Correction

Correction: A simple method for analyzing data from a randomized trial with a missing binary outcome

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In this article [1], equation (8) is incorrect because it omitted the covariance terms. Let h denote the number of strata, so $s = 1,2,...,h$. Let T denote transpose, • denote matrix product, and *Diagonal Matrix* [*vector*] denote a matrix of all 0's except for *vector* on the diagonal. The correct formula is

$$
\begin{aligned}
\widehat{var}(\widehat{\Delta}) &= \sum_{s=1}^{h}\left(\frac{\partial\widehat{\Delta}}{\partial d_s}\right)^2 \widehat{var}(d_s) + \left(\frac{\partial\widehat{\Delta}}{\partial \underline{w}}\right)\bullet \widehat{var}(\underline{w})\bullet\left(\frac{\partial\widehat{\Delta}}{\partial \underline{w}}\right)^T \\
&= \sum_{s=1}^{h} w_s^2 \sum_z q_{sz}(1-q_{sz})/n_{zs} + \sum_{s=1}^{h-1}(d_s - d_{\boldsymbol{h}})^2 w_s / N_{++} \\
&\quad - \sum_{i=1}^{h-1}\sum_{j=1}^{h-1}(d_i - d_h)(d_j - d_h)w_i w_j / N_{++},
\end{aligned}
\tag{8}
$$

where

$$
\underline{w} = (w_1, w_2, ..., w_{h-1}0,
$$

$$
\frac{\partial\Delta}{\partial \underline{w}} = (d_1 - d_h, d_2 - d_h, ..., d_{h-1} - d_h),
$$

$$
\widehat{var}(\underline{w}) = (DiagonalMatrix[\underline{w}] - \underline{w}^T\bullet\underline{w})/N_{++}.
$$

In our example, the effect of the correction was negligible; the corrected estimated standard error was the same to two significant digits as the incorrect value.

Also for clarification, we note that in the sentence after (11), it is an assumption that, within stratum s, the difference, Δ_s, does not depend on the unobserved covariate x.

References

1. Baker SG, Freedman LS: **A simple method for analyzing data from a randomized trial with a missing binary outcome.** *BMC Medical Research Methodology* 2003, **3**:8.

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