

CBR Workers' Training Needs for People with Communication Disability

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ABSTRACT

Aims: *In order for speech-language pathologists to work better together with CBR workers, there is a necessity to understand what they perceive as their training needs for people with communication disability (PWCD).*

Method: *In 2013, a cross-sectional written survey was conducted with 421 Malaysian workers, using convenient sampling and a mixed-method approach.*

Results: *In-depth information on training needs from descriptive analysis of quantitative data and content analysis of qualitative data were obtained and discussed.*

Conclusion: *This study, although not generalizable, builds up the literature on worker training needs in developing countries, and would be of benefit for speech-language pathologists and worker trainers.*

INTRODUCTION

The community-based rehabilitation (CBR) approach is a strategy that seeks to promote “the rehabilitation, equalisation of opportunities and social inclusion of all people with disabilities” (WHO, ILO & UNESCO, 2004). Best practice principles indicate this will be implemented by a cadre of locally trained community workers supported by existing governmental and non-governmental health, education, vocational, social, advocacy and other infrastructure, with the active participation of people with disabilities and their families. Different centres have different priorities, although activities are generally conducted in the medical rehabilitation (health), education, income generation, empowerment and social domains. In Malaysia, CBR was introduced in 1983 through collaboration between

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the Malaysian government and the World Health Organisation (WHO) in Kuala Terengganu. It is now recognised as an augmentative approach to disability management (Rashid, 2004), especially given the wide service-needs gap for rehabilitation services. At the same time, CBR in Malaysia is influenced by the context of CBR practice world-wide which increasingly emphasises activities in the areas of advocacy and empowerment.

In many situations, speech-language pathologists (SLPs) work together with different personnel (e.g., special education teachers, other rehabilitation professionals) to provide services for people with communication disability. A communication disability is a complex phenomenon that includes impairments in receiving, sending, processing and comprehending concepts or verbal and nonverbal symbol systems (American Speech-Language-Hearing Association -ASHA, 1993). Oftentimes though, many people observe only the outward expressions of a communication disability, such as the lack of speech or poor speech pronunciation, and have a limited understanding about the other components such as the individual's overall communication needs. Working together with others is thus critical in all contexts, and particularly so in developing countries where there are limited numbers of SLPs and huge service demands. Nonetheless, in order for SLPs to work better alongside CBR workers, there is a necessity to understand worker training needs.

Literature Review

The term 'low-skilled workers' has been used in the literature to refer to workers such as grassroots CBR workers (hereafter, workers) who possess basic schooling and little additional formal job training (Maxwell, 2006). Thus, worker training is defined here broadly as the development of relevant knowledge, understanding, skills and competencies among such workers. The literature suggests that knowledge and skills taught need to be re-contextualised to these learners' workplaces, personal experiences and needs (Mayfield-Johnson, 2011). Another principle, also based on adult learning, is the creation of opportunities for reflection and the evaluation of experiences (Mayfield-Johnson, 2011). This allows learners the opportunity to reflect on espoused theories of practice and their own theories-in-use, to re-contextualise knowledge and skills to their personal situation. This principle of partnership or active participation in learning is also vital to ensure learning is culturally contextualised and sensitive to learner needs. Thus, Thomas and Thomas (1999) indicate that curriculum content be

contextualised to meet the needs of the workers in the community, and not be dependent on the perspectives of institution-based trainers and their curriculum that are far removed from the actual situation. Indeed, studies which created content curricula after identifying local needs and utilising local trainers, found these well-received by the community (O'Toole and McConkey, 1998). Hence, the present case study seeks to understand the needs of local Malaysian workers who manage people with communication disability, in order to enhance worker training and to add to the literature about CBR worker needs.

