

## CHAPTER 5

### CONCLUSIONS AND CLINICAL IMPLICATIONS

#### 5.1 INTRODUCTION

In this chapter the conclusions, based on the results of this study, are discussed. The possible resultant clinical implications are then described. The study is evaluated in terms of its strengths and limitations. Finally, potential directions for further research are recommended.

#### 5.2 CONCLUSIONS

The purpose of this study was to determine the effect of voice output on the attitudes of peers to a child with physical disabilities and LNFS using an AAC device. The research results confirmed the hypothesis that the provision of voice output would result in more favourable attitudes of unfamiliar peers to a child with physical disabilities and LNFS. The hypothesis that girls would have more positive attitudes than boys toward a peer with disabilities and LNFS was also confirmed.

Initial attitudes toward the peer with physical disabilities and LNFS were measured according to three dimensions: affective/behavioural, cognitive/belief and communication competence. Attitudes were more positive towards the child with LNFS who used the device with voice output across all three dimensions. The greatest variance was noted in participants' responses to statements in the communication competence dimension and the least variance noted in the cognitive/belief dimension.

The CADAQ questionnaire represents an attempt to devise a new measure for the study of peers' attitudes to a child with physical disabilities and LNFS. The CADAQ is based on the theoretical constructs of attitude formation and the importance of peers' evaluations of the communicative competence in their initial appraisal of a child with LNFS. It was devised with careful consideration of similar measures and the requirements of devising a Likert-type scale. The CADAQ proved to be sensitive to differences in peers' attitudes towards a child with

disabilities using an AAC device and, with refinement, may be a useful aid to determine the effect of clinical programmes to improve children's attitudes to peers with disabilities and LNFS.

### **5.3 CLINICAL IMPLICATIONS**

#### **5.3.1 Voice output on initial attitudes**

The results of this study support the provision of a device with voice output as a means of promoting more favourable initial peer attitudes towards a child with disabilities and LNFS. The AAC team should, therefore, motivate for appropriate devices with voice output as part of their AAC system to be provided to children with disabilities and LNFS. A device, however, is only part of the equation to promote the interaction of a child with disabilities and LNFS with peers. The peers need to be made aware of what it is like to have LNFS and should be informed of how to interact and communicate with the child using an AAC system. Peers should be taught technical and communicative strategies to facilitate successful interactions and be encouraged to allow sufficient time for the AAC user to formulate messages. Likewise, the AAC user needs to be taught strategies for effective social interaction. Facilitation of interaction between peers and the AAC user should be continued until spontaneous, functional and independent communication readily takes place.

The AAC user should always use the most effective mode (i.e. the most efficient, including fastest rate and most accurate as well as being the most appropriate means of expression) dependent on the situation, the communication partner, the environment and the message. Voice output not only has the advantages of attracting the targeted listener's attention and of generally being intelligible even to unfamiliar partners, but also promotes more favourable initial attitudes of peers to a child with physical disabilities and LNFS.

#### **5.3.2 Accommodation of gender differences in initial attitudes**

The study supported the finding that girls have more positive attitudes toward peers with disabilities and LNFS. Boys, having less favourable attitudes towards peers with disabilities and LNFS, should receive a more intensive disability awareness programme and receive greater facilitation and increased support in their attempts to interact with peers with disabilities and LNFS.

Consideration of the participation model of communication should focus on strategies to allow children with LNFS, especially boys, to meet the participation patterns of male peers. This can be facilitated by providing appropriate colloquial vocabulary and making provision for interactions, for example joke telling, that constitute the expected communication patterns of boys of this age group by the AAC user.

### **5.3.3 Programmes to reduce stereotyping**

The findings of the current study reinforce the need to promote understanding of peers and reduce stereotyping of children with LNFS. Negative attitudes towards children with LNFS will result in distinct disadvantages with respect to educational, vocational and community-based opportunities (Ruscello *et al.* 1988). Peer perceptions and attitudes are important to the personal and educational progress of all students and negative attitudes may have an adverse effect on the educational progress of pupils with disabilities and LNFS. The crucial role that peers can assume in the education of all pupils, disabled or not, through peer tutoring and support strategies is increasingly recognised (Uditsky 1993). Intervention strategies to improve peers' attitudes are thus essential.

### **5.3.4 Facilitation of integration and inclusion**

The research participants were allocated time to ask questions after they had completed the questionnaires. Their questions revealed extremely limited exposure to peers with disabilities and, consequently, a great deal of ignorance as is typical of children in segregated educational systems. However, the research participants also evidenced a tremendous interest in the lives and experiences of peers with disabilities and LNFS. Their questions, related to the vocational, procreational and social implications of the disability of the child with LNFS, demonstrated a depth of concern not expected by the researcher. The pupils wished to know whether the child with disabilities and LNFS could follow a normal educational programme and were interested in what types of employment were possible for adult AAC users. They inquired about the videotaped subject's social life, relationship to friends and his recreational pursuits. Numerous issues, including whether he would be able to marry and father a normal child, were also raised.

