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The use of augmentative and alternative communication in Cyprus: Findings from a preliminary survey

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Abstract

Whilst augmentative and alternative communication has been used for over sixty years across many countries, in Cyprus it remains underdeveloped. The current study seeks to investigate the current AAC practices in Cyprus. Data were collected through electronically distributed questionnaires to all registered speech and language therapists (n = 330), contacted by the Cyprus Speech Therapy Association. The questionnaire comprised 12 questions, which were categorized into three sections: background information (educational level and clinical experience), training undergone (during or after completion of tertiary education) and participants' AAC practices (caseload, assessment and intervention). The findings from the analysis of the returned data (n = 59) reveal that training provision on augmentative and alternative communication has positively influenced practice. Most of the participants received training in the specific field during their bachelor's degree, rather than during later education. Life-long training on different language systems (including different assistive technology tools, such as symbols and talking products as well as methods such as the Picture Exchange Communication System) also played a pivotal role in their work. Regarding the assessment process, the findings show that whilst there are a number of standardized language assessment tools, the participants relied heavily on non-standardized tools and/or their clinical judgment. Regarding intervention, they reported using different language systems and a variety of Assistive Technology equipment. Several recommendations are made aimed at raising the profile of AAC services in Cyprus, especially with regards to training and assessment, as the findings show that these areas have not been addressed systemically thus far.

Keywords

augmentative and alternative communication, Cyprus, people with complex communication needs, speech and language therapy

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1 Introduction

Augmentative and alternative communication (AAC) refers to all forms of communication that can be used to support, either temporarily or permanently, people with little or no functional speech, so they can communicate with others (Glennen and DeCoste, 1997). Its positive benefits have been documented extensively for both developmental and acquired disorders for people of all ages (Beukelman and Mirenda, 2013). At the international level, AAC practices originate from the 1950s, when professionals noticed that despite the years of exposure to traditional speech therapy intervention, some individuals with complex communication needs (CCN) were unable to develop functional and meaningful speech (Zangari et al., 1994). This was due to a wide range of health conditions, that concern body structures and functions. In conjunction with the environmental and personal factors, these influence activities and participation (World Health Organization, 2001; International Communication Project, 2014). However, it was not until the 1970s that AAC became a field in its own right (Alant et al., 2006; Zangari et al., 1994). In Cyprus, documentation regarding AAC practices has mainly been restricted to those developed by speech and language therapists (SLTs) servicing people with CCN. Moreover, the application of AAC rehabilitation regimes by SLTs, in Cyprus, appears to be a recent phenomenon as reported through informal conversations. Services within public school settings began in 1985 through an initiative by the Cyprus Ministry of Education and Culture (MoEC) involving the employment of SLTs (Mavrou, 2011). MoEC regulates the identification of pupils with disabilities and their placement in educational settings with special educators and therapeutic resources.

People who experience CCN comprise a heterogeneous group in terms of their skills and abilities, with a variety of difficulties. Amongst others, these are, difficulties with social language use (Agius and Vance, 2005), cognition (Erickson and Geist, 2016), motor skills (Geytenbeek et al., 2010) and constraints with understanding different symbolic forms (Pampoulou, 2015). It is widely accepted that comprehensive AAC assessment is crucial for the provision of effective services and hence, the importance of this initial step of support cannot be underestimated (Binger et al., 2012; Wilkinson and Rosenquist, 2006). Such assessments are neither simple nor easy, for they need to cover elements, such as language and communication, symbolic understanding, the appropriate assistive technology (AT) equipment, the method of access as well as personalization (Dietz et al., 2012; Glennen and DeCoste, 1997). By employing effective assessment tools for people with CCN, AAC intervention plans can be developed with more confidence that they are appropriate and hence, more beneficial for the user (Dietz et al., 2012; McDougall et al., 2012).

The Participation Model has guided the procedure of AAC assessment since 2005 (Beukelman and Mirenda, 2005) and it is consistent with the International Classification of Functioning Disability and Health (Threats and Worrall, 2009). Its proponents recommend an organized, consistent and systematic way of performing the related assessment, which must be driven by the Evidence Based Model (Sackett et al., 1996). The model provides a framework for an assessment that takes into consideration the existence of communication participation patterns, the barriers to participation in communication situations, the effectiveness of previous strategies to enhance participation and the potential for new strategies to enhance communication (Beukelman and Mirenda, 2005). Due to the nature of the difficulties that those with CCN experience, a comprehensive AAC assessment requires the knowledge of different professionals (Binger et al., 2012; Dietz et al., 2012; Glennen and DeCoste, 1997). Regarding the assessment of Greek speaking individuals, in the past 15 years there has been an increasing number of language tests available for clinicians to use focusing on both receptive and expressive language skills. The utility of these tests has been examined and it has been ascertained that they can be used with some modifications specific to the Cypriot-Greek variety of the language (Theodorou et al., 2016). Due to the complex difficulties

that people with CCN experience, adaptations of these assessment tools to match the needs of the users, are often part of the assessment itself (Geytenbeek et al., 2010; Glennen and DeCoste, 1997).

