Exploring the Usefulness of Fisher's Auditory Problems Checklist as a Screening Tool in Relationship to the Buffalo Model Diagnostic Central Auditory Processing Test Battery

Anna K. Strange, AuD
Central Maine Audiology, Lewiston, Maine

Thomas R. Zalewski, PhD
Bloomsburg University of Pennsylvania, Bloomsburg, Pennsylvania

Mary Katherine Waibel-Duncan, PhD
Bloomsburg University of Pennsylvania, Bloomsburg, Pennsylvania

In 1996, ASHA addressed the need for appropriate tools to screen for (C)APD; yet, no universally accepted screening tool has been identified. The purpose of the current study was to determine if Fisher's Auditory Problems Checklist (Fisher, 1976) is a useful screening tool. A Chi Square goodness-of-fit test found that children who scored at or below cutoff on Fisher's Checklist were significantly more likely to receive a diagnosis of (C)APD ($X^2 1 = 22.5$, $p < 0.05$) based on the Buffalo Model Diagnostic Test Battery. The current study offers preliminary support for the clinical usefulness of Fisher's Auditory Problems Checklist (Fisher, 1976) as a screening tool.

Introduction

In 1996, the American Speech-Language Hearing Association (ASHA) Task Force on Central Auditory Processing Disorders ([C]APD) developed a technical report to assist clinicians in the diagnosis and management of (central) auditory processing disorders in children and adults. This technical report contributed to a renewed clinical interest in (C)APD and, more specifically, concerns about the misdiagnosis of the disorder. The document addressed the need for appropriate tools to screen for (C)APD; yet, no universally accepted screening tool for use with children has been identified. The goal of such a tool would be to accurately identify children who exhibit a need for a more comprehensive battery of diagnostic auditory processing tests.

The ASHA Task Force on (C)APD (1996) defined a (central) auditory processing disorder as:

> A deficiency in one or more of the mechanisms and processes associated with the following behaviors: sound localization and lateralization, auditory discrimination, auditory pattern recognition, temporal aspects of audition (temporal resolution, masking, integration, and ordering), auditory performance decrements with competing acoustic signals, and auditory performance decrements with degraded acoustic signals. (p. 41)

Although minimal research on the prevalence of (C)APD in the pediatric population exists, the most commonly cited prevalence estimates indicate that 2-3% of the pediatric population meets diagnostic criteria for the disorder (Chermak & Musiek, 1997).

Complicating the study of (C)APD is its co-morbidity with other clinical conditions, including normal or greater than normal intelligence with difficulty in academic subjects that are highly dependent upon verbal skills (language, reading, spelling), distractibility or inattentiveness, poor performance with a degraded speech signal or in the presence of background noise, and socially withdrawn (Bamiou, Musiek, & Luxon, 2001; Musiek, Gollegly, Lamb, & Lamb, 1990). The co-morbidity with other clinical conditions suggests that (C)APD may be misdiagnosed or overdiagnosed.

The routine use of an effective screening tool may help to identify children who would benefit from more extensive and formal (C)APD testing. In agreement with Jerger and Musiek (2000), an auditory processing screening program should (1) emphasize tasks essential in the processing of complex auditory stimuli, such as temporal processing or auditory discrimination, and (2) meet the psychometric standards of sensitivity and specificity, clearly define pass or refer criteria, demonstrate inter-rater and test-retest reliability, and show concurrent and discriminate validity.

A survey of audiologists (Emanuel, 2002) indicated that approximately 75% of the respondents used (C)APD screening questionnaires. The respondents reported using the following screening tools to identify those in need of a formal auditory processing evaluation: 43% used the Children's Auditory Performance Scale (CHAPS; Smoski, 1990), 25% used the Screening Identification for Targeting Education Risk (SIFTER; Anderson, 1989), and 32% used Fisher's Auditory Problems Checklist (Fisher, 1976).

Fisher's Checklist is a questionnaire developed to collect information from the referring source/observer about the perceived auditory processing problems of the child at risk for (C)APD. Although Fisher reports that the checklist is an effective screening tool for (C)APD, the findings were never published (Van Hattum, 1985). Furthermore, no additional attempts to explore the potential usefulness of this screening tool have been published.

