

The Education Effect on Mother-Infant Interactions

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Background

Education changes the potential knowledge a parent can have in raising a child. This can influence infant distress and development (Fouts et al, 2012). The LENA recording device picks up language and distress variables which can be used to compare against demographic information.

Research Hypothesis

There is a difference between LENA measures and education level where higher education levels have higher AWC and CT counts and lower cry frequencies and durations.

Methods and Materials

N=86 families completed demographic information and LENA outputs were collected.

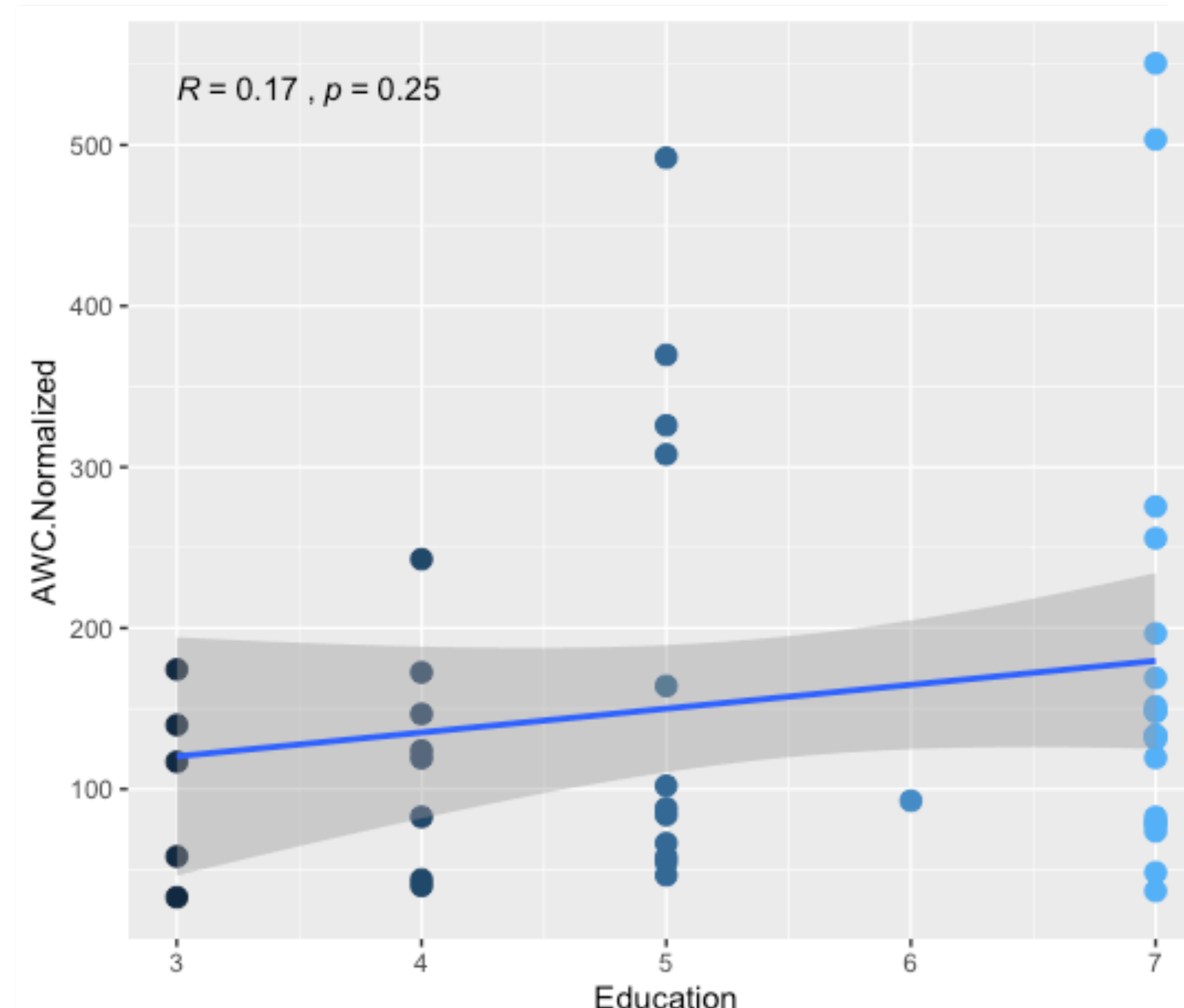
N= 46 participants had complete data. LENA data was used to obtain four auditory variables