Furthermore, the AT assessment includes matching the needs and skills of the person with the available tools taking into consideration the environment in which they will be used (Brady et al., 2014; Cook and Hussey, 2002; Wilkinson and Mitchell, 2014). Briefly, these tools can be classified as being low to high technology, depending on the technological requirements needed for their operation. Low-technology systems can be photographs or line-drawings symbols such as the Makaton and Widgit symbols. At a more sophisticated level, light-technology refers to those systems that need batteries to operate and include a number of different talking products, such as talking tiles, palm pen and the photo album, whilst high-technology systems require recharging to operate, for instance, speech-generating devices, tablets and even computers.

In Cyprus, the AT team appointed by MoEC conducts the assessment for students who have been referred and decides whether AT is needed and if so, what form is appropriate for each case (Mavrou, 2011). A further issue relating to AT delivery pertains to the implementation of the AAC systems by the SLTs. In a study conducted by Wright et al. (2006) in England, the views of SLTs and education staff regarding the assessment and delivery of AAC systems as part of the Communication Aids Project were evaluated. It emerged that professionals supporting AAC users, not only needed to be informed about the assessment outcomes, but also be required guidelines on how these systems can be used. Similarly, in Cyprus, Mavrou (2011) found that many professionals working in school settings lack the knowledge of how AT can be used beyond support sessions (e.g. speech and language therapy session) they provide. Furthermore, the American Speech-Language Hearing Association (ASHA) has advocated that part of the responsibilities of SLTs, who support AAC individuals, is to: 'acquire and maintain the knowledge and skills that are necessary to provide quality professional services' (American Speech-Language-Hearing Association, 2004). However, professionals often feel inadequately prepared to provide AAC support to individuals who might need their services (Marvin et al., 2003; Sutherland et al., 2005; Wormnaes and Malek, 2004). Consequently, SLTs tend to focus on eliminating the underlying impairment of people with CCN (Cherney et al., 2008; Dietz et al., 2012), rather than focusing on enhancing their communication competencies.

Costigan and Light (2010) explored preservice AAC training for undergraduate students by conducting a systematic literature review focusing only on English published papers (this included the US, the UK, Australia and Egypt). It emerged that only limited training on AAC is offered by tertiary programmes in the different parts of the world that the study took place. In another paper, Dietz et al. (2012), focusing on the AAC assessment and clinical-decision making by SLTs, found that the training provided for SLT undergraduate students is insufficient to support their clinical practices for people with CCN. One way that some participants addressed their minimal knowledge of AAC, was by undergoing intensive additional training after qualification (Dietz et al., 2012).

In Cyprus, this type of training is offered by the Pedagogical Institute of MoEC to all educational staff (including speech and language therapists) at the beginning of every year, as a two-day course (Fthiaka, 2007). However, this is just one of a number of topics covered and it is not offered yearly on a systematic basis. In addition, training for different AAC language systems has been provided. Despite the fact that these AAC systems have been delivered in several countries of the world for more than 20 years (Bondy and Frost, 1994; Grove and Walker, 1990; Lorah et al., 2013; Porter and Cafiero, 2009), in Cyprus, this only started quite recently. Specifically, the first training provided on AAC language systems was in 2005 for the Makaton Vocabulary Development Project, followed in 2007 for the Picture Exchange Communication System (PECS) system and in 2014, for the Pragmatic Organization Dynamic Display (PODD). Training provision on language

systems is provided only for these three and it is not offered systematically. Given the current situation, it seemed vital to explore AAC services delivery by SLTs in Cyprus.

II Research aims

The current study was aimed at collecting descriptive information regarding the current AAC practices by SLTs working in Cyprus in order to address three research questions:

1. What training related to AAC these SLTs received?
2. What are SLTs' AAC practices in terms of assessment for the population they support?
3. What modes of communication do SLTs use in their AAC practices?

III Methodology

The questionnaire (Appendix 1) comprised 12 questions categorized into three sections: background information (educational level, clinical experience), training undergone (during or after completion of tertiary education) and AAC practices (caseload, assessment and intervention). Most of the questions had multiple-choice answers, thus aiming to minimize the time for completion (Gillham, 2000). Following Gillham's (2000) guidelines, the questionnaire was piloted in January 2016 in order:

1. to ensure that the wording of the questions and responses provided would be clear to the potential respondents;
2. to check whether the questionnaire was perceived as an instrument capable of achieving what it was supposed to do (face validation); and
3. to confirm that this instrument was valid for measuring what it was created for (content validation).

The questionnaire was initially reviewed by the authors of this article and, later, by another expert in the field. Subsequently, it was given to two other people who shared similar professional roles as the potential participants. During this collaboration, those involved were asked about such matters as: 'Do you understand what is asked in each question and the options that are given as answers?', 'Do you think that this questionnaire is appropriate for addressing the research questions of the current project?'

