Seasonal Factors and Birth Weight: New Evidence from the Southern Hemisphere

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Birth Weights Around the World: From North to South

<table>
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<th>MBW</th>
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Method

A change in birth record processing in January 1998 resulted in lower than expected numbers of registered births for 1997 and 1998. Therefore, the 102,779 (49% female) birth records from these years were removed, and the analyses presented here used only the data from January 1980 to December 1997 (975,975 birth records, 51% male).

Results

Time series analysis indicated a 12-month pattern in the 18 years of birth weight data, thus a mean birth weight for each month was created. From the figure below, it is apparent that the highest birth weights occur in the months of September, October, and November, which is spring in the Southern Hemisphere.

Discussion

Because the pattern in New Zealand was offset by six months from the pattern in northern studies, particularly those with similar latitude, mean birth weight, and sample size. The southernmost region has the fewest studies; therefore, if any seasonality hypotheses are to be tested globally, the first step is to gain more evidence from the south. New Zealand, a country at 36ºS, is ideally situated to provide this evidence. Data from New Zealand should show a seasonal pattern that is offset by 6 months from the pattern from northern studies, particularly those with similar latitude, mean birth weight, and sample size.

Hypothesis

This figure is very similar to the original birth weight figure above, but the absence of low birth weight and pre-term neonates from these analyses suggests that the seasonal pattern is not a function of seasonal fluctuations in the numbers of low birth weight and pre-term infants.
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