PANNEURO\_analysis

Christopher Huebel

Sys.Date()

Table of Contents

Frequencies of neurological symptoms in participants of the COPING/RAMP studies

Filtered by participants that self-reported a swap or antibody test

and that answered the neurological questionnaire

Script written by C Huebel Email: [christopher.1.huebel@kcl.ac.uk](mailto:christopher.1.huebel@kcl.ac.uk)

# Set up

Clear global environment

Retrieve the current date to use it for file endings to not overwrite files when one exports files

# Packages

Install packages (if they are not available in your version of R)

Load packages

Warning: package 'knitr' was built under R version 3.6.2

Registered S3 method overwritten by 'pryr':  
 method from  
 print.bytes Rcpp

For best results, restart R session and update pander using devtools:: or remotes::install\_github('rapporter/pander')

Attaching package: 'polycor'

The following object is masked from 'package:psych':  
  
 polyserial

corrplot 0.84 loaded

Warning: package 'patchwork' was built under R version 3.6.2

Warning: package 'broom' was built under R version 3.6.2

── Attaching packages ─────────────────────────────────────────────────────────────────────────────── tidyverse 1.3.0 ──

✓ ggplot2 3.3.2 ✓ purrr 0.3.4  
✓ tibble 3.0.3 ✓ dplyr 1.0.0  
✓ tidyr 1.1.0 ✓ stringr 1.4.0  
✓ readr 1.3.1 ✓ forcats 0.5.0

Warning: package 'ggplot2' was built under R version 3.6.2

Warning: package 'tibble' was built under R version 3.6.2

Warning: package 'tidyr' was built under R version 3.6.2

Warning: package 'purrr' was built under R version 3.6.2

Warning: package 'dplyr' was built under R version 3.6.2

── Conflicts ────────────────────────────────────────────────────────────────────────────────── tidyverse\_conflicts() ──  
x ggplot2::%+%() masks psych::%+%()  
x ggplot2::alpha() masks psych::alpha()  
x dplyr::filter() masks stats::filter()  
x dplyr::lag() masks stats::lag()  
x tibble::view() masks summarytools::view()

Warning: package 'ggpubr' was built under R version 3.6.2

# Colour palettes

Define colours for plotting this are the standard coping colours

Choose in this chunk which palette to use 04.07.2020 - Default to 2 colour COPING palette