The changes made mainly concerned the wording of the questions and their order in the questionnaire. Additional options were included in the multiple-choice questions, such as tablet and computer as part of the technology professionals use (Appendix 1). Ethics approval was granted by the Cyprus National Bioethics Committee responsible for the research projects undertaken under the auspices of Speech and Language and Research and Rehabilitation Laboratory (TheraLab) of the Cyprus University of Technology. The questionnaire was submitted as a link on Survey Monkey via email to the Cyprus Association of Speech Therapy, which forwarded it to all its members (n = 330) with an information letter included in the main body of the e-mail as well as on the first page of the online survey. In the letter, information about the purposes, the importance of the study and the protection of personal data (anonymity) were included. Additionally, participants were informed that the completion of the questionnaire implied that they had given their consent to participate. The questionnaire was available online for 30 days and three reminders were sent via email in order to maximize the response rate. Of all the 72 questionnaires returned, 59 were completed in full and thus, constituted the final data analysis pool. All the selected answers on the completed

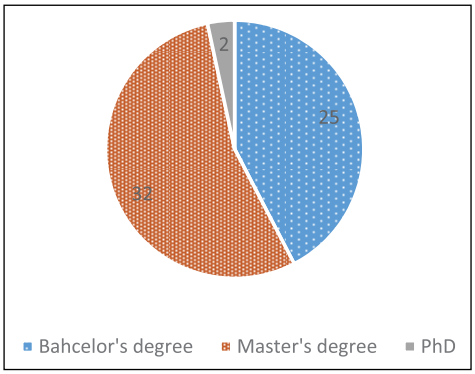

Figure 1. Level of tertiary education. Figure 1 and 2 concerns the first part of 'Findings: *I Background information*'.

questionnaires were transferred onto an Excel spreadsheet. The number of participants who replied to each question was detected and the discussion below is based on those numbers.

IV Findings

In this section, the findings from the questionnaire are presented.

1 Background information

The first question asked was 'What is the highest degree you have received', and most of the participants responded that they held a bachelor's degree ($n = 32$) and slightly fewer a masters degree ($n = 25$) and two had a PhD qualification (Figure 1). The second question asked was 'How many years of work experience do you have', and the findings are illustrated in Figure 2, in conjunction with those of the third question, which probed participants to describe their work environment. Regarding the participants' employment in the public sector, Figure 2 represents the responses of 57 participants as two had not been recruited into it. The majority of SLTs ($n = 13$) were recruited by MoEC during the period 2001–05. Three participants had worked in public sector for less than five years, five between 16 to 20 years, whereas three had worked for in the sector for more than 21 years. Thirty-one participants worked for the private sector of whom, 25 had work experience of less than 10 years, while the remaining six had more than 10 years.

2 AAC training

The second section of the survey focused on the AAC training obtained and the respondents were asked: 'Did you attend any class on augmentative and alternative communication during your studies?' As shown in Figure 3, the participants ($n = 40$) had attended one or more classes specific to AAC during undergraduate studies and/or postgraduate studies. Seventeen of the participants ticked that they had never attended classes relevant to AAC.

Next, the responders were asked to answer whether they had 'attended any seminars related to augmentative and alternative communication?' Fourteen responded that I 'have not attended any relevant seminar' and, consequently, the discussion below pertains to the other participants, who indicated that they had had some training. As shown in Figure 4, the majority reported being trained in the PECS program ($n = 43$), followed by the MAKATON ($n = 29$) and then PODD ($n =$

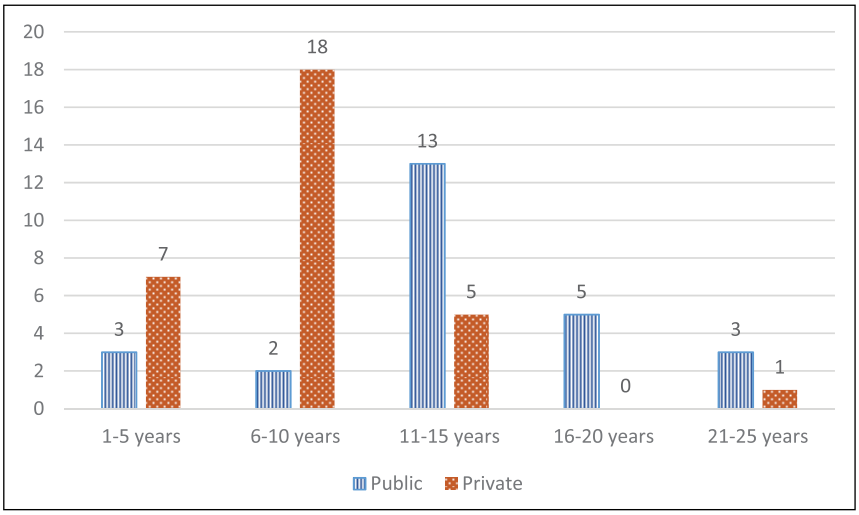

Figure 2. Work experience and work placement.