- Adult word count (AWC): the estimated amount of adult words spoken per day.
- Conversational turns (CT): the estimated adult-child interactions per day
- Infant cry frequency and duration

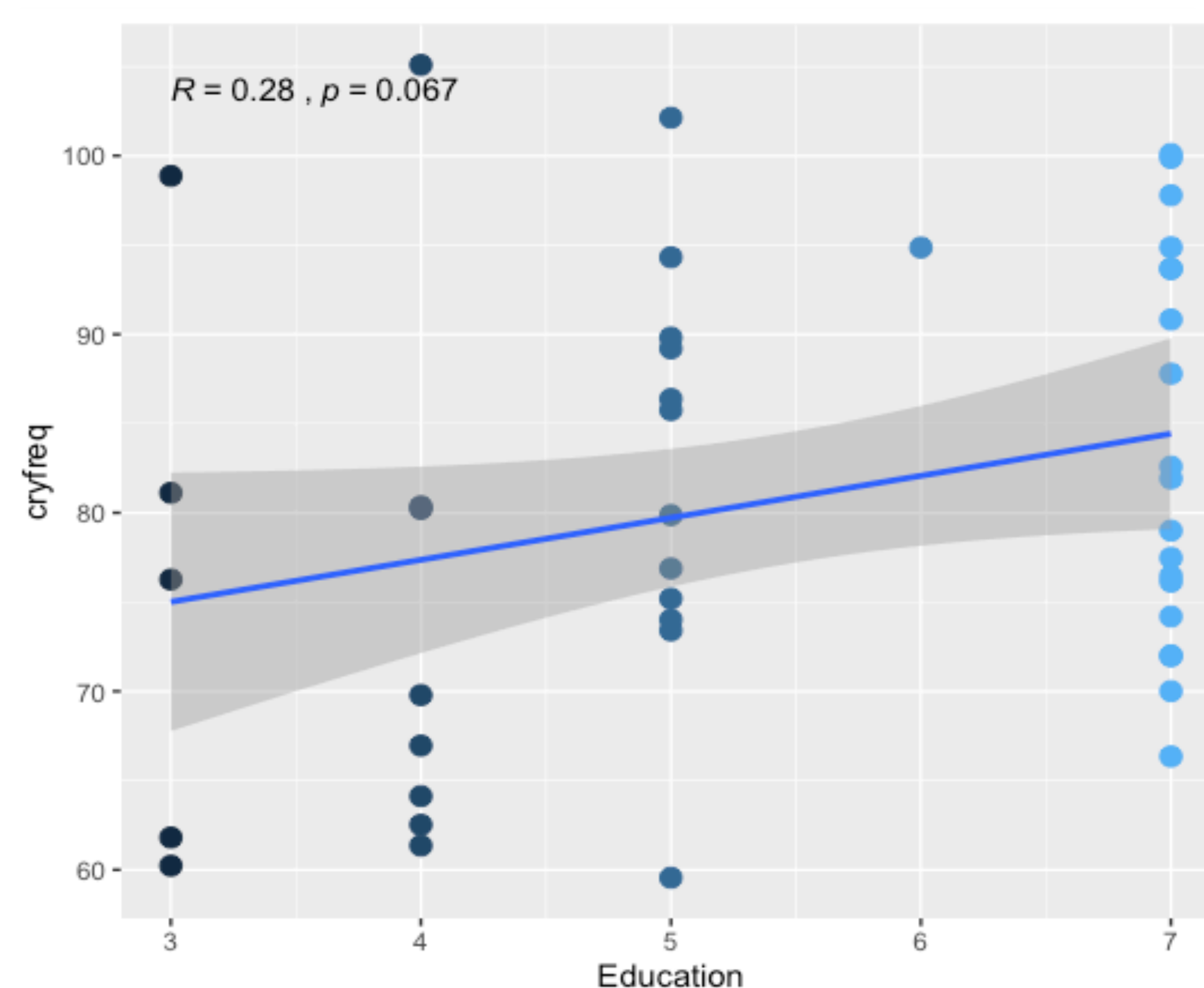
Mothers' education was divided into the following levels:

- 1 – less than 8th grade
- 2 – some high school
- 3 – high school diploma/GED
- 4- some college
- 5 – college degree
- 6 – some graduate school
- 7 – graduate school degree