# Data import

## Source data file paths

## Read in data

[1] 63266 579

[1] "Sample"   
 [2] "ID"   
 [3] "startDate.prepandemic"   
 [4] "Age\_uncleaned"   
 [5] "Gender\_unc"   
 [6] "Sex"   
 [7] "EduYrs"   
 [8] "demographics.college\_or\_university\_degree"   
 [9] "demographics.a\_levelsas\_levels\_or\_equivalent"   
 [10] "demographics.o\_levelsgcses\_or\_equivalent"   
 [11] "demographics.cses\_or\_equivalent"   
 [12] "demographics.nvq\_or\_hnd\_or\_hnc\_or\_equivalent"   
 [13] "Ethnicity\_unc"   
 [14] "Gender\_numeric"   
 [15] "Sex\_numeric"   
 [16] "demographics.college\_or\_university\_degree\_numeric"   
 [17] "demographics.a\_levelsas\_levels\_or\_equivalent\_numeric"   
 [18] "demographics.o\_levelsgcses\_or\_equivalent\_numeric"   
 [19] "demographics.cses\_or\_equivalent\_numeric"   
 [20] "demographics.nvq\_or\_hnd\_or\_hnc\_or\_equivalent\_numeric"   
 [21] "Ethnicity\_numeric"   
 [22] "Gender"   
 [23] "Ethnicity"   
 [24] "Age"   
 [25] "age\_category\_numeric"   
 [26] "age\_category"   
 [27] "highest\_education\_prepan\_numeric"   
 [28] "highest\_education\_prepan"   
 [29] "employment.phd"   
 [30] "employment.masters\_degree\_or\_equivalent"   
 [31] "employment.postgraduate\_degree\_or\_equivalent"   
 [32] "employment.bachelors\_degree\_or\_equivalent"   
 [33] "employment.a\_levelsas\_levels\_or\_equivalent"   
 [34] "employment.o\_levelsgcses\_or\_equivalent"   
 [35] "employment.cses\_or\_equivalent"   
 [36] "employment.nvq\_or\_hnd\_or\_hnc\_or\_equivalent"   
 [37] "employment.government\_work\_key\_workers"   
 [38] "employment.unemployed"   
 [39] "employment.zerohours\_contract"   
 [40] "employment.stayathome\_parent\_or\_carer"   
 [41] "employment.retired"   
 [42] "employment.student\_gcse\_or\_a\_level"   
 [43] "employment.student\_university"   
 [44] "employment.became\_unemployed"   
 [45] "employment.furloughed\_or\_paid\_leave\_government\_funded"   
 [46] "employment.furloughed\_or\_paid\_leave\_company\_funded"   
 [47] "employment.paid\_leave\_furloughed"   
 [48] "employment.phd\_numeric"   
 [49] "employment.masters\_degree\_or\_equivalent\_numeric"   
 [50] "employment.postgraduate\_degree\_or\_equivalent\_numeric"   
 [51] "employment.bachelors\_degree\_or\_equivalent\_numeric"   
 [52] "employment.a\_levelsas\_levels\_or\_equivalent\_numeric"   
 [53] "employment.o\_levelsgcses\_or\_equivalent\_numeric"   
 [54] "employment.cses\_or\_equivalent\_numeric"   
 [55] "employment.nvq\_or\_hnd\_or\_hnc\_or\_equivalent\_numeric"   
 [56] "employment.government\_work\_key\_workers\_numeric"   
 [57] "employment.unemployed\_numeric"   
 [58] "employment.zerohours\_contract\_numeric"   
 [59] "employment.stayathome\_parent\_or\_carer\_numeric"   
 [60] "employment.retired\_numeric"   
 [61] "employment.student\_gcse\_or\_a\_level\_numeric"   
 [62] "employment.student\_university\_numeric"   
 [63] "employment.became\_unemployed\_numeric"   
 [64] "employment.furloughed\_or\_paid\_leave\_government\_funded\_numeric"   
 [65] "employment.furloughed\_or\_paid\_leave\_company\_funded\_numeric"   
 [66] "employment.paid\_leave\_furloughed\_numeric"   
 [67] "highest\_education\_numeric"   
 [68] "highest\_education"   
 [69] "key\_worker\_numeric"   
 [70] "key\_worker"   
 [71] "anxiety\_disorders\_numeric"   
 [72] "anxiety\_disorders"   
 [73] "mhd.specific\_phobia\_e.g.\_phobia\_of\_flying\_numeric"   
 [74] "mhd.specific\_phobia\_e.g.\_phobia\_of\_flying"   
 [75] "mhd.social\_anxiety\_or\_social\_phobia\_numeric"   
 [76] "mhd.social\_anxiety\_or\_social\_phobia"   
 [77] "agoraphobia\_panic\_disorder\_numeric"   
 [78] "agoraphobia\_panic\_disorder"   
 [79] "depressive\_disorders\_numeric"   
 [80] "depressive\_disorders"   
 [81] "eating\_disorders\_numeric"   
 [82] "eating\_disorders"   
 [83] "obsessive\_compulsive\_disorders\_numeric"   
 [84] "obsessive\_compulsive\_disorders"   
 [85] "psychotic\_disorders\_numeric"   
 [86] "psychotic\_disorders"   
 [87] "mhd.mania\_hypomania\_bipolar\_or\_manicdepression\_numeric"   
 [88] "mhd.mania\_hypomania\_bipolar\_or\_manicdepression"   
 [89] "mhd.posttraumatic\_stress\_disorder\_ptsd\_numeric"   
 [90] "mhd.posttraumatic\_stress\_disorder\_ptsd"   
 [91] "autism\_spectrum\_disorder\_numeric"   
 [92] "autism\_spectrum\_disorder"   
 [93] "mhd.attention\_deficit\_hyperactivity\_disorder\_numeric"   
 [94] "mhd.attention\_deficit\_hyperactivity\_disorder"   
 [95] "mhd.personality\_disorder\_numeric"   
 [96] "mhd.personality\_disorder"   
 [97] "personality\_cluster\_a\_numeric"   
 [98] "personality\_cluster\_a"   
 [99] "personality\_cluster\_b\_numeric"   
[100] "personality\_cluster\_b"   
[101] "personality\_cluster\_c\_numeric"   
[102] "personality\_cluster\_c"   
[103] "depression\_and\_anxiety\_numeric"   
[104] "depression\_and\_anxiety"   
[105] "restricting\_vs\_binge\_eating\_eating\_disorders\_numeric"   
[106] "restricting\_vs\_binge\_eating\_eating\_disorders"   
[107] "bipolar\_and\_schizophrenia\_numeric"   
[108] "bipolar\_and\_schizophrenia"   
[109] "control\_numeric"   
[110] "control"   
[111] "disorders\_total\_count"   
[112] "comorbidity\_total\_count\_numeric"   
[113] "comorbidity\_total\_count\_factor\_numeric"   
[114] "comorbidity\_total\_count\_factor"   
[115] "mhd.none\_of\_the\_above"   
[116] "mhd.none\_of\_the\_above.1"   
[117] "gad.feeling\_nervous\_anxious\_or\_on\_edge\_prepan"   
[118] "gad.control\_worrying\_stop\_prepan"   
[119] "gad.worrying\_too\_much\_about\_different\_things\_prepan"   
[120] "gad.trouble\_relaxing\_prepan"   
[121] "gad.sit\_restless\_hard\_prepan"   
[122] "gad.becoming\_easily\_annoyed\_or\_irritable\_prepan"   
[123] "gad.awful\_feeling\_afraid\_happen\_prepan"   
[124] "gad.feeling\_nervous\_anxious\_or\_on\_edge\_prepan\_numeric"   
[125] "gad.control\_worrying\_stop\_prepan\_numeric"   
[126] "gad.worrying\_too\_much\_about\_different\_things\_prepan\_numeric"   
[127] "gad.trouble\_relaxing\_prepan\_numeric"   
[128] "gad.sit\_restless\_hard\_prepan\_numeric"   
[129] "gad.becoming\_easily\_annoyed\_or\_irritable\_prepan\_numeric"   
[130] "gad.awful\_feeling\_afraid\_happen\_prepan\_numeric"   
[131] "gad.sum\_score\_prepan\_raw"   
[132] "na\_per\_person\_gad\_prepan"   
[133] "gad.sum\_score\_prepan"   
[134] "pcl.stressful\_experience\_repeated\_images\_prepan"   
[135] "pcl.stressful\_experience\_upset\_reminded\_prepan"   
[136] "pcl.stressful\_situation\_avoiding\_activities\_prepan"   
[137] "pcl.cut\_people\_feeling\_distant\_prepan"   
[138] "pcl.feeling\_irritable\_or\_having\_angry\_outbursts\_prepan"   
[139] "pcl.difficulty\_concentrating\_prepan"   
[140] "pcl.stressful\_experience\_repeated\_images\_prepan\_numeric"   
[141] "pcl.stressful\_experience\_upset\_reminded\_prepan\_numeric"   
[142] "pcl.stressful\_situation\_avoiding\_activities\_prepan\_numeric"   
[143] "pcl.cut\_people\_feeling\_distant\_prepan\_numeric"   
[144] "pcl.feeling\_irritable\_or\_having\_angry\_outbursts\_prepan\_numeric"   
[145] "pcl.difficulty\_concentrating\_prepan\_numeric"   
[146] "pcl.sum\_score\_prepan\_raw"   
[147] "na\_per\_person\_pcl\_prepan"   
[148] "pcl.sum\_score\_prepan"   
[149] "phq.little\_interest\_or\_pleasure\_in\_doing\_things\_prepan"   
[150] "phq.feeling\_down\_depressed\_or\_hopeless\_prepan"   
[151] "phq.staying\_asleep\_sleeping\_trouble\_prepan"   
[152] "phq.feeling\_tired\_or\_having\_little\_energy\_prepan"   
