ORIGINAL ARTICLES

Doing it Right: An Interdisciplinary Model for the Diagnosis of ADHD

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Abstract

Objective: This article describes the Colchester East Hants Attention-Deficit/Hyperactivity Disorder Clinic (ADHD Clinic), which uses a best practice, interdisciplinary service model to provide diagnostic assessment and treatment services for children suspected of having ADHD, and presents data about perceived effectiveness of and satisfaction with the clinic's services. **Method:** Interviews were conducted with service providers (N=31) associated with the clinic and survey data was collected from consumers, including parents/guardians (N=46), teachers (N=20), and family physicians (N=12). **Results:** High levels of satisfaction and positive beliefs about the effectiveness of services were found. **Conclusion:** Implications for the ADHD Clinic and the general importance of interdisciplinary models of mental health service delivery are discussed.

Key words: interdisciplinary, diagnosis, ADHD, evaluation

Résumé

Objectif: Décrire la clinique de déficit d'attention avec hyperactivité (TDAH) de Colchester- East Hants qui applique un modèle de soins basé sur les meilleures pratiques et sur l'interdisciplinarité pour diagnostiquer et traiter les enfants chez qui on soupçonne un TDAH. Les auteurs présentent les données sur l'efficacité des services cliniques et la satisfaction des patients. **Méthodologie:** Trente-et-un fournisseurs de services qui travaillaient à la clinique ont été interrogés; quarante-six clients, parents/tuteurs, 20 enseignants et 12 omnipraticiens ont répondu à un sondage. **Résultats:** Les personnes interrogées se sont déclarées très satisfaites et ont jugé les services très efficaces. **Conclusion:** Les implications pour la clinique TDAH et pour l'importance des modèles interdisciplinaires de prestation des services en santé mentale font l'objet d'une discussion.

Mots clés: interdisciplinaire, diagnostic, TDAH, évaluation

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Attention-Deficit/Hyperactivity Disorder (ADHD) is a prevalent, complex, and chronic mental health disorder, affecting three to seven percent of school-aged children (American Psychiatric Association, 2000) and is the most common outpatient diagnosis provided to children (Harpaz-Rotem & Rosenbeck, 2004). ADHD results in a significant cost to health and educational systems, so effective treatment has major public health implications. The first step toward effective treatment is accurate and timely diagnosis.

The process of diagnosing ADHD, however, is often not straightforward. This is partly due to the fact that making a differential diagnosis is complicated by the high rate of co-morbidity and the fact that attention and behavioural regulation difficulties (the core symptoms of ADHD) are often present in other psychiatric disorders. The accuracy of diagnosis is further complicated by the fact that there are a number of health care professionals who might diagnose ADHD.

There has been general agreement for some time as to best practice in the diagnosis of ADHD. Best practice involves a thorough evaluation to determine the origins of behavioural symptoms and requires expertise from professionals in health, mental health, and education (Furma & Berman, 2004). A complete evaluation for ADHD should include obtaining information about development and general health, conducting clinical interviews with parents, teachers, and perhaps the child to look for other mental health difficulties, and completing a psycho-educational assessment to determine whether the child has a learning disability which frequently co-exists with ADHD or can present similarly to ADHD in the classroom setting. Information from these multiple sources is necessary to enable professionals to eliminate other explanations for the symptoms of inattention, over-activity, and/or impulsivity (Root & Resnick, 2003). Although the utilization of interdisciplinary teams in mental health settings has become widely accepted as best practice (Robinson, 2005), the reality is that current diagnostic practices often fall short of this.

The Colchester East Hants Attention-Deficit/ Hyperactivity Disorder Clinic

The Colchester East Hants Attention-Deficit/ Hyperactivity Disorder Clinic (hereafter referred to as the ADHD Clinic) was conceived as a means of using best

