

Online Information-Seeking Behaviors of Parents of Children With ADHD

Clinical Pediatrics
1–5
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DOI: 10.1177/000922817691821
journals.sagepub.com/home/cpj



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Abstract

This article describes (a) parent questions about ADHD (attention deficit/hyperactivity disorder), (b) parent Internet use to seek ADHD information, and (c) associations between type of Internet access and ADHD information-seeking. Seventy parents of children (ages 7-17 years) with ADHD completed questionnaires after their child's visit with their pediatrician. Bivariate relationships were assessed using chi-square statistics, Pearson correlation coefficients, or *t* tests. Parents identified an average of 8.9 questions about ADHD for their child's provider. Common questions were related to medication and long-term implications of ADHD. A majority of parents searched the Internet for general ADHD information (87%) and ADHD medication information (81%). White parents accessed the Internet significantly more via home computer, mobile phone, and tablet, and significantly less via public library than non-White parents. Parents who accessed the Internet via home computers and tablets were more likely to search the Internet for ADHD medication information than parents who did not.

Keywords

Internet, ADHD, medication, information-seeking, communication, parent

Introduction

Attention deficit/hyperactivity disorder (ADHD) affects approximately 5% of children in the United States, making it one of the most prevalent mental health disorders in the pediatric population.¹ Whether parents opt for beginning or continuing treatment of ADHD can depend on their initial perspectives of ADHD,² as well as their concerns about the long-term effects and stigma of ADHD.³ These thoughts can be shaped by information received within and outside of the clinical setting. Additionally, evidence suggests parents seek tailored information to suit their specific situation.⁴ Although health professionals are seen as a trusted source of ADHD information,⁵ prior research in the United States has shown that communication about ADHD treatment between parents of children with ADHD and their providers is limited.⁶ In an earlier study from 2010 that assessed ADHD information sources of parents in Australia, the most frequently accessed sources of ADHD information were pediatricians (86%), books (76%), family physicians (65%), and schools (61%), and the Internet (59%).⁵ However, as the Internet becomes more accessible and its use

becomes more pervasive, people are increasingly relying on it as a source of health information.

As of September 2016, 87% of American adults use the Internet.⁷ Overall, these Internet users tend to be younger, wealthier, and have more years of education.⁸ Among Internet users, 72% seek health information online, 50% seek health information on behalf of someone else, and 26% have read someone else's health or medical experiences online.⁹

Very little research exists exploring the information-seeking behaviors of parents of children with ADHD. The research that does exist spans different countries and cultures, which makes direct comparisons difficult

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to interpret^{5,10,11}; however, there are important take-aways nonetheless. In a survey of 1544 parents of children in public schools in Italy about general online health information, parents seeking health information for others online were more likely to have a high school diploma or college degree, be younger, female, and unsatisfied with their general practitioner's health information.¹⁰ In another study, 35 parents of children with ADHD and 16 ADHD health professionals in Spain were asked to evaluate the quality of the 10 highest ranked websites in Spain containing information about ADHD.¹¹ Both groups found the quality of ADHD information to be low. However, despite rating the ADHD information as low quality, parent knowledge about ADHD and their motivation to treat their child's ADHD significantly increased after reviewing the 10 websites.

Thus, it follows that parents who seek more ADHD information outside of the clinical setting may have more knowledge about ADHD, and that these information seekers may be demographically different than those who do not seek information outside the clinic setting. The objectives of this article are to describe (a) the types of questions parents have about ADHD, (b) the extent to which parents use the Internet to seek information about ADHD and ADHD medication, and (c) the association between type of Internet access and information seeking about ADHD and ADHD medication.

Methods

Study Sample

Children and their parents were recruited at 2 private pediatric practices in North Carolina. Parents were eligible if they were present during the office visit, could read and speak English, were at least 18 years of age, and if their child was also eligible. Children were eligible if they were ages 7 through 17 years, were able to speak English, could read the assent form, were present at the visit with an adult parent who was also eligible, had a diagnosis of ADHD, and had a prescription for at least 1 ADHD medication. This study was approved by the University of North Carolina at Chapel Hill Institutional Review Board. Informed consent was obtained from all individual participants included in the study.

Clinic staff referred potentially eligible parents to a research assistant who explained the study and obtained consent. Families were told that the primary study aim was to examine parent's perceptions of communication with their pediatric providers about ADHD.

Measurement

Parent age, their child's age, time since their child received an ADHD diagnosis, and parent self-reported education level (in years) were measured as continuous variables. Parents also reported their gender and race (White, African American, Native American/American Indian, or Other). For bivariate analysis, race was dichotomized (White vs non-White).

Parents were first presented with a list of commonly asked questions about ADHD and ADHD medications. These questions were developed from a previous study using audio-recordings of pediatric visits,⁶ and included questions such as "are there other things we can do at home to help with ADHD," and "what are the long-term effects of my child taking the ADHD medicine?" Parents were then asked to check any questions about ADHD they had for their child's provider. A summary score was created of the total number of questions checked. Parents were also asked where they would like a program to be offered to learn more about ADHD and ADHD medication: (a) online, (b) at their provider's office, (c) at their child's school, and (d) at their pharmacy.