[153] "phq.poor\_appetite\_or\_overeating\_prepan"   
[154] "phq.feeling\_bad\_failure\_family\_prepan"   
[155] "phq.trouble\_concentrating\_reading\_newspaper\_prepan"   
[156] "phq.moving\_fidgety\_noticed\_opposite\_prepan"   
[157] "phq.dead\_hurting\_thoughts\_prepan"   
[158] "phq.little\_interest\_or\_pleasure\_in\_doing\_things\_prepan\_numeric"   
[159] "phq.feeling\_down\_depressed\_or\_hopeless\_prepan\_numeric"   
[160] "phq.staying\_asleep\_sleeping\_trouble\_prepan\_numeric"   
[161] "phq.feeling\_tired\_or\_having\_little\_energy\_prepan\_numeric"   
[162] "phq.poor\_appetite\_or\_overeating\_prepan\_numeric"   
[163] "phq.feeling\_bad\_failure\_family\_prepan\_numeric"   
[164] "phq.trouble\_concentrating\_reading\_newspaper\_prepan\_numeric"   
[165] "phq.moving\_fidgety\_noticed\_opposite\_prepan\_numeric"   
[166] "phq.dead\_hurting\_thoughts\_prepan\_numeric"   
[167] "phq.sum\_score\_prepan\_raw"   
[168] "na\_per\_person\_phq\_prepan"   
[169] "phq.missing\_only\_suicide\_item\_prepan"   
[170] "phq.sum\_score\_prepan"   
[171] "phq.sum\_score\_8items\_prepan"   
[172] "ocir.i\_repeatedly\_check\_doors\_windows\_drawers\_etc\_prepan"   
[173] "ocir.arranged\_things\_change\_upset\_prepan"   
[174] "ocir.repeat\_feel\_numbers\_prepan"   
[175] "ocir.clean\_simply\_wash\_feel\_prepan"   
[176] "ocir.mind\_upset\_unpleasant\_thoughts\_prepan"   
[177] "ocir.afraid\_avoid\_throwing\_things\_prepan"   
[178] "ocir.light\_switches\_water\_taps\_prepan"   
[179] "ocir.arranged\_things\_prepan"   
[180] "ocir.good\_feel\_bad\_numbers\_prepan"   
[181] "ocir.hands\_longer\_wash\_prepan"   
[182] "ocir.saved\_things\_prepan"   
[183] "ocir.frequently\_difficulty\_rid\_nasty\_prepan"   
[184] "ocir.i\_check\_things\_more\_often\_than\_necessary\_prepan"   
[185] "ocir.arranged\_properly\_objects\_upset\_prepan"   
[186] "ocir.feel\_compelled\_count\_things\_prepan"   
[187] "ocir.strangers\_touch\_touched\_difficult\_prepan"   
[188] "ocir.control\_difficult\_find\_thoughts\_prepan"   
[189] "ocir.i\_collect\_things\_i\_dont\_need\_prepan"   
[190] "ocir.i\_repeatedly\_check\_doors\_windows\_drawers\_etc\_prepan\_numeric"  
[191] "ocir.arranged\_things\_change\_upset\_prepan\_numeric"   
[192] "ocir.repeat\_feel\_numbers\_prepan\_numeric"   
[193] "ocir.clean\_simply\_wash\_feel\_prepan\_numeric"   
[194] "ocir.mind\_upset\_unpleasant\_thoughts\_prepan\_numeric"   
[195] "ocir.afraid\_avoid\_throwing\_things\_prepan\_numeric"   
[196] "ocir.light\_switches\_water\_taps\_prepan\_numeric"   
[197] "ocir.arranged\_things\_prepan\_numeric"   
[198] "ocir.good\_feel\_bad\_numbers\_prepan\_numeric"   
[199] "ocir.hands\_longer\_wash\_prepan\_numeric"   
[200] "ocir.saved\_things\_prepan\_numeric"   
[201] "ocir.frequently\_difficulty\_rid\_nasty\_prepan\_numeric"   
[202] "ocir.i\_check\_things\_more\_often\_than\_necessary\_prepan\_numeric"   
[203] "ocir.arranged\_properly\_objects\_upset\_prepan\_numeric"   
[204] "ocir.feel\_compelled\_count\_things\_prepan\_numeric"   
[205] "ocir.strangers\_touch\_touched\_difficult\_prepan\_numeric"   
[206] "ocir.control\_difficult\_find\_thoughts\_prepan\_numeric"   
[207] "ocir.i\_collect\_things\_i\_dont\_need\_prepan\_numeric"   
[208] "ocir.sum\_score\_prepan\_raw"   
[209] "na\_per\_person\_ocir\_prepan"   
[210] "ocir.sum\_score\_prepan"   
[211] "startDate.coping"   
[212] "gad.problems\_made\_difficult\_care"   
[213] "gad.pandemic\_felt\_feelings"   
[214] "gad.feeling\_nervous\_anxious\_or\_on\_edge\_retro"   
[215] "gad.control\_worrying\_stop\_retro"   
[216] "gad.worrying\_too\_much\_about\_different\_things\_retro"   
[217] "gad.trouble\_relaxing\_retro"   
[218] "gad.sit\_restless\_hard\_retro"   
[219] "gad.becoming\_easily\_annoyed\_or\_irritable\_retro"   
[220] "gad.awful\_feeling\_afraid\_happen\_retro"   
[221] "gad.feeling\_nervous\_anxious\_or\_on\_edge\_base"   
[222] "gad.control\_worrying\_stop\_base"   
[223] "gad.worrying\_too\_much\_about\_different\_things\_base"   
[224] "gad.trouble\_relaxing\_base"   
[225] "gad.sit\_restless\_hard\_base"   
[226] "gad.becoming\_easily\_annoyed\_or\_irritable\_base"   
[227] "gad.awful\_feeling\_afraid\_happen\_base"   
[228] "gad.problems\_made\_difficult\_care\_numeric"   
[229] "gad.pandemic\_felt\_feelings\_numeric"   
[230] "gad.feeling\_nervous\_anxious\_or\_on\_edge\_retro\_numeric"   
[231] "gad.control\_worrying\_stop\_retro\_numeric"   
[232] "gad.worrying\_too\_much\_about\_different\_things\_retro\_numeric"   
[233] "gad.trouble\_relaxing\_retro\_numeric"   
[234] "gad.sit\_restless\_hard\_retro\_numeric"   
[235] "gad.becoming\_easily\_annoyed\_or\_irritable\_retro\_numeric"   
[236] "gad.awful\_feeling\_afraid\_happen\_retro\_numeric"   
[237] "gad.feeling\_nervous\_anxious\_or\_on\_edge\_base\_numeric"   
[238] "gad.control\_worrying\_stop\_base\_numeric"   
[239] "gad.worrying\_too\_much\_about\_different\_things\_base\_numeric"   
[240] "gad.trouble\_relaxing\_base\_numeric"   
[241] "gad.sit\_restless\_hard\_base\_numeric"   
[242] "gad.becoming\_easily\_annoyed\_or\_irritable\_base\_numeric"   
[243] "gad.awful\_feeling\_afraid\_happen\_base\_numeric"   
[244] "gad.sum\_score\_retro\_raw"   
[245] "gad.sum\_score\_base\_raw"   
[246] "na\_per\_person\_gad\_base"   
[247] "na\_per\_person\_gad\_retro"   
[248] "gad.sum\_score\_base"   
[249] "gad.sum\_score\_retro"   
[250] "pcl.stressful\_experience\_repeated\_images\_base"   
[251] "pcl.stressful\_experience\_upset\_reminded\_base"   
[252] "pcl.stressful\_situation\_avoiding\_activities\_base"   
[253] "pcl.cut\_people\_feeling\_distant\_base"   
[254] "pcl.feeling\_irritable\_or\_having\_angry\_outbursts\_base"   
[255] "pcl.difficulty\_concentrating\_base"   
[256] "pcl.stressful\_experience\_repeated\_images\_retro"   
[257] "pcl.stressful\_experience\_upset\_reminded\_retro"   
[258] "pcl.stressful\_situation\_avoiding\_activities\_retro"   
[259] "pcl.cut\_people\_feeling\_distant\_retro"   
[260] "pcl.feeling\_irritable\_or\_having\_angry\_outbursts\_retro"   
[261] "pcl.difficulty\_concentrating\_retro"   
[262] "pcl.stressful\_experience\_repeated\_images\_base\_numeric"   
[263] "pcl.stressful\_experience\_upset\_reminded\_base\_numeric"   
[264] "pcl.stressful\_situation\_avoiding\_activities\_base\_numeric"   
[265] "pcl.cut\_people\_feeling\_distant\_base\_numeric"   
[266] "pcl.feeling\_irritable\_or\_having\_angry\_outbursts\_base\_numeric"   
[267] "pcl.difficulty\_concentrating\_base\_numeric"   
[268] "pcl.stressful\_experience\_repeated\_images\_retro\_numeric"   
[269] "pcl.stressful\_experience\_upset\_reminded\_retro\_numeric"   
[270] "pcl.stressful\_situation\_avoiding\_activities\_retro\_numeric"   
[271] "pcl.cut\_people\_feeling\_distant\_retro\_numeric"   
[272] "pcl.feeling\_irritable\_or\_having\_angry\_outbursts\_retro\_numeric"   
[273] "pcl.difficulty\_concentrating\_retro\_numeric"   
[274] "pcl.sum\_score\_retro\_raw"   
[275] "pcl.sum\_score\_base\_raw"   
[276] "na\_per\_person\_pcl\_base"   
[277] "na\_per\_person\_pcl\_retro"   
[278] "pcl.sum\_score\_base"   
[279] "pcl.sum\_score\_retro"   
[280] "phq.problems\_made\_difficult\_care"   
[281] "phq.pandemic\_felt\_feelings"   
[282] "phq.little\_interest\_or\_pleasure\_in\_doing\_things\_retro"   
[283] "phq.feeling\_down\_depressed\_or\_hopeless\_retro"   
[284] "phq.staying\_asleep\_sleeping\_trouble\_retro"   
