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Attention Deficit Hyperactivity Disorder (ADHD): Cypriot elementary school teachers' knowledge, attitudes and in-service training (INSET)

Maria Doukanari
Childhood and Inclusive Education
School of Education
University of Leeds
Leeds LS2 9JT
Email for correspondence: ed09m2d@leeds.ac.uk

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Abstract

Attention Deficit Hyperactivity Disorder (ADHD) is one of the most common and controversial lifelong disorders. According to the fifth edition of the DSM criteria (APA, 2013), the prevalence of school-age children with ADHD is approximately 5.0%. This suggests that in each typical classroom of around 20 children one child is diagnosed with ADHD (Ohan et al., 2011; Farrar, 2011). Therefore, the likelihood of teachers having a diagnosed or undiagnosed child in their classroom is high (Anderson et al., 2012). This paper briefly presents the research methodology and reflects on the findings of a PhD study, conducted in the educational context of Cyprus. The study explored Cypriot elementary school teachers' knowledge of ADHD and their attitudes towards the instruction of children with ADHD and current INSET. The identification of teachers' prior INSET experiences, their expectations and recommendations regarding future INSET was part of the investigation. Considering the overall findings of the study, identified needs and participants' recommendations, several implications are offered for teacher INSET provision.

The importance of teachers' knowledge

The accurate diagnosis and effective management of ADHD require the composition of a multi-disciplinary evaluation and intervention team of professionals and non-professionals. Necessary members of this team are teachers who are invited to play a pivotal role in identifying undiagnosed children with ADHD, in evaluating their behavioural, educational and social functioning and creating an inviting learning environment for them and their typically developing peers (Perold et al., 2010).

Given that behaviours related to hyperactivity/impulsivity and inattention are easily noticeable in highly structured and demanding settings, as a mainstream classroom is, it is not surprising that elementary school teachers are usually the first to notice atypical behaviour and make referrals for an ADHD diagnosis (Anderson et al., 2012; Sayal, 2007; Kos et al., 2006; Snider et al., 2003; Sciotto et al., 2000). In parallel with their indirect informational role (referrals for evaluation), teachers constitute a primary source of information during the assessment procedure and they play a central role in advising parents, in implementing classroom-based interventions (e.g. behavioural, physical, instructional) and observing the effects of pharmacological interventions (Anderson et al., 2012; Weyandt et al., 2009; Vereb and DiPerna, 2004; West et al., 2005).

Considering the involvement of teachers in the diagnostic and intervention procedure, holding positive attitudes towards children with ADHD and having a clear understanding of the disorder is highly important. Accurate knowledge can enhance the accuracy of referrals and enable teachers to develop realistic expectations, to adapt the teaching procedure accordingly and apply empirically validated interventions (Sciotto et al., 2000; DuPaul and Stoner, 2003; Ohan et al., 2008; Perold et al., 2010; Anderson et al., 2012). Acknowledging the critical role of knowledge, researchers from all over the world have carried out investigations to assess educators' knowledge and identify areas that need further development (Jerome et al., 1994; Sciotto et al., 2000; Bekle, 2004; Kos et al., 2004; West et al., 2005; Ohan et al., 2008; Perold et al., 2010; Anderson et al., 2012).

The importance of teachers' attitudes

Teachers' attitudes towards the inclusion of children with special needs have been widely explored over the past few decades (Woodcock, 2013; Fields, 2006). Studies involving educators across countries have corroborated the powerful influence that attitudes have on teacher performance and the pivotal role they play in the implementation and success of inclusive initiatives (Woodcock, 2013; Cassady, 2011; Fields, 2006; Avramidis et al., 2000a; Hastings and Oakford, 2003; Siegel and More, 1994; Center and Ward, 1987; Jamieson, 1984). As Avramidis et al. (2000, p.278) explain, the attitudes of school personnel directly involved in inclusive education "may act to facilitate or constrain the implementation of policies". For inclusive education to succeed, it is of critical importance that educators hold

positive attitudes and they are willing to accommodate children with special needs in their classrooms (Woodcock, 2013; Cassady, 2011; Angelidis, 2008; Winter, 2006). In an opposite case, teachers are more likely to resist individualising lesson plans and differentiating their pedagogy to meet the diverse needs of their students with special needs and they often shift responsibility for their education to specialists (Fields, 2006; Avramidis et al., 2000).