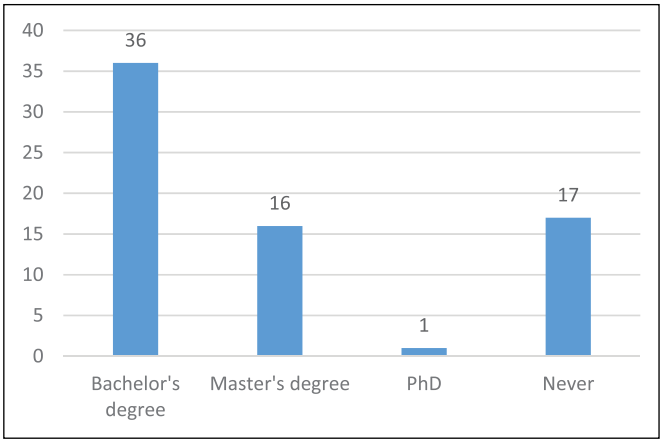

Figure 3. AAC training during educational studies.

3). Over half the participants ($n = 23$) ticked both options (PECS and MAKATON), and one scored all three. In the comments area provided with this question, four stated that they had received training on Grid 2, one on Symwriter and one on Keyword Signing.

3 AAC assessment practices

The participants were, initially, asked to indicate the number, age and the disorder of people who were receiving AAC support from them at the time of the survey (Question 6). As shown in Figure 5, only a minority of respondents ($n = 7$) were supporting people over 15 years old ($n = 11$). These were those with cerebral palsy ($n = 4$), Rett syndrome ($n = 1$), Down syndrome ($n = 2$), autism spectrum disorders ($n = 1$), psychomotor delay ($n = 1$), aphasia ($n = 1$), and verbal apraxia ($n = 1$).

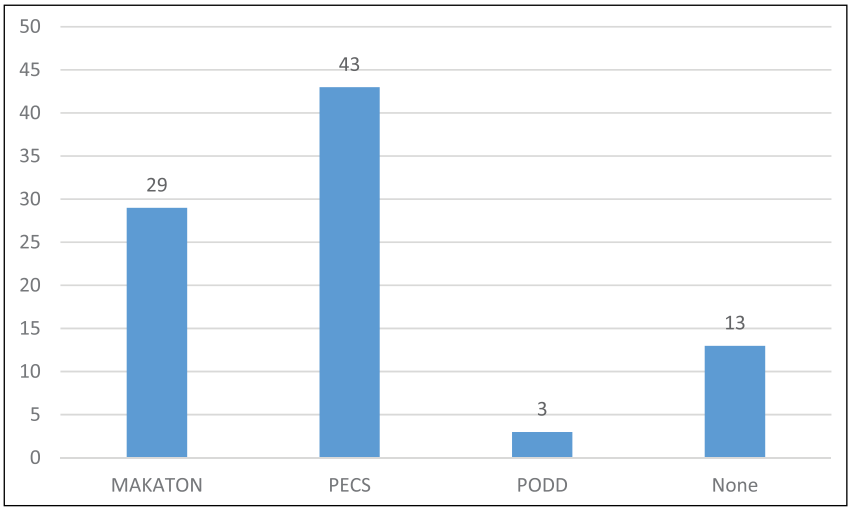

Figure 4. Seminar attendance related to AAC.

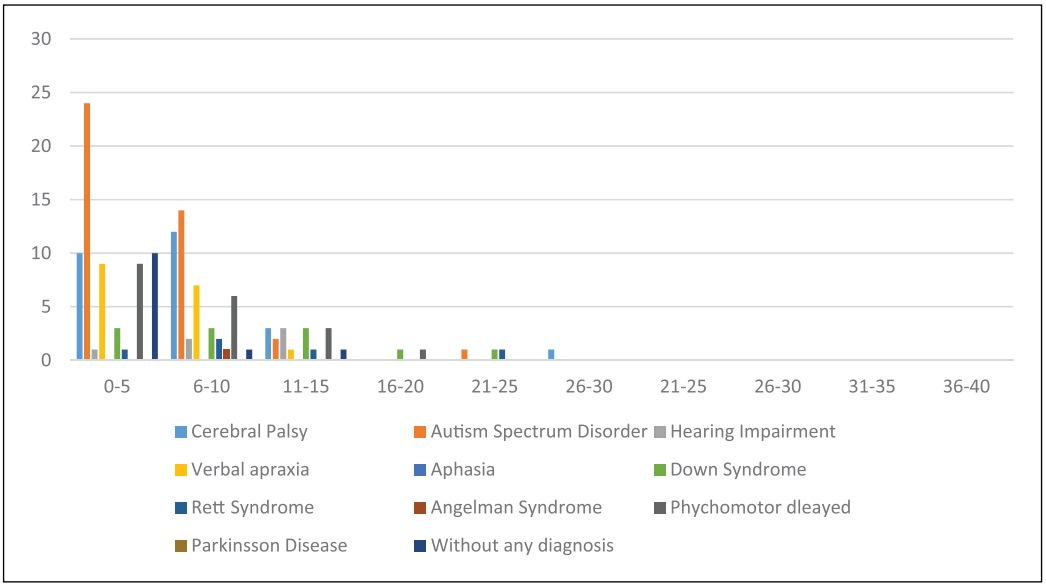

Figure 5. Population provided for by the participants.