[285] "phq.feeling\_tired\_or\_having\_little\_energy\_retro"   
[286] "phq.poor\_appetite\_or\_overeating\_retro"   
[287] "phq.feeling\_bad\_failure\_family\_retro"   
[288] "phq.trouble\_concentrating\_reading\_newspaper\_retro"   
[289] "phq.moving\_fidgety\_noticed\_opposite\_retro"   
[290] "phq.dead\_hurting\_thoughts\_retro"   
[291] "phq.little\_interest\_or\_pleasure\_in\_doing\_things\_base"   
[292] "phq.feeling\_down\_depressed\_or\_hopeless\_base"   
[293] "phq.staying\_asleep\_sleeping\_trouble\_base"   
[294] "phq.feeling\_tired\_or\_having\_little\_energy\_base"   
[295] "phq.poor\_appetite\_or\_overeating\_base"   
[296] "phq.feeling\_bad\_failure\_family\_base"   
[297] "phq.trouble\_concentrating\_reading\_newspaper\_base"   
[298] "phq.moving\_fidgety\_noticed\_opposite\_base"   
[299] "phq.dead\_hurting\_thoughts\_base"   
[300] "phq.problems\_made\_difficult\_care\_numeric"   
[301] "phq.pandemic\_felt\_feelings\_numeric"   
[302] "phq.little\_interest\_or\_pleasure\_in\_doing\_things\_retro\_numeric"   
[303] "phq.feeling\_down\_depressed\_or\_hopeless\_retro\_numeric"   
[304] "phq.staying\_asleep\_sleeping\_trouble\_retro\_numeric"   
[305] "phq.feeling\_tired\_or\_having\_little\_energy\_retro\_numeric"   
[306] "phq.poor\_appetite\_or\_overeating\_retro\_numeric"   
[307] "phq.feeling\_bad\_failure\_family\_retro\_numeric"   
[308] "phq.trouble\_concentrating\_reading\_newspaper\_retro\_numeric"   
[309] "phq.moving\_fidgety\_noticed\_opposite\_retro\_numeric"   
[310] "phq.dead\_hurting\_thoughts\_retro\_numeric"   
[311] "phq.little\_interest\_or\_pleasure\_in\_doing\_things\_base\_numeric"   
[312] "phq.feeling\_down\_depressed\_or\_hopeless\_base\_numeric"   
[313] "phq.staying\_asleep\_sleeping\_trouble\_base\_numeric"   
[314] "phq.feeling\_tired\_or\_having\_little\_energy\_base\_numeric"   
[315] "phq.poor\_appetite\_or\_overeating\_base\_numeric"   
[316] "phq.feeling\_bad\_failure\_family\_base\_numeric"   
[317] "phq.trouble\_concentrating\_reading\_newspaper\_base\_numeric"   
[318] "phq.moving\_fidgety\_noticed\_opposite\_base\_numeric"   
[319] "phq.dead\_hurting\_thoughts\_base\_numeric"   
[320] "phq.sum\_score\_retro\_raw"   
[321] "phq.sum\_score\_base\_raw"   
[322] "na\_per\_person\_phq\_retro"   
[323] "phq.missing\_only\_suicide\_item\_retro"   
[324] "na\_per\_person\_phq\_base"   
[325] "phq.missing\_only\_suicide\_item\_base"   
[326] "phq.sum\_score\_base"   
[327] "phq.sum\_score\_8items\_base"   
[328] "phq.sum\_score\_retro"   
[329] "phq.sum\_score\_8items\_retro"   
[330] "ocir.felt\_pandemic\_feelings"   
[331] "ocir.i\_repeatedly\_check\_doors\_windows\_drawers\_etc\_retro"   
[332] "ocir.arranged\_things\_change\_upset\_retro"   
[333] "ocir.repeat\_feel\_numbers\_retro"   
[334] "ocir.clean\_simply\_wash\_feel\_retro"   
[335] "ocir.mind\_upset\_unpleasant\_thoughts\_retro"   
[336] "ocir.afraid\_avoid\_throwing\_things\_retro"   
[337] "ocir.light\_switches\_water\_taps\_retro"   
[338] "ocir.arranged\_things\_retro"   
[339] "ocir.good\_feel\_bad\_numbers\_retro"   
[340] "ocir.hands\_longer\_wash\_retro"   
[341] "ocir.saved\_things\_retro"   
[342] "ocir.frequently\_difficulty\_rid\_nasty\_retro"   
[343] "ocir.i\_check\_things\_more\_often\_than\_necessary\_retro"   
[344] "ocir.arranged\_properly\_objects\_upset\_retro"   
[345] "ocir.feel\_compelled\_count\_things\_retro"   
[346] "ocir.strangers\_touch\_touched\_difficult\_retro"   
[347] "ocir.control\_difficult\_find\_thoughts\_retro"   
[348] "ocir.i\_collect\_things\_i\_dont\_need\_retro"   
[349] "ocir.i\_repeatedly\_check\_doors\_windows\_drawers\_etc\_base"   
[350] "ocir.arranged\_things\_change\_upset\_base"   
[351] "ocir.repeat\_feel\_numbers\_base"   
[352] "ocir.clean\_simply\_wash\_feel\_base"   
[353] "ocir.mind\_upset\_unpleasant\_thoughts\_base"   
[354] "ocir.afraid\_avoid\_throwing\_things\_base"   
[355] "ocir.light\_switches\_water\_taps\_base"   
[356] "ocir.arranged\_things\_base"   
[357] "ocir.good\_feel\_bad\_numbers\_base"   
[358] "ocir.hands\_longer\_wash\_base"   
[359] "ocir.saved\_things\_base"   
[360] "ocir.frequently\_difficulty\_rid\_nasty\_base"   
[361] "ocir.i\_check\_things\_more\_often\_than\_necessary\_base"   
[362] "ocir.arranged\_properly\_objects\_upset\_base"   
[363] "ocir.feel\_compelled\_count\_things\_base"   
[364] "ocir.strangers\_touch\_touched\_difficult\_base"   
[365] "ocir.control\_difficult\_find\_thoughts\_base"   
[366] "ocir.i\_collect\_things\_i\_dont\_need\_base"   
[367] "ocir.felt\_pandemic\_feelings\_numeric"   
[368] "ocir.i\_repeatedly\_check\_doors\_windows\_drawers\_etc\_retro\_numeric"   
[369] "ocir.arranged\_things\_change\_upset\_retro\_numeric"   
[370] "ocir.repeat\_feel\_numbers\_retro\_numeric"   
[371] "ocir.clean\_simply\_wash\_feel\_retro\_numeric"   
[372] "ocir.mind\_upset\_unpleasant\_thoughts\_retro\_numeric"   
[373] "ocir.afraid\_avoid\_throwing\_things\_retro\_numeric"   
[374] "ocir.light\_switches\_water\_taps\_retro\_numeric"   
[375] "ocir.arranged\_things\_retro\_numeric"   
[376] "ocir.good\_feel\_bad\_numbers\_retro\_numeric"   
[377] "ocir.hands\_longer\_wash\_retro\_numeric"   
[378] "ocir.saved\_things\_retro\_numeric"   
[379] "ocir.frequently\_difficulty\_rid\_nasty\_retro\_numeric"   
[380] "ocir.i\_check\_things\_more\_often\_than\_necessary\_retro\_numeric"   
[381] "ocir.arranged\_properly\_objects\_upset\_retro\_numeric"   
[382] "ocir.feel\_compelled\_count\_things\_retro\_numeric"   
[383] "ocir.strangers\_touch\_touched\_difficult\_retro\_numeric"   
[384] "ocir.control\_difficult\_find\_thoughts\_retro\_numeric"   
[385] "ocir.i\_collect\_things\_i\_dont\_need\_retro\_numeric"   
[386] "ocir.i\_repeatedly\_check\_doors\_windows\_drawers\_etc\_base\_numeric"   
[387] "ocir.arranged\_things\_change\_upset\_base\_numeric"   
[388] "ocir.repeat\_feel\_numbers\_base\_numeric"   
[389] "ocir.clean\_simply\_wash\_feel\_base\_numeric"   
[390] "ocir.mind\_upset\_unpleasant\_thoughts\_base\_numeric"   
[391] "ocir.afraid\_avoid\_throwing\_things\_base\_numeric"   
[392] "ocir.light\_switches\_water\_taps\_base\_numeric"   
[393] "ocir.arranged\_things\_base\_numeric"   
[394] "ocir.good\_feel\_bad\_numbers\_base\_numeric"   
[395] "ocir.hands\_longer\_wash\_base\_numeric"   
[396] "ocir.saved\_things\_base\_numeric"   
[397] "ocir.frequently\_difficulty\_rid\_nasty\_base\_numeric"   
[398] "ocir.i\_check\_things\_more\_often\_than\_necessary\_base\_numeric"   
[399] "ocir.arranged\_properly\_objects\_upset\_base\_numeric"   
[400] "ocir.feel\_compelled\_count\_things\_base\_numeric"   
[401] "ocir.strangers\_touch\_touched\_difficult\_base\_numeric"   
[402] "ocir.control\_difficult\_find\_thoughts\_base\_numeric"   
[403] "ocir.i\_collect\_things\_i\_dont\_need\_base\_numeric"   
[404] "ocir.sum\_score\_retro\_raw"   
[405] "ocir.sum\_score\_base\_raw"   
[406] "na\_per\_person\_ocir\_retro"   
[407] "na\_per\_person\_ocir\_base"   
[408] "ocir.sum\_score\_base"   
[409] "ocir.sum\_score\_retro"   
[410] "alsfrs.limb\_weakness\_noticed\_past"   
[411] "alsfrs.normal"   
[412] "alsfrs.slow\_or\_sloppy\_all\_words\_are\_legible"   
[413] "alsfrs.not\_all\_words\_are\_legible"   
[414] "alsfrs.able\_to\_grip\_pen"   
[415] "alsfrs.unable\_to\_grip\_pen"   
[416] "alsfrs.have\_you\_noticed\_any\_difficulty\_walking"   
[417] "alsfrs.do\_you\_have\_any\_difficulty\_climbing\_stairs"   