There have been earlier studies on worker training needs in developing countries (McGlade and Aquino, 1995; O'Toole and McConkey, 1998; Lorenzo, 2004; Raj et al, 2004; Deepak et al, 2011; Puri, 2011; Varma, 2011; Mannan et al, 2012), but most of them did not look specifically at worker needs based on types of disabilities. In one study however, workers described the need for training in sign language and the use of hearing aids in relation to people with hearing and speech disabilities (Deepak et al, 2011). Often, many people experience communication disability as part of a more major impairment, such as cerebral palsy or intellectual disability. In fact, communication disability is associated with many different kinds of disabilities and different age groups. It would thus be important to investigate training needs for people with communication disability more comprehensively. Indeed, Hartley and Wirz (2002) estimated that between 38 – 49% of people with disability seeking help at community rehabilitation services in 3 developing countries had communication disability.

This article is primarily concerned with CBR services in Malaysia, provided by the government through the Department of Social Welfare (DSW). There are now 486 centres across the country, with a total of 21,138 people with disability receiving services mainly through CBR workers (DSW, 2013). These centres are typically managed by a local committee, with an annual stipend and basic training for workers provided by the DSW. Workers in Malaysia are expected to provide basic rehabilitation services to the community, in association with health, education, social, and other relevant governmental and nongovernmental organisations (DSW, 2003). However, the current training programmes may not be sufficient for them to fulfil this role. A non-formal in-service basic training course organised by the DSW is about one week in length and has a bias towards the rehabilitation of people with learning disabilities (Kuno, 2007). In addition, short courses covering a variety of topics are offered by the DSW and other nongovernmental organisations (Pekerja, 2010). In recent years, a few topics

relevant to communication disability, such as introduction to sign languages and speech-language therapy, have been offered. It must be noted, however, that only a limited number of training courses are available each year for more than 2000 workers currently employed (DSW, 2013). Those who do not have the chance to attend these courses are expected to pick up knowledge and skills from their centre supervisors and through daily working experiences.

The lack of adequate communication rehabilitation services in Malaysia is acute (Ahmad, 2010). In 1995, the first local SLP undergraduate programme was started at Universiti Kebangsaan Malaysia. In 2009, the Department of Audiology and Speech Sciences, Universiti Kebangsaan Malaysia, estimated a ratio of one SLP per 150,000 people in Malaysia (population 28 million). An estimated half of the local SLPs serve in general and university hospitals located in urban areas throughout the country. The other half work typically in traditional institution-based urban speech-language pathology settings in the private sector and non-governmental organisations. There is little incentive and opportunity for SLPs to work in rural and regional communities (Ahmad, 2010). At the same time, there may be opportunities for SLPs to work together with other personnel such as workers, to provide assistance to people with communication disability in such contexts. For example, Stanmore and Waterman (2007) described how multi-purpose rehabilitation workers in the UK, who had been given basic training, could act as assistants in the delivery of occupational therapy, physical therapy and speech-language (communication) therapy services. Furthermore, Hartley et al (2009) described how community-based workers in Kenya helped provide basic communication rehabilitation in association with the referral for more specialised services.

Objective

This paper aimed to investigate the training needs of Malaysian workers in relation to people with communication disability. The primary aim was to investigate common self-perceived training needs in relation to communication disability and to find how important these needs are to workers. A secondary aim was to explore the relationship between selected worker variables and training needs. A concurrent question was also investigated, relating to the domains of activities workers engage in and their self-perceived training needs, but these findings will be reported in a forthcoming article.

Permission to conduct this research was obtained from the DSW, Malaysia. Ethical approval was granted by the Universiti Kebangsaan Malaysia Research Ethics Committee.

METHOD

Study Design

This study is a cross-sectional mixed method survey.

Study Sample

A convenience sampling method was adopted. All workers (n=496) from across Malaysia who attended an introductory three-day workshop on communication disability, organised by the DSW and the Wives of Ministers and Deputy Ministers (BAKTI), were involved. This workshop was designed to provide support for workers at centres with limited access to SLP services. The following topics were covered: (i) an introduction to the SLP profession and its scope of work, (ii) the concepts of communication, speech and language and its impact on a child's daily life, (iii) typical development patterns of speech and language growth in children from the ages of 0-6 years, and (iv) the building blocks of communication. In practical sessions, workers were supported to use a screening checklist on case studies of children with communication disability to identify communication, language and speech levels and needs. A total of 7 such workshops were conducted over 3 months. At the end of each workshop, researchers invited workers to participate in the study. Those who were interested were given questionnaires, their doubts were clarified, and the completed questionnaires were returned to the researchers at the session. The survey response rate was good, with 421 workers (84.9%) agreeing to participate.

