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The Identification and Assessment of Late-life ADHD in Memory Clinics

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Abstract

INTRODUCTION—Little data exists about attention deficit hyperactivity disorder (ADHD) in late life. While evaluating patients' memory problems, our Memory Clinic staff has periodically identified ADHD in previously undiagnosed adults. We conducted a survey to assess the extent to which other memory clinics view ADHD as a relevant clinical issue.

METHOD—We developed and sent a questionnaire to Memory Clinics in the United States to ascertain how ADHD was identified and addressed. The percentage of responding memory clinics' means of assessing and managing late-life ADHD comprised the measurements for this study.

RESULTS—Approximately one-half of responding memory clinics reported seeing ADHD patients. Of these, one-half reported identifying previously diagnosed cases, and almost one-half reported diagnosing ADHD themselves. One fifth of clinics reported screening regularly for ADHD, and few clinics described treatment methods.

CONCLUSION—Our results suggest that U.S. memory clinics may not adequately identify and address ADHD in late life.

Keywords

Adult attention deficit hyperactivity disorder; geriatric; cognition

INTRODUCTION

Attention Deficit-Hyperactivity Disorder (ADHD) is a relatively common behavioral syndrome beginning in childhood. Most sources suggest that ADHD affects between 3–7%

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CONFLICT OF INTEREST DECLARATION

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of children today, although some estimates place the rate as high as 15% (Barkley, 2005, Schmidt & Petermann, 2009). Presenting symptoms include inattention, increased distractibility and forgetfulness, difficulty with sustained mental effort, poor organization, and/or excessive activity, restlessness and impulsivity (American Psychiatric Association, 2000). Children with ADHD often have difficulties with school performance and demonstrate increased levels of comorbid oppositional defiant disorder and mood disorders (Schmidt & Petermann, 2009).

It is now widely recognized that ADHD symptoms persist into adulthood. What is unknown is the extent to which symptoms may persist in late life, when memory problems and dementia typically arise. When patients present to memory clinics, the diagnosing of dementia is sometimes complicated by the presence of pre-morbid disorders such as ADHD which adversely affect cognitive functioning. Because patients with ADHD may have difficulty attending to specific stimuli, their encoding of information may be ineffective or incomplete. The deficits in executive functioning that are frequently associated with ADHD can further affect performance on neuropsychological assessment (Roth & Saykin, 2004).

Determining symptom etiology is complex in geriatric patients. According to the DSM-IV-TR (American Psychiatric Association, 2000) attention difficulties must be apparent by the age of seven to meet criteria for the diagnosis of ADHD. Current recommended methods of diagnosis suggest using several sources of information including the clinical interview and history, collateral input from family members who can confirm early attention problems, data from a neuropsychological evaluation, school records indicating attention difficulties in educational settings, physical examination, and a family history (Adler & Cohen, 2004; Wender, 1998; Weiss & Murray, 2003). Diagnosing ADHD is more complex in geriatric populations for several reasons. Typical sources of information may be unavailable to elderly patients (e.g. collateral information) and this population is also unlikely to retain elementary school records. Moreover, little is known about the presentation of ADHD in elderly populations, such as whether and how the syndrome may change or even remit as individuals age (Seidman, 2006). Yet, preliminary evidence suggests that in some patients, ADHD symptoms may result in lifelong deficits which may occur in a unique and cumulative manner as patients age (Wetzel & Burke, 2008).

Moreover, attention difficulties are frequently seen in patients who develop cognitive impairment later in life. Disorders such as Lewy Body dementia (Kraybill et al., 2005), stroke (Welsh-Bohmer & Warren, 2006), traumatic brain injury (Okie, 2005), delirium (Rabin, et al., 2006), as well as Alzheimer's disease (Cohen et al., 2006) may involve deficits in attention. In addition, since attention is an important component in memory processes, patients with impaired attention capacity are likely to develop memory deficits. A trained neuropsychologist using a comprehensive neuropsychological battery would likely be able to differentiate between attention and memory difficulties due to ADHD and those due to acquired cognitive dysfunction such as dementia, as the pattern of deficits in ADHD involves a decreased rate of learning (Seidman et al., 1998) while dementia typically involves a rapid rate of forgetting (Welsh-Bohmer & Warren, 2006). However, the brevity of many memory screening batteries and the overlap in symptoms may result in uncertainty regarding etiology. When geriatric patients present to memory clinics with memory

impairments, the presence of ADHD may thus be a confounding variable. A Medline search yields a paucity of data regarding the occurrence and implications of ADHD in late life. Hence, we conducted a cross-sectional study to assess the extent to which the staffs of memory clinics consider this issue to be concerning, and how they address it.

