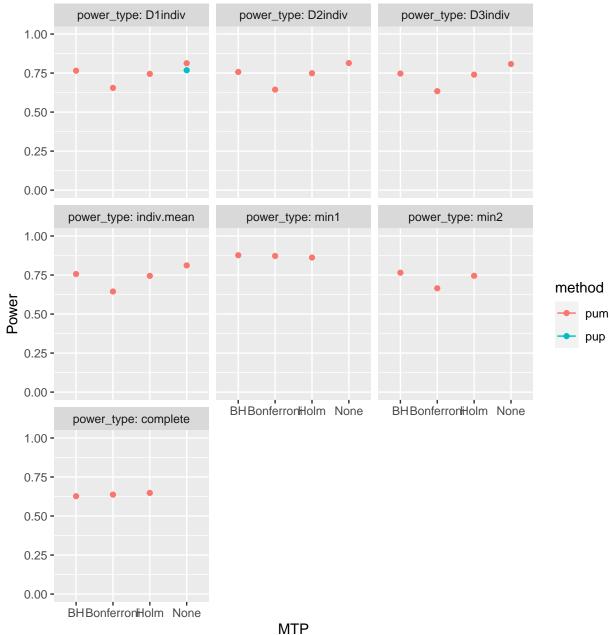
Validate Power: MDES and SS power definitions