Instrument and Validation

The questionnaire was adapted from the one used by Deepak et al (2011) to survey worker training needs. It was modified to reflect this study's focus on persons with communication disability. It was first translated into Malay, strictly following the guidelines of the WHO process of translation and adaptation of instruments (2007). The translation was then verified by two linguists who were native speakers of the Malay language. It was pilot-tested with 10 workers in order to ascertain consistency of interpretation of questions, to clarify ambiguous

items and to obtain feedback regarding the design and relevance of questions. Changes were made based on worker feedback.

The written questionnaire was divided into 4 sections. Both close-ended and open-ended questions were used to yield quantitative and qualitative data. The first section, General Information, contained questions to elicit worker demographic and training information. In addition, workers were asked about contact with SLPs or SLP students, and to estimate the number of their training courses that covered some aspect of communication disability and its management. The second section was significantly reworked from the original questionnaire which had surveyed training needs for 8 groups of people with disabilities (e.g., vision, learning). In this survey, the section was titled Communication Disability, and focussed only on training needs in relation to people with communication disability. People with communication disability were defined as clients with speech, hearing, language and/or communication impairments who experience communication disability as a consequence. Workers were asked to rate how frequently they encountered such clients in their caseloads, their need for training, and difficulties in working with them. They were then asked to write down at least 3 of their significant training needs for working with people with communication disability. The third section, Components of CBR Matrix, surveyed training needs according to the Matrix areas of (I) health, (II) education, (III) social, (IV) livelihood and (V) empowerment. The format of the questions was similar to section two. The results of this section will be presented in a forthcoming paper. In the final section, Priority of Training Needs, workers were required to review all training needs they had expressed and prioritise them, by ranking the 3 most critical needs. They were also invited to include any other priority training needs that had not been expressed earlier.

Data Analysis

One research assistant entered all the data into Microsoft Office Excel 2007 spread-sheets. All valid information was entered, with omitted questions coded as missing data. This software was used to conduct descriptive analysis of the close-ended questions in order to yield frequency distributions of quantitative data. Additionally, to answer a secondary research aim, worker perceptions of difficulty levels when working with persons with communication difficulty were investigated further using IBM SPSS version 22. Cross tabulations and chi-square statistical analysis were obtained to compare this with the variables of age,

educational level, years of work experience, contact with SLPs, the frequency of communication disability courses attended, and their need for training.

Content analysis was used for all open-ended questions in sections two and four, which recorded worker descriptions of key training needs, in order to identify and quantify common categories of responses. First, three researchers read through all responses many times and a list of categories was developed based on the different concepts identified. Next, each response was put into its relevant category. Trends and patterns of responses were identified to see whether related categories could be grouped together to form larger category groups. Only after consensus among the three researchers were the categories finalised. For the purpose of this article, category labels and quotations from qualitative data have been translated into English by two researchers who are proficient in Bahasa Malaysia and English.

RESULTS

A total of 421 workers, mainly supervisors of CBR centres (n=299; 71%), participated in the study (see Table 1). The mean age of participants was 38.7 years (age range: 19 - 66 years) and the majority were females (n=408; 97%). The

Table 1: Characteristics of Respondents

Characteristics of Respondents	CBR Workers	
	<i>n</i>	%
Gender		
Male	4	1
Female	408	97
No Response	9	2
Work Status		
Supervisor	299	71
Worker	63	15
No Response	59	14
Education Level		
Primary	2	0.5
High School	309	73
Pre-University & Higher	103	24.5
No Response	7	2