We assessed types of Internet access and Internet use in two different ways. For each type of device (home computer, iPad or tablet, mobile phone, and public library), participants were asked if they used it to access the Internet (yes or no). In this way, we were able to measure accessibility of the Internet from each device. Internet information-seeking about ADHD and ADHD medication was measured using scaled responses (daily, weekly, monthly, less than monthly, never), but included an option for "other." Our analyses dichotomized the ADHD and ADHD medication Internet information-seeking variables into having ever used the Internet for ADHD information-seeking or not. Responses indicating "other" were included as having ever used the Internet for ADHD information seeking because these responses still indicated some level of use. Finally, parents were asked what types of websites they used to gather information, which included response options for (a) topic specific chat rooms, (b) message boards, (c) Facebook, (d) Twitter, (e) MySpace, (f) WebMD, and (g) other websites (specified).

Analysis

Descriptive statistics were calculated for all variables. Bivariate relationships were assessed using chi-square statistics, Pearson correlation coefficients, or *t* tests. First, associations were assessed between demographic variables (parent age, gender, race, and educational level), and (a) the number of years their child has had

Table 1. Parent Characteristics.

	Mean (SD) or % (n)	Range
Parent age, years	42.9 (7.1)	30-62
Parent gender		
Male	18.6 (13)	
Female	81.4 (57)	
Years of education	15.5 (2.4)	10-26
How long child has had ADHD, years	5.5 (3.4)	1-16
Race		
White	82.9 (58)	
Black/African American	10.0 (7)	
Other	4.3 (3)	
Missing/Not reported	2.9 (2)	

ADHD, (b) the total number of questions about ADHD and ADHD medication the parent checked, (c) types of Internet access, (d) Internet information seeking about ADHD, and (e) Internet information seeking about ADHD medication. We then examined associations between types of Internet access and ADHD information and ADHD medication information-seeking behaviors. Finally, we examined associations between Internet ADHD information and ADHD medication information seeking and the total number of questions parents had for their providers. A P value $\leq .05$ indicated a significant finding. All analyses were performed using IBM SPSS for Windows version 22.¹²

Results

Seventy parent/child pairs agreed to participate in the study. The demographic data for parents and children are presented in Table 1. Parent age ranged from 30 to 62 years with a mean of 43 years ($SD = 7.1$). Children's ages ranged from 7 to 17 years with an average age of 12 years ($SD = 2.6$ years). The number of years since their child's ADHD diagnosis ranged from 1 to 16 with a mean of 5.5 years ($SD = 3.4$). Eighty-three percent of parents were white, 81% percent were female, and parents had an average of 15.5 years ($SD = 2.4$) of education comparable to a high school degree with some college.

Table 2 presents the questions that parents checked that they would like to ask their child's healthcare provider about ADHD and ADHD medications. Parents checked an average of 8.9 questions ($SD = 5.1$; range 0-19). The most common questions parents had were related to ADHD medication and long-term implications of ADHD and ADHD medication. No demographic characteristics were significantly associated with the number of questions that parents checked.

Table 2. Questions About ADHD and ADHD Medication Parents Have for Providers.

	n	%
What are the long-term effects of my child taking the ADHD medicine?	58	82.9
Are there other things we can do at home to help with ADHD?	52	74.3
Will my child be able to grow out of ADHD?	51	72.9
Will my child ever be able to stop taking their ADHD medicine?	46	65.7
Which ADHD medicine is best for my child's symptoms?	45	64.3
What are the side effects of my child's ADHD medicine?	44	62.9
What causes ADHD?	43	61.4
How long does my child need to use their ADHD medicine?	39	55.7
Is it okay for my child to take the ADHD medicine with his/her other medicines?	36	51.4
Should my child take their ADHD medicine on the weekends?	32	45.7
Will my child be able to function as well as kids without ADHD?	30	42.9
How much ADHD medicine should my child take each time they use it?	23	32.9
How many time a day should my child take ADHD medicine?	22	31.4
What is the purpose of my child's ADHD medicine?	19	27.1
Will the ADHD medicine give my child bad dreams?	19	27.1
How will I know when I need to get more ADHD medicine?	18	25.7
What is the name of the medicine my child takes?	18	25.7
Will my child be able to drive a car?	17	23.3
Does my child need his/her ADHD medicine at school?	12	17.1

Parents noted where they would like to learn more about ADHD and ADHD medication: (a) an online program (70%), (b) at their providers' office (56%), (c) at their child's school (43%), and (d) at their pharmacy (13%). No demographic characteristics were significantly associated with where parents want to learn about ADHD.