[418] "alsfrs.limb\_weakness\_noticed\_past\_numeric"   
[419] "alsfrs.normal\_numeric"   
[420] "alsfrs.slow\_or\_sloppy\_all\_words\_are\_legible\_numeric"   
[421] "alsfrs.not\_all\_words\_are\_legible\_numeric"   
[422] "alsfrs.able\_to\_grip\_pen\_numeric"   
[423] "alsfrs.unable\_to\_grip\_pen\_numeric"   
[424] "alsfrs.have\_you\_noticed\_any\_difficulty\_walking\_numeric"   
[425] "alsfrs.do\_you\_have\_any\_difficulty\_climbing\_stairs\_numeric"   
[426] "ess.felt\_excessively\_sleepy\_past"   
[427] "ess.sitting\_and\_reading"   
[428] "ess.watching\_tv"   
[429] "ess.sitting\_inactive\_in\_a\_public\_place"   
[430] "ess.break\_passenger\_car\_hour"   
[431] "ess.afternoon\_rest\_circumstances\_lying"   
[432] "ess.sitting\_and\_talking\_to\_someone"   
[433] "ess.sitting\_quietly\_after\_a\_lunch\_without\_alcohol"   
[434] "ess.car\_minutes\_stopped\_traffic"   
[435] "ess.insomnia"   
[436] "ess.narcolepsy"   
[437] "ess.rem\_sleep\_behaviour\_disorder"   
[438] "ess.restless\_legs\_syndrome"   
[439] "ess.sleep\_apnea"   
[440] "ess.sleep\_terrors"   
[441] "ess.sleepwalking"   
[442] "ess.other"   
[443] "ess.none"   
[444] "ess.felt\_excessively\_sleepy\_past\_numeric"   
[445] "ess.sitting\_and\_reading\_numeric"   
[446] "ess.watching\_tv\_numeric"   
[447] "ess.sitting\_inactive\_in\_a\_public\_place\_numeric"   
[448] "ess.break\_passenger\_car\_hour\_numeric"   
[449] "ess.afternoon\_rest\_circumstances\_lying\_numeric"   
[450] "ess.sitting\_and\_talking\_to\_someone\_numeric"   
[451] "ess.sitting\_quietly\_after\_a\_lunch\_without\_alcohol\_numeric"   
[452] "ess.car\_minutes\_stopped\_traffic\_numeric"   
[453] "ess.insomnia\_numeric"   
[454] "ess.narcolepsy\_numeric"   
[455] "ess.rem\_sleep\_behaviour\_disorder\_numeric"   
[456] "ess.restless\_legs\_syndrome\_numeric"   
[457] "ess.sleep\_apnea\_numeric"   
[458] "ess.sleep\_terrors\_numeric"   
[459] "ess.sleepwalking\_numeric"   
[460] "ess.other\_numeric"   
[461] "ess.none\_numeric"   
[462] "midas.headaches\_suffered\_past\_month"   
[463] "midas.days\_past\_month\_miss\_work\_school"   
[464] "midas.days\_past\_month\_work\_school\_half\_productivity"   
[465] "midas.days\_past\_month\_miss\_housework"   
[466] "midas.days\_past\_month\_housework\_half\_productivity"   
[467] "midas.days\_past\_month\_miss\_social\_activities"   
[468] "midas.headaches\_suffered\_past\_month\_numeric"   
[469] "midas.days\_past\_month\_miss\_work\_school\_numeric"   
[470] "midas.days\_past\_month\_work\_school\_half\_productivity\_numeric"   
[471] "midas.days\_past\_month\_miss\_housework\_numeric"   
[472] "midas.days\_past\_month\_housework\_half\_productivity\_numeric"   
[473] "midas.days\_past\_month\_miss\_social\_activities\_numeric"   
[474] "nmss.ability\_taste\_food\_smell"   
[475] "nmss.severe\_taste\_smell\_loss"   
[476] "nmss.ability\_taste\_food\_smell\_numeric"   
[477] "nmss.severe\_taste\_smell\_loss\_numeric"   
[478] "nmsw.drink\_problems\_choking\_difficulty"   
[479] "nmsw.regularly\_night\_pass\_urine"   
[480] "nmsw.sex\_difficult\_finding"   
[481] "nmsw.weak\_standing\_feeling\_light"   
[482] "nmsw.acting\_moving\_sleep\_talking"   
[483] "nmsw.double\_vision"   
[484] "nmsw.drink\_problems\_choking\_difficulty\_numeric"   
[485] "nmsw.regularly\_night\_pass\_urine\_numeric"   
[486] "nmsw.sex\_difficult\_finding\_numeric"   
[487] "nmsw.weak\_standing\_feeling\_light\_numeric"   
[488] "nmsw.acting\_moving\_sleep\_talking\_numeric"   
[489] "nmsw.double\_vision\_numeric"   
[490] "tinnitus.ears\_noises\_minutes\_head"   
[491] "tinnitus.ears\_noises\_minutes\_head\_frequency"   
[492] "tinnitus.noises\_worry\_worst\_upset"   
[493] "tinnitus.ears\_noises\_minutes\_head\_numeric"   
[494] "tinnitus.ears\_noises\_minutes\_head\_frequency\_numeric"   
[495] "tinnitus.noises\_worry\_worst\_upset\_numeric"   
[496] "ID.dup"   
[497] "prepandemic\_january\_31\_numeric"   
[498] "prepandemic\_january\_31"   
[499] "prepandemic\_march\_1\_numeric"   
[500] "prepandemic\_march\_1"   
[501] "prepandemic\_march\_23\_numeric"   
[502] "prepandemic\_march\_23"   
[503] "time\_diff\_coping\_lockdown\_march\_23"   
[504] "time\_diff\_coping\_awareness\_march\_1"   
[505] "time\_diff\_coping\_first\_case\_uk\_jan\_31"   
[506] "time\_diff\_sign\_up\_coping"   
[507] "phq.diff\_score\_retro\_prepan"   
[508] "phq.diff\_score\_base\_prepan"   
[509] "phq.diff\_score\_base\_retro"   
[510] "gad.diff\_score\_retro\_prepan"   
[511] "gad.diff\_score\_base\_prepan"   
[512] "gad.diff\_score\_base\_retro"   
[513] "pcl.diff\_score\_base\_prepan"   
[514] "ocir.diff\_score\_retro\_prepan"   
[515] "ocir.diff\_score\_base\_prepan"   
[516] "ocir.diff\_score\_base\_retro"   
[517] "data\_group\_phq\_numeric"   
[518] "data\_group\_phq"   
[519] "data\_group\_gad\_numeric"   
[520] "data\_group\_gad"   
[521] "data\_group\_pcl\_numeric"   
[522] "data\_group\_pcl"   
[523] "data\_group\_ocir\_numeric"   
[524] "data\_group\_ocir"   
[525] "respiratory.breath\_diarrhoea\_fatigue\_fever"   
[526] "respiratory.worst\_ill\_feel"   
[527] "respiratory.persistent\_cough"   
[528] "respiratory.skipping\_meals\_because\_you\_felt\_unwell"   
[529] "respiratory.was\_your\_sense\_of\_smell\_impaired"   
[530] "respiratory.was\_your\_sense\_of\_taste\_impaired"   
[531] "respiratory.feeling\_tiredfatigued"   
[532] "respiratory.throat\_swab\_coronavirus\_nose"   
[533] "respiratory.throat\_swab\_test\_nose"   
[534] "respiratory.coronavirus\_antibody\_test"   
[535] "respiratory.results\_antibody\_test"   
[536] "respiratory.breath\_diarrhoea\_fatigue\_fever\_numeric"   
[537] "respiratory.worst\_ill\_feel\_numeric"   
[538] "respiratory.persistent\_cough\_numeric"   
[539] "respiratory.skipping\_meals\_because\_you\_felt\_unwell\_numeric"   
[540] "respiratory.was\_your\_sense\_of\_smell\_impaired\_numeric"   
[541] "respiratory.was\_your\_sense\_of\_taste\_impaired\_numeric"   
[542] "respiratory.feeling\_tiredfatigued\_numeric"   
[543] "respiratory.throat\_swab\_coronavirus\_nose\_numeric"   
[544] "respiratory.throat\_swab\_test\_nose\_numeric"   
[545] "respiratory.coronavirus\_antibody\_test\_numeric"   
[546] "respiratory.results\_antibody\_test\_numeric"   
[547] "respiratory.anosmia\_binary"   
[548] "respiratory.pcough\_binary"   
[549] "respiratory.fatigue\_binary"   
[550] "respiratory.skipped\_meals\_binary"   
[551] "Sex\_respiratory"   
[552] "Age\_respiratory"   
[553] "covid\_symptoms"   
[554] "covid\_probability"   
[555] "covid\_odds\_ratio"   
[556] "covid\_odds\_ratio\_50\_numeric"   
[557] "covid\_odds\_ratio\_50"   
[558] "covid\_probable\_case\_incl\_screening\_numeric"   
[559] "covid\_probable\_case\_incl\_screening"   
[560] "COPING\_ID"   
[561] "Birthyear\_unc"   
[562] "Birthmonth"   
[563] "Birthday"   
[564] "Birthyear\_unc\_numeric"   
[565] "Birthmonth\_numeric"   
[566] "Birthday\_numeric"   
[567] "Birthyear\_numeric"   
[568] "Birthdate"   
[569] "Cohort"   
[570] "Ethnicity.unc"   
[571] "Cohort\_numeric"   
[572] "Ethnicity.unc\_numeric"   
[573] "Ethnicity\_full"   
[574] "Transgender\_uncleaned"   
[575] "Transgender\_uncleaned\_numeric"   
[576] "employment.what\_is\_your\_highest\_level\_of\_education"   
[577] "employment.what\_is\_your\_highest\_level\_of\_education\_numeric"   
[578] "respiratory.coronavirus\_week\_antibody\_test"   
[579] "respiratory.coronavirus\_week\_antibody\_test\_numeric"