Duration of Working Experience (Years)		
1-5	120	28
6-10	164	39
> 10	129	31
No Response	9	2
Number of Training Courses Attended		
0-5	81	19
6-10	195	46
>10	127	31
No Response	18	4
Client Groups Worked With		
Children	327	78
Adolescents	276	66
Adults	213	51
No Response	7	2

majority of participants had completed secondary school (n=309, 73.4%). Most of them were experienced workers, with 164 (39%) participants having 6-10 years of work experience. The mean work experience was 8.9 years, ranging from 1 month to 32 years. The median range of training courses attended thus far, for almost half (n=195; 46.3%) of the participants, was 6-10. In terms of client age groups, while most workers (n=327; 77%) had children in their caseloads, many worked with adolescents (n=276; 66%) and adults (n=213; 51%) also.

Training Needs of Workers for Persons with Communication Disability

Workers were asked to rate how often they encountered clients who were persons with communication disability. On a scale of 'rarely', 'sometimes' and 'often', the majority (61.4%) opted for 'often' while 27.7% rated this as 'sometimes'. Regarding the level of difficulty in conducting activities for persons with communication disability, 80.5% (n=339) of workers reported some difficulty, 11.6% (n=49) reported it was very difficult, and 5.7% (n=24) reported no difficulty. In terms of perceived training needs for rehabilitating persons with communication difficulty, 82.9% (n=349) felt they needed a lot of training while 13.1% (n=55) reported the need for some training. Regarding previous training, 81.3% of participants (n=342) estimated that 5 courses or less that they attended had some aspect related to communication disability and management. However, a large

number of participants (n=320; 76%) had never worked with an SLP or a student SLP (see Table 2).

Two by Two tables, where worker perceptions of difficulty in dealing with persons with communication disability (re-categorised as having 'no' or 'some' difficulty versus having 'a lot' of difficulty) were cross-tabulated with (i) age (re-

Table 2: Training Needs for Clients with Communication Disabilities

Features	CBR Workers	
	<i>n</i>	%
Involvement with Clients with Communication Disabilities		
Often	259	61.4
Sometimes	117	27.7
Seldom	33	7.9
No Response	12	2.9
Number of Courses Attended Related to Communication Disability and Rehabilitation		
0-5	342	81.3
6-10	46	10.9
>10	11	2.6
No response	22	5.2
Working Together with SLP or Student SLP		
Yes	64	15.2
No	320	76.0
No Response	37	8.8
Perceived Level of Difficulty		
Significantly Difficult	49	11.6
Sometimes Difficult	339	80.5
Not Difficult	24	5.7
No Response	9	2.1
Perceived Need for Training		
Need a lot of Training	349	82.9
Need some Training	55	13.1
Need no Training	5	1.2
No Response	12	2.9

categorised as ≤ 35 versus > 35 years), (ii) educational level (up to secondary versus post-secondary), (iii) years of experience (re-categorised as ≤ 10 years versus > 10 years), (iv) contact with SLP, (v) frequency of SLP-related courses attended (re-categorised into ≤ 10 versus ≥ 10 courses), and (vi) their need for training (re-categorised as having 'no' or 'some' need for training versus having 'a lot' of need). Chi-square statistical analysis revealed no significant differences for the above variables except for age ($\chi^2 = 4.83$, $p < 0.05$), years of experience ($\chi^2 = 5.82$, $p < 0.05$) and worker need for training ($\chi^2 = 7.26$, $p < 0.005$).

