
Subject: Case-crossover analysis with DHS
Posted by [paul](#) on Fri, 13 Sep 2024 13:29:32 GMT
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Hello,

I am using the DHS data from 5 countries (Uganda, Kenya, Tanzania, Burundi and Rwanda) to model the effect of temperature on neonatal mortality. Since the cycles 7 and 8 include the day of death for neonates, it's thus possible for me to calculate the date of death. I have created a time-stratified case-crossover with distributed lag non-linear models (from the `dlm` package by Antonio Gasparrini) which uses a conditional logistic regression model. Unfortunately, the `clogit` in R does not work with complex survey designs. The other challenge is that because of the design of the case-crossover, I have to only include cases (i.e. those with $b_5=0$ and $b_6<128$ (ie 0-27 days). This introduces additional challenges since it's not possible to do sub-group analyses (the subpopulations would require creating control cases and lags). I have seen several studies using the DHS data and the time-stratified case-crossover to model the effects of temperature on health outcomes. I am requesting if there is a workaround this. I am posting links of articles that used the DHS and the cco for your reference.

<https://www.sciencedirect.com/science/article/pii/S0160412021005274>

[https://www.nature.com/articles/s41467-024-49890-x#:~:text=Heat%2Drelated%20deaths%20accounted%2C%20on,4.1%25\)%20\(See%20Supplementary%20Fig.](https://www.nature.com/articles/s41467-024-49890-x#:~:text=Heat%2Drelated%20deaths%20accounted%2C%20on,4.1%25)%20(See%20Supplementary%20Fig.)

On (un)related issues, I failed to convert the dates of birth for Ethiopia DHS (in the Ethiopian Calendar) to the Gregorian Calendar because the climate data used is in the Gregorian Calendar. How would I correctly convert the Ethiopian dates to the Gregorian Calendar from b_1 , b_{17} , and b_2 .

NB: I am using the KR file. I hope that's the correct one to use.

I am happy to provide the R code used for the case-crossover.

Thank you so much.

Paul