In 1993, Katz introduced the Buffalo Model Diagnostic Test Battery of (C)APD assessment and management (Musiek & Berge, 1998). This model consists of three primary diagnostic tests: Staggered Spondaic Words (SSW; Katz, 1998), Phonemic Synthesis Test (PST; Katz, 1998), and W-22 Speech-in-Noise test (Katz, 1998). The SSW presents dichotic spondaic words which are staggered such that the second syllable of the first spondee presented to one ear overlaps the first syllable of the second spondee presented to the other ear (Katz, 2007a). The PST presents individual phonemes which must be blended to form a target word (Katz, 2007a). Lastly, the W-22 Speech-in-Noise test presents phonetically balanced words in quiet, as well as in an environment of competing background noise, and the individual must repeat the target word (Katz, 2007a). When all three tests are used in conjunction with one another, the battery is reported to be quite sensitive, with 96% of individuals diagnosed with (C)APD failing one of the tests and 73% of individuals diagnosed with (C)APD failing two or three of the tests (Katz & Marasciulo, 2001).

The Buffalo Model Diagnostic Test Battery categorizes (C)APD into four individual types: decoding, tolerance fading memory, integration, and/or organization. A decoding deficit is a breakdown at the phonemic level which results in an inability to quickly and accurately process what is heard (Stecker, 1998). Tolerance fading memory is an indication of poor auditory memory, figure-ground skills, and difficulty understanding speech in poor listening conditions (Stecker, 1998). The third category, integration, is a difficulty combining auditory information with other functions, such as visual information from nonverbal aspects of a speech signal (Stecker, 1998). Lastly, the category of organization represents difficulty with organizational tasks and sequencing of sounds and words (Medwetsky, 2002). These categories are not mutually exclusive; the majority of children seen for testing have a deficit in two or more categories (Katz, 2007a; 2007b). Katz (2007a; 2007b) reported that as many as 5-10% of those seen for testing demonstrate all four categories.

The available research on (C)APD focuses on the auditory processing abilities and clinical presentation of symptoms in adults (Committee on Hearing and Bioacoustics and Biomechanics, 1998; Golding, Carter, Mitchell & Hood, 2004; Martin & Jerger, 2005) with relatively little attention to auditory processing problems and symptoms in children. In adults, (central) auditory processing issues are often attributed to age-related changes in the auditory system or neurologic changes in general (Committee on Hearing and Bioacoustics and Biomechanics, 1998). The symptoms of (C)APD in children often appear to be idiopathic; therefore, several authors (Cook et al., 1993; Gascon, Johnson & Burd, 1986) question the accuracy of the diagnosis and/or the existence of the disorder in children. Two decades ago, Jerger, Johnson, and Loiselle (1988) countered this criticism with a comparison study between children with suspected auditory processing disorders and those with a confirmed lesion of the central auditory nervous system. The similarity of results obtained on pure tone audiometry, speech audiometry, and acoustic reflexes across the two groups suggested an auditory-perceptual basis for (C)APD.

Developed in 1976, Fisher's Auditory Problems Checklist provides a broad assessment of general characteristics associated

Table 1

Categorical representation of items on Fisher's Checklist

Category	Item number(s)
Acuity	1 and 2
Attention	3, 4, and 5
Attention span	6, 7, and 8
Figure ground	9
Discrimination	10 and 11
Short-term memory	12 and 13
Long-term memory	14
Sequential memory	15 and 16
Comprehension	17, 18, and 19
Speech and language problems	20 and 21
Auditory-visual integration	22
Motivation	23
Performance	24 and 25

Note. Numbers in the Item number(s) column represents the question's number in Fisher's Checklist where the category is found.

with 13 categories of auditory processing skills. Fisher developed the checklist, guided by the following principles: (1) includes problems related to all components of auditory processing, (2) uses simple language, (3) is quick and easy to administer and interpret, (4) is able to differentiate normal processing children from those with auditory processing problems, (5) can be completed by any referral source (i.e. parent, teacher, speech language pathologist), and (6) can be utilized as a screening tool (Van Hattum, 1985).

