

Critical Review:

Do bilingual children, with or at risk for a language impairment differ from their monolingual peers in their language development?

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This critical review examines the evidence regarding the impact of bilingualism on children with, or at risk of a language impairment in comparison to their monolingual peers. Study designs include a cohort, single subject design with matched controls and case controls. Overall the studies suggest that there are no or little differences between bilingual and monolingual language impaired children. Recommendations for clinical practice and future research are provided.

Introduction

Canada continues to grow as a diverse nation, and it is predicted that by the year 2017 approximately 20% of Canada's total population will belong to a visible minority group. There has also been an increase in the number of languages other than English and French. It is estimated that there are over 200 languages spoken in Canada alone (Stats Canada, 2006).

Speech Language Pathologists (SLP) have also seen an increase in clients who speak more than one language. Therefore it is important to be aware of the effect that being bilingual has on communication development as this can impact assessment, therapy and how we view children who are bilingual. For many years parents have been told that bilingualism can hinder or be detrimental to a child's language development. Recent evidence however has raised questions about this advice (Paradis et al. 2003). Some concern nevertheless persists with regard to children with language impairments (LI). To know about the effect of being bilingual on a child with a language impairment or if being bilingual can hinder language development in a language delayed child, we must look at bilingual children in comparison to monolingual children with language impairments (Paradis, 2003). If we see a difference in the language development of the two, then we can say that bilingualism is a factor. If on the other hand we see that there is no difference then we know that it has no impact on language development.

It is important to examine the existing literature on the differences between bilingual and monolingual language impaired children, so that we as professionals know what to expect and we can advise concerned parents and other professionals.

While in Canadian culture bilingualism is classified as French and English, in principal it is not necessary to limit our review to bilingualism involving

these specific languages because it is the act of leaning any two languages that is of interest. Therefore this review will include articles that have examined language development in a variety of languages.

Objectives

The primary objective of this paper is to critically evaluate the existing literature on the differences in language development between bilingual children with or at risk for language impairment and their monolingual peers. The secondary objective of this paper is to provide appropriate recommendations to SLP's when dealing with this population.

Methods

Search Strategy

Computerized databases, including PubMed and CINAHL were searched using the following strategy: (language impairment) AND (bilingual OR bilingualism). The searches were limited to articles written in English from 2003-present as it was felt that this encompassed the most recent studies on this topic. Papers were also selected from the references of the papers that resulted from this search.

Selection Criteria

The studies that were included in this critical review examined how bilingual children who either had a language impairment or were at risk for one, compared to their monolingual peers. No limits were set on demographics of research participants (i.e what languages they spoke).

Data Collection

Results from the selection criteria resulted in six articles that matched the above mentioned criteria. One study was a single subject design with matched controls, one study was a cohort design, and four were case control design studies.

Results

Studies comparing the language profiles of bilingual children with monolingual children who are both at risk for language impairment

Westman *et al.* (2008) conducted a case control study to investigate language profiles in Swedish-Finnish children. A Language Impaired-Risk (LI-Risk) group (n=49) was compared to a Non Language Impaired-Risk (Non-Risk) group (n=63). These groups were determined based on their performance on a language screening tool. The children were further grouped by language: a monolingual (n=35) and a bilingual group (n=46). An appropriate mixed 2x2x8 repeated measures multivariate analysis of covariance (MANCOVA) was completed and it was found that while the test profiles of the bilingual and monolingual groups differed on some tests (Body Part Naming and Sentence Repetition) but not others, this effect was not significant. The authors concluded that the language profiles of the monolingual LI-Risk children did not differ from the bilingual LI-Risk children. Therefore being bilingual was not additionally detrimental to the child at risk for language impairment.

While the study did the appropriate analysis and had well defined selection criteria, there are a few weaknesses. First the number of people per group was unbalanced. In addition groups were defined based on a screening tool which may not have been as accurate as a more detailed assessment, potentially leading to a sampling bias. It is important to mention that Westman *et al.* acknowledge this weakness as well. Another area of weakness is that there is a gap of 12 months between the initial screening and the actual assessment, which is somewhat problematic as this time lapse could have impacted the children's performances on these tests. The assessments themselves were administered in Swedish only and while the languages themselves are not of interest to us, it would have furthered the findings if the profiles were compared to a Finnish monolingual child.