METHOD

Study Population: Selection of Memory Clinics to Survey

We selected memory clinics from two sources, including all Department of Veterans Affairs (VA) medical centers with a Geriatric Research, Education and Clinical Center (GRECC) (except our own), and VA medical centers which reported the presence of a dementia clinic. In addition, we conducted an internet search for memory clinics within the United States, verifying contact information with the national yellow pages. In all, we sent surveys to 165 memory clinics across the country

Survey Questionnaire

The survey was comprised of 21 questions regarding whether and how memory clinics screen for ADHD, and how they address ADHD as a confounding variable. In addition, the survey solicited estimates of the frequency with which these clinics identify and diagnose patients with ADHD. Based on conservative estimates of ADHD in the general population at rates of 1–5% (Barkley, 1997), clinics were asked to rate the frequency of cases of ADHD in memory clinic either rarely (1–2%), occasionally (3–5%) or frequently (6–10%). Clinics were also asked how they addressed ADHD as a confounding variable when patients with attention problems presented in memory clinics. Finally, the survey inquired about the composition of memory teams in these clinics, and the types of clinical settings and catchment areas involved. A copy of the survey can be found in the Appendix.

RESULTS

We obtained an initial response rate of approximately 25% of clinics surveyed. We then mailed the survey out again, requesting clinicians who had not yet had the opportunity to respond to consider completing and returning the questionnaire. This resulted in an additional 17% response rate for a total of 42% response rate. In an attempt to gain fuller disclosure of actual clinical practice, all responses were anonymous; we did not seek or obtain any identifying information from responding clinics.

Of the 165 surveys mailed, 12 were returned unopened, 2 were returned stating that no memory clinic existed at that location, 2 were returned blank with no explanation, and 62 were returned completed. Sources of responding hospitals and clinics included VA, university or university affiliated clinics, community, private, and public. Eight hospitals and clinics reported dual affiliations (Table 1). Responding memory clinics reported staffing to include: physician, social worker, neuropsychologist, psychologist, neuropsychology technician, registered nurse, occupational therapist, speech pathologist, rehabilitation therapist and physician's assistant (Table 2). Twenty-four clinics were in urban catchment areas, 5 in rural areas, and 29 in mixed rural and urban areas. One clinic did not respond to this question. Since responses to the survey were anonymous, we were unable to make

correlations between our specific clinics or types of clinics and response rates or particular clinical procedures.

A relatively large number of clinics acknowledged having seen patients with ADHD in their clinic. Fifty-four percent of responding clinics reported having recognized cases of ADHD in their memory clinics. However, only twelve clinics (19%) reported screening regularly for ADHD.

Approximately one-half of responding memory clinics reported some contact with ADHD patients, either in evaluating patients with a prior diagnosis of ADHD or specifically making that diagnosis in clinic. A combined total of 34 clinics reported seeing previously diagnosed cases of ADHD. Twenty-four clinics did not report seeing cases of ADHD. Four clinics did not respond to this question. Fully half of respondents reported diagnosing ADHD for the first time in their memory clinic (see Table 3).

Cases of ADHD were reported comorbidly with cognitive impairment by more than one-third of reporting clinics. Patients with comorbid Mild Cognitive Impairment (MCI) and ADHD were reported by a total of 23 of 62 clinics. Equivalent numbers of clinics reported comorbid dementia and ADHD, with a total of 22 of 62 clinics (see Table 3).

Methods of identifying patients with ADHD varied. As summarized in Table 4, while a quarter of responding clinics reported using two or more methods to identify patients with ADHD, the majority used either one or none. The most frequent methods of identification were history and neuropsychological evaluation.

Only three clinics reported accessing a collateral informant. These results are depicted in Table 5. Only 15 of 62 respondents provided specific strategies describing how ADHD was addressed as a confounding variable. Eight clinics reported considering ADHD medication as either a primary or secondary treatment, with four clinics listing treatment of depression, family education, and addressing cognitive issues as primary concerns. Four clinics indicated a practice of referring patients for further assessment, either to neuropsychology or psychiatry. One clinic reported devising a care plan with the patient's caregiver, one suggested collaborative intervention with mental health, and one clinic referred for cognitive re-training.

CONCLUSION

Only approximately one-half of responding clinics reported contact with ADHD patients in their memory clinics, suggesting that in the other half of responding memory clinics, no contact was reported with ADHD patients at all. Since ADHD is reported in the adult population at rates of 1–5% (Faraone et al., 2004; McCann & Roy-Byrne, 2000), this study raises the question of whether ADHD may not be seen or recognized as frequently in memory clinics. Possible reasons are speculative, as the field has not yet systematically examined these issues. Reasons may include the following: ADHD is a less prevalent disorder in late life because its symptoms diminish over time (Halperin et al., 2008); the ADHD clinical profile increases in heterogeneity with age, rendering it more difficult to recognize in older patients (Schmidt & Petermann, 2009); validity of DSM criteria may be

reduced in this age group (Simon, Czobor, Balint, Mszaros, & Bitter, 2009); its symptoms may be misattributed to age-related cognitive decline (Smith & Rush, 2006); patients with ADHD might be less likely to survive into old age, due for example to a higher prevalence of risk taking behaviors (Barkley, 2004) or co-morbid disorders (Roth & Saykin, 2004); and patients with ADHD may be incarcerated or more preferentially seen in addiction treatment centers (Seidman et al., 1998). Based on our own experiences, we have identified other possible reasons ADHD may not be recognized. First, data may be inaccessible that could confirm the diagnosis (e.g. old school records). Older patients with ADHD may also be inappropriately managed or referred by their physicians. In addition, ADHD behaviors may have been better tolerated, and therefore less diagnosed in previous generations than is currently the case. The data from this study also raise the possibility that ADHD is under-recognized and under-diagnosed in the geriatric population.

