Appendix 1 The association between time and outcomes

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| --- | --- | --- | --- |
|  | *Estimated change* | *P-value* | *95%-CI* |
| *WHO-5*T0-T1       T1-T2       T0-T2 | 1.283  1.150  2.433 | .429  .485  .135 | -1.895 to 4.462  -2.079 to 4.379  -0.756 to 5.622 |
|  | *OR*\* | *P-value* | *95%-CI* |
| *Symptomatic hypoglycemia incidence*T0-T1       T1-T2  T0-T2 | 0.542 1.285 0.696 | .026 .386 .176 | 0.316 to 0.929  0.728 to 2.270 0.411 to 1.177 |
| *Nocturnal hypoglycemia incidence*T0-T1       T1-T2       T0-T2 | 0.636 1.117 0.711 | .351 .834 .472 | 0.245 to 1.650 0.395 to 3.168 0.280 to 1.806 |
| *Severe hypoglycemia incidence*T0-T1       T1-T2       T0-T2 | 0.466 1.000 0.466 | .198 1.000 .202 | 0.146 to 1.493 0.254 to 3.943  0.144 to 1.508 |
|  | *Estimated change* | *P-value* | *95%-CI* |
| *HbA1c (%)*T0-T1       T1-T2       T0-T2 | -0.128  -0.039  -0.167 | .072  .588  .020 | -0.267 to 0.011  -0.181 to 0.103  -0.307 to -0.027 |
| *HbA1c (mmol/mol)*T0-T1       T1-T2       T0-T2 | -1.395 -0.426  -1.821 | .072  .588  .020 | -2.916 to 0.126  -1.974 to 1.122  -3.353 to -0.290 |
|  | *Ratio of geometric averages*† | *P-value* | *95%-CI* |
| *HFS-W* T0-T1       T1-T2       T0-T2 | 0.862  0.952  0.821 | .086  .576  .024 | 0.729 to 1.021  0.802 to 1.131  0.693 to 0.974 |
| *PAID-SF*T0-T1      T1-T2      T0-T2 | 0.895  0.899  0.806 | .286  .315  .039 | 0.731 to 1.096  0.732 to 1.106  0.656 to 0.989 |
|  | *Estimated change* | *P-value* | *95%-CI* |
| *DMSRQ*T0-T1      T1-T2      T0-T2 | 3.280  1.116  4.396 | <.001  .182  <.001 | 1.670 to 4.890  -0.522 to 2.754  2.774 to 6.019 |
| *PSQI item 1*T0-T1      T1-T2      T0-T2 | -0.101  -0.006  -0.107 | .318  .950  .292 | -0.299 to 0.097  -0.208 to 0.195  -0.307 to 0.093 |
|  | *Ratio of geometric averages*† | *P-value* | *95%-CI* |
| *PSQI item 2*T0-T1       T1-T2       T0-T2 | 1.077  0.888  0.957 | .139  .021  .382 | 0.976 to 1.189  0.803 to 0.982  0.866 to 1.057 |
| *PSQI item 3*T0-T1       T1-T2       T0-T2 | 0.960  0.986  0.946 | .202  .671  .091 | 0.901 to 1.022  0.925 to 1.051  0.889 to 1.009 |
|  | *OR*‡ | *P-value* | *95%-CI* |
| *SDSCA*T0-T1       T1-T2       T0-T2 | 1.495  0.820  1.226 | .224  .565  .531 | 0.781 to 2.863  0.416 to 1.616  0.647 to 2.321 |

\*Odds Ratio for the groups “zero hypoglycemic events” (reference category) and “one or more hypoglycemic events”  
†HFS-w, PAID-SF, PSQI item 2 and PSQI item 3 were analyzed as log transformed and back transformed afterwards, resulting in a ratio of geometric averages  
‡Odds Ratio for the groups “less than 7 days a week adherent” (reference category) and “7 days a week adherent”

Appendix 2 Imputed WHO-5 and DMSRQ total scores

|  |  |  |  |
| --- | --- | --- | --- |
|  | *Baseline* | *Three months* | *Six months* |
| *WHO-5*  Mean\* | 61.65 | 62.66 | 63.87 |
| *DMSRQ*  Mean\* | 32.66 | 35.94 | 37.07 |