The majority of respondents were providing AAC services under 15 years old (n = 107). These covered cerebral palsy (n = 26), autism spectrum disorders (n = 41) psychomotor delayed (n = 19), Down syndrome (n = 11), hearing impairment (n = 6), Rett syndrome (n = 5), and a child with Angelman syndrome (n = 1). Twelve of the individuals receiving AAC services were, at the time of the survey, undiagnosed, which might have been because the diagnostic procedure was still in progress, or the specialists were still not clear regarding the diagnosis. Finally, none of the respondents were supporting adults with aphasia or Parkinson disease.

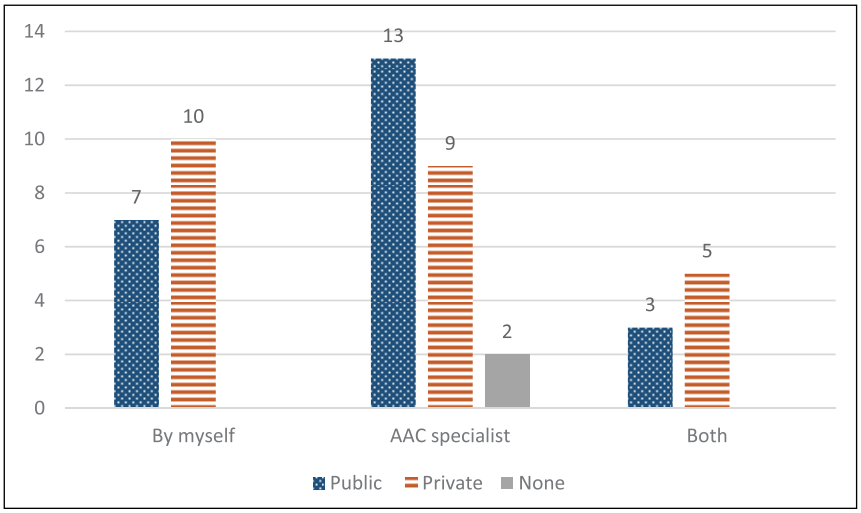

Figure 6. Individuals responsible for conducting AAC assessments.

Shifting the attention to the assessment, the seventh question was: 'Who assesses a person needing augmentative and alternative communication support?' and the options given were the SLTs themselves or another colleague specializing in the field. Most of the participants (n = 22) indicated that the latter was the case (Figure 6). Thirteen working in public sector and nine participants working in private sector indicated that a specialist colleague conducted the assessments for those who might need AAC support. Seventeen participants, 10 in the private sector and seven in the public, ticked themselves as the assessor of individuals who might need AAC support. In addition, eight ticked both options (i.e. me and another specialist).

Those participants who mentioned that they acted as the main assessor were also asked to indicate whether they used any formal assessment tools, and if yes, which ones (Question 8). Twenty-five respondents (two of them skipped the question) said that they did not use any in the assessment procedure and 17 commented that they applied their clinical judgment.

4 Modes of communication use

The tenth question asked the responders to choose which language systems they use. It was not surprising to discover that PECS (n = 31) and MAKATON (n = 19) were most commonly used, given that these two were the sets that most participants had received training in. Twenty-three had received training on both AAC systems, albeit the use of these systems in their practices varied substantially. Half of them reported using both systems (n = 11), whereas three used just PECS, three only MAKATON, five none of them and one person mentioned that he/she used the Grid 2 software. See Figure 7.

Question 11 asked 'Which of the following communication symbols do you use with people with complex communication needs?', and a number of different choices were given. It emerged that participants were more inclined to use aided modes of communication, such as pictures (n = 53), photos (n = 41), objects (n = 41) and/or commercial symbols sets (n = 37). They also used unaided modes of communication, such as MAKATON signs (n = 13), sign language (n = 19), gestures (n = 19), and/or speech (n = 38). Regarding the commercial symbol sets, whilst there are

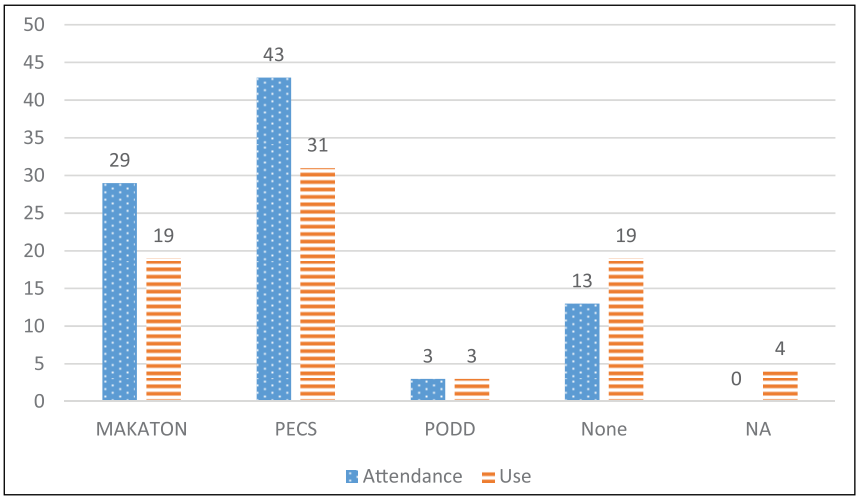

Figure 7. Seminar attendance and use of AAC systems.

different ones (such as Makaton, Pics, and Widgit), a choice set was purposively avoided in the survey. This was because findings from a recent research project show that SLTs and special education teachers working in mainstream public schools in Cyprus are confused about the terminology related to the different graphic symbol sets (Pampoulou, 2015). See Figure 8.