Approximately one-half of responding clinics reported diagnosing ADHD patients in their clinics. However, the reported means by which patients are identified in memory clinics raises concerns. While approximately one-third of those clinics diagnosing ADHD utilized at least two of the recommended methods for assessing symptoms, one-quarter reported utilizing only one. Of the 62 responding clinics, only two cited the use of an informant in the diagnostic process. One clinic reported using the attention scale from the Cognistat, but this alone would likely not constitute an adequate method of assessing ADHD as a potentially confounding factor, since this scale (as well as the Cognistat as a whole) includes very few items related to ADHD (Mueller, et al., 2001).

While one-half of responding clinics reported newly diagnosing cases of ADHD, and one-third reported seeing cases of ADHD comorbidly with both MCI and dementia, only one-third described attempts to address ADHD as a confounding variable, either by assessment or by treatment (approximately one-half each). These preliminary data suggest that in responding memory clinics, ADHD symptomatology may not adequately be taken into account as part of the pre-morbid baseline against which late onset cognitive impairment needs to be measured. Of those clinics that reported that they attempted to treat ADHD symptomatology, only one-half reported considering medication as a primary or secondary line of treatment. Only two suggested referring the patient to psychiatry, and only two mentioned use of psychotherapy or cognitive strategies to remediate patients' ADHD symptoms. These results raise additional concerns, since the literature shows that a multi-modal approach is the most effective approach to managing ADHD (Searight, et al., 2000, Bellak & Black, 1992). Thus it seems likely that some memory clinics may currently be unprepared to assess and address ADHD symptoms in the context of other late-life cognitive impairments.

This study has a number of significant limitations, including its small sample size. With only 62 clinics responding, it is possible that responding clinics were self-selected, with those identifying ADHD patients more likely to respond. Other possible reasons for poor response rate include limited time on the part of respondents or limited knowledge or interest in ADHD in older adults. The small sample size precluded making correlations between clinic composition and location, and methods of diagnosis and treatment. A substantial proportion of responding clinics (25%) were associated with the VA system. Since elderly patients in

VA Memory Clinics are disproportionately male, and since the diagnosis of ADHD is made much more frequently in males, the collected data may be somewhat skewed. Another limitation may involve participants' time constraints. Because some questions were open ended rather than multiple choice, participants may have under-registered methods of diagnosis and treatment actually utilized. Taken together, these considerations limit the generalizability of the results, and conclusions should therefore be regarded in a preliminary light.

The results from this study provide preliminary evidence regarding the need for greater awareness of late-life ADHD in memory clinics. The data highlight the importance of considering ADHD as a potential contributor to cognitive problems in late life, as well as the need for more systematic approaches. These data also suggest that ADHD in the more general geriatric population may be under-identified and under-treated. Given the burgeoning population of older adults in many countries, more attention needs to be devoted to studying the diagnosis and management of ADHD in the context of late-life cognitive disorders.

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Table 1

Sources of Responding Hospitals and Clinics

Source	Number (%)
University or university affiliated	25 (40)
VA	15 (25)
Community	16 (26)
Private	9 (15)
Public	1 (02)
Dual	8 (13)

* Some hospitals carry dual affiliations, such that numbers summate to greater than 100%.

Table 2**Staff of Memory Clinics Reported**

Staff	Number of clinics (percentage)
Physician	55 (89)
Neuropsychologist	33 (53)
Social Worker	28 (47)
Neuropsych technician	28 (45)
PhD/PsyD	28 (45)
Registered Nurse	22 (35)
Speech Pathologist	6 (10)
Occupational Therapist	4 (06)
Respiratory therapist	2 (03)
Physician Assistant	1 (02)

- Most clinics had more than 1 staff member, such that numbers summate to greater than 100%.

Table 3

Contact with ADHD patients in memory clinics

	ADHD already diagnosed Number (%)	ADHD newly diagnosed in clinic Number (%)	ADHD comorbid with MCI Number (%)	ADHD comorbid with dementia Number (%)
None	28 (45)	31 (50)	38 (61)	40 (65)
Rare (1–2%)	25 (40)	21 (34)	16 (26)	18 (29)
Occasional (3–5%)	8 (13)	9 (15)	6 (10)	2 (3)
Frequently (6–10%)	1 (2)	1 (2)	2 (3)	2 (3)
Total seen in clinics	34 (55)	32 (51)	24 (39)	22 (35)

Table 4

Number of Methods Used to Identify Presence of ADHD

Number of Methods Used	Number of Clinics (%)
0	24 (39)
1	20 (32)
2	15 (24)
3	2 (03)
Other	1 (02)

Table 5

Types of Methods of ADHD Identification

Type	Number (%)
History	24 (43)
Neuropsychological testing	13 (23)
Clinical interview	4 (7)
Informant	3 (5)
Clinical assessment	2 (4)
Single test (e.g.Cognistat)	2 (4)
Younger age	2 (4)
Other	6 (11)