Twenty-five items were selected and divided into the following 13 categories: acuity, attention, attention span, figure ground, discrimination, short-term memory, long-term memory, sequential memory, comprehension, speech and language problems, visual integration, motivation and performance (Van Hattum, 1985). Table 1 presents each category with its associated checklist items. A review of the table indicates that most of the auditory processing characteristics are addressed by several items on the Checklist. Consistent with Jerger and Musiek's (2000) recommendations, Fisher's Checklist (Fisher, 1976) includes items that examine (1) difficulty in hearing and/or understanding in the presence of background noise or reverberation, (2) difficulty in understanding degraded speech (e.g. rapid speech, muffled speech), (3) difficulty in following spoken instructions in the classroom in the absence of language comprehension deficits, (4) difficulty in discriminating and identifying speech sounds, and (5) inconsistent responses to auditory stimuli or inconsistent auditory attention.

Fisher's Checklist contains 25 items, each with a value of 4%. The observer is instructed to place a checkmark next to each item that is consistent with the exhibited behavior of the child. Items not selected by the observer are multiplied by four to determine a total percentage. A child exhibiting no behaviors consistent with auditory problems (i.e., no items checked by the observer) would score a 100%. Unpublished research by Fisher identified a cut-off score of 72%, such that children who scored at or below this value warrant a referral for further (C)APD diagnostic testing. Fisher's data showed 92% of the children with a diagnosed (C)APD were below the 72% cut-off score compared to only 11.6% of the undiagnosed group. The current study used the recommended 72% cut-off score to explore Fisher's Checklist's usefulness in identifying children at risk for (C)APD in light of diagnostic and technological advances.

Smoski, Brunt and Tannahill (1992) criticized Fisher's Checklist because it covers such a broad range of characteristics and only a small number of items related to listening. Furthermore, listening behaviors of children with (C)APD vary depending on the listening environment (Smoski, Brunt & Tannahill, 1992). Therefore, a screening checklist must include questions pertaining to a variety of tasks and environments. Fisher's Checklist (Fisher, 1976) includes various skills that are part of auditory processing behaviors. However, it does not specifically question the influence of the environment on the skills.

A need exists for a (C)APD screening tool that is effective and efficient. However, there is little consensus regarding this issue. Fisher's Checklist is used clinically to screen for (C)APD, although it has not been empirically evaluated. Although testing many of the aforementioned psychometric standards is beyond the scope of this study, the current research explored whether children who scored at or below the cut-off point on Fisher's Checklist were significantly more likely to receive a diagnosis of (C)APD following the completion of the Buffalo Model Diagnostic test battery. Therefore, the current study examined the relatedness between Fisher's Auditory Problems Checklist (Fisher, 1976) and the diagnostic battery following the Buffalo Model for (C)APD testing (as described in Musiek & Berge, 1998).

Method

Participants

Fifty-seven charts were reviewed to determine if they met the inclusion criteria of a completed Fisher's Checklist (Fisher, 1976) and the Buffalo Model Diagnostic test battery. Seventeen

Table 2

Percentages of Test Outcomes for Fisher's Checklist and the Buffalo Battery

	SSW	PST	W-22	Percentage
No (C)APD Diagnosis	Normal	Normal	Normal	5% (n=2)
	Normal	Abnormal	Normal	5% (n=2)
	Normal	Abnormal	Abnormal	2.5% (n=1)
(C)APD Diagnosis	Abnormal	Normal	Abnormal	27.5% (n=11)
	Abnormal	Normal	Normal	17.5% (n=7)
	Abnormal	Abnormal	Normal	15% (n=6)
	Abnormal	Abnormal	Abnormal	10% (n=4)
	Normal	Normal	Abnormal	10% (n=4)
	Normal	Abnormal	Abnormal	5% (n=2)
	Normal	Abnormal	Normal	2.5% (n=1)

Note. (C)APD diagnosis based upon the Buffalo Model categorization; however, tests not included in the Buffalo Model were used in some of the evaluations. SSW = Staggered Spondaic Word Test. PST = Phonemic Synthesis Test. W-22 = W-22 Speech-in-Noise test. (C)APD = (central) auditory processing disorder.