The last question probed: 'Which of the following types of assistive technology do you use with people with complex communication needs?' As Figure 9 shows, the majority indicated that they used computers (n = 28) and tablets (n = 29) and/or printed communication boards (n = 20). Further, mid-level technology tools were also incorporated into some of the respondents AAC practices, including switches with single (n = 17) or multiple messages (n = 9), communication boards with batteries (n = 10), talking albums (n = 10) and talking pen (n = 4). Nine of the participants reported that they did not use any assistive technology tool.

V Discussion

The purpose of the current article is to contribute to the scant knowledge that exists regarding SLTs' AAC practices in Cyprus. In order to collect factual information about current AAC practices in the country, an online questionnaire was distributed, via e-mail to all registered SLTs. Whilst the findings from such an approach could be potentially generalized, they are limited in the sense that the information gathered is somewhat descriptive and not rich and in-depth as would be the case with interviews (Patton, 2002). Additionally, despite the questionnaire being piloted, there was a possible lack of understanding of the main topic (e.g. AAC) and misunderstanding of the questions might have occurred. However, this cannot be clarified as the data collection was anonymous (Gillham, 2000). Furthermore, the impersonal way of collecting data through questionnaires could be attributed to the low-response rate (Gillham, 2000).

In terms of the response-rate for the current study, why it was low (18%) can be partially attributed to the fact that AAC practices are sparse in Cyprus and hence, many questionnaires were not returned. The relatively high number of uncompleted questionnaires (n = 16) suggests that whilst some were willing to complete them, lack of knowledge regarding AAC meant they were unable to do so.

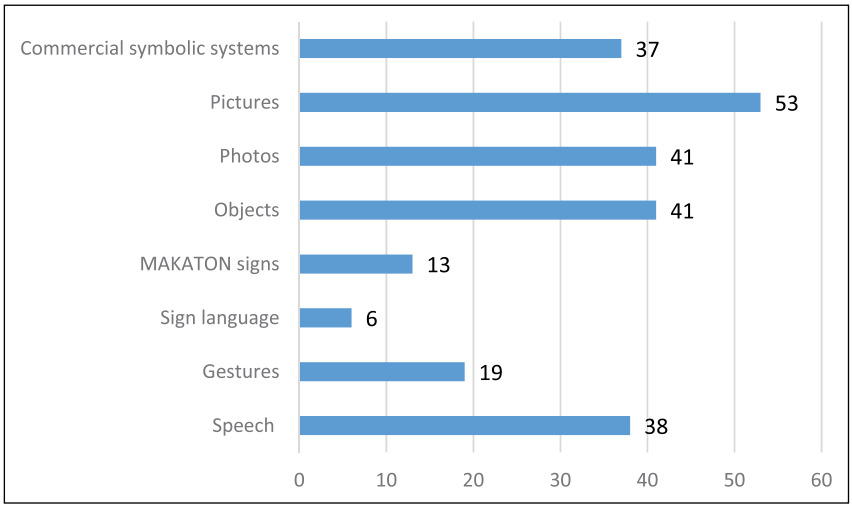

Figure 8. AAC symbolic tools.

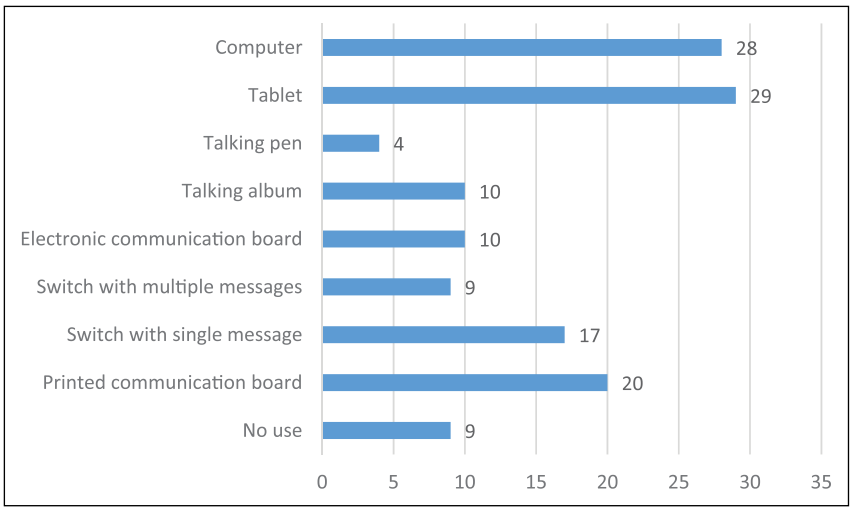

Figure 9. Use of assistive technology.

