

Meta Analysis

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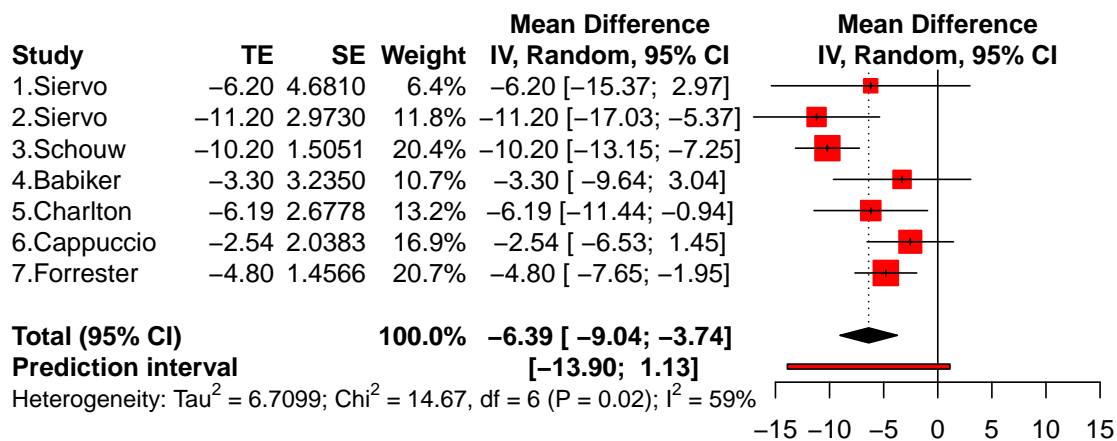
This is a report showing the results of a regenerated meta analysis on studies investigating the effects of dietary interventions on hypertension in Sub-Saharan Africa. The first table shows the studies and the data structure that fueled the underlying analysis, and included in this report are funnel plots with interpretations showing that there does not appear to be any publication bias, forest plots, bubble plots and a meta regression. The meta regression was fit with one predictor of study duration, and it has a small affect on SBP and DBP but is not significant.

Data Processing Results

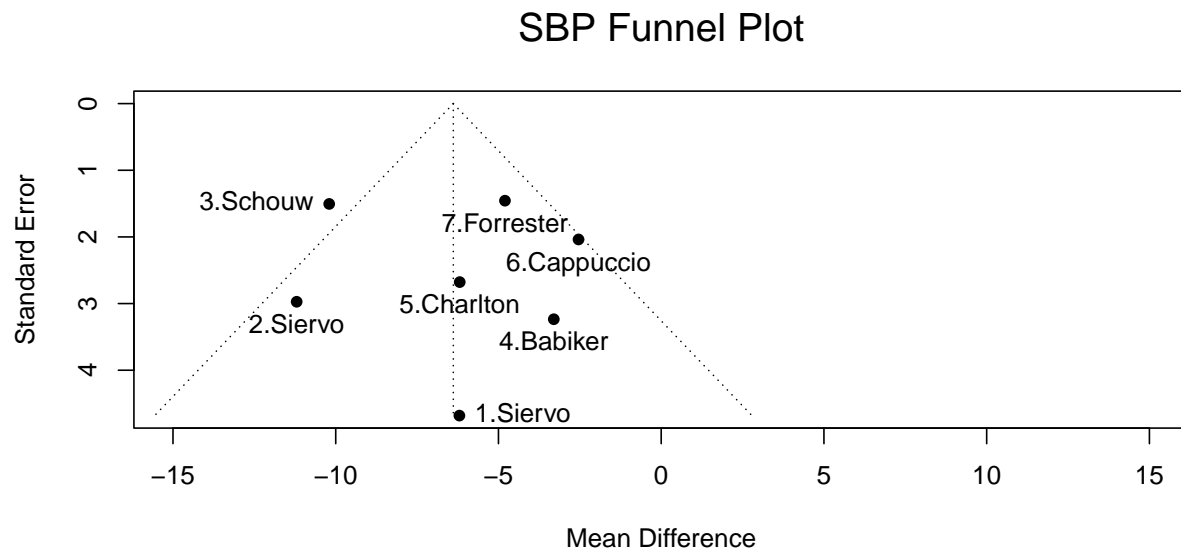
	StudyID	Author	Size	MeanDiff_SBP	MeanDiff_DBP	SE_SBP	SE_DBP	Duration_M
1	1	Siervo	11	-6.20	-1.800	4.6810	2.7140	2
2	1	Siervo	12	-11.20	-4.900	2.9730	1.6170	2
4	2	Schouw	137	-10.20	-3.900	1.5051	1.0204	24
5	3	Babiker	91	-3.30	-1.780	3.2350	1.9680	3
6	4	Charlton	80	-6.19	-0.595	2.6778	1.2367	6
7	5	Cappuccio	1013	-2.54	-3.950	2.0383	2.0127	6
8	6	Forrester	114	-4.80	-3.200	1.4566	1.0204	1.5

