

Experiencing success: an occupational therapy partnership programme. Gymnastics for children with attention deficit hyperactivity disorder

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Abstract

Purpose – This paper aims to outline and evaluate a pilot partnership programme – an Occupational Therapy–led gymnastics group intervention for children aged eight to twelve with a diagnosis of attention deficit hyperactivity disorder (ADHD).

Design/methodology/approach – The overall aim of this programme was to increase participation in a valued leisure occupation. Based on the needs of the children, a physical-activity-based intervention was chosen that was challenging, novel and motivating. The intervention was then developed to target executive functioning and processing skills; enhance motor coordination skills; develop social skills; and primarily provide a positive experience. Seventeen children attended 75-minute sessions weekly for eight weeks. The programme was evaluated using non-standardised qualitative measures – parent, child and coach evaluation questionnaires were developed by the occupational therapist for this purpose.

Findings – Children engaged well in the programme with results showing increased participation and enjoyment of a new leisure occupation; improvement in social interaction levels and a sense of belonging; and development of motor and process skills. The results demonstrate the benefit of a partnership approach and suggest sustainability of the programme as well as the gains made.

Originality/value – The results of this evaluation suggest that the programme met its aims and supports further research into the efficacy of this type of partnership approach and intervention in supporting children with ADHD attending Child and Adolescent Mental Health Services.

Keywords Occupational therapy, Gymnastics attention deficit hyperactivity disorder (ADHD), Child and Adolescent Mental Health Service (CAMHS)

Paper type General review

Background

Attention deficit hyperactivity disorder (ADHD) is one of the most common neurodevelopmental disorders of childhood with a worldwide prevalence of approximately 5% (Polanczyk *et al.*, 2007). ADHD is characterised by difficulties in attention, hyperactivity and impulsivity (American Psychiatric Association, 2013). Children with ADHD may have reduced participation in activities due to poor motor coordination skills (Jeyanthi *et al.*, 2019); difficulties with social interaction (Cordier *et al.*, 2009); as well as the core symptoms of inattention, hyperactivity and impulsivity. There may be difficulties with maintenance of motivation (Carson *et al.*, 2002). Children with ADHD show less preference to participate in physical activities, social activities, skill-based activities and formal activities that their peers (Engel-Yeger and Ziv-On, 2011). Unfortunately, children with ADHD may also elicit less social support and more negative evaluations from authority figures with the potential long-term consequences of reduced self-esteem, social isolation, etc. (Demaray and Elliott, 2001).

Physical activity interventions appear to have multiple and diverse benefits for young people with ADHD, with programmes shown to improve outcomes related to motor skills and executive functioning (Jeyanthi *et al.*, 2019; Ng *et al.*, 2017). Engagement in structured physical activity requires a level of executive function as well as motor coordination and planning. Participation in sport has been shown to improve self-confidence and, in some cases, elevate social status within the peer group (Nazeer *et al.*, 2014). Gymnastics is a skill-based activity that requires the ability to follow rules and directions. Previous research on a gymnastics

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programme for children with autistic spectrum disorder discussed the benefits of the structured environment, as well as positive peer interaction, and demonstrated high levels of satisfaction (Leahy *et al.*, 2000). Further research examined the views of parents of children with ADHD in relation to how gymnastics may have a particular therapeutic effect. They viewed gymnastics to be effective “behavioural therapy” in controlling and improving ADHD symptoms with the effects extending to home and school (Kaufman *et al.*, 2011). Parents of children with a disability reported the positive impact on their child’s confidence, self-esteem and social development when attending a gymnastics class (Murphy and Carbone, 2008). Research has focused on parental and professional perspectives and has not examined the perspective of the children engaged in these programmes, or indeed, the coaches running them.

Due to the many difficulties faced by children with ADHD outlined above, many children seen by CAMHS Occupational Therapist are not engaged in extracurricular and/or group activities. They and their parents often report experiencing failures, rejection and isolation in their attempts to participate. Chu and Reynolds (2007) suggested a model of practice for occupational therapists working with children with ADHD where the occupational therapist assesses the child-environment-task balance to ensure successful participation in different valued and purposeful occupations. The role of the occupational therapist is to find the just-right challenge in meeting the occupational participation needs of the child in a safe, motivating and graded manner that supports the child’s self-esteem and well-being. The challenge in this case was to develop a client-centred evidence-based programme to meet the needs of the presenting children with ADHD in their local community.

Method

Context

There was a need for a programme to meet the needs of children with ADHD attending CAMHS Occupational Therapy. Children were assessed, and gymnastics was selected as the group activity most likely to meet their needs.