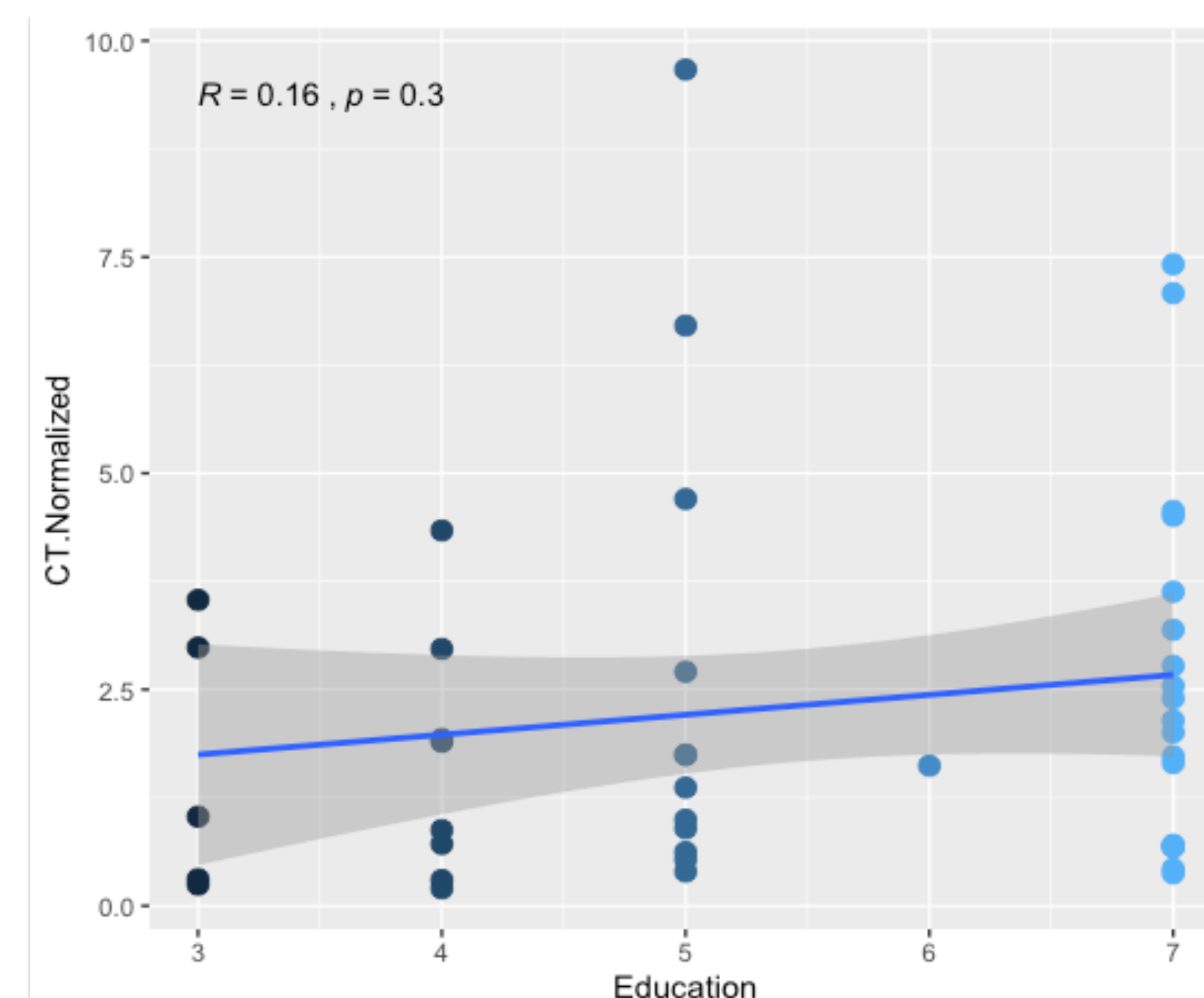
Correlations and t-tests were used to compare levels of education with LENA variables.