Forest & Funnel Plots

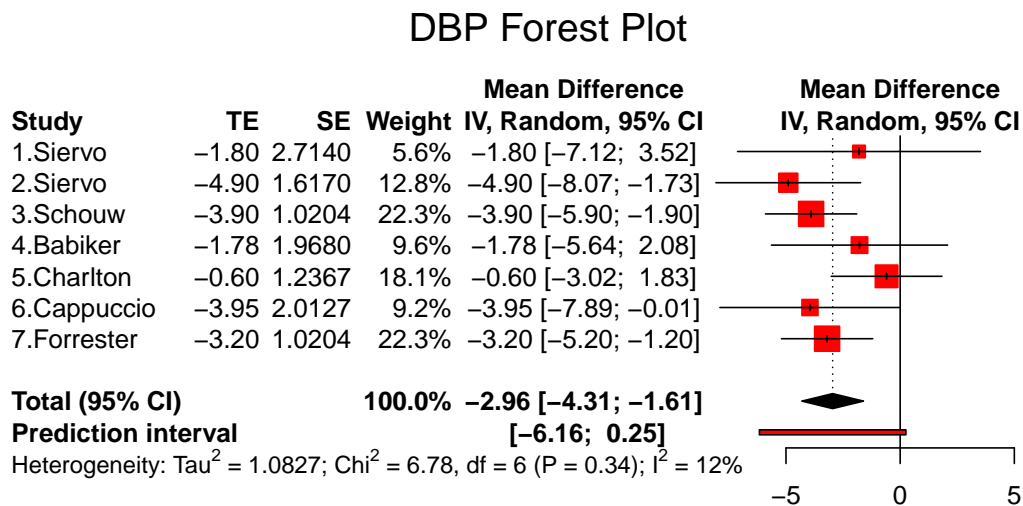
SBP Forest Plot



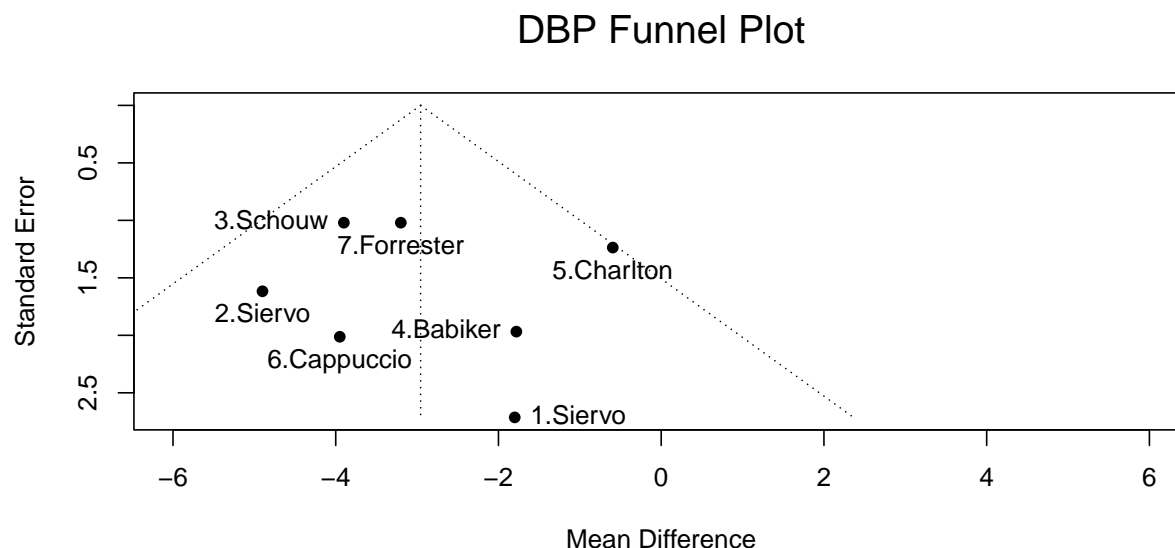
The forest plot shows that the mean difference for SBP is generally negative, the highest weighted study is Study ID 6, Forrester in terms of it's effects on the meta analysis.