Based on the above mentioned critique, the results of this study can be taken as suggestive.

Examining the phonological abilities of bilingual children with Specific Language Impairment in comparison to monolingual peers.

MacLeod and McCauley (2003) conducted a case control design that looked at the French expressive phonological abilities of bilingual children with specific language impairment (SLI) as compared to their monolingual peers. They investigated whether or not the abilities of bilingual children with SLI are different or delayed compared to their monolingual peers. A bilingual SLI (BIL-SLI) group (n=5) was compared to a monolingual SLI (MON-SLI) group (n=4). This group was also compared to a monolingual typically developing (MON-NORM) group (n=4). Language samples were collected by researchers visiting the children in their homes or at school and conducting one hour of free play between child and parent or child and research assistant. Results of a one way analysis of variance (ANOVA) found that phonological mean length of utterance and percent consonant correct both contributed to overall group differences. When comparing the bilingual to the monolingual group, results of this study indicated that the BIL-SLI showed both similar and different results in comparison to the MON-SLI group. While they had similar productive phonetic inventories and similar phonological process, the BIL-SLI children had less accurate consonant productions but had more complex words than the MON-SLI group.

The selection criteria for both the case and control subjects were reported in detail and employed mean length of utterance, a valid measure. The study also included a high inter rater reliability of 80%. Despite these relative strengths there are some weaknesses that should be taken into consideration. While the criteria for the groups were specific it also meant that the groups resulted in small sample sizes, calling into question the use of parametric rather than non-parametric measures. Another weakness is that while the children in both the BIL-SLI and MON-NORM were visited at home, the MON-SLI group was visited at school and therefore the difference in the settings could have impacted the children's performance.

Therefore based on these results, this study can only be taken as preliminary and suggestive at best.

Studies exploring specific aspects of language when comparing bilingual language impaired children and their monolingual peers.

Lee and Gorman (2009) conducted a single subject design, with matched controls which examined a Korean-English specific language impaired child's production of Korean grammatical morphemes in

comparison to an age matched control, a mean length utterance (MLU) matched control and a monolingual control. Spontaneous language samples were collected through conversations about the child's family, friends and school activities and through story narratives. All the children were administered a probe task, where eight picture cards and four unfamiliar objects were used to elicit the different particles. Lee and Gorman found that the bilingual child with SLI used some particles at a similar rate to his age matched peer and used other particles at a lower rate. Based on the pattern of particle production the authors argue that the difficulties the child with SLI had were due to the language impairment itself and not due to the bilingualism.

While this study can be classified as a single subject design which can be a strong design in the case of multiple measures the present study compares individuals at one time point. This study is also an unconventional single subject design and so lacks some of the strengths that characterize a single subject design. As a result one of the weaknesses is that all data was analyzed using visual inspection only. The other weakness is that the monolingual child used as a comparison did not have a language impairment and therefore we cannot say for sure that the differences found are as a result of the additional language and not due to the language impairment.

This study overall provides a moderate level of evidence and therefore is suggestive.

Paradis *et al.* (2003) conducted a cohort study comparing French and English bilingual children with SLI to see if they were similar in respect to their use of tense morphemes. Bilingual children with SLI (n=8) were compared to age matched monolingual children with SLI (n=21) and monolingual French children (n=10). Spontaneous language samples were collected, coded and analyzed by bilingual research assistants. Both tense bearing and non tense morphemes were targeted in French and in English. Non parametric analyses were used to account for the small sample sizes. Paradis *et al.* found that the Mann Whitney U comparisons showed no significant difference between the monolingual and bilingual children for tense scores in each language. They concluded that the bilingual children with SLI displayed the same type of difficulty as their monolingual peers.

Overall Paradis *et al.* (2003) conducted a study that contained a well specified inclusion criterion, widely employed outcome measures and conducted appropriate statistical analysis. The study also presented with a high inter-rater reliability of 88%. It is important to mention that the small sample sizes do present somewhat of a weakness, however as we will discuss further on, this is an indication of the challenges that exists when doing research with this population.

Overall the general strengths of this study are able to provide a strong level of evidence and therefore be quite suggestive.

