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Language Development and Literacy: Comments on Beitchman and Cohen

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Introduction

Beitchman and Cohen both address the issues of language development and its impact on academic, psychosocial and emotional development, by focusing on the poor outcomes of children with primary difficulties in speech and language impairments (i.e. problems that cannot be accounted for by any other condition, known as specific language impairments or SLI). Both also focus on impairments in structural aspects of receptive and expressive language skills (phonology, semantics, syntax, morphosyntax, narrative discourse, auditory verbal information processing) and accord little attention to the outcome of impairments in pragmatic aspects (the appropriate use of language within social, situational and communicative contexts). Nonetheless, it is important to understand that speech and language impairments may also occur as secondary difficulties to a primary condition such as autism, hearing impairment, neurological impairment, general developmental difficulties, behavioural or emotional difficulties, psychosocial adversity (e.g. adverse rearing conditions associated with growing up in poverty, orphanages, refugee camps or war zones) or immigration (English language learners).

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Beitchman approaches the topic from the research context of his 20-year prospective longitudinal epidemiological study of five-year-old English-speaking children from one geographic region of Canada. By contrast, Cohen situates the topic more broadly, calling upon evidence from national and international studies of clinical and epidemiological populations, using cross-sectional and longitudinal designs. Thus, while Beitchman's study provides a rich source of data on the outcomes of SLI in an English-speaking context for Canadian policy and service perspectives, the results presented by Cohen provide an opportunity to look for independent replication of findings across studies and English-speaking cultures.

Research Results and Conclusions

Both authors concur that preschool SLI increases the risk for negative sequelae in terms of subsequent language and literacy abilities, poor social and emotional competency in terms of internalizing difficulties (e.g. social isolation, withdrawn social interaction styles or anxiety disorders) and externalizing difficulties (e.g. aggression, attention-deficit/hyperactivity disorder [ADHD], antisocial personality disorder). In addition, recent research highlights the increased risk of victimization (e.g. being teased, ridiculed, threatened, bullied), which in turn may contribute to subsequent antisocial personality disorder.[1] One relatively minor point is the potentially misleading conclusion about mental health outcomes in young adulthood, which are listed by Beitchman as anxiety disorders and antisocial personality disorder. This could be misinterpreted as indicating that the relationship between SLI and ADHD, which is evident in childhood, dissipates by adulthood, whereas the problem is that ADHD and other Axis I and Axis II disorders were not investigated in the 19-year-old follow-up study.

Both Cohen and Beitchman conclude that the risk resides with language impairment (with and without accompanying speech impairments), rather than with speech impairment per se. In contrast, recent evidence indicates that speech impairment may be a risk factor for phonological processing, phonological learning and literacy.[2,3] Not only are persistent speech impairments (beyond age six) associated with poor literacy outcome, but also even children with apparently resolved speech impairments manifest marked problems in spelling despite relatively intact language abilities.[4] One critical distinction that needs to be made is between inaccurate production of speech sounds and difficulties in phonological processing.[5] The latter is a circumscribed component of language that is well established as a risk factor for reading disorder (dyslexia). The problem is that phonological processing skills may be overlooked and not investigated in the presence of severe articulatory problems without concurrent oral language

impairments.

Cohen and Beitchman also conclude that preschool SLI is associated with poor academic functioning, but do not specify the nature of this problem. Robust evidence indicates that SLI is a major cause of problems in both reading (particularly reading comprehension) and written language.[3,6,7] Moreover, recent evidence highlights the sensitivity of written language indices to the longer-term outcome of oral language impairments.[5] Specifically, written language deficits are evident even in those children whose earlier language impairments appear to have resolved, including purportedly unaffected monozygotic twins of children with language impairments.[5] Moreover, one index of expressive language (non-word repetition), which has been proposed as an effective marker of the heritable form of language impairments,[8,9] predicted written language impairments.[5]

One critical and non-trivial issue briefly alluded to by Cohen is the extent to which SLI constitutes a specific disorder that is unique from other neurodevelopmental disorders such as dyslexia. This issue, which remains unresolved and controversial,[10] has important implications for policy and service delivery perspectives and requires in-depth investigation.

The primary limitations of both of these summary texts from the point of view of policy and service delivery perspectives are: 1) the absence of prevalence data for the various subtypes of SLI, and at different ages/developmental stages; and 2) the apparent accordance of equal weighting to findings from studies that vary in methodological rigour. Moreover, the conclusions are based on a non-systematic review of the literature. Importantly, however, the conclusions are largely consistent with those reported in recent meta-reviews.[11,12,13]

Implications for Policy and Services Perspectives

Both authors argue for the need for routine assessment of language and communication skills, starting from infancy, with the rationale that intervention during infancy or preschool years can have a significant impact on child outcomes. Moreover, both argue the need for professionals to educate parents about the significance of SLI and the need for intervention. In particular, Beitchman accords to speech and language pathologists the responsibility for educating the public and other professionals in this regard.

There are several problems with these broad recommendations. First, a recent review concluded that there is insufficient evidence to warrant universal screening at this point in time.[12] Barriers to be overcome include the development of screening measures with improved sensitivity,

consensus on case definition, and a more complete understanding of the prevalence and natural history of the various subgroups of SLI.[12,13] This should not be interpreted as a recommendation against case identification, since early SLI clearly constitutes a major problem in its own right and may flag an increased risk for other problems. Alternate approaches to universal screening might include screening populations at high risk for SLI or screening populations identified by parental concern about possible SLI or related socio-emotional or behavioural problems.[13]

Second, despite Beitchman's claim of demonstrated efficacy of early language intervention, a recent meta-analysis reveals mixed evidence for short-term effects and little or no evidence of the long-term effectiveness of the programs on language abilities per se.[11] For example, there is no robust evidence of effective intervention for receptive language difficulties. Moreover, although there is some support for beneficial effects of intervention on primary caregivers who provide the communicative environment, there are no data on the effects of intervention on amelioration and prevention of associated problems such as poor literacy and psychopathology (anxiety, attention-deficit/hyperactivity disorder, antisocial personality disorder).

Third, making speech and language pathologists responsible for educating the public and other professionals poses major challenges, the least of which is the inadequate supply of this category of professionals. More importantly, enhancing parent recognition of the child's potential problem and the need to seek help are among the primary barriers to accessing the existing services.[14] In today's multicultural and technological society, information about the significance of language impairments and the need for intervention may be most effectively delivered by and accessed through responsible media (multicultural TV, radio, newspapers) backed by government policy and funding.

Finally, additional key issues are missing from these two articles, including the following; 1) consensus statements about the definitions of boundaries around the population(s) in need of service; 2) consensus approach to the operationalization of these boundaries (i.e. standards of assessment and diagnosis), with particular attention to populations for whom English is not the primary language of the family; 3) estimates of prevalence and incidence with reference to regional and ethnic/cultural variations, along with any projected changes in these rates; 4) standards for service providers (particularly for daycare providers, early childhood educators, classroom teachers and pediatric speech-language pathologists); 5) evidence of cost-effective evidence-based intervention approaches and their relative efficacy at various developmental stages; and 6) challenges and solutions to accessibility to services, particularly for inner-city, rural, indigenous and ethnic populations.

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Note:

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