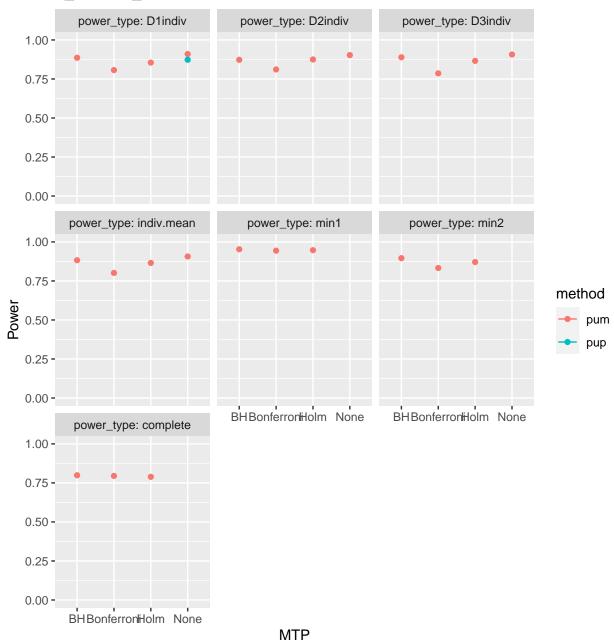
December 27, 2021

Power Validation

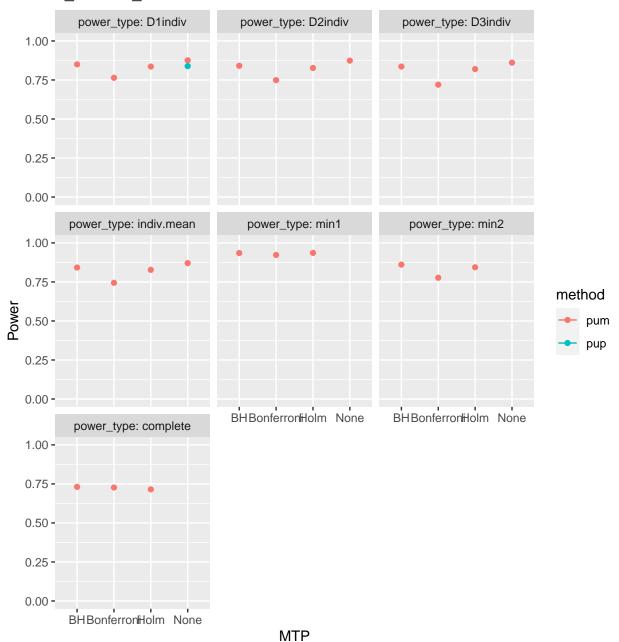
d_m: d3.2_m3ff2rc



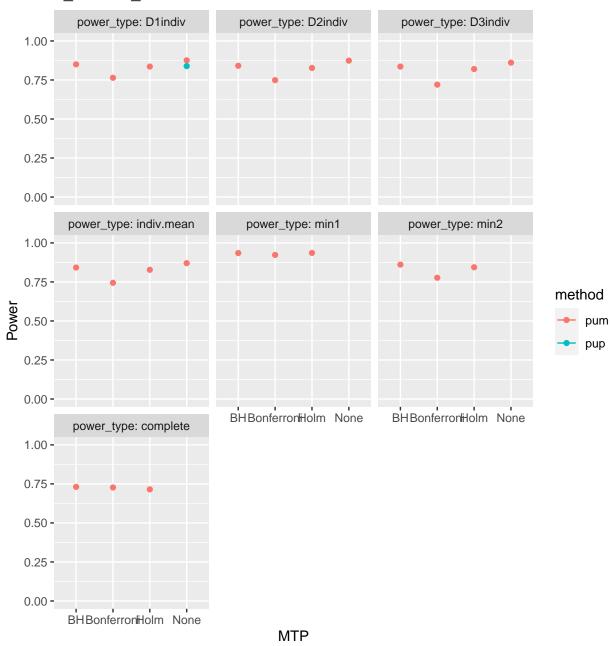
d_m: d3.2_m3ff2rc



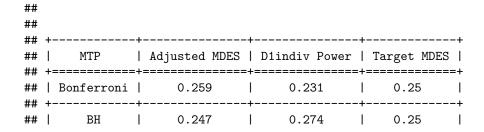
d_m: d3.2_m3ff2rc



d_m: d3.2_m3ff2rc



MDES



```
## | Holm | 0.245 | 0.25
## +-----
## Table: d3.3_m3rc2rc
##
##
## +-----
   MTP | Adjusted MDES | min1 Power | Target MDES |
## | Bonferroni | 0.252 | 0.411 | 0.25
   BH
      0.247 | 0.416 |
                     0.25
## +-----
## | Holm | 0.25
             | 0.405 | 0.25
## Table: d3.3_m3rc2rc
##
##
## +-----
   MTP | Adjusted MDES | min2 Power | Target MDES |
## +-----+
## | Bonferroni | 0.259
             0.194 | 0.25
## +-----
   BH
      0.236
             0.222
                     0.25
             0.234
## | Holm | 0.252
                     0.25
## +-----+
## Table: d3.3_m3rc2rc
##
## +-----
      | Adjusted MDES | complete Power | Target MDES |
## | Bonferroni |
        0.249
               0.161
## +-----
             0.154
        0.245
## +-----
     0.253
             Holm
                0.17
##
## Table: d3.3_m3rc2rc
```

Sample Size

Sample Size J

##

```
MTP | Sample.type | Sample.size | D1indiv.power |
## +-----
           l NA
                  l 0.231
## | Bonferroni |
         J
## +----+
   BH
      - 1
         J
           2
## +-----
     | J
           | 11
                  - 1
                    0.236
   Holm
## +-----+
##
## Table: d3.3_m3rc2rc
##
##
## +----+
   MTP | Sample.type | Sample.size | min1.power |
## | Bonferroni | J
           | 2250 | 0.416
      l J
           17
## +-----
## | Holm | J | 21 | 0.396 |
## +-----
## Table: d3.3_m3rc2rc
##
##
## +-----
   MTP | Sample.type | Sample.size | min2.power |
## | Bonferroni | J |
               260
      | J | 15
   BH
           | 1500
  {\tt Holm}
         J
## +-----
## Table: d3.3_m3rc2rc
##
##
## +-----
   MTP | Sample.type | Sample.size | complete.power |
## +======+======+=====+
## | Bonferroni | J |
               27
   BH
      | 13
                  0.148
           | 752
                  0.169
## +-----
```

Table: d3.3_m3rc2rc

Sample Size K

```
##
##
## +-----
   MTP | Sample.type | Sample.size | D1indiv.power |
## +======+====+====+
## | Bonferroni | K |
              21
     | K |
              21 |
   BH
                    0.288
## +-----
  Holm
        K
          1
                 1
              20
                    0.25
## +----+
## Table: d3.3_m3rc2rc
##
##
## +----+
     | Sample.type | Sample.size | min1.power |
## | Bonferroni | K |
              21
          1
                 0.418
  BH
      1
              20
## +----+
     l K
          1
              20 | 0.403
## +-----
## Table: d3.3_m3rc2rc
##
##
## +----+
      | Sample.type | Sample.size | min2.power |
## +======+=====+
          1
## | Bonferroni |
        K
              21 | 0.189
## +----+
          | 19 |
        K
           - 1
                 0.248
              21
   Holm
## Table: d3.3_m3rc2rc
##
##
## +-----
   MTP | Sample.type | Sample.size | complete.power |
## | Bonferroni | K
                0.154
           - 1
              20
## +-----
   BH
     l K
          1
              20 | 0.158
## +-----
## | Holm | K |
              21
                - 1
                    0.17
## +----+
```

```
##
## Table: d3.3_m3rc2rc
```