Programme structure

This was a partnership programme. Partners involved were the CAMHS Occupational Therapist, the Local Sports Partnership and a local Gymnastics Club with the support of the “Gymable” programme – an inclusion programme from “Gymnastics Ireland” promoting gymnastics opportunities for people with disabilities. Coaches from the gymnastics club received an education session from the CAMHS team on working with children with ADHD; and completed disability training through the Gymable programme. The partnership approach allowed for maximal use of resources to provide an efficient, acceptable and sustainable programme for children and families. The *Child-Environment-Task* balance was kept to the forefront in developing the intervention. The needs of each *child* were assessed in individual Occupational Therapy sessions prior to participating in group intervention. The *environment* of the Gymnastics club was tailored to meet the needs of the children attending: coaches and CAMHS staff maintained a

calm, structured atmosphere with safety rules, well-defined expectations and positive reinforcement to the forefront. The *task demands* were addressed within the goals of the programme: participation in valued purposeful leisure occupation; social interaction; skill acquisition – motor and process skills, e.g. impulse control, turn taking, adherence to rules; providing novel and challenging tasks to promote motivation; and to increase confidence and experience of success.

The pilot programme ran for eight weeks. Sessions lasted 75 min. The group was facilitated by four gymnastics coaches as well as three CAMHS staff. Safety rules were clearly explained and positive behaviour was reinforced throughout. Each group started with an ice breaker activity for kids to learn names, settle in, etc. Occupational Therapist grouped children into four smaller groups for gymnastic work. Each small group worked on a set activity e.g. balance beams, trampolines, obstacle course and bars. Activities and instructions were graded by Occupational Therapist in consultation with gymnastics coach, e.g. one step instructions, repetition of simple tasks to achieve success, positive reinforcement. As the weeks progressed more team work was introduced and children worked on more challenging tasks.

Participants

Children were recruited for the programme as part of their CAMHS Occupational Therapy treatment as normal. Inclusion criteria were children with a diagnosis of ADHD aged eight to twelve; attending CAMHS Occupational Therapist; and that the gymnastics group would support their individual goals for therapy. There were no exclusion criteria for the group programme as the number referred did not exceed capacity. Of the 18 children who were offered the programme, 17 chose to attend.

Evaluation measures

Following completion of the eight week programme child, parent and coach questionnaires were administered. These questionnaires were developed by the Occupational Therapist. Children were given simple questionnaires appropriate to their developmental level and language abilities and were supported by parents to complete them. Questionnaires were completed and returned during the last group session.

Ethics

This is a retrospective service evaluation. Advice was sought from the local Health Service Executive (HSE) Ethics Committee. and a written response outlined that ethical approval was not required in this case for a retrospective service evaluation. The Occupational Therapist met with all children and parents prior to the group and explained the intervention. Informed consent was obtained prior to participation in the programme as part of their CAMHS Occupational Therapy intervention. Group evaluations are collected as part of normal group protocol. No identifiable information is shared in this evaluation, and each child and parent questionnaire is stored in their patient file in locked cabinets in the CAMHS clinic. Retrospective consent was

gained for evaluation feedback to be anonymised and published.

Results

Seventeen children aged eight to twelve (mean: 9.76, SD: 1.28) attended the programme. There were 14 boys and three girls. All had a diagnosis of ADHD. All the children and parents, as well as the coaches, were invited to complete evaluation questionnaires developed by the OT. A total of 38 evaluations forms were completed, 16 by children (13 boys, three girls), 17 by parents (15 female, two male) and five by female coaches.

Occupational engagement, participation and enjoyment

There was a 95% attendance rate to the programme. In total, 100% of children reported that the group made them feel “happy” when given a choice of words. Children also reported feeling “excited” (75%) and “friendly” (44%). In total, 100% of parents reported their child enjoyed the group:

“It made her happy [...] enjoyed it and looked forward to it every week.”

“My child loved the group [...] felt relaxed [...] made friends [...] it’s great for the kids.”

“He became more confident as the weeks went on”

“She wanted to go, she enjoyed it, needed no encouragement”

“Much easier than bringing him to other new places”

“Teacher in school noticed the difference – she would smile all day before group”

Social interaction and belonging

When asked about the best part of the group a number of children described increased social interaction: “making friends” and “playing with other kids”. Parents gave positive feedback regarding increased social interaction among the children:

“He realised he is not alone with ADHD and this in itself is very empowering”

“Sticks to himself generally but this time he took part in group things”

“[...] they are all on the same page in this little group.”

“Interaction and play has improved”

“Much more relaxed in the evening of the group [...] more family interaction.”