practice to provide diagnostic services to children suspected of having ADHD. The clinic operates as a formal partnership between the Colchester East Hants Health Authority (CEHHA) and the Chignecto-Central Regional School Board (CCRSB). There is no specific financial contribution required from the partners; rather each contributes professional time, administrative support and supplies. The ADHD Clinic also has close ties with universities with graduate level training programs in clinical and school psychology. The ADHD Clinic is located at the Colchester Regional Hospital, in a mid-size town (Truro; population approximately 12,000), in Nova Scotia, Canada. At the time of the current study, the ADHD Clinic had been operating for six years and had seen 193 children and their families. Approximately 70% (133) of these children were male. The children ranged in age from 5 years, 5 months to 12 years, 8 months (M = 8 years, 5 months). Although all children reached criteria on questionnaires for ADHD, only 58% (112) were diagnosed with ADHD. The other children were diagnosed with a range of learning and mental health disorders such as Learning Disabilities, Tourette's Disorder, Autism Spectrum Disorders, Anxiety, and Depression. Only 8% (15) were not given any diagnosis.

The mandate of the ADHD Clinic is to conduct thorough diagnostic assessments (the focus of this paper) and deliver evidence-based, ADHD-specific interventions, as well as to facilitate research and professional development. The diagnostic services of the ADHD Clinic are provided by an interdisciplinary team consisting of clinical psychologists, school psychologists, and paediatricians. Other professionals (e.g., psychiatrists, occupational therapists) also collaborate on an as-needed basis. Before the clinic day, the school psychologist reviews the child's school record and conducts a classroom observation and the ADHD Clinic psychologist conducts a diagnostic telephone interview with the child's teacher (a modified version of the Teacher Telephone Interview for Children with ADHD and Related Disorders, *DSM-IV* Version; Hum et al., 1999). On the morning of the clinic day, parents/guardians participate in a semi-structured diagnostic interview with the clinical psychologist and paediatrician (Parent Interview for Child Symptoms [PICS]; Ickowicz et al., 2006). At the same time, the school psychologist conducts a standardized psycho-educational assessment battery (i.e., WISC-IV, WIAT-II, VMI). During the morning, the parents/guardians are able to observe parts of the assessment of their child with the clinical psychologist and the paediatrician who explain and interpret the assessment procedures and comment on the child's test-taking behaviour.

After the assessments are completed, the interdisciplinary team meets to discuss findings and to develop a diagnostic consensus as well as suggestions for multisystem interventions in the home, community, and school. The parents/guardians return to the clinic in the latter part of the afternoon to receive feedback from the team. Subsequent to the clinic day, follow-up is provided by the school psychologist who arranges a meeting at the child's school to share the results of the assessment. Parents are always invited to attend this meeting. A copy of the ADHD Clinic report is routinely sent within three weeks to the parents/guardians, the child's school, the school board, the family physician, and the paediatrician. Family physicians and/or paediatricians also routinely provide follow-up services to the child and family.

Since the clinic's inception, anecdotal reports consistently indicated that the ADHD Clinic was perceived as a highly effective means of diagnosing children who presented with attention difficulties. There was also a growing waitlist for this service and discussion among the partners about expanding service delivery. The partners concluded that prior to expansion there was a need for a systematic program evaluation to examine satisfaction with and perceptions of the effectiveness of current services.

Program Evaluation

The evaluation was comprised of two phases. The first phase consisted of individual semi-structured interviews with 31 *service providers* who were professionals (employed by the health authority or school board) who worked within the ADHD Clinic itself or who had ongoing contact with the clinic and/or its clients. They included administrators from the school board and from mental health, school psychologists, principals, clinical psychologists, paediatricians, a child psychiatrist, a social worker, and an occupational therapist. Participants were asked to discuss their satisfaction with the clinic and perception of the effectiveness of the clinic, and their ideas for future directions for the clinic.

The second phase consisted of a survey that was mailed to the *consumers* of the clinic services. Potential participants were 124 parents/guardians (for whom current addresses were available), 35 family physicians, and 45 teachers. Surveys asking the same general questions about the logistics of the clinic (e.g., referral process), participants' satisfaction with the clinic process, and their perception of the clinic's effectiveness were developed for each group. Response rates for the mailed surveys were very similar across groups (48.9% for teachers, 41.1% for parents/guardians, and 41.7% for family physicians).