It is therefore important that teachers develop a critical understanding of inclusion and display a commitment to inclusive principles and demands (Avramidis et al., 2000). When such understanding, responsibility and commitment are not evident, inclusive attempts are generally unsuccessful (Fields, 2006). Existing research in the area has primarily explored teacher attitudes towards the idea of inclusion in general and not towards specific categories of children with special needs (Cassady, 2011). As a result, educators' attitudes towards children with ADHD have not been widely and distinctly investigated in the past. Consequently, the need to explore and understand teacher attitudes and levels of acceptance children with ADHD have in mainstream classrooms further exists.

Research questions – Methodological approach

Two research questions were considered in the study:

1. What is the knowledge of Cypriot elementary school teachers with regard to: a) the symptoms/diagnosis of ADHD, b) the treatment and c) general information regarding the nature of the disorder, the causes and the outcomes?
2. What are the attitudes of Cypriot elementary school teachers with regard to: a) the instruction of students with ADHD, b) their self-efficacy in teaching students with ADHD, c) the current and future INSET scheme?

In addressing these research questions, primary research involving Cypriot elementary school teachers from twenty public schools was conducted. Data collection commenced in January 2012 and was completed in May of the same year. For the purposes of this study, an explanatory mixed methods design was adopted that consisted of two sequential phases. In the first phase, primarily quantitative data were collected through the administration of a questionnaire (191 participants) while in the second phase qualitative data were generated through semi-structured interviews (23) and focus groups (4). Cypriot teachers' knowledge of ADHD was explored in the first phase of the research using a 35-item knowledge scale. The attitudes towards the instruction of children with ADHD were quantitatively explored in the first phase of the research and in more depth in the second one. The purpose was not only to capture teachers' attitudes but also to get an insight into the rationale behind their feelings, beliefs and predispositions to act in certain ways. Teachers' attitudes towards the current INSET system, their expectations and recommendations for future INSET were explored both in the first and second phase of the research. Quantitative data were coded

and entered into SPSS 20 (Statistical Package for Social Sciences) for analysis. The management and analysis of qualitative data were facilitated with the use of NVivo 10 software.

Cypriot teachers' knowledge of ADHD

On average, participants correctly answered 15.16 out of 35 knowledge items, which corresponded to a percentage of 43.3%. The current average knowledge score is not as high as in parallel studies by Jerome et al. (1994), Barbaresi and Olsen (1998), Bekle (2004) and Ohan et al. (2008) that reported average knowledge scores of 77.5%, 77.0%, 82.4% and 76.3% respectively. This discrepancy in scores is likely due to methodological differences relating to the response format and the number of knowledge items used across studies. In contrast to the present study, which used a three choice (True/False/Don't Know) response format, the studies by Barbaresi and Olsen (1998), Bekle (2004) and Ohan et al. (2008) adopted the scale (20 items) and the two choice (True/False) response format introduced by Jerome et al. (1994). Given the 50.0% likelihood of guessing the correct answer, the higher average knowledge scores found in these studies may be attributable to the response format and not to actual greater knowledge levels.

The number of knowledge items across studies might have also played a role in the formation of average scores. The greater number of items that was used to assess Cypriot teachers' knowledge might have enlarged the knowledge gaps of participants and resulted in lower scores than those reported in the earlier four studies. The hypothesis that methodological differences might explain the discrepant average knowledge scores seems credible, given that parallel studies with a greater number of knowledge items and a three choice (True/False/Don't Know) response format also concluded to lower average scores. Sciotto et al. (2000) and Perold et al. (2010), for example, reported average knowledge scores of 47.8% and 42.6% respectively.

In alignment with previous studies (Jerome et al., 1994; Sciotto et al., 2000; Bekle, 2004; West et al., 2005; Ohan et al. 2008; Perold et al., 2010; Anderson et al., 2012), Cypriot teachers scored statistically significantly lower on treatment items and specifically on those related to pharmacological and alternative interventions (e.g. electroconvulsive therapy). On average, participants correctly answered 32.04% on the treatment subscale, 48.26% on the general information subscale and 48.86% on the symptoms/diagnosis subscale. The statistically significant differences found suggest that subscales are useful to identify strengths and weaknesses in educators' knowledge of ADHD. In line with American (Sciotto et al., 2000) and Australian teachers (Kos et al., 2004), Cypriot teachers indicated a tendency to select the response option "Don't Know" rather than incorrectly responding to an item. 86.6%, for example, did not know whether electroconvulsive therapy constitutes an effective intervention for severe cases of ADHD. Similarly, the majority of Cypriot teachers did not

know about the role of diet in the management of ADHD-related behaviours, the side-effects (appetite loss, insomnia, mood disturbances, headaches, cognitive development) and types of pharmacological interventions (stimulants, antidepressants).