Workers were then asked to state 1-3 significant training needs for persons with communication disability. The 420 responses were coded and grouped into broad categories for analysis (see Table 3). Only 12 (2.9%) of these responses were not relevant to communication disorders (e.g., need training in physiotherapy). The most common response (29.3%) related to training in augmentative and alternative communication methods (AAC). These are communication methods used to supplement or as an alternative for speech and writing when natural communication is impaired, e.g., picture, sign and gestural communication systems. Furthermore, 80% of these responses were concerned with training in sign languages and Makaton. Makaton is a simpler form of sign language used with people with learning disability. The second most common category (25.5%) related to general requests for appropriate training courses in communication disability. Various adjectives were used to describe the kind of training workers preferred, e.g., "basic", "appropriate", "relevant", "practical", "effective" and "specific". Some participants wanted "a series of courses over time" and "consistent" follow-up. The third most common perception (10.7%) was the need for verbal language, speech and oral motor skills training. Workers expressed needs related to the facilitation of oral expression and the use of verbal language. Of interest is the fact that many workers perceived oral motor training as a primary strategy for speech rehabilitation. For example, one worker remarked "(We need) training to strengthen oral muscles". In the fourth most common category, 8.1% of the responses indicated a need to learn how to manage persons with communication difficulty with specific conditions. Examples of such conditions included clients who did not follow instructions, non-verbal clients, and clients with hyperactivity, hearing impairment, cerebral palsy, multiple handicaps, autism spectrum disorder, and adults with communication disability. The remaining categories with relevant examples are listed in Table 3. They cover a range of significant needs, from workers developing interaction skills, acquiring appropriate teaching strategies and aids, managing behaviour and training in social skills, to working together more closely

Table 3: Perceived Training Needs for Persons with Communication Disability (PWCD) (Qualitative findings)

Categories	Percent (%)	Examples
Augmentative & Alternative Communication needs (AAC)	29.3	<i>"training in sign language", "makaton communication", "cued speech", "picture communication"</i>
General training course requests and nature of such courses	25.5	<i>"basic training course", "communication training course", [a training course that is...] "relevant & appropriate", "practical", "periodic", "follow-up"</i>
Verbal language, speech and oral motor skills training	10.7	<i>"techniques to teach how to speak properly and more clearly using the right sentence structure", "how to teach them to speak", "oral motor skills training", "mouth muscles exercises and tongue articulation"</i>
Rehabilitating specific conditions	8.1	<i>"clients who did not follow instructions", "non-verbal clients", "clients with hyperactivity", "hearing impairment", "cerebral palsy", "multiple handicap", "autism spectrum disorder", "adults with communication disability"</i>
Workers acquiring interaction and communication skills	5.7	<i>"want to understand them [PWCD]", "how to communicate easily with them [PWCD]"</i>
Materials, teaching aids and resources	5.2	<i>"need to know suitable and easy teaching materials to use", "teaching aids"</i>
Miscellaneous	5.2	<i>"raising parental awareness about their child with disability", "managing feeding and swallowing difficulties", "music therapy", "the right communication training for parents"</i>
Teaching strategies and managing behaviour	5.0	<i>"the right teaching method" "teaching techniques for speech therapy", "how to interest and engage [PWCD] in activities"</i>
Working together with SLPs	4.1	<i>"joint workshops with SLPs to introduce simple methods to rehabilitate these children", "many [PWCD] undergo therapy at the hospitals... I want to know about this therapy so I can supplement it here and not undermine therapy"</i>
Social skills training	1.2	<i>"how to play in a group", "way to prevent extreme shyness and help them speak with the public"</i>

with SLPs. Indeed, many workers requested that SLPs be situated within CBR centres in order that their clients could be better served.

Global Priority Training Needs

The final section of the questionnaire asked workers to reflect upon all the training needs they had identified and to select their most important priorities. As mentioned earlier, this survey also covered training needs according to the domains of common CBR activities (health, education, social, livelihood and empowerment), the results of which will be described in a forthcoming paper. 261 workers (62.0%) responded to this section. Of interest to this paper was the fact that the highest number of workers (53.2%) identified some aspect of communication rehabilitation as the most pressing priority.

DISCUSSION

In terms of the sample, the fact that respondents were predominantly female was representative of the Malaysian CBR worker population. Conversely, the presence of a majority of workers with longer years of experience, who had attended a fair number of training courses and completed secondary or post-secondary education, reflected the large number of CBR supervisors in the sample (71%). This statistic leads to the speculation that more opportunities are given to supervisors to attend training courses, and may imply that general workers do not have such access.