This is a fairly balanced funnel plot with an even amount of studies on either side of the mean difference line, and the studies relatively follow the expected funnel shape. The mean difference line is a negative value, which makes sense given that the studies are involving interventions to reduce SBP, it would be unlikely that there would be a study published with a positive mean difference. Overall this plot shows that there does not appear to be any publication bias.



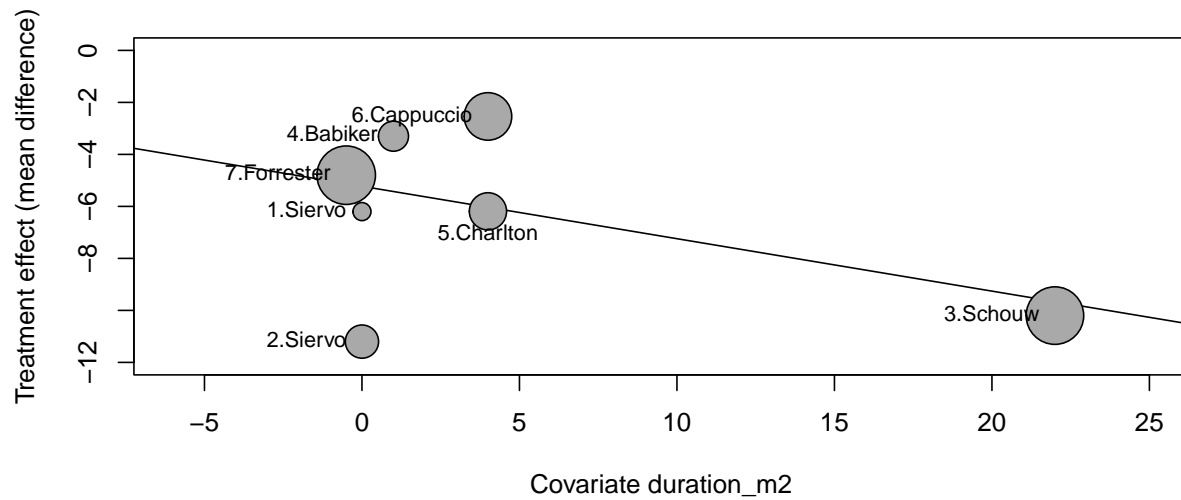
This is a forest plot for DBP mean difference, which is also generally negative, and the highest weighted studies are Schouw and Forrester.



Similar to SBP, this is a fairly balanced funnel plot with an even amount of studies on either side of the mean difference line, and the studies relatively follow the expected funnel shape. The mean difference line is a little higher but still negative value, it seems in one study there was a positive mean difference in DBP after intervention. Overall this plot indicates that there does not appear to be any publication bias.