\*Scores based on imputed items. Items for drop-outs were not imputed from the moment of drop-out on. When all items of a questionnaire were missing on a certain visit, no imputation on this questionnaire for the regarding visit would take place. Pooled results do not provide a standard deviation

|  |  |  |  |
| --- | --- | --- | --- |
| Appendix 3 Changes in DMSRQ items over time\* | | | |
| *DMSRQ* | *Baseline* | *Three months* | *Six months* |
| *Item 1*†,‡ *satisfaction with…*  A. appropriateness of diabetes  medication    B. painfulness of diabetes medication    C. user friendliness of diabetes  medication  *Item 2*†,‡ *extent to which the diabetes medication hinders…*  A. having a good night sleep  B. sleeping late when you want  C. eating when and what you want  D. to do sports when you want  E. doing as much sports as you want  F. doing the kind of sports you want  *Item 3*§ *how well the diabetes medication helps with…*  A. getting good blood glucose control  B. avoiding low blood sugar levels  without snacks  C. avoiding low blood sugar levels  during the night  D. avoiding high blood sugar levels  E. avoiding weight gaining‡  **F**. losing weight‡  **G**. controlling appetite‡  *Item 4*†,‡ *general satisfaction with the diabetes medication* | 1.97 (0.76) 2.00 (1.25 – 2.75)  1.90 (0.82) 2.00 (1.00 – 3.00)  2.10 (0.78) 2.00 (2.00 – 3.00)  2.30 (0.97) 3.00 (2.00 – 3.00)  2.35 (0.98) 3.00 (2.00 – 3.00)  1.96 (1.01) 2.00 (1.00 – 3.00)  2.45 (0.92) 3.00 (2.00 – 3.00)  2.41 (0.92) 3.00 (2.00 – 3.00)  2.42 (0.93) 3.00 (2.00 – 3.00)  2.10 (1.02)  1.89 (1.08)  2.03 (1.10)  1.74 (1.03)  1.21 (1.14) 1.00 (0.00 – 2.00)  0.83 (1.09) 0.00 (0.00 – 1.00)  1.45 (1.12) 1.00 (1.00 – 2.00)  1.71 (0.75) 2.00 (1.00 – 2.00) | 2.24 (0.74) 2.00 (2.00 – 3.00)  2.23 (0.83) 2.00 (2.00 – 3.00)  2.38 (0.67) 2.00 (2.00 – 3.00)  2.39 (0.92) 3.00 (2.00 – 3.00)  2.26 (1.10) 3.00 (1.00 – 3.00)  1.99 (1.03) 2.00 (1.00 – 3.00)  2.50 (0.89) 3.00 (2.00 – 3.00)   2.53 (0.77) 3.00 (2.00 – 3.00)  2.54 (0.84) 3.00 (2.00 – 3.00)  2.26 (0.98)  2.24 (0.86)  2.43 (0.90)  1.98 (0.95)  1.41 (1.07) 1.00 (1.00 – 2.00)  0.78 (1.03) 0.00 (0.00 – 1.00)  1.71 (1.10) 2.00 (1.00 – 2.00)  2.05 (0.70) 2.00 (2.00 – 2.75) | 2.28 (0.62) 2.00 (2.00 – 3.00)  2.16 (0.82) 2.00 (2.00 – 3.00)  2.36 (0.68) 2.00 (2.00 – 3.00)  2.51 (0.87) 3.00 (2.00 – 3.00)  2.57 (0.83) 3.00 (1.75 – 3.00)  2.15 (0.89) 2.00 (2.00 – 3.00)  2.42 (0.87) 3.00 (2.00 – 3.00)   2.41 (0.85) 3.00 (2.00 – 3.00)  2.50 (0.85) 3.00 (2.00 – 3.00)  2.39 (0.94)  2.31 (0.98)  2.43 (0.97)  2.04 (1.00)  1.53 (1.18) 1.00 (1.00 – 2.00)  0.93 (1.18) 0.00 (0.00 – 2.00)  1.77 (1.15) 2.00 (1.00 – 2.00)  2.20 (0.64) 2.00 (2.00 – 3.00) |