# Data availability

Data availability GAD

Frequencies   
dat.raw$data\_group\_gad   
Type: Factor   
  
 Freq % Valid % Total  
------------------------------------------------------ ------- --------- ---------  
 Only prepandemic data 14 0.04 0.02  
 Baseline and retrospective data 11852 34.01 18.73  
 Prepandemic and baseline data 3590 10.30 5.67  
 Baseline data only 10354 29.71 16.37  
 All prepandemic, baseline and retrospective data 9024 25.90 14.26  
 Retrospective data only 11 0.03 0.02  
 <NA> 28421 44.92  
 Total 63266 100.00 100.00

Data availability PHQ

Frequencies   
dat.raw$data\_group\_phq   
Type: Factor   
  
 Freq % Valid % Total  
------------------------------------------------------ ------- --------- ---------  
 Only prepandemic data 18 0.05 0.03  
 Baseline and retrospective data 12724 36.25 20.11  
 Prepandemic and baseline data 3241 9.23 5.12  
 Baseline data only 9739 27.74 15.39  
 All prepandemic, baseline and retrospective data 9357 26.66 14.79  
 Retrospective data only 25 0.07 0.04  
 <NA> 28162 44.51  
 Total 63266 100.00 100.00

Data availability PCL

Frequencies   
dat.raw$data\_group\_pcl   
Type: Factor   
  
 Freq % Valid % Total  
------------------------------------------------------ ------- --------- ---------  
 Only prepandemic data 107 0.31 0.17  
 Baseline and retrospective data 4420 12.78 6.99  
 Prepandemic and baseline data 8032 23.23 12.70  
 Baseline data only 17093 49.44 27.02  
 All prepandemic, baseline and retrospective data 4885 14.13 7.72  
 Retrospective data only 35 0.10 0.06  
 <NA> 28694 45.35  
 Total 63266 100.00 100.00

Data availability OCI-R

Frequencies   
dat.raw$data\_group\_ocir   
Type: Factor   
  
 Freq % Valid % Total  
------------------------------------------------------ ------- --------- ---------  
 Only prepandemic data 1219 19.49 1.93  
 Prepandemic and baseline data 2 0.03 0.00  
 Retrospective data only 487 7.79 0.77  
 All prepandemic, baseline and retrospective data 483 7.72 0.76  
 Baseline and retrospective data 3031 48.46 4.79  
 Baseline data only 1033 16.51 1.63  
 <NA> 57011 90.11  
 Total 63266 100.00 100.00

Frequencies   
dat.raw$Sample   
Type: Character   
  
 Freq % Valid % Valid Cum. % Total % Total Cum.  
----------- ------- --------- -------------- --------- --------------  
 EDGI 1950 3.08 3.08 3.08 3.08  
 GLAD 38622 61.05 64.13 61.05 64.13  
 NBR 13989 22.11 86.24 22.11 86.24  
 RAMP 8705 13.76 100.00 13.76 100.00  
 <NA> 0 0.00 100.00  
 Total 63266 100.00 100.00 100.00 100.00

# COVID

## Recode variable

Frequencies   
dat.raw$covid\_test\_positive\_double   
Type: Factor   
  
 Freq % Valid % Valid Cum. % Total % Total Cum.  
--------------------- ------- --------- -------------- --------- --------------  
 Negative 540 81.33 81.33 0.85 0.85  
 Positive 116 17.47 98.80 0.18 1.04  
 Double positive 8 1.20 100.00 0.01 1.05  
 <NA> 62602 98.95 100.00  
 Total 63266 100.00 100.00 100.00 100.00

Frequencies   
dat.raw$covid\_test\_positive   
Type: Factor   
  
 Freq % Valid % Valid Cum. % Total % Total Cum.  
-------------- ------- --------- -------------- --------- --------------  
 Negative 540 81.33 81.33 0.85 0.85  
 Positive 124 18.67 100.00 0.20 1.05  
 <NA> 62602 98.95 100.00  
 Total 63266 100.00 100.00 100.00 100.00

## COVID swab test positive

respiratory.throat\_swab\_test\_nose Sample n Prop  
1 Positive EDGI 1 0.00  
2 Positive GLAD 59 0.00  
3 Positive NBR 46 0.00  
4 Positive RAMP 10 0.00  
5 Negative EDGI 7 0.00  
6 Negative GLAD 363 0.01  
7 Negative NBR 122 0.00  
8 Negative RAMP 27 0.00  
9 Result awaited EDGI 2 0.00  
10 Result awaited GLAD 80 0.00  
11 Result awaited NBR 49 0.00  
12 Result awaited RAMP 7 0.00  
13 <NA> EDGI 1940 0.03  
14 <NA> GLAD 38120 0.60  
15 <NA> NBR 13772 0.22  
16 <NA> RAMP 8661 0.14