This tendency, which was apparent in the other two subscales as well (the "Don't Know" responses had the highest frequency in 18 out of 35 items), indicates that teachers' lack of knowledge was more prominent than their misconceptions. This is highly important in the light of evidence suggesting that teachers are less receptive to learn when they hold inaccurate beliefs about a topic (DiBattista and Shepherd, 1993). Teachers, for example, who do not know about the role of diet in the management of ADHD-related behaviours, are more likely compared to colleagues, who incorrectly believe that reduction of sugar intake is an effective intervention, to look for further information before recommending modifications in children's diet (DiBattista and Shepherd, 1993). Similarly, when teachers hold the misconception that stimulant medication has adverse effects on children's typical cognitive development, they are less likely to learn more before rejecting pharmacological interventions and providing misplaced advice to parents.

In contrast to parallel studies (e.g. Sciotto et al., 2000; Perold et al., 2010) that found participants' knowledge on symptoms/diagnosis to be statistically significantly higher, Cypriot teachers' scores on the general information (48.26%) and symptoms/diagnosis (48.86%) subscales did not present statistically significant differences. In line with previous research (e.g. Sciotto et al., 2000; West et al., 2005; Perold et al., 2010), the majority of Cypriot teachers were aware of primary ADHD behaviours. 90.9% of them, for example, knew that impatience and impulsivity can be symptoms of the disorder. The fact that the number of items relating to primary symptoms was limited and emphasis was placed on broader diagnostic issues might have resulted in lower scores on the symptoms/diagnosis subscale. In this study, symptoms/diagnosis items were purposely chosen to examine teachers' knowledge of distinguishing criteria (e.g. persistence of symptoms, number of settings, subtypes), the diagnostic procedure and behaviours beyond the obvious ones that signify an ADHD diagnosis (e.g. excessive talkativeness). The majority of Cypriot teachers displayed substantial knowledge gaps on these items. Similar knowledge gaps were found in the general information subscale; the majority of participants either did not know or held incorrect beliefs about the nature (e.g. prevalence, future course of the disorder, gender differences, peer relationships) and the origins of the disorder (e.g. dietary and family factors, heritability).

Cypriot teachers' attitudes towards the instruction of children with ADHD

In contrast to teachers' knowledge that was easily quantified and interpreted, their attitudes were neither definite, nor simple to explain at first sight. Quantitative and qualitative analysis suggested that the majority of Cypriot teachers did not have absolute attitudes. The

overall behavioural profile of children informed their feelings, beliefs and predispositions to act in certain ways. Qualitative data analysis provided evidence suggesting that educators' prior experiences with children having an ADHD diagnosis impact on and form their attitudes. The experiences of participants had been differentiated according to the type, the severity index and whether a child was or not on medication.

Teachers, for example, who had taught students with extreme levels of hyperactivity/impulsivity that were not on medication, reported less positive experiences and highlighted the difficulties that had arisen from their presence in the mainstream classroom. Students with hyperactivity/impulsivity were seen as causing greater levels of stress and tiredness than students with primarily inattentive behaviours. Teachers considered these students as "difficult" and placed particular emphasis on challenges relating to the smooth functioning of the learning procedure, the safety and the relationships of students with ADHD and their peers. They agreed, for example, that the management of ADHD-related behaviours absorbs valuable instructional time and thus the lesson purposes remain unfulfilled. 64.2% in the first phase of the research considered students with ADHD as negative role models for the other children whereas 41.2% believed that the extra educational support students with ADHD may need is detrimental to the learning of their classmates without ADHD.

On the contrary, teachers who shared experiences with inattentive students (personal or colleagues' experiences) expressed more favourable attitudes towards them and their education in mainstream classrooms. They focused on the "individuality" of the condition and challenges relating to the learning and the academic progress of these students. Teachers, who did not indicate experience with ADHD during their teaching career (34.1%), had the tendency to moderately approach attitude items and choose the response option "neither agree nor disagree". It is worth to mention that teachers without prior exposure to students with ADHD were not involved in personal interviews and focus groups. The observed variance in Cypriot teachers' attitudes towards children with diverse behavioural profiles is in line with earlier findings suggesting that educators' attitudes towards inclusion, their competence and willingness to accommodate children with special needs are strongly influenced by the severity and nature of the special need (Cassady, 2011; Ryan, 2009; Fields, 2006; Koutrouba et al., 2006; Avramidis and Norwich, 2002; Scruggs and Mastropieri, 1996; Center and Ward, 1987).