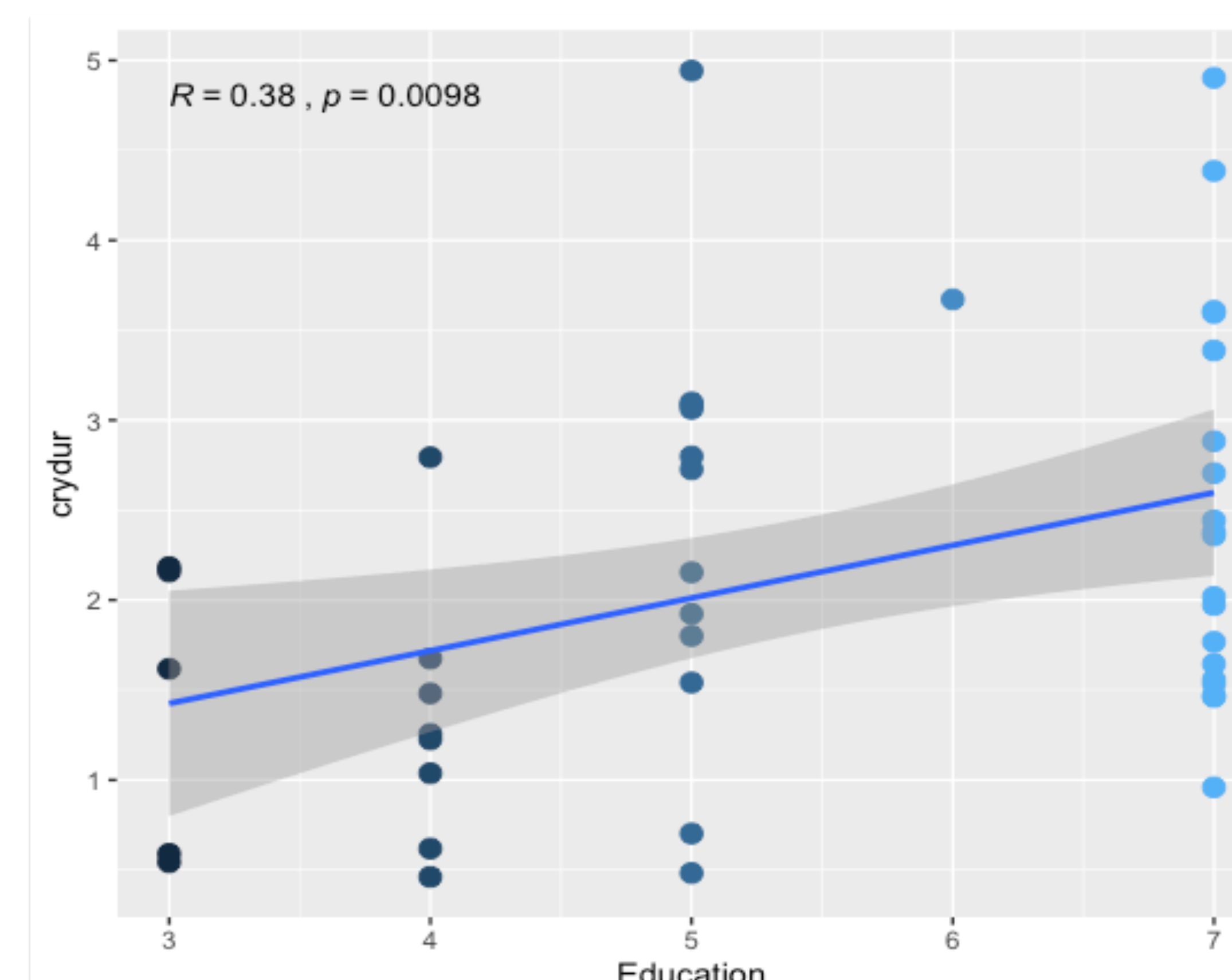
There is no significant correlation or effect of education level and adult word count (t-test $p=0.15$).



There is no significant correlation but a significant effect of education level on cry frequency (t-test $p=0.03$).



There is no significant correlation or effect of education on conversational turn (t-test $p = 0.18$).



There is a significant correlation between education and cry duration (t-test $p = 0.0019$).

Results

There was no significant correlation between education and AWC, CT, or cry frequency. There was a significant positive correlation between education and cry duration. The data was then divided into two groups. Group one was low education, levels 1-4, and group two was high education, levels 5-7. After running t-tests, there was still no significant difference between education and AWC or CT. However, there was a significant difference between cry frequency and education. The mean cry frequency for the low education group was lower than the mean cry frequency of the high education group. The LENA variables were also examined across other demographic factors (language, ethnicity, family income, family status) for which no significant correlations were found.

Conclusion

Although not significant, there was a weak positive correlation between education and AWC and CT as supported by previous research. An unexpected weak positive relationship was observed between education and cry frequency and duration. Possible confounding variables such as depression, age, the presence of another caregiver in the household, and working status, were not controlled for. These findings cannot be greatly generalized as most of the mothers were in the high education group and analysis was done on a small sample size.

Acknowledgments

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References

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