a single disability. To achieve this, they were provided with glasses reducing visual fields, Canadian crutches, a white cane for low vision, ear protectors to reduce audition to a minimum or were pinched to experience slight pain. The second part of training was more traditional and focused on knowledge on how to identify individuals with a variety of special needs (e.g., attention deficit, behavior issues, visual deficits, motor deficits, etc.) and the concrete strategies to be used to assist them when providing services.

2.5. Sample size
As recruitment was voluntary and limited to one shopping mall, we aimed at recruiting between 10 and 12 individuals with a maximum of 20 participants in each group. In the end, seven participants received the training (experimental group) and 11 were in the control group.

2.6. Statistical analysis
Statistical analyses were exploratory. Descriptive statistics were used to describe the sample as well as raw scores of knowledge and confidence levels converted to a total of 100 (mean and standard deviation). Non-parametric statistics were used to test differences because of the small sample size. The absence of between group differences (experimental versus control) on sample characteristics was verified with the Chi square test for dichotomous variables, ANOVA for categorical variables and Mann-Whitney U test for continuous variables. The Mann-Whitney U test was also used to test the presence of a significant difference between the two groups (experimental vs. control, independent groups) on the differences in knowledge and self-confidence scores between measurement times. The Wilcoxon non-parametric test for paired samples was used to document the presence of improvement in between measurement times (T0 vs. T1; T1 vs. T2 and T0 vs. T2). Finally, the Friedman’s test was used to document the presence of overall improvement over time (over the three measurement periods) in knowledge and confidence levels for each group (experimental and control).

3. Results
Participants from the control group (n = 11) and experimental group (n = 7) did not differ significantly in any of the sociodemographic variables collected (see Table 1). Level of familiarity with disability ranged from 2 to 8/10 for the total sample where 0 meant not at all, and 10 meant extremely familiar with disability. Both knowledge and self-confidence levels improved significantly over the three measurement periods for the experimental group (Friedman’s test for k paired-samples, p value respectively = 0.009 and 0.03) whereas a level of significance was not reached for the control group (Friedman’s test for k paired-samples, p value respectively = 0.40 and 0.37). When looking more specifically at intra group differences, scores were not significantly different at any measurement time for the control group (see Table 2). In contrast for the experimental group, scores post-training (T1) were significantly higher than scores pre-training (T0) (knowledge, p = 0.03 and self-confidence, p = 0.02). Similarly, scores of retention at three months post-training (T2) were significantly higher than pre-training scores (T0) for knowledge levels (p = 0.04) but not for self-confidence (p = 0.06) for the experimental group.
Table 1. Description of the samples

|                      | Control group (n = 11) | Experimental gr. (n = 7) | p value |
|----------------------|------------------------|-------------------------|---------|
|                      | N (%)                  | N (%)                   | χ² test |
| Age (years)          |                        |                         |         |
| 18–30                | 5 (45.5)               | 4 (57.1)                |         |
| 31–50                | 5 (45.5)               | 2 (28.6)                | 0.77    |
| 51 à 64              | 1 (9.0)                | 1 (14.3)                |         |
| 65 and more          | 0                      | 0                       |         |
| Gender               |                        |                         |         |
| Women                | 8 (72.7)               | 3 (42.9)                | 0.33    |
| Men                  | 3 (27.3)               | 4 (57.1)                |         |
| Schooling            |                        |                         |         |
| Primary              | 0                      | 0                       |         |
| High school          | 1 (9.1)                | 1 (14.3)                | 0.56    |
| College              | 4 (36.4)               | 4 (57.1)                |         |
| University           | 6 (54.5)               | 2 (28.6)                |         |
| Employment           |                        |                         |         |
| Sales person/cashier | 3 (27.3)               | 2 (28.6)                | 0.93    |
| Manager              | 7 (63.6)               | 4 (57.1)                |         |
| Other                | 1 (9.1)                | 1 (14.3)                |         |
| Mother tongue        |                        |                         |         |
| French               | 8 (72.7)               | 3 (42.9)                | 0.15    |
| English              | 3 (27.3)               | 2 (28.6)                |         |
| Other                | 0                      | 2 (28.6)                |         |
| Familiarity with disability (/10) | Mean (SD) | Mean (SD) | p value |
|                      | 6.6 ± 1.4              | 5.9 ± 1.7               | 0.38§   |
|                      | [2–8]                  | [4–8]                   |         |

Note: SD: standard deviation.

*Mann & Whitney test.