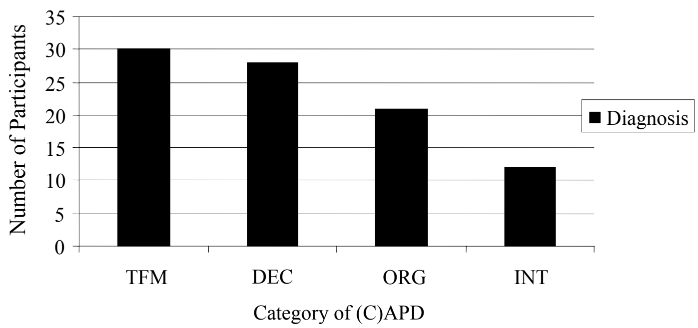

Figure 1. Number of participants identified with each category of (C)APD.

charts were excluded due to an incomplete test battery, diagnosis of Attention Deficit Hyperactivity Disorder, or a Fisher's Checklist (Fisher, 1976) score above 72%. Forty children between the ages of 6 and 13 years, (M = 9.25, SD= 1.82) who were evaluated at Bloomsburg University's Speech, Language and Hearing Clinic from 2003 to 2008 were included in this study. The participants consisted of 23 boys (57.5%) and 17 girls (42.5%). The mother was the most common individual (87.5%) to complete the Fisher's Checklist. Each child exhibited normal peripheral hearing and normal middle ear function. The mean three-frequency pure tone average (PTA) for the participants was 4.93 dB HL (SD=4.37) for the right ear and 4.84 dB HL (SD=4.71) for the left ear. Participants' scores on Fisher's Checklist ranged from 32% to 72%, with a mean score of 54% (SD = 12.91).

Co-morbid disorders make it difficult to identify a (C)APD. Consequently, as reported by parents via written or oral case history, individuals with any confounding diagnosis were excluded from this study. For the purpose of this study, a confounding diagnosis was defined as any attention, learning, or developmental disorder.

Procedures

The investigator examined each child's file within the Bloomsburg University Speech, Language, and Hearing Clinic to determine if the child met the inclusion criteria. Fisher's Checklist (Fisher, 1976) percentage score, scores from the SSW, PST, and W-22 Speech-in-Noise test, as well as the specific type of (C)APD diagnosis (i.e., decoding, tolerance fading memory, integration, and/or organization) were recorded on a test results spreadsheet. More than one type of (C)APD could be diagnosed for an individual child. Table 2 summarizes the findings of the case review. This table presents the percentage of individuals identified with and without a (C)APD and the outcome of the Buffalo Test Battery. Please note that tests outside the Buffalo Model may have been used to identify a disorder. Data were analyzed and entered into Statistical Package for Social Sciences (SPSS) for Windows for analysis (Version 16.0; Polar Engineering and Consulting, 2007). Given the nominal scales of measurement upon which the data were recorded, a Chi Square goodness-of-fit test was conducted to examine if children who scored at or below the cutoff on Fisher's Checklist were more likely to receive a diagnosis of (C)APD following completion of a more extensive and comprehensive diagnostic battery. In addition, separate Chi Square goodness-of-fit tests were performed to examine whether children who scored at or below cut-off on Fisher's Checklist were more likely to obtain abnormal scores on each of the three tests in the Buffalo Model Diagnostic Test Battery.

Results

As illustrated in Figure 1, 30 of the participants (75%) were diagnosed with a tolerance fading memory deficit, 28 of the participants (70%) were diagnosed with a decoding deficit, 21 participants (52.5%) were diagnosed with a deficit in organization, and 12 participants (30%) were diagnosed with an integration deficit. Figure 2 illustrates the distribution of the four types of (C)APD that were identified in the current study. The most commonly identified combination of (C)APD types included deficits in decoding, tolerance fading memory, and organization. Six participants (15%) were diagnosed with all four types of (C)APD.