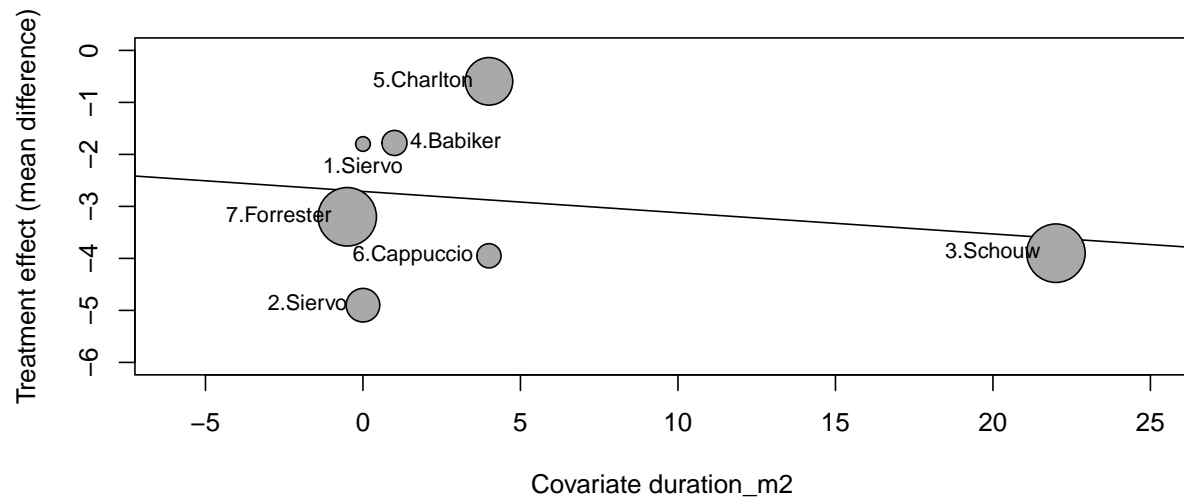
Meta regression

```
##
## Mixed-Effects Model (k = 7; tau^2 estimator: SJ)
##
## tau^2 (estimated amount of residual heterogeneity):      5.8719 (SE = 4.6832)
## tau (square root of estimated tau^2 value):             2.4232
## I^2 (residual heterogeneity / unaccounted variability): 48.46%
## H^2 (unaccounted variability / sampling variability):    1.94
## R^2 (amount of heterogeneity accounted for):             12.49%
##
## Test for Residual Heterogeneity:
## QE(df = 5) = 7.5186, p-val = 0.1848
##
## Test of Moderators (coefficient 2):
## QM(df = 1) = 1.7355, p-val = 0.1877
##
## Model Results:
##
##              estimate      se      zval      pval      ci.lb      ci.ub
## intrcpt        -5.2263  1.5744  -3.3196  0.0009   -8.3120   -2.1406 ***
## duration_m2    -0.2016  0.1530  -1.3174  0.1877   -0.5016    0.0983
##
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```



The coefficient for duration is negative, showing that as the number of days in a study increases, the more DBP decreases on average. The I squared value is at 48.46%, indicating a moderate amount of heterogeneity, indicating that the variation in study outcomes is less likely due to chance.

```
##
## Mixed-Effects Model (k = 7; tau^2 estimator: SJ)
##
## tau^2 (estimated amount of residual heterogeneity):      1.2241 (SE = 1.0624)
## tau (square root of estimated tau^2 value):             1.1064
## I^2 (residual heterogeneity / unaccounted variability): 32.91%
## H^2 (unaccounted variability / sampling variability):    1.49
## R^2 (amount of heterogeneity accounted for):            0.00%
##
## Test for Residual Heterogeneity:
## QE(df = 5) = 6.2005, p-val = 0.2872
##
## Test of Moderators (coefficient 2):
## QM(df = 1) = 0.2546, p-val = 0.6138
##
## Model Results:
##
##              estimate      se    zval    pval    ci.lb    ci.ub
## intrcpt       -2.7121  0.8533  -3.1783  0.0015  -4.3846  -1.0397  **
## duration_m2   -0.0409  0.0810  -0.5046  0.6138  -0.1997   0.1179
##
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```



The coefficient for duration is negative, showing that as the number of days in a study increases, the more DBP decreases on average. The I squared value is at 32.91%, indicating a smaller amount of heterogeneity, that the variation in study outcomes is more likely due to chance.