Parents reported accessing the Internet via home computer (97%), mobile phone (76%), iPad or other tablet (71%), and public library (11%). White parents were more likely to access the Internet from a home computer, ($P = .009$, Fisher's exact test), mobile phone ($P = .006$, Fisher's exact test), iPad or tablet ($P = .02$, Fisher's exact test), and less likely to access the Internet at a public

Table 3. Websites Parents Use to Gather Information.

	n	%
WebMD	52	74.3
Google	14	20.0
Message boards	10	14.3
Facebook	7	10.0
Topic-specific chat rooms	7	10.0
ADHD manufacturer's website	3	4.3
CHADD	3	4.3
Twitter	2	2.9
Provider's website	2	2.9
MSN News	2	2.9
Other medical websites	2	2.9
NIH	1	1.4
Mayo Clinic	1	1.4
ADDitude	1	1.4
Wikipedia	1	1.4
Fast Brain	1	1.4
Psychology Today	1	1.4
Express Scripts	1	1.4
Pintrest	1	1.4
Yahoo	1	1.4
John Rosemond	1	1.4
Medical libraries	1	1.4
MySpace	0	0.0

library ($P = .003$, Fisher's exact test) than non-White parents. No significant differences were found between other demographic characteristics (age, gender, and years of education) and types of Internet access.

Parents reported searching the Internet for ADHD information (87%) and ADHD medication information (81%). No demographic characteristics were significantly associated with parent Internet ADHD information and ADHD medication information seeking. Table 3 shows the frequencies for the types of websites that parents reported using to gather ADHD information. WebMD (74%), Google (20%), and message boards (14%) were the most reported websites that were used to obtain ADHD information.

No significant relationships were found between the types of Internet access and having ever used the Internet to search for ADHD information. However, significant relationships were found between some sources of Internet access and having ever used the Internet to search for ADHD medication information. Parents were more likely to search the Internet for ADHD medication information if they reported having Internet access from a home computer ($P = .032$, Fisher's exact test) or tablet ($P = .007$, Fisher's exact test), compared with those who did not access the Internet in such ways. The association between Internet access from a mobile phone and ADHD

medication information seeking approached significance ($P = .051$, Fisher's exact test). No significant relationship was found between accessing the Internet from a public library and searching the Internet for ADHD medication information.

Discussion

When asked to indicate what questions about ADHD and ADHD medication they had for their child's provider, parents indicated an average of 8.9 questions. This finding suggests that parents want more information about ADHD and our results suggests they go to the Internet to help fulfill these information needs. In our sample, 87% and 81% of parent sought information about ADHD and ADHD medication on the Internet, respectively. Consistent with online information-seeking behaviors, 70% of parents reported a preference for an online program for learning about ADHD and ADHD medication. While other places for an informational program were also widely preferred, such as a provider's office (56%) and children's school (43%), efforts to develop online ADHD informational programs should be prioritized. In light of this, our results also suggest that the targeted patient population should be considered when developing such programs.

Our results suggest that being White was significantly associated with accessing the Internet more via a home computer, mobile phone, and iPad or tablet, and accessing the Internet less via public library. When it comes to Internet information seeking, our results show that parents of children with ADHD often seek information about ADHD medication. Furthermore, it appears that seeking information using the Internet is related to the type of Internet access. Accessing the Internet from a home computer and iPad or tablet were both significantly associated with more online ADHD medication information-seeking, and mobile phone Internet access approached a similar significant association. So while a majority of parents in our study preferred online programs for learning more about ADHD and ADHD medication, barriers to access should be considered with such an approach.

Future research in more diverse samples should focus on individual characteristics of patients and their parents and how these may be indicative of how parents engage in their child's healthcare inside and outside of the clinical setting. A majority of our sample engaged in online health information seeking, although this finding was somewhat expected given parents in our sample were on average younger white females with more than a high school education, which are characteristics that have been linked to more online health information seeking.⁸

Additionally, these findings suggest that future research focus on strategies to reduce the barriers to information that both pediatric patients and their parents experience inside and outside of the clinical setting.

This study is not without limitations. Our sample consists of parents of children with ADHD that were recruited in the provider's office which limits generalizability. The majority of our sample was mothers; future research should assess where fathers would like to learn about ADHD. Our sample size for this pilot study was small. Future research should examine in larger samples parent preferences for learning about ADHD and ADHD medication information. Significant associations found between Internet access and ADHD medication information seeking on the Internet might be confounded by measures that were not assessed for this study (eg, health literacy and technological literacy).

Conclusion

The results of this study suggest that ADHD medication information seeking on the Internet by parents of children with ADHD is an increasingly important topic that warrants further investigation. Given the significant associations found in our analysis between type of Internet access and race, and type of Internet access and ADHD medication seeking behaviors, it is reasonable to hypothesize disparities in parent knowledge are partially explained by limited access to information outside of the clinical settings. Providers should be cognizant of such possible disparities and work to alleviate both lack of information as well as misinformation about ADHD and ADHD medications.

Author Contributions

AS contributed to the conception, analysis, and drafting of the manuscript. BS contributed substantially to the conception and drafting of the manuscript. All authors, AS, DC, RS, KT, LM, SS, AS, and BS contributed to editing and provided approval of the final manuscript.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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