Program Evaluation Outcome

Interviews with Stakeholders. All qualitative analyses were conducted using the N6 NUD*IST software to extract main themes. Overwhelmingly, the service providers endorsed the interdisciplinary model of service. These professionals noted that the diagnostic services provided by the clinic were enhanced by both the skills of the individuals involved and by the cooperative, dialogic nature of the process. Professionals indicated that this

resulted in the clinic being uniquely able to provide high quality differential diagnoses in complex cases as well as excellent suggestions for the most effective treatment. Furthermore, the stakeholders stated that the clinic model simplified the process of professional contact for the families who had immediate access to an interdisciplinary team rather than having to travel to a number of locations on a number of dates to gain a diagnosis and treatment for their child.

The stakeholders believed that this coordinated access results in family members feeling involved in the diagnostic process and that their specific concerns and points of view have been heard and considered by multiple professionals. Most service providers mentioned their belief that families were hearing a consistent, coordinated message from a variety of professionals which could increase the likelihood of treatment initiation and adherence. A final theme that emerged was that the cooperation of professionals at the ADHD Clinic was having spill-over effects so that they were more likely to make use of their professional contacts outside the confines of the ADHD Clinic, resulting in a more interdisciplinary approach to their everyday practice.

Surveys with Consumers. Quantitative data was analyzed using SPSS and qualitative data was transcribed and organized into themes. All consumers indicated that they liked the fact that anyone (parents, teachers, and medical professionals) could refer children and that they would be willing to continue to do so. The vast majority agreed with the diagnosis (parents: 98%, teachers: 95%, physicians: 100%) and with the treatment recommendations (parents: 93%, teachers: 100%, physicians: 92%) provided by the ADHD Clinic. Consumers were asked to provide a number of ratings on a 5-point Likert scale (1=Not at all, 5=Very much). Overall, consumers gave high ratings regarding the clinic's diagnostic effectiveness. Group means (with standard deviations in parentheses) were parents: 4.60 (.75); teachers: 4.47 (.77); physicians: 4.40 (.67). Consumers also gave high ratings to the clinic's ability to determine appropriate treatment recommendations [parents: 4.17 (.78); teachers: 4.32 (.75); physicians: 3.90 (.57)]. The consumers were also generally very satisfied with the services provided at the ADHD Clinic [parents: 4.43 (.79); teachers: 4.37 (.68); physicians: 3.33 (.99)].

Qualitative comments made by the consumers indicated that the main concern expressed, particularly by family physicians, was in regard to the long wait times for services. The second most frequent concern was related to the limited diagnostic follow-up services (e.g., updating diagnosis at later points, providing ongoing contact with the family, ensuring implementation of recommendations). Positive feedback included that the ADHD Clinic success was the result of a knowledgeable multi-disciplinary team, comprehensive diagnostic assessments, collecting information from multiple sources, and a collaborative, coordinated team approach.

Conclusions

It is widely recognized that interdisciplinary teams are the best way to provide mental health services to children and families (e.g., Robinson, 2005); however, it has been noted that multi-system practice often falls short when dealing with children with ADHD (e.g., Edwards, 2003; Sloan et al., 1999). The overwhelming endorsement of the interdisciplinary, multi-system model used by the Colchester East Hants Attention-Deficit/Hyperactivity Disorder Clinic has broad implications for clinical practice beyond the confines of this setting. Teams of professionals described as multi- or interdisciplinary are often not that in practice. In terms of client contact, they work in parallel, not as a team. Recent research (e.g., Fickel et al., 2007; Tovain, 2006) and the results of this evaluation of the ADHD Clinic have both emphasized the general importance of and the benefits for professionals and service consumers that can be derived from interdisciplinary cooperation.

Program evaluation, such as the one described here, should also be included in these service delivery models. As a result of this program evaluation, the ADHD Clinic was re-confirmed as a valuable and needed service. Additional clinic days were added to address concerns about wait list times and additional follow-up procedures were also implemented. Currently, these involve contact between the family and the clinical psychologist three to six months after the family's visit to the clinic to check-in about progress and concerns. Given that both service providers and service consumers at the ADHD Clinic believe its services to be effective and highly satisfactory and that previous research (Sayal et al., 2002) has indicated that professionals working alone can be diagnostically ineffective, other environments should give consideration to adopting an interdisciplinary model for the assessment of ADHD.

Acknowledgements/Conflict of Interest

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