Table 2. Control group (n = 11) and experimental group (n = 7) total scores for the two dimensions “Knowledge about disability” and “Confidence level”

| Dimensions         | T0-Pre | T1-Post | T2-Follow up | p-value | p-value |
|--------------------|--------|---------|--------------|---------|---------|
| Group              | Mean (SD) | Mean (SD) | Mean (SD) | Intra group* | Between group** |
| Knowledge          |        |         |              |         |         |
| Control            | 61.1 ± 15.9 | 53.3 ± 20.2 | 61.7 ± 20.1 | 0.12/0.08/0.71 | T1–T0 = 0.003 |
| Experimental       | 76.2 ± 17.5 | 95.2 ± 8.7 | 90.5 ± 7.8 | 0.03/0.18/0.04 | T2–T0 = 0.04 |
| Confidence level   |        |         |              |         |         |
| Control            | 69.0 ± 8.9 | 73.8 ± 6.7 | 67.8 ± 9.6 | 0.09/0.17/0.36 | T1–T0 = 0.06 |
| Experimental       | 76.5 ± 9.3 | 89.5 ± 6.1 | 85.4 ± 8.4 | 0.02/0.21/0.06 | T2–T0 = 0.07 |

Notes: T0: Pre-training measure; T1: Post training measure or one week post T0 for control group where n = 10; T2: Three months post T0; control group n = 9; SD = standard deviation.

*Wilcoxon non parametric Test for paired samples between T0 and T1; T1 and T2 and between T0 and T2.

**Mann & Whitney non parametric Test on the differences for independent samples.
4. Discussion
This exploratory study aimed at documenting the impact of a training on shopping center’s employees’ knowledge and perceived confidence levels in interacting with a clientele, presenting with various disabilities. The training proved to be effective, as there were statistically significant differences in favor of those who received the training (experimental group) compared to those who did not (control group) both in knowledge and perceived self-confidence levels. Surprisingly, although several community organizations are known to offer this type of training in many cities worldwide, we could not find any other study documenting empirically its impact. Increasing the competence levels of the social environment so it becomes a true facilitator of inclusion through more supportive attitudes (WHO, 2001) respects universal design principles (National Disability Authority, 2014) even though these principles primarily focus on the physical environment.

We faced challenges in recruiting study participants despite having a letter of support from the shopping center managerial team. While most eligible individuals showed interest in receiving the training, in the end, they were unable to participate, despite efforts to choose a date and time that ensured maximal availability. This situation differs from the pre-test training session with city workers who were asked by their employer to attend the training and were paid to do so. This reflects the potential influence of policies and infrastructure supporting individuals to attend such training opportunities. To ensure a change in policy requiring this type of training obligatory, one would have to demonstrate its impact on actual service provision to the clientele and not only on personal factors of the social environment, which is what we have done in this study.

Despite a relatively small sample size, results were statistically significant and conclusive. The training offered used different pedagogical approaches: traditional knowledge transfer and experimentation of what it feels like to live with multiple disabilities. We are not able to differentiate the impact of these two pedagogical approaches although we hypothesize that experimentation played an important role in changing participants’ confidence levels by promoting the creation of new beliefs with regard to disability (as they experimented them while in action i.e. doing an activity of daily living), especially since confidence is associated to one’s own experiences (Maddux & Volkmann, 2010). Also, the fact that the two individuals in charge of the training had themselves visible disabilities may have contributed in reducing attendees’ preconceptions about persons with disability.

5. Strength and weaknesses
This study is one of the first to document the impact of training members of a social environment to interact with individuals with various disabilities. Although the sample size was small and we were not able to document service delivery outcomes (i.e. improved consumer satisfaction), the quasi-experimental design including a control group is a strength of this study as is the three month follow up measure. However, we must acknowledge that reliability and validity of the outcome measure was not documented and this is a limitation of this study.

6. Conclusion
A short 3-h group training, including both traditional knowledge transfer on how to welcome individuals with various disabilities and an experimentation with how it feels to accomplish daily activities when disabled, proved to be effective in increasing knowledge levels and self-confidence of shopping mall employees in interacting with this consumer group. It is possible that better trained personnel could ultimately provide improved services to this clientele and thus contribute to maximizing inclusion and the well-being of the population in general, whether with or without disabilities. Future research could further investigate these important issues for a true change in policies and service provision.
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Authors’ Contributions
All authors participated into the conception and the design of the study. LEMB was in charge of recruitment and data collection. LR and CG were in charge of offering the intervention. AR carried out statistical analysis. All authors provided help to draft the manuscript. All authors read and approved the final manuscript.

Author details
Annie Rochette1,2
E-mail: annie.rochette@umontreal.ca
Bonne Swaine1,2
E-mail: bannie.swaine@umontreal.ca
Eva Kehayia1,3
E-mail: eva.kehayia@mcgill.ca
Lise Roche4
E-mail: liser@altergo.net
Catherine Guérard4
E-mail: catherine@altergo.net
Lucie Ève-Marie Bourque1
E-mail: evelucie.bourque@gmail.com

1 Centre for Interdisciplinary Research in Rehabilitation of Greater Montreal (CRIR), Quebec, Canada.
2 School of Rehabilitation, University of Montreal, C.P. 6128, Succursale Centre-Ville, Montreal, Canada.
3 School of Physical and Occupational Therapy, McGill University, Montreal, Canada.
4 AlterGo Formation, Montreal, Canada.

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