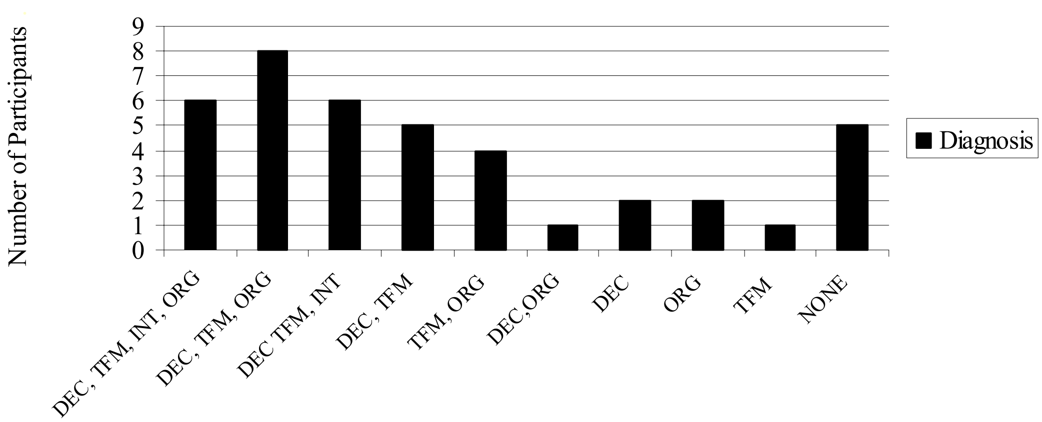

Figure 2. Distribution of (C)APD type(s)

A Chi Square goodness-of-fit test showed that children who scored at or below the cut-off score of 72% on Fisher's Checklist (Fisher, 1976) were significantly more likely to receive a diagnosis of (C)APD ($X^2_1 = 22.5$, $p < 0.05$) following a comprehensive diagnostic evaluation.

Table 2 shows outcomes of Fisher's Checklist (Fisher, 1976), as well as each of the clinic's standard diagnostic tests (i.e., SSW, PST, and W-22), and the percentage of those participants who fell in each category. Bloomsburg University of Pennsylvania's (C)APD test battery changes based on the outcomes of tests administered. The tests used to identify a processing disorder for the sample in this study were combinations of the following: SSW (Katz, 1998), Pitch Pattern Sequence test (Pinheiro, 1977), Phonemic Synthesis Test (Katz, 1998), Duration Pattern Sequence (Musiek, Baran & Pinheiro, 1990), Random Gap Detection Test (Keith, 2000), Auditory Continuous Performance Test (Keith, 1994), Dichotic Digits (Musiek,1983), Competing Environmental Sounds (Katz, 1998), and W-22 Speech-in-Noise test (Katz, 1998). Chi Square goodness-of-fit tests were performed to determine whether children who scored at or below cutoff on Fisher's Checklist were more likely to obtain abnormal scores on each of the three Buffalo Model auditory processing tests (SSW, PST, and W-22). Analyses showed that children identified by Fisher's Checklist (Fisher, 1976) as warranting further diagnostic testing were significantly more likely to have abnormal scores on the SSW ($X^2_1 = 6.4$, $p < 0.05$), but not on the PST or the W-22.

Discussion

Over a decade ago, ASHA's Task Force on (C)APD (1996) addressed the need for effective screening tools for children with (C)APD; however, there remains little consensus on the topic. Although Fisher's Auditory Problems Checklist (Fisher, 1976) is being used clinically to screen for (C)APD, its usefulness as a screening instrument has not been empirically evaluated. Results from the present study indicate that children who score at or below the cut-off point on Fisher's checklist are significantly more likely to receive a diagnosis of (C)APD, based on results from the Buffalo Model Diagnostic Test Battery.

Katz (1998) discussed the sensitivity of the SSW, reporting that it has a very high sensitivity and specificity in normal hearing listeners and that it provides information regarding each of the four types of (C)APD. It is, therefore, reasonable to expect that children identified by Fisher's Checklist would be more likely to have abnormal scores on the SSW. The results showed that children identified by Fisher's Checklist as needing further diagnostic testing were significantly more likely to show abnormal scores on the SSW test.

The second test of the Buffalo Model test battery, the PST, is reportedly less sensitive than the SSW. In a study with 92 participants with a mean age of 8.5 years, 54% of the participants failed the PST test (Katz & Marascuilo, 2001). The PST has been found to be sensitive primarily in the diagnosis of decoding deficits (Katz, 2007b); however, Katz and Marascuilo (2001) noted that the 54% hit rate identified in the study is lower than previous studies had suggested. The authors attributed this finding to the increased emphasis on phonics, phonemic awareness, and auditory training in schools in recent years. Katz and Marascuilo (2001) also reported that many children with decoding issues may have been missed by the PST. This test identifies only one type of (C)APD, which may have contributed to the lower sensitivity.