In studies conducted by Clough and Lindsay (1991), Avramidis et al. (2000), Hastings and Oakford (2003) and Fields (2006), for example, children with emotional and behavioural disorders were seen as the most challenging categories of special needs and as those with a greater negative impact on their classmates and the teaching procedure. Similarly, studies by Dupoux et al. (2005), Loreman et al. (2005), Soodak et al. (1998) and Forlin (1995) indicated that teachers held more positive attitudes and they were most willing to accommodate children with social, physical disabilities, specific learning difficulties and

hearing impairments and least receptive to include those with behavioural and emotional disorders. This finding is not surprising, given that behaviour management is considered the number one concern of educators (Vinson, 2002).

Avramidis and Norwich (2002) explained that the mixed attitudes teachers develop towards different categories of special needs are likely due to the perceived accommodations required and skills, managerial and instructional, that in their opinion are necessary for including these children in the mainstream classroom. Overall, the categories of children that educators view as the most demanding and challenging for their daily practice are those they hold the most negative attitudes about, and they are least willing to undertake the education (Cassady, 2011; Soodak et al, 1998; Center and Ward, 1987). These children have consistently been those with behavioural and emotional disorders (Woodcock, 2013; Cassady, 2011; Avramidis and Norwich, 2002) and in the current study those with hyperactive and impulsive behaviours.

Current INSET provision – Criticism and recommendation for future INSET

Notwithstanding the emphasis that teachers placed on INSET, only 15.0% had participated in INSET programmes and 7.1% found them adequate for successfully managing and teaching children with ADHD. Overall, Cypriot teachers expressed their disappointment and criticised the decision of the government to accommodate children with ADHD in mainstream classrooms without preparing teachers to manage related behaviours and facilitate the teaching procedure. They also criticised the policy of the Ministry of Educations and Culture (MoEC) to provide INSET opportunities primarily to special teachers and stated their readiness to get involved in relevant INSET, if available. The role of INSET in teachers' knowledge and sense of self-efficacy was corroborated in the first phase of the research. Statistical analysis indicated that Cypriot teachers, who had attended relevant INSET, had statistically significantly higher scores on the knowledge scale and greater perceived knowledge, sense of self-efficacy and readiness to teach this group of children. The lack of INSET was also the most commonly reported reason for interviewees' stress, their disagreement towards the instruction of children with ADHD in mainstream classrooms and their negative predisposition to undertake classrooms with students having an ADHD diagnosis.

The majority of participants that reported prior experience with formal INSET had attended on their own initiative the five-session optional seminars of the Cyprus Pedagogical Institute (CPI). These teachers acknowledged the contribution of seminars to the acquisition of a basic knowledge background but focused on the limitations that undermined their effectiveness. The place, the time, the voluntary character and theoretical orientation of these seminars were the most common areas of criticism. Participants perceived voluntary INSET in non-working time inconvenient and suggested the introduction of compulsory INSET that will be

part of their professional responsibilities. These attitudes towards the preferable time and legal framework were corroborated by the majority of teachers in both research phases.

Participants explained that INSET in non-working time is usually not correlated with the classroom reality and the needs of each teacher. It was also considered discouraging for educators whose free time is restricted due to family and other commitments. Overall, Cypriot teachers appeared against out-of-school INSET. In their opinion, it only provides general information, without considering the specific needs of each child. Simultaneously, it does not allow the cooperation with trainers and the application of interventions in real conditions. For these reasons, the provision of school-based INSET was the response with the highest frequency in both research phases.

A group of teachers reported that voluntary INSET undermines the importance of teachers' knowledge and gives the impression that the education of children with ADHD is not primarily their responsibility. The majority of teachers believed that ADHD is common and the likelihood of having a diagnosed child in the classroom high. Therefore, the preparation of all teachers was perceived necessary. The in advance information about the nature of the disorder and the diagnostic criteria was also found critical for the early identification and accurate diagnosis of children with ADHD. The majority of participants, however, considered the provision of further INSET opportunities and support essential for those undertake the education of children with ADHD.

The theoretical orientation of the CPI seminars was in the opinion of teachers their main limitation. Teachers felt that the seminars were detached from the classroom reality. They primarily focused on the nature of ADHD and general approaches to intervention and therefore they did not facilitate the management and teaching of children with ADHD as expected. The fact that the same seminars appealed to educators from a pre-elementary to a high school level had as a result the content and discussions to be general whereas the recommended interventions not in all cases applicable and effective. This was because such interventions were unrelated to the dynamic of each classroom, the type, the severity, the age, the background and the specific needs of each student with ADHD. Overall, participants criticised the attendance of single informative events by external providers and considered continuity and cooperation with trainers as key principles for a successful INSET programme.

