Reviewer's report

Title: Television viewing in Thai infants and toddlers: impacts to language development and parental perceptions

Version: 3 Date: 3 January 2009

Reviewer: Heidi M. Feldman

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I have been asked to focus my remarks on two specific questions, asked by the editors:
1) Did the authors use an appropriate definition of language delay?
2) Is the use of the modified Clinical Linguistic Auditory Milestone Scale (CLAMS) appropriate?

The authors have chosen to use one scale from the Denver-II as part of the diagnosis of language delay. The Denver-II should not be used in this way. It is a screening test. It is designed to indicate who is at high risk of developmental delay, not who is delayed. You must administer the entire test. Then you get one of three results: pass, fail, or indeterminate. In other words, the determination of high risk status requires administering all of the scales and determining if the child fails the test. You cannot use the Denver-II to specify the domain of delay. Children may fail the Denver-II because they are suspect in the motor and fine-motor adaptive scales, but a comprehensive assessment finds that delays exist in domains of cognition and language. In addition, the Denver is notably insensitive in the area of language. That is one reason it has fallen out of favor for developmental screening.

The CLAMS is a good choice for a study like this one because it is not only a screening test. It can be used to assess children in terms of language development. The CLAMS generates a Developmental Quotient, or DQ, with a mean is 100 and standard deviation of 15. However, the authors are not reporting the children’s scores. It would be much better to use the DQ scores for the participants rather than a categorical definition of language delay. First, it is an appropriate use of the tests. Second, the authors can use multiple linear regression analyses for their statistics and improve their power. If the DQ scores are available, my strong recommendation would be to drop the Denver-II from the results and report only on the CLAMS DQ.

What if the DQ cannot be generated? The use of a single item from the CLAMS to determine language delay is problematic. The ability to point to two pictures is but one of three items at 21 months of age. Proper administration of the test requires beginning below the child’s age, giving all of the items in an age bracket, establishing a basal level as that age bracket in which all items are passed, and then testing to a ceiling level, an age bracket in which none of the items are
passed. For a child of 24 months of age, you start by administering the 18 month items and proceed until the child failed all items within an age block. If a child fails all three items at the 21 months age level, then the DQ would be less than or equal to 75, a reasonable definition of language delay. If the child passed the other two items within that age bracket and none of the items at 24 months of age, then the DQ is 83, greater than one standard deviation below the mean and again a reasonable definition of language delay. Unfortunately, it is possible that a child could fail to point to two pictures and then pass items at the 24 month level. In that case, the child would not be delayed.

The authors are identifying only 5% of their sample as delayed at age 2 years. That is a low percentage compared to other studies. In addition, maternal education and monthly income are not associated with language development at age 2 years. In US samples, the association of language with socioeconomic status is quite strong. I worry that these findings mean that their methods may not be adequately sensitive to identifying delay.

I would like to think about a way to salvage this study. It is an interesting topic, worthy of study, particularly in a cross-cultural context. However, I think that the authors need to provide more information on language in their sample if this is to remain a focus of the paper, particularly if the results are negative. Maybe they could focus on parental attitudes and child rearing practices without the language findings.

**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.