Some of the research participants indicated an interest in meeting with the videotaped subject and the need for additional exposure to peers with disabilities was clearly evident. The research participants have not had the opportunity of experiencing friendships with peers with disabilities. Inclusive education has the potential of enriching children's lives and contributing to positive change resulting in youth that are more caring, responsible and accepting of diversity. These outcomes are not automatic, however, and can only be achieved with effort and the implementation of effective strategies to facilitate interaction and solve problems that may arise. Fundamental is the acceptance of an educational policy based on the rights of all to be included in a values based education.

## **5.4 CRITICAL EVALUATION OF THE STUDY**

Both positive and negative aspects of the study are presented.

### **5.4.1 The isolation of the voice output variable**

The manner in which the methodology was structured, to result in the isolation of the output mode variable, was considered a strength. This was achieved by using only one videotaped conversational extract, which was then copied and the voice output edited out. Furthermore, the VOCA was adapted more closely to resemble an alphabet board by the use of an overlay and by using it in spell mode. In this way, variables such as message length, conversational turns, conversational content and message encoding were eliminated.

The disadvantages included possible confusion of participants in following a message letter by letter when the AAC user corrected a placement error. Conversant with the DeltaTalker™ keyboard, he automatically corrected any errors by touching the 'delete last selection key' which appeared as a blank area on the overlay. In addition the 'space key' was activated between each word spelt and this too was not marked on the overlay. In observing the participants while they viewed the videotape, none showed evidence of confusion. Being unfamiliar with AAC methods, the participants merely seemed to note that the user spelt out his messages and they did not tend to follow each keystroke.

#### **5.4.2 The development of the questionnaire**

A second strength of the study was the development of the attitudinal scale. The questionnaire (CADAQ) was based on well-recognised theoretical constructs of attitude formation and communicative competence in addition to previous measures designed to determine peers' attitudes toward children with disabilities. Consideration was also given to scales designed to measure adults' attitudes towards persons with disabilities and other adults with LNFS. The advantage of the CADAQ over previous measures such as the CATCH was the addition of the communicative competence dimension in addition to the attitudinal dimensions. It was designed with children aged 11 years 0 months to 13 years 6 months in mind and was readily understood by the research participants, who were from this age range. The participants found it easy to complete and identified with the questions asked in it, and their involvement was obvious from the questions they posed after completing the questionnaires.

#### **5.4.3 Limitations of the study**

Several limitations of this study are apparent:

- The participants were from a limited urban geographical area and represented a narrow socio-economic group. Accordingly, results can only be generalised to this group.
- The study used only one child with physical disabilities and LNFS and quite different results toward a different AAC user may possibly have been revealed. Initial attitudes are influenced by factors such as physical attractiveness, gender and attire. In addition, the degree of severity of the disability of the child could influence initial peer attitudes.
- The small number of research participants (N=115) was a limitation of the study and, in addition, limited the statistical procedures that could be applied, e.g. it was not possible to do a factor analysis of the items of the questionnaire.
- The use of a questionnaire as a method of data collection had limitations and whether stated attitudes as determined by the CADAQ would be translated into overt behaviour is questionable (Fiedler & Simpson 1987).

- The internal consistency could be improved by the deletion of statement 26, which is ambiguous. Reliability could also be substantiated by correlation with an accepted attitudinal scale and by factor analysis using larger samples. Test, retest reliability has not been established.
- The voice output lacked intelligibility and also had a marked American accent. The VOCA used was a DeltaTalker™, which utilised synthesised speech, namely Dectalk (Perfect Paul voice option). The lack of intelligibility was especially apparent with respect to words such as 'webpages' and 'Frontpage'. This lack of intelligibility, as well as the American accent of the synthesised speech, may have influenced the attitudes of the peers who watched the video with speech output.

## **5.5 RECOMMENDATIONS FOR FUTURE RESEARCH**

Directions for further research include the following:

- A study of the actual interactive behaviours of peers to children with physical disabilities and LNFS using various AAC devices in various community environments including natural settings.
- The design and evaluation of a programme aimed at increasing peers' awareness of the communication difficulties experienced by children with LNFS. The programme would include strategies to modify the interactive behaviours of peers towards children with disabilities and LNFS and to compare the effectiveness of applied strategies.
- An investigation to compare the effect of various types of voice output of VOCAs on the attitudes of peers with the aim of facilitating the development of improved synthetic speech options. The study would need to include evaluations by VOCA users.
- The interaction of the AAC device used with other factors that are known to be important in the formation of initial attitudes to peers related to communicative competence factors.

- Additional studies with a larger group of participants to evaluate the psychometric properties of the CADAQ and with correlation to the CATCH in order further to validate the CADAQ.

## **5.6 SUMMARY**

The conclusions of the research with respect to the aims of the study were presented at the beginning of this chapter. The clinical implications of these conclusions were then discussed, followed by a critical evaluation of the study leading to recommendations for additional research.