In this study, teachers were mostly oriented towards INSET programmes that would enhance their understanding of ADHD and the needs of students with the disorder. The management of related behaviours and the improvement of teaching practice were the fundamental expectations of educators from future INSET. In their opinion, these will minimise negative feelings and make them more confident to undertake the education of students with ADHD. For these reasons, even those who advocated the acquisition of a theoretical background supported that focus should be on practical issues with immediate benefits for the teaching procedure. The way teachers should approach students with ADHD and accommodations

(physical, instructional, behavioural) that could be easily applied in a classroom setting were the most commonly reported responses.

Implications for future INSET

Considering the findings reported in both research phases, it could be argued that with the provision of extensive INSET opportunities and support, teachers' knowledge of ADHD and sense of self-efficacy can increase while their attitudes towards the instruction of this group of children are likely to become more favourable. As Ross-Hill (2009, p.189) explains, lack of systematic and substantial INSET results in "tension, stress, and strain for both teachers and students alike in inclusive settings". Providing educators with knowledge, skills and systematic support is therefore likely to address insecurities and enhance their willingness to undertake the education of children with ADHD.

At this point, an important dilemma that should be carefully considered and resolved by those involved in the development and delivery of governmental teacher INSET, such as academics and MoEC administrators, is posed. This dilemma concerns the nature of future INSET programmes and the extent to which teachers' preference for practical knowledge with immediate impact on everyday practice (e.g. school-based intervention strategies) should define the structure and content of such programmes. The observed emphasis of teachers on the practical is in line with the results reported in a study by Symeonidou and Phtiaka (2009). When Cypriot teachers were asked to prioritise four given thematic areas of future INSET, they all indicated a preference for practical aspects. Learning about the characteristics and educational needs of different categories of children with special needs, practical strategies to cope with them and ways to differentiate the lesson accordingly were the most commonly reported answers (Symeonidou and Phtiaka, 2009).

Developing INSET programmes that respect educators' expressed views and meet their expectation to be exposed to strategies that facilitate the management and teaching of children with ADHD is highly important. Considering the informational role that teachers are invited to play in the diagnostic procedure and their critical contribution in advising parents, it is of equal importance that future INSET focuses on broader knowledge areas and addresses gaps and misconceptions identified in the study. Considering also that prior exposure to children with ADHD was found to be associated with a greater understanding of the disorder, it is suggested that future INSET maximises the opportunities for educators to be exposed to children with ADHD. Given research supporting the pivotal role that teacher attitudes play in the successful inclusion of children with special needs, it is imperative that future INSET places emphasis not only on the acquisition of knowledge and skills but also on the development of more favourable attitudes.

Therefore, in parallel with teachers' insufficient knowledge of ADHD and practical preparation, administrators and policy-makers should also consider the lack of ideological

preparation, the segregating and medical ideologies that were reproduced in the findings of the current study. As a result of these, teachers expressed reservations and less favourable attitudes towards the education of children with ADHD in mainstream classrooms, especially those with hyperactive/impulsive behaviours. In line with earlier studies that explored Cypriot teachers' attitudes towards children with special needs (Koutrouba et al., 2006; Symeonidou and Phtiaka, 2009), the current sample considered specialists' expertise as superior to their own knowledge and pedagogical skills and they often shifted responsibility for the education of children with ADHD to special teachers. They also displayed a misunderstanding of inclusive principles and perceived socialisation as the fundamental reason why children with ADHD should be educated in mainstream classrooms along with their typically developing peers.

Concluding Comments

Considering the findings of the current study and the broader social ideologies that undermine the progress towards inclusion, the cooperation of the MoEC administrators and academics in the field is necessary to achieve a balance between theory and practice in future INSET programmes. Thus, teachers' preference for practical will be respected and simultaneously the theoretical background that is highly important to address prejudices, segregating and medical ideologies will not be overlooked. An INSET programme that alongside practical strategies provides opportunities for teachers to reflect on and develop a critical understanding of the principles and benefits of inclusive education is more likely to alter negative attitudes (Koutrouba et al. 2006; Angelides, 2004; Papanastasiou and Koutselini, 2003; Symeonidou, 2002b; Avramidis et al., 2000). Such INSET can help teachers understand the importance of their role in the implementation of inclusive practices and provide them with "a vision and knowledge skills to operationalise that vision; skills which allow them to modify their everyday practice in ways which are ultimately inclusive" (Avramidis et al., 2000, p.209). Given the overall findings, it is imperative that educators' understanding of ADHD, expectations of children with the disorder and attitudes towards their accommodation in mainstream classrooms are carefully guided through undergraduate courses and INSET programmes.

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