Given the limited numbers of SLPs in Malaysia (Van Dort et al, 2013), it was no surprise that the majority of workers ($n=320$; 76%) had never worked with SLPs. This is unfortunate, especially given the high prevalence of persons with communication disability, with 61.4% of workers noting they often encountered such clients. This statistic resonates with the study done by Hartley and Wirz (2002) which demonstrated that many persons with disability who access services at CBR centres have communication disability. Surprisingly, only 11.6% reported a lot of difficulty in working with persons with communication disability while the majority reported 'only some' (80.5%) or 'no' (5.7%) difficulty. Conversely, when difficulty level was cross-tabulated with need for training, the chi-square statistic was significant ($\chi^2 = 7.26$, $p < 0.005$). Many who had noted 'no' or 'only some' difficulty, still perceived the need for a lot of training (85.3%). Indeed, 86.4% of all workers wanted a lot of training. It may be speculated that workers were more comfortable with describing their own training needs rather than

confessing their difficulties. Thus it appears that, given their frequent encounters with persons with communication disability, workers perceived the need for more training and collaboration with SLPs.

Interestingly, educational level did not seem to affect worker perceptions of difficulty in managing persons with communication disability. However, those with a lot (> 10 years) of experience were more likely to perceive significant difficulty in working with these clients ($\chi^2 = 5.82, p < 0.05$). Such workers, one could speculate, were more confident and comfortable in mentioning difficulties. Also, they may have been more aware of the significant difficulties they faced. Additionally, workers who were younger (≤ 35 years) were also more likely to perceive significant difficulty in dealing with persons with communication disability ($\chi^2 = 4.83, p < 0.05$) since they were more aware of their limited expertise. On the other hand, frequency of SLP-related courses attended and contact with SLPs had no significant effect on perceptions of difficulty. One could speculate that the meagre training and on-the-job support provided had not been sufficient, and was the reason for workers with the necessary attributes also feeling no different from the rest.

When participants expressed in their own words the specific training needs for communication rehabilitation, it was heartening to note that 97.1% of responses were all relevant to the management of persons with communication disability. This indicates that the workers in the sample did have some knowledge about communication disability and were able to use relevant vocabulary to express such needs. This positive outcome could perhaps be attributed to the fact that they had all recently attended a workshop on communication disability. Even so, they must have been aware of the problems to have expressed these needs, albeit very generally. For example, rather than asking for training in language stimulation techniques, workers requested training so that they "could communicate more easily" with their clients. This could indicate a general lack of specific knowledge about speech-language pathology. Consistent with the study of Deepak et al (2002), training need for sign language, Makaton and other types of AAC was most commonly mentioned. AAC was not covered as a specific topic in the recently attended workshop; however, it was noted that many workers asked about the management of non-verbal clients during the Q&A sessions, and the use of AAC was briefly discussed. Two other factors could explain this need for AAC training. Traditionally, workers are expected to be responsible for basic rehabilitation. As a result, sign language and other inexpensive alternative communication methods (e.g., communication boards) have been commonly

taught skills. This is understandable, given the fact that verbal communication for many persons with communication disability requires comprehensive assessment and specialised skills. It would possibly account for workers identifying sign language and other types of AAC as basic skills to be acquired. Additionally, many persons with disability who are enrolled in Malaysian CBR programmes are those with moderate to severe disabilities (Rashid, 2004). Consequently it is speculated that many of them would have significant communication disability that requires AAC.

The second most common need that was identified was for more training courses on communication disability. Workers clearly perceived that the training they received was insufficient, especially since short training courses are the norm. The third most common training need pertained to developing verbal language and speech among persons with communication disability. However, the placing of oral motor exercise in an almost causal relationship with verbal language points to faulty understanding. The reason for this could be faulty teaching, traditional beliefs and, above all, because workers did not have enough contact with SLPs. Another common need was specific training for particular client groups. Many types of client groups were identified; among these developmental disabilities made up a large section. There were also workers who required help with clients who did not “follow instructions”, which may have been either a problem in understanding language or perhaps a behaviour management issue. However, behaviour management issues are often linked to communication disability. What became clear from this example and the other needs expressed was that workers were thinking of real clients and wanted to solve commonly experienced practical problems. It is therefore important to provide on-site support or supervision for grassroots workers if they are expected to assist in the management of persons with communication disability. This support could be provided by more experienced supervisors, in collaboration with SLPs.