## antibody test

respiratory.results\_antibody\_test Sample n Prop  
1 Positive EDGI 1 0.00  
2 Positive GLAD 12 0.00  
3 Positive NBR 7 0.00  
4 Positive RAMP 2 0.00  
5 Negative EDGI 3 0.00  
6 Negative GLAD 25 0.00  
7 Negative NBR 12 0.00  
8 Negative RAMP 2 0.00  
9 Result awaited GLAD 18 0.00  
10 Result awaited NBR 5 0.00  
11 Result awaited RAMP 2 0.00  
12 <NA> EDGI 1946 0.03  
13 <NA> GLAD 38567 0.61  
14 <NA> NBR 13965 0.22  
15 <NA> RAMP 8699 0.14

## COVID probable diagnosis

covid\_probable\_case\_incl\_screening Sample n Prop  
1 No COVID EDGI 443 0.01  
2 No COVID GLAD 10650 0.17  
3 No COVID NBR 12015 0.19  
4 No COVID RAMP 8177 0.13  
5 Probable COVID EDGI 44 0.00  
6 Probable COVID GLAD 1153 0.02  
7 Probable COVID NBR 609 0.01  
8 Probable COVID RAMP 183 0.00  
9 <NA> EDGI 1463 0.02  
10 <NA> GLAD 26819 0.42  
11 <NA> NBR 1365 0.02  
12 <NA> RAMP 345 0.01

## Cross table probable covid and covid test positive

covid\_probable\_case\_incl\_screening Negative Positive <NA>  
1 No COVID 322 33 30930  
2 Probable COVID 139 85 1765  
3 <NA> 79 6 29907

# Neurological frequencies

Adding missing grouping variables: `covid\_test\_positive`

[1] "covid\_test\_positive"   
[2] "alsfrs.limb\_weakness\_noticed\_past"   
[3] "alsfrs.normal"   
[4] "alsfrs.slow\_or\_sloppy\_all\_words\_are\_legible"   
[5] "alsfrs.not\_all\_words\_are\_legible"   
[6] "alsfrs.able\_to\_grip\_pen"   
[7] "alsfrs.unable\_to\_grip\_pen"   
[8] "alsfrs.have\_you\_noticed\_any\_difficulty\_walking"   
[9] "alsfrs.do\_you\_have\_any\_difficulty\_climbing\_stairs"

alsfrs.limb\_weakness\_noticed\_past, alsfrs.normal, alsfrs.slow\_or\_sloppy\_all\_words\_are\_legible, alsfrs.not\_all\_words\_are\_legible, alsfrs.able\_to\_grip\_pen, alsfrs.unable\_to\_grip\_pen, alsfrs.have\_you\_noticed\_any\_difficulty\_walking, alsfrs.do\_you\_have\_any\_difficulty\_climbing\_stairs

covid\_test\_positive alsfrs.limb\_weakness\_noticed\_past n Prop  
1 Negative No 132 0.60  
2 Negative Yes 30 0.14  
3 Positive No 43 0.19  
4 Positive Yes 16 0.07

# A tibble: 4 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive alsfrs.normal n Prop  
 <fct> <fct> <int> <dbl>  
1 Negative Not Normal 10 0.33  
2 Negative Normal 20 0.67  
3 Positive Not Normal 3 0.19  
4 Positive Normal 13 0.81

# A tibble: 4 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive alsfrs.slow\_or\_sloppy\_all\_words\_are\_legible n Prop  
 <fct> <fct> <int> <dbl>  
1 Negative Not Slow or sloppy, all words are legible 26 0.87  
2 Negative Slow or sloppy, all words are legible 4 0.13  
3 Positive Not Slow or sloppy, all words are legible 13 0.81  
4 Positive Slow or sloppy, all words are legible 3 0.19

# A tibble: 3 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive alsfrs.not\_all\_words\_are\_legible n Prop  
 <fct> <fct> <int> <dbl>  
1 Negative Not Not all words are legible 26 0.87  
2 Negative Not all words are legible 4 0.13  
3 Positive Not Not all words are legible 16 1

# A tibble: 3 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive alsfrs.able\_to\_grip\_pen n Prop  
 <fct> <fct> <int> <dbl>  
1 Negative Not Able to grip pen 27 0.9  
2 Negative Able to grip pen 3 0.1  
3 Positive Not Able to grip pen 16 1

# A tibble: 3 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive alsfrs.unable\_to\_grip\_pen n Prop  
 <fct> <fct> <int> <dbl>  
1 Negative Not Unable to grip pen 29 0.97  
2 Negative Unable to grip pen 1 0.03  
3 Positive Not Unable to grip pen 16 1

# A tibble: 6 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive alsfrs.have\_you\_noticed\_any\_difficulty\_walking n Prop  
 <fct> <fct> <int> <dbl>  
1 Negative Normal 17 0.570  
2 Negative Early walking difficultly 11 0.37   
3 Negative Need a person, crutch or frame to help you wa… 2 0.07   
4 Positive Normal 10 0.62   
5 Positive Early walking difficultly 5 0.31   
6 Positive Need a person, crutch or frame to help you wa… 1 0.06

# A tibble: 7 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive alsfrs.do\_you\_have\_any\_difficulty\_climbing\_st… n Prop  
 <fct> <fct> <int> <dbl>  
1 Negative Normal 17 0.570  
2 Negative Slow 7 0.23   
3 Negative Mild unsteadiness or fatigue 5 0.17   
4 Negative Need assistance of a person or a rail 1 0.03   
5 Positive Normal 9 0.56   
6 Positive Slow 2 0.12   
7 Positive Mild unsteadiness or fatigue 5 0.31

Adding missing grouping variables: `covid\_test\_positive`

[1] "covid\_test\_positive"   
 [2] "ess.felt\_excessively\_sleepy\_past"   
 [3] "ess.sitting\_and\_reading"   
 [4] "ess.watching\_tv"   
 [5] "ess.sitting\_inactive\_in\_a\_public\_place"   
 [6] "ess.break\_passenger\_car\_hour"   
 [7] "ess.afternoon\_rest\_circumstances\_lying"   
 [8] "ess.sitting\_and\_talking\_to\_someone"   
 [9] "ess.sitting\_quietly\_after\_a\_lunch\_without\_alcohol"  
[10] "ess.car\_minutes\_stopped\_traffic"   
[11] "ess.insomnia"   
[12] "ess.narcolepsy"   
[13] "ess.rem\_sleep\_behaviour\_disorder"   
[14] "ess.restless\_legs\_syndrome"   
[15] "ess.sleep\_apnea"   
[16] "ess.sleep\_terrors"   
[17] "ess.sleepwalking"   
[18] "ess.other"   
[19] "ess.none"

# A tibble: 4 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive ess.felt\_excessively\_sleepy\_past n Prop  
 <fct> <fct> <int> <dbl>  
1 Negative No 90 0.56   
2 Negative Yes 72 0.44   
3 Positive No 25 0.42   
4 Positive Yes 34 0.580

# A tibble: 8 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive ess.sitting\_and\_reading n Prop  
 <fct> <fct> <int> <dbl>  
1 Negative Would never doze 14 0.2   
2 Negative Slight chance of dozing 31 0.44  
3 Negative Moderate chance of dozing 14 0.2   
4 Negative High chance of dozing 12 0.17  
5 Positive Would never doze 6 0.18  
6 Positive Slight chance of dozing 18 0.55  
7 Positive Moderate chance of dozing 5 0.15  
8 Positive High chance of dozing 4 0.12

# A tibble: 8 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive ess.watching\_tv n Prop  
 <fct> <fct> <int> <dbl>  
1 Negative Would never doze 12 0.17  
2 Negative Slight chance of dozing 21 0.3   
3 Negative Moderate chance of dozing 24 0.34  
4 Negative High chance of dozing 14 0.2   
5 Positive Would never doze 6 0.18  
6 Positive Slight chance of dozing 13 0.39  
7 Positive Moderate chance of dozing 12 0.36  
8 Positive High chance of dozing 2 0.06