Prior to discussing the findings regarding the research questions, it is important to comment on the background information selected. The majority of SLTs working in the AAC field, had a bachelor's degree and they were recruited by MoEC during the period 2001–05. This result was anticipated, as in September 2001, the Education and Training of Children with Special Needs Law 1999 was implemented (Mavrou, 2011). As to the low numbers prior to 2001, these might indicate how little attention had been paid at the government level to this matter before this time. Regarding the low numbers in the latter two categories, focusing between the 16–25 years, this can be attributed to the fact that, since 2010, MoEC has recruited just 10 SLTs, on average, per year (Ministry of Education and Culture, 2014: 37). According to reports from MoEC, there is currently little need for the recruitment of additional SLTs, since the number of children requiring services has

been slightly decreasing in recent years (Damianidou, 2015). This could be due to new children who have been referred for special education services in early years schooling being fewer than those who have been leaving school (Ministry of Education and Culture, 2014: 37). In addition, the SLTs that have been recruited since 1985 are relatively young, so very few of them have been retiring and thus, there has been little room for new appointments.

The first research question aimed to explore the AAC training obtained either during or after completion of tertiary education. The findings revealed that learning about AAC, most often, would appear to take place during the bachelor's degree rather than later. This is not particularly surprising given that masters and doctoral studies involve specialization in particular areas. The findings also show that some of the participants had continued receiving training on different AAC language systems, thus suggesting that these were keen on expanding their knowledge in the field. The fact that most of the responders indicated that they were trained in PECS, fewer in Makaton and only three in PODD can be attributed to the frequency of training provided to these systems in the past decade in Cyprus.

The second research question focused on investigating the SLTs' AAC assessment practices, whilst also exploring the population that participants support. Focusing on the population, the findings show that the majority involved children under 15. This could be because despite the Educational Training of Children with Special Needs Law (Ministry of Education and Culture, 1999) mandating that SLT services are provided for all school years, the reality is that only primary mainstream schools do so and, secondary levels (e.g. high school) do not seem to fulfil this obligation. For service delivery in special school settings, SLTs are provided throughout the school years (up to the age of 18, as these students can have three more years of education) (Ministry of Education and Culture, 1999). The fact that none of the responders indicated that they were supporting adults with acquired communication disorders raises a number of concerns regarding AAC services provision to this population. Regarding the person who conducts the AAC assessments, the findings show that those who worked in the public sector were more inclined to ask a specialist colleague to conduct the assessments. This can be attributed to the fact that under the auspices of MoEC there is an appointed team responsible for conducting AT related assessments (Mavrou, 2011). However, whilst there is a great overlap between AT and AAC, they are not the same (Beukelman and Mirenda, 2013), because AAC is not just concerned with aided modes of communication (such as switches and communication devices), for it also includes unaided modes (such as sign language and gestures), which AT does not cover.

The findings also reveal that participants based their assessments on clinical judgment rather on existing formal assessment tests. Regarding receptive and expressive language skills, formal diagnostic tools standardized in Standard Modern Greek, are available. Despite the fact that these assessment tools are not standardized for the Greek-Cypriot population, a recent research project has demonstrated that with the appropriate modifications they can be easily used (Theodorou et al., 2016). It might be the case that the participants were not aware of the existing diagnostic tests or that they considered their cost too high to purchase them. Accordingly, Theodorou (2013) has commented that the assessment procedures in the educational system are selective, depending on the individual judgment and the training of the clinician in charge of the evaluation of the child. This is in contrast to the practices followed in other countries, which are based on the outcomes of formal diagnostic tools administration (COST, 2015–19).

The third research question aimed to investigate the modes (aided and unaided) of communication SLTs use in their AAC practices. The findings suggest that a significant proportion of those who had received training in a particular AAC system (PECS and MAKATON) went on to apply this in their everyday teaching practice. Regarding the type of symbols that participants used in their AAC

practices, it is notable that graphic symbols were more frequently used than spoken or manual symbols. This could be due to no specific knowledge being needed with pictures and photos, whereas this is not so for manual symbols, such as sign language (Glennen and DeCoste, 1997). Another reason could be the cost of the different resources. Pictures and photos can be found for free online, whereas when learning sign language training sessions need to be paid for. the findings demonstrate that the SLT participants used a variety of AT tools in their AAC practices. Computers and tablets were found to be the most dominant AT equipment, which might be because these are available in every single school (Mavrou, 2011; Ministry of Education and Culture, 2014), whilst SLTs working in the private sector would appear to have purchased their own such equipment.

To summarize, one of the key findings of the current research is that training provision positively influences the AAC practices of professionals; findings that align with other research projects (Ashton, 2005; Pampoulou, 2015, 2016). However, findings from other research surveys show that SLTs often feel incompetent when working with people with CCN due to the lack of training received on AAC during their studies (Costigan and Light, 2010; Dietz et al., 2012; Wormnaes and Malek, 2004). This consequently may negatively influence the quality of the services provided to people with CCN (Costigan and Light, 2010; Dietz et al., 2012). The findings also have shown that life-long training positively influences SLTs' AAC practices. As Dietz et al. (2012) found in their survey, specialists in AAC received intensive additional support subsequent to their academic qualifications. However, the cost of training can prohibit professionals using certain systems, such as MAKATON or even commercial graphic symbols sets (Pampoulou, 2015; Sheehy and Duffy, 2009).