\*Scores based on the original (non-imputed) data  
†Item contains four categories ranging from 0 to 3 ‡Since this item is (on some visits) skewed distributed, both the mean (SD) and median (25th percentile – 75th percentile) are given §Item contains five categories ranging from 0 to 4

Appendix 4 The association between time and DMSRQ items\*,†

|  |  |  |  |
| --- | --- | --- | --- |
|  | *Estimated change* | *P-value* | *95%-CI* |
| *Item 1a*       T0-T1       T1-T2       T0-T2 | 0.264  0.036  0.299 | .001  .640  <.001 | 0.114 to 0.413  -0.116 to 0.189  -2.390 to -2.154 |
| *Item 1b*       T0-T1       T1-T2       T0-T2 | 0.332  -0.071  0.261 | <.001  .423  .003 | 0.161 to 0.503  -0.246 to 0.104  0.088 to 0.434 |
| *Item 1c*  T0-T1       T1-T2       T0-T2 | 0.280  -0.021  0.259 | <.001  .757  <.001 | 0.149 to 0.410  -0.154 to 0.112  0.127 to 0.391 |
| *Item 2a*       T0-T1       T1-T2       T0-T2 | 0.090  0.120  0.210 | .364  .242  .038 | -0.105 to 0.286  0.081 to 0.321  0.011 to 0.409 |
| *Item 2b*       T0-T1       T1-T2       T0-T2 | -0.074  0.309  0.235 | .458  .002  .020 | -0.269 to 0.122  0.110 to 0.508  0.037 to 0.433 |
| *Item 2c*       T0-T1       T1-T2       T0-T2 | 0.039  0.156  0.195 | .701  .138  .061 | -0.162 to 0.240  0.050 to 0.362  -0.009 to 0.399 |
| *Item 2d*       T0-T1       T1-T2       T0-T2 | 0.061  -0.111  -0.050 | .497  .229  .583 | -0.115 to 0.237  -0.292 to 0.070  -0.228 to 0.128 |
| *Item 2e*       T0-T1       T1-T2       T0-T2 | 0.119  -0.130  -0.011 | .178  .152  .905 | -0.055 to 0.293  -0.307 to 0.048  -0.186 to 0.165 |
| *Item 2f*       T0-T1       T1-T2       T0-T2 | 0.125  -0.065  0.061 | .160  .477  .501 | -0.050 to 0.300  -0.244 to 0.114  -0.116 to 0.237 |
| *Item 3a*       T0-T1       T1-T2       T0-T2 | 0.161  0.134  0.296 | .073  .144  .001 | -0.015 to 0.338  -0.046 to 0.315  0.118 to 0.474 |
| *Item 3b*       T0-T1       T1-T2       T0-T2 | 0.365  0.072  0.437 | <.001  .445  <.001 | 0.183 to 0.546  -0.113 to 0.257  0.254 to 0.619 |
| *Item 3c*       T0-T1       T1-T2       T0-T2 | 0.401  -0.012  0.391 | <.001  .917  <.001 | 0.206 to 0.597  -0.211 to 0.189  0.193 to 0.588 |
| *Item 3d*       T0-T1       T1-T2       T0-T2 | 0.254  0.050  0.305 | .005  .584  .001 | 0.077 to 0.432  -0.130 to 0.231  0.127 to 0.483 |
| *Item 3e*  T0-T1       T1-T2       T0-T2 | 0.299  0.120  0.349 | .036  .278  .002 | 0.015 to 0.442  -0.098 to 0.338  0.134 to 0.564 |
| *Item 3f*       T0-T1       T1-T2       T0-T2 | -0.033  0.149  0.116 | .764  .186  .297 | -0.250 to 0.184  -0.072 to 0.371  -0.102 to 0.335 |
| *Item 3g*       T0-T1       T1-T2       T0-T2 | 0.289  0.065  0.355 | .008  .556  .001 | 0.076 to 0.503  -0.153 to 0.284  0.140 to 0.570 |
| *Item 4*       T0-T1       T1-T2       T0-T2 | 0.342  0.145  0.488 | <.001  .057  <.001 | 0.196 to 0.489  -0.004 to 0.295  0.341 to 0.634 |

\*Analyses based on non-imputed item scores †See Appendix 3 for the content of items