Motor and process skills

Informal Occupational Therapist observations demonstrated improved motor and process skills throughout the group programme. Children were achieving more on various gymnastic equipment and enhanced executive functioning was observed as the weeks progressed, e.g. turn taking, following directions, impulse control/safety awareness. Parents and coaches fed back on motor and process skills through the group.

Parent feedback:

“Yes he seems willing to try new things/activities that involve coordination”

“I couldn’t believe him on the beam – couldn’t believe the difference. His physio saw a massive improvement”

“Yes and definite better ability with balance [...] confidence to try new things that involved balance or coordination”

Coach feedback:

“[...] a big improvement in their balance and coordination each week... particularly on Trampoline which became natural for them”

“On all pieces there was a huge improvement – [...] measurable by the amount of skills the kids achieved”

“Their balance skills improved with good concentration, their motor skills improved with motivation”

“Their balance and coordination did progress [...] towards the end they became more confident”

Partnership approach

Working together with two external partners is what made this group a success. The coaches fed back on their experience of working in partnership:

“Dealing with their difficulty in understanding consequences was hard at the start but learned to work around it with support from OT”

“They were great and anything, any questions we had 100% answered and supported throughout”

“Support was great and appreciated”

“Support when dealing with behaviour issues and how to deal with them”

Sustainability

The aim of any CAMHS Occupational Therapy intervention is that children are participating more in valued occupations in their own community. By the end of this programme, 100% of the kids said they wanted to continue engaging in gymnastics. In the interest of sustainability, we asked parents if they would be interested in their child continuing to attend gymnastics locally and 83% said they would. Upon completion of the group programme, five children (29%) were on the club’s list for mainstream gymnastic classes. The club coaches spoke of sustainability also:

“Many of the children would have the confidence and ability to join in to the mainstream group classes and have an enjoyable experience and fun”

Discussion

The outcomes of this group evaluation are positive and promising. Results of both the child and parent evaluations demonstrate that this programme was successful in its main aim – the children who attended achieved positive participation outcomes in a mainstream leisure occupation. While children with ADHD have difficulties sustaining motivation (Carslon *et al.*, 2002); the occupation of gymnastics appears to have captured the internal motivation of the children and provided the “just right challenge” by reaching the “child-environment-task” balance (Chu and Reynolds, 2007). Similarly, ADHD related difficulties with motor and process skills are well

documented (Jeyanthi *et al.*, 2019). Feedback from this programme suggests children can develop skills in these areas through engagement in gymnastic activities.

The impact of poor social communication skills, in particular difficulties in social play, in children with ADHD is well documented (Cordier *et al.*, 2009). Parents and children spoke of the level of comfort within this group of children with similar difficulties. It would be beneficial to further investigate the social interaction skills of children within this group. Further research is planned to examine the social interaction and pragmatic language skills on children with ADHD attending this programme in conjunction with CAMHS Speech and Language Therapy.

This programme benefited from the use of a partnership approach to meeting resource demands in a challenging work environment. Coach evaluations demonstrate the benefits of the support provided by CAMHS staff and the new learning in working with this client group. As an Occupational Therapist on a small community-based team with limited space, time and resources, the benefits to working in partnership with community organisations are many. Without each of the three partners in this project, it could not have been successful. Efficient work practices such as this allow for both variety and sustainability of interventions.

Limitations

Evaluation was completed using informal questionnaires. Further investigation using appropriate outcome measures would be beneficial to develop an evidence base. The use of a standardised outcome measure such as the “Model of Human Occupation Screening Tool” (MOHOST, Parkinson *et al.*, 2006) would be useful to demonstrate if the group results in measureable change in the participation and motivation levels of the children, motor skills, process skills, communication and social interaction skills over time.

Informal feedback suggested that the high ratio of CAMHS staff and coaches to children would not be sustainable for future groups due to staff resources. A smaller group would allow for more targeted, goal focused intervention for each individual child. It would also allow for individual outcome measures to be administered by the occupational therapist.

There are many challenges to developing research in practice (Duncan, 2009) and limitations to what conclusions can be made from a small-scale service evaluation. However, despite these challenges the results of this programme are promising and warrant further exploration.

Conclusion

This evaluation provides preliminary evidence for the use of partnership approaches in developing programmes in CAMHS as well as the use of Gymnastics as an intervention approach for children with ADHD. Reports from children, parents and coaches suggest participation in the programme was positive, with evaluations suggesting children made progress in their motor and coordination skills, social interaction skills and overall confidence levels. While this is an emerging area of intervention the initial evaluations are promising.

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