The findings have also shown that AAC services are provided mainly to people under 15 years old, which raises important questions regarding the older population. This is in contrast to a Comité Permanent de Liaison des Orthophonistes' (CPLOL) survey (2003), conducted by its representatives in Cyprus, where clinicians were found to assist adults with acquired communication difficulties by using different communication aids. Additionally, the findings clearly show that there is little knowledge on the different components of the AAC process and the use of any of the existing standardized assessment tools. None of the practitioners referred to systematic ways of assessing AAC needs according to evaluation of the communication barriers, the communication patterns used and the strategies that are known to enhance participation (Beukelman and Mirenda, 2005, 2013). Of some concern is that many referred to arbitrary assessment procedures driven by their clinical judgement being similar to those followed for language disorders, thereby failing to recognize that the AAC assessment procedure differs from typical language therapy assessment in that it places emphasis on communication needs as well as sensory and motor abilities (Beukelman and Mirenda, 2005; Glennen and DeCoste, 1997). Taking into account the inadequate AAC assessment procedure followed, it could well be that recommendations for subsequent intervention and the tools used are not always the most appropriate. Lastly, professionals indicated that they used a number of different modes of communication (e.g. sign language, pictures, tablets) and as the literature highlights in the AAC field, it is important that different modes of communication are used in order for the person to convey their needs and thoughts to others (Beukelman and Mirenda, 2013; Glennen and DeCoste, 1997).

VI Conclusions

Despite generalizability of the findings not being available, the outcomes from this survey raise some salient issues in relation to the capacity of practitioners engaging with AAC. That is, the evidence would suggest that the practice of deploying AAC in support of people with communication difficulties across Cyprus is somewhat inconsistent and requires further attention so that those in need can fully benefit from such services. At present, there is a lack of evidence based practice in Cyprus, which is essential for improving service delivery (Sackett et al., 1996).

It important that academic institutions offering programmes on speech therapy also focus on delivering in-depth training on AAC. It is recommended that professional bodies put in place Continuing Education Unit schemes mirroring those that exist in other countries of the world. This would also provide opportunities for these professionals to share best practice during training sessions as well as developing knowledge networks. It is critical that training provision focuses on the assessment process followed in the AAC field. Furthermore, future work will thus need to devise ways for uncovering what support is currently available for adults requiring AAC services as well as determining unfulfilled need for this cohort. Additionally, the different professional bodies need to continue raising the awareness on issues related to AAC, so that more people can benefit from such services provision. Finally, in order to build this body of knowledge, collaboration with countries more advanced in the field is warranted.

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Appendix 1. The questionnaire.

Section 1: Background information

1. What is the highest degree you have received?

   Bachelor's
   Master's
   PhD

2. How many years of clinical experience do you have?

   1–5 years
   6–10 years
   11–15 years
   16–20 years
   21–25 years

3. Where do you work?

   Public Sector
   Private Sector

Section 2: Training

4. Did you attend any classes on augmentative and alternative communication during your studies?

Bachelor's
Master's
PhD
I haven't attended any

5. Have you attended any seminar relevant to augmentative and alternative communication?

MAKATON System
Picture Exchange Communication System (PECS)
Pragmatic Organization Dynamic Display System
I haven't attended any
Other _____

Section 3: AAC practices

6. If you currently support people with complex communication needs, in the space provided, please write their diagnosis, the number of people you support and their age.

	Age of the 1st person	Age of the 2nd person	Age of the 3rd person	Age of the 4th person	Age of the 5th person
Cerebral palsy					
Autistic spectrum disorders					
Hearing loss / Deafness					
Apraxia of speech					
Aphasia					
Down syndrome					
Rett syndrome					
Angelman syndrome					
Psychomotor delay					
Parkinson disease					
No diagnosis					
Other (specify) …….					

7. Who assesses a person needing Augmentative and Alternative Communication support?
I
Other colleague who is a specialist in augmentative and alternative communication

8. If you are the assessor, do you use any particular test? If yes, which one?
9. Do you use any of the following language systems? If yes, which one(s)?

MAKATON System
Picture Exchange Communication System (PECS)
Pragmatic Organization Dynamic Display System
I do not use any
Other _____

10. Which of the following communication symbols do you use with people with complex communication needs?

    Speech
    Signing
    Cypriot Sign Language
    Objects
    Photos
    Pictures
    MAKATON Symbols
    PECS Symbols
    Other _____

11. Which of the following types of assistive technology do you use with people with complex communication needs?

    Printed Communication Board
    Switch with one message
    Switch with multiple messages
    Communication Board operating with batteries
    Talking Album
    Tablet
    Computer
    I do not use any
    Other _____