Paradis, Crago and Genesee (2005) conducted a case control study that compared seven year old bilingual children with SLI (n=7) and three year old bilingual children who were typically developing (TD) (n=9). These two groups were compared to three monolingual groups: TD seven year olds (n=10), TD three year olds (n=10) and seven year olds with SLI (n=10). The study compared the groups' use of direct object clitics/pronouns and definite articles in both English and French. These groups were matched by mean length of utterances and ages. Forty-five minute spontaneous language samples were collected by either having the parent or the research assistant interact with the child in the child's home.

When looking specifically at the performance of the bilingual children with SLI in comparison to their monolingual peers, Paradis *et al.* (2005) using Mann U Whitney tests and found that the bilingual children with SLI used clitics more often than the monolingual children with SLI. Using Wilcoxon Signed Rank Tests they found that both the bilingual and monolingual children with SLI used the definite articles more than object clitics. Ten percent of the transcripts were re-coded and an inter rater reliability was determined to be 85 % to 95%. Overall they concluded that bilingual children with SLI did not perform worse on their percent of clitics used or the correctness with form choice in comparison to monolingual children with SLI.

Paradis *et al.* (2005) used the appropriate non parametric tests to account for the small groups, used common outcome measures and used a well defined inclusion criterion to distinguish the groups. They were able to provide a high inter rater reliability to strengthen their overall findings.

Overall, they were able to provide a strong study with a fair amount of suggestive evidence to support the notion that there are no differences between bilingual and monolingual children who are language impaired.

Gutierrez-Clellen, Simon-Derejido and Wagner (2008) conducted a case control study that compared English –Spanish bilingual children to their monolingual peers with a language impairment. They had 5 groups in total; (i) English as a first language with typical language development (n=15), (ii) English as a first language with language impairment (n=16), (iii) Bilingual with typical language development (n=11), (iv) Bilingual with language impairment (n=11), and (v) English as second language learner (n=16). Parental and teacher reports were used to determine the bilingual status of the children. Narrative samples were collected

from the children by using wordless picture books, and they were recorded and transcribed by the bilingual research assistants. A coding reliability was reported of 94%. One of the purposes of this study was to examine the differences between bilingual children who are language impaired and their monolingual peers in terms of their production of morphemes. Specifically they examined the past participle –ed, the third person singular, the auxiliary be and do and the copula be. A 2x2 ANOVA was done despite having relatively small sample sizes. They found that there were no significant differences between the bilingual children with LI and the monolingual children with LI. They concluded that bilingual children with language impairments were not hindered by either exposure to a second language or by being bilingual.

While Gutierrez-Clellen *et al.* identified the bilingual and monolingual groups very well and had a high inter-rater reliability; there are some important weaknesses to the study that should be taken into consideration. While it is commendable to have so many groups to compare, there is a risk of having a small group sample size. This fact makes it difficult to be able to justify the claims made, since it cannot be used to make generalizations. Even with the small groups they failed to appropriately use non parametric analysis, opting for an ANOVA instead.

While this paper provides a lot of information specific to the language of bilingual language impaired children and compares it to that of monolingual children, the findings of this study are suggestive at best.

Discussion

The purpose of this review was to examine the literature on bilingual children with a language impairment in comparison to their monolingual peers to find out whether or not there were differences in their language development. With few consistencies the available evidence is suggestive of there being no differences between bilingual children and monolingual children with language impairments in their language development. It would follow then that bilingualism does not further impair language learning in children with a language impairment.

One of the central debates in research aimed at investigating language development is how two language codes are learned. One view is that our language system are adapt at learning language generally and therefore not deterred by exposure to multiple languages. The tentative findings of this review are consistent with this account.

It must be acknowledged that it is difficult to conduct this type of research for a variety of reasons. One of the main reasons is that the population of

language impaired children is relatively small in comparisons to other disorders or impairments. Therefore being able to recruit children into these studies can be a challenge. The other issue is that the amount of children who speak another language is also a limited population.

Despite these limitations it should be acknowledged that further research with increased sample sizes, well defined appropriate statistical analysis should be used to be able to provide compelling evidence to provide a clear resolution to this debate.

Clinical Implications

The findings of this review have clinical implications for Speech Language Pathologists. The first being that parents can be informed that for a child with a language impairment there does not seem to be a hindrance of any kind because of a second language. In terms of assessment it is important to keep in mind when dealing with a bilingual child with a language impairment that the difficulties they present with may be due to the impairment instead of the dual language. In terms of general practice this review suggests that SLP's should encourage language development in both languages.

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