One point of difference from the study by Deepak et al (2011) was that workers did not, in general, want training in hearing aids. The most likely factor, it is speculated, is that clients with pure hearing impairment may not be a significant client group in CBR. Malaysia has historically had a stronger special education programme (day and residential schools) for such clients. Even so, CBR centres may encounter clients with multiple handicaps and hearing impairment; thus, training in hearing aids, would still be necessary for workers.

Overall, workers' recognition of their critical need for training in communication rehabilitation is best reflected by the finding that 53.2% (the highest number of workers) prioritised this need. A lack of knowledge and skills in managing persons with communication disability explains this result. This finding is different from the finding of Deepak et al (2011), which showed that workers from 7 different countries ranked advocacy, lobbying, legal protection and using a human rights-based approach as global priority needs. Thus, consistent with Kuno (2007), this study indicates that CBR in Malaysia, at present, follows a predominantly medical rehabilitation-based approach. At the same time, the data regarding CBR activities that are commonly engaged in (which will be discussed in a forthcoming article) shows that empowerment and livelihood activities are on the rise.

CONCLUSION

The workers' ability to identify relevant and specific training needs means that they often encounter clients with communication disability. It appears that workers are generally aware of communication difficulties even though their knowledge is limited, and they may not be able to fully understand the complexities involved and do not know how to help. Moreover, they indicated that training in this area is crucial. Thus, there is an urgent need for Malaysian SLPs, although limited in number, to become involved in CBR work. This involvement, it is speculated, can be both at the level of the DSW which offers training courses for workers nationwide and at the local level. For instance, SLPs and other personnel could work more closely with the department to develop a more comprehensive basic worker training course which is of longer duration. At the local level, SLPs employed at government hospitals to provide public health services, could collaborate with local CBR centres. Following the example of their more established physical and occupational therapy colleagues, they could provide periodic and ongoing workshops for workers. Training would of course be basic, for example training in screening and referral activities, sign language and verbal language facilitation techniques. Additionally, workers can be aided to problem-solve specific challenges encountered by their clients and their families. Innovative methods of delivering training modules, such as through the Internet, could be developed. In this role, SLPs provide services to the community rather than individual services to particular clients. This community service role as suggested by McAllister et al (2013) is crucial in countries with

overwhelming demand for SLP services which can never be met by traditional models of service delivery. A flexible framework wherein SLPs use a variety of service models (both community and individual) will ultimately increase the accessibility and equitability of services. Possibly, in the long term, there will also be the establishment of more direct allied health services within CBR. Working together with CBR will also benefit SLPs to become more aware about the multisectoral nature of disability work. These collaborations with workers can thus enhance and inform SLP training (Van Dort et al, 2013). Furthermore, working with the community will help increase knowledge and skills, and raise community awareness about communication disability. This will benefit persons with communication disability, and also help address environmental and attitudinal barriers.

Limitations

The quantitative findings are not generalisable to the population since a convenience sample was used. At the same time, the details about the sample of workers across Malaysia, of varying educational and experiential backgrounds, who were predominantly female and in supervisory roles, provides a background for the findings. Furthermore, the qualitative data collected was sufficient to provide a deeper understanding about workers' perceptions of their training needs.

This study assumed that workers were able to correctly identify persons with communication disability. The authors believe this to be a reasonable assumption, given worker roles in interacting closely with persons with disability. Another study limitation was the written format. A large number of workers chose to give very short and general written answers, using the guided examples quoted in the descriptions for the various sections. This may have affected the quality of the data recorded.

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