The final test of the battery, the W-22 Speech-in-Noise test, is associated primarily with a deficit in the tolerance fading memory category (Katz, 2007b). This single indicator may be the reason it had a lower sensitivity rate when compared to Fisher's Checklist. The W-22 Speech-in-Noise test has been shown to relate well to findings obtained on the SSW in those with sensorineural hearing loss, as well as a control group with normal hearing (Katz, Basil & Smith, 1963). Even though the PST and W-22 Speech-in-Noise test are not as sensitive as the SSW, this does not indicate that they are not important to the diagnostic test battery.

Katz (2007b) reminds us that a battery of testing is required to diagnose and categorize (C)APD. The professional looks for a pattern of errors in which the specific category has two or more significant characteristics to identify the disorder. The Buffalo Model Diagnostic Test Battery (SSW, PST, W-22) has a sensitivity of 96% when using one or more significant test findings as the diagnostic criterion (Katz & Marascuilo, 2001). The high sensitivity of the Buffalo Model Diagnostic Test Battery increased the importance of using Fisher's checklist as a screening tool for (C)APD. That is, the sensitivity of the Buffalo Model Diagnostic Test Battery provides a valid means of determining the sensitivity of the Fisher's Auditory Problems Checklist.

In the current study, 75% of the participants were diagnosed with a tolerance fading memory deficit, 70% of the participants were diagnosed with a decoding deficit, 52.5% of the participants were diagnosed with a deficit in organization, and 30% of the participants were diagnosed with an integration deficit. In agreement with previous estimates, results from the current study indicate deficits in decoding and tolerance fading memory as the most commonly identified categories. The current findings differ from previous research that reported decoding being identified 49% of time, tolerance fading memory being reported 43% of the time, organization reported 18% of the time and integration identified in 8% of those with (C)APD (Stecker, 1998). This may be due to a greater overlap between the (C)APD categories in the current study versus Stecker's research. This is evident by the higher percentages in each category. Furthermore, the current study did not use the modifiers to assist in the identification of the (C)APD categories. Modifiers assist in categorizing the type of (C)APD. The use of the modifiers may have aligned the current study with the previous research. Finally, the small sample size may also have influenced the outcomes of this project.

Limitations of the Study

Several limitations surfaced in the present study. First, the sample size was limited to 40 participants selected from a database of charts at the Bloomsburg University Speech, Language and Hearing Clinic. The participants selected by the investigator were based on convenience and thereby may not have been representative of the (C)APD population, in general. Initially, the researcher intended to complete a Chi Square test for independence to assess true and false positive and negative results. However, a Chi Square goodness-of-fit test was completed given the sample size and representation. A major limitation of the study was that it did not address the issues of sensitivity or specificity of Fisher's Checklist (Fisher, 1976).

In addition, various graduate students supervised by licensed audiologists completed the diagnostic testing. It is inherent that testing procedures and interpretations vary across clinicians. As a result, the SSW qualifiers (e.g., delays, reversals, quiet rehearsals) were not used in the statistical analysis due to the subjectivity in recording the information. Due to the lack of standardized (C)APD testing protocols and screening procedures (ASHA, 1996; Jerger & Musiek, 2000), clinicians often develop their own test protocols (Emanuel, 2002). Therefore, testing procedures and interpretations vary greatly and may confound test results. This may have influenced the type and quality of data collected. Despite these limitations, the current study offers preliminary support for the use of Fisher's Auditory Problems Checklist (Fisher, 1976) as a screening tool to complement the Buffalo Model Diagnostic Test Battery.