Sample Size nbar

```
##
##
## +-----
   MTP | Sample.type | Sample.size | D1indiv.power |
## +======+=====+=====+
            l NA
## | Bonferroni | nbar
   BH
      | 13539 | 0.279
        nbar
## +----+
                 0.226
## | Holm | nbar | 1
## +----+
##
## Table: d3.3_m3rc2rc
## +----+
   MTP | Sample.type | Sample.size | min1.power |
## +======+=====+
## | Bonferroni | nbar
           3013
## +----+
## | BH | nbar | 459 | 0.423 |
## +----+
## | Holm | nbar | 911 | 0.41 |
## Table: d3.3_m3rc2rc
##
## +-----+
   MTP | Sample.type | Sample.size | min2.power |
## | Bonferroni | nbar | NA
## +-----
      | nbar | NA
   BH
## | Holm | nbar | 6171 | 0.233 |
## +----+
## Table: d3.3_m3rc2rc
##
##
## +-----
   MTP | Sample.type | Sample.size | complete.power |
## | Bonferroni | nbar | NA
                 l NA l
## +----+
## |
   BH | nbar | NA |
                     NA
```

```
## +-----+
## | Holm | nbar | 3702 | 0.165 |
## +-----+
##
##
Table: d3.3_m3rc2rc
```

Changing correlation

correlation = 0

##

```
##
##
## +-----
   MTP | Adjusted MDES | min1 Power | Target MDES |
## +======+===+=====+
## | Bonferroni | 0.252
            0.411
## +----+
     0.247
            0.416
            0.405
     0.25
  {\tt Holm}
## +-----
## Table: d3.3_m3rc2rc
##
##
## +-----
      | Adjusted MDES | complete Power | Target MDES |
## | Bonferroni |
        0.249
              0.161
## +-----
   BH
     0.245
            0.154
                  0.25
## +-----
## | Holm
     0.253 | 0.17
##
## Table: d3.3_m3rc2rc
##
## +----+
     | Sample.type | Sample.size | min1.power |
   MTP
0.416
## | Bonferroni | J | 2250
## +-----
  BH
     | J | 17 | 0.406 |
## +----+
          1
   Holm | J
              21
                0.396
## +-----
## Table: d3.3_m3rc2rc
##
```

correlation = 0.8

## ## ##	+						
## ## ## ##		MTP	Adjusted MDES				
	I	Bonferroni		0.411	0.25		
	١	BH	0.247	0.416	0.25		
##		Holm	0.25	0.405	0.25		
##	+-			+	++		

Table: d3.3_m3rc2rc

##

##	+	+	+	++
## ## ## ## ##		. 3	complete Power	. 0
	Bonferroni		+=======	0.25
	l BH	 0.245	0.154	0.25
	Holm	0.253	0.17	0.25
##	+	+	+	++

Table: d3.3_m3rc2rc

##

##							
## ## ## ## ## ##	MTP	Sample.type	Sample.size 	-			
	Bonferroni	J J	2250	0.416			
	l BH	J	17	0.406			
	Holm	J	21	0.396			
##	+	+	+	++			

```
## Table: d3.3_m3rc2rc
##
## +-----
   MTP | Sample.type | Sample.size | min2.power |
## +======+====+====+
## | Bonferroni | J
            1
                 260
                    l 0.183 l
## +-----+
  BH
            | 15
       - 1
          J
## +----+
## | Holm
      | J | 1500 | 0.236 |
##
## Table: d3.3_m3rc2rc
correlation = 1
##
##
## +-----
       | Adjusted MDES | min1 Power | Target MDES |
## +======+=====+
          0.252
              | 0.411 |
## | Bonferroni |
    BH
      0.247
              0.416
## | Holm
          0.25 | 0.405
                        0.25
## Table: d3.3_m3rc2rc
##
##
## +-----
   MTP | Adjusted MDES | complete Power | Target MDES |
## | Bonferroni | 0.249
              0.161
## +-----+
       0.245
              0.154
                     1
## +-----
                 0.17 | 0.25
              1
## | Holm | 0.253
## Table: d3.3_m3rc2rc
##
   MTP | Sample.type | Sample.size | min1.power |
## +======+=======+=====+
## | Bonferroni | J | 2250 | 0.416 |
## +----+
          J | 17
      1
```

Table: d3.3_m3rc2rc