The current study examined the relationship of Fisher's Checklist to the Buffalo Model Diagnostic Tests: SSW, PST, and W-22. Bloomsburg University of Pennsylvania's (C)APD test battery changes based on the outcomes of tests administered. All participants in the current research completed all of the tests within the Buffalo Model and were categorized based on its (C)APD classification system (decoding, tolerance fading memory, integration, and organization). However, tests outside the Buffalo battery were also utilized to evaluate the individuals. For example, if a child was given the diagnosis of an integration deficit, the outcome may be based on the findings of the Buffalo Model battery, as well as tests not part of that test battery. As illustrated in Table 2, some combinations of test results overlapped. For example, three children obtained normal results on both the SSW and the W-22 with abnormal results on the PST. Of these children, two did not receive a (C)APD diagnosis and one did.

Directions for Future Research

To date, there is no research that investigates the relatedness of Fisher's Checklist (Fisher, 1976) and (C)APD classification models (e.g. Buffalo Model [Katz, Stecker & Masters, 1994], Bellis/Ferre Model, [Bellis & Ferre, 1999]). Data from this study suggest that Fisher's Checklist may be better at identifying a specific (C)APD (i.e., decoding) rather than serving as a general screening tool. Future research could utilize a factor analysis of the 25 items to determine if the items group together to point towards a specific diagnosis. This could lead to improved fine-tuning of the test battery to be administered. For example, if certain items on Fisher's Checklist point toward a possible diagnosis of decoding, then the tester should complete the PST. The current study could not address this issue due to insufficient data from each (C)APD type as required by the appropriate statistic.

It is important that teachers and other professionals who may interact with the child on a regular basis be given an active role in the screening process whenever possible. Normative data for Fisher's Checklist (Fisher, 1976) were established from a group of teachers filling out the checklist. In the present study, the Checklist was most often completed by the child's mother. Given the changes in the education system since the development of the tool, a similar study using teachers as the respondents may elicit different results. In addition, it may be noteworthy to investigate the inter-rater reliability by having fathers and teachers complete the Checklist in addition to each child's mother. A 2008 comparison study of father and mother reports of child behavior on a standardized measure of strengths and difficulties revealed that combined parental reports would enhance the sensitivity of identifying children requiring clinical attention (Dave, Nazareth, Senior, & Sherr, 2008). The study illustrated a high inter-parental agreement on normal behaviors, but lower correlation on abnormal behaviors.

As discussed in several consensus papers (ASHA, 1996; Jerger & Musiek, 2000; ASHA, 2005), the need for more consistency with regard to classification of (C)APD test results must be developed. The current study used the Buffalo Model, but there are other major classification models which could have been chosen. Katz (2007a) reported that the classifications used in the Buffalo Model are quite similar to those described in the Bellis and Ferre Model, indicating that some consistency is beginning to emerge. More consistent analysis of the central test battery is likely to result in more accurate definitions, estimates of prevalence, and management of the disorder. While the current research found Fisher's Checklist to be a useful screening tool when following the Buffalo Model, no statement can be made in regard to the other classification models.

The current study was limited to children between the ages of 5 and 13, although there were no 5-year-old participants who met the inclusion criteria. Given that the tool is to be used for the purpose of screening children, it may be useful to establish normative data for younger children so that it can be utilized with Kindergarten and pre-Kindergarten children. However, this recommendation may prove difficult given the variability in central auditory nervous system maturation in children so young. In contrast, children on the older side of the age range may be able to self report on Fisher's checklist (Fisher, 1976) and this could be compared to teacher/parent reports for assessment of inter-rater reliability. These children should be able to provide accurate reports of their classroom difficulties as well.

Conclusions

The reliability of (C)APD screening instruments have been questioned (Emanuel, 2002). Prior to the current study, the only source of information regarding Fisher's Auditory Problems Checklist (Fisher, 1976) was a textbook chapter written by the author of the tool. In this text, Fisher reviewed the development of the Checklist, as well as the establishment of normative data and the cutoff score. However, the data were not peer reviewed and did not appear in a scholarly journal. Therefore, the credibility of the information is questionable.

The present study found that children identified by Fisher's Checklist as needing further diagnostic testing were significantly more likely to show abnormal scores on the SSW test, but not on the other tests used in the Buffalo Model Diagnostic Test Battery. Consequently, it can be concluded that Fisher's Checklist (Fisher, 1976) may have the potential to be a useful tool for screening children for (C)APD using diagnostic tests following the Buffalo Model.

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