# A tibble: 8 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive ess.sitting\_inactive\_in\_a\_public\_place n Prop  
 <fct> <fct> <int> <dbl>  
1 Negative Would never doze 42 0.59  
2 Negative Slight chance of dozing 18 0.25  
3 Negative Moderate chance of dozing 8 0.11  
4 Negative High chance of dozing 3 0.04  
5 Positive Would never doze 21 0.64  
6 Positive Slight chance of dozing 8 0.24  
7 Positive Moderate chance of dozing 2 0.06  
8 Positive High chance of dozing 2 0.06

# A tibble: 8 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive ess.break\_passenger\_car\_hour n Prop  
 <fct> <fct> <int> <dbl>  
1 Negative Would never doze 21 0.3   
2 Negative Slight chance of dozing 24 0.34  
3 Negative Moderate chance of dozing 17 0.24  
4 Negative High chance of dozing 9 0.13  
5 Positive Would never doze 13 0.39  
6 Positive Slight chance of dozing 11 0.33  
7 Positive Moderate chance of dozing 4 0.12  
8 Positive High chance of dozing 5 0.15

# A tibble: 8 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive ess.afternoon\_rest\_circumstances\_lying n Prop  
 <fct> <fct> <int> <dbl>  
1 Negative Would never doze 4 0.06  
2 Negative Slight chance of dozing 18 0.25  
3 Negative Moderate chance of dozing 23 0.32  
4 Negative High chance of dozing 26 0.37  
5 Positive Would never doze 5 0.15  
6 Positive Slight chance of dozing 11 0.33  
7 Positive Moderate chance of dozing 9 0.27  
8 Positive High chance of dozing 8 0.24

# A tibble: 6 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive ess.sitting\_and\_talking\_to\_someone n Prop  
 <fct> <fct> <int> <dbl>  
1 Negative Would never doze 63 0.89  
2 Negative Slight chance of dozing 6 0.08  
3 Negative Moderate chance of dozing 2 0.03  
4 Positive Would never doze 30 0.91  
5 Positive Slight chance of dozing 2 0.06  
6 Positive Moderate chance of dozing 1 0.03

# A tibble: 8 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive ess.sitting\_quietly\_after\_a\_lunch\_without\_alc… n Prop  
 <fct> <fct> <int> <dbl>  
1 Negative Would never doze 30 0.42  
2 Negative Slight chance of dozing 27 0.38  
3 Negative Moderate chance of dozing 8 0.11  
4 Negative High chance of dozing 6 0.08  
5 Positive Would never doze 18 0.55  
6 Positive Slight chance of dozing 10 0.3   
7 Positive Moderate chance of dozing 3 0.09  
8 Positive High chance of dozing 2 0.06

# A tibble: 6 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive ess.car\_minutes\_stopped\_traffic n Prop  
 <fct> <fct> <int> <dbl>  
1 Negative Would never doze 59 0.83  
2 Negative Slight chance of dozing 9 0.13  
3 Negative Moderate chance of dozing 1 0.01  
4 Negative High chance of dozing 2 0.03  
5 Positive Would never doze 32 0.97  
6 Positive Slight chance of dozing 1 0.03

# A tibble: 4 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive ess.insomnia n Prop  
 <fct> <chr> <int> <dbl>  
1 Negative Insomnia 7 0.05  
2 Negative Not Insomnia 125 0.95  
3 Positive Insomnia 1 0.02  
4 Positive Not Insomnia 47 0.98

# A tibble: 2 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive ess.narcolepsy n Prop  
 <fct> <chr> <int> <dbl>  
1 Negative Not Narcolepsy 132 1  
2 Positive Not Narcolepsy 48 1

# A tibble: 2 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive ess.rem\_sleep\_behaviour\_disorder n Prop  
 <fct> <chr> <int> <dbl>  
1 Negative Not REM sleep behaviour disorder 132 1  
2 Positive Not REM sleep behaviour disorder 48 1

# A tibble: 4 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive ess.restless\_legs\_syndrome n Prop  
 <fct> <chr> <int> <dbl>  
1 Negative Not Restless legs syndrome 130 0.98  
2 Negative Restless legs syndrome 2 0.02  
3 Positive Not Restless legs syndrome 46 0.96  
4 Positive Restless legs syndrome 2 0.04

# A tibble: 4 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive ess.sleep\_apnea n Prop  
 <fct> <chr> <int> <dbl>  
1 Negative Not Sleep apnea 131 0.99  
2 Negative Sleep apnea 1 0.01  
3 Positive Not Sleep apnea 47 0.98  
4 Positive Sleep apnea 1 0.02

# A tibble: 3 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive ess.sleep\_terrors n Prop  
 <fct> <chr> <int> <dbl>  
1 Negative Not Sleep terrors 130 0.98  
2 Negative Sleep terrors 2 0.02  
3 Positive Not Sleep terrors 48 1

# A tibble: 4 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive ess.sleepwalking n Prop  
 <fct> <chr> <int> <dbl>  
1 Negative Not Sleepwalking 129 0.98  
2 Negative Sleepwalking 3 0.02  
3 Positive Not Sleepwalking 47 0.98  
4 Positive Sleepwalking 1 0.02

# A tibble: 3 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive ess.other n Prop  
 <fct> <chr> <int> <dbl>  
1 Negative Not Other: 131 0.99  
2 Negative Other: 1 0.01  
3 Positive Not Other: 48 1

# A tibble: 4 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive ess.none n Prop  
 <fct> <chr> <int> <dbl>  
1 Negative None 121 0.92  
2 Negative Not None 11 0.08  
3 Positive None 44 0.92  
4 Positive Not None 4 0.08

Adding missing grouping variables: `covid\_test\_positive`

[1] "covid\_test\_positive"   
[2] "midas.headaches\_suffered\_past\_month"   
[3] "midas.days\_past\_month\_miss\_work\_school"   
[4] "midas.days\_past\_month\_work\_school\_half\_productivity"  
[5] "midas.days\_past\_month\_miss\_housework"   
[6] "midas.days\_past\_month\_housework\_half\_productivity"   
[7] "midas.days\_past\_month\_miss\_social\_activities"

# A tibble: 4 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive midas.headaches\_suffered\_past\_month n Prop  
 <fct> <fct> <int> <dbl>  
1 Negative No 75 0.47  
2 Negative Yes 86 0.53  
3 Positive No 23 0.39  
4 Positive Yes 36 0.61

# A tibble: 0 x 4  
# Groups: covid\_test\_positive [0]  
# … with 4 variables: covid\_test\_positive <fct>,  
# midas.days\_past\_month\_miss\_work\_school <fct>, n <int>, Prop <dbl>

# A tibble: 0 x 4  
# Groups: covid\_test\_positive [0]  
# … with 4 variables: covid\_test\_positive <fct>,  
# midas.days\_past\_month\_work\_school\_half\_productivity <fct>, n <int>,  
# Prop <dbl>

# A tibble: 0 x 4  
# Groups: covid\_test\_positive [0]  
# … with 4 variables: covid\_test\_positive <fct>,  
# midas.days\_past\_month\_miss\_housework <fct>, n <int>, Prop <dbl>

# A tibble: 0 x 4  
# Groups: covid\_test\_positive [0]  
# … with 4 variables: covid\_test\_positive <fct>,  
# midas.days\_past\_month\_housework\_half\_productivity <fct>, n <int>,  
# Prop <dbl>

# A tibble: 0 x 4  
# Groups: covid\_test\_positive [0]  
# … with 4 variables: covid\_test\_positive <fct>,  
# midas.days\_past\_month\_miss\_social\_activities <fct>, n <int>, Prop <dbl>

Adding missing grouping variables: `covid\_test\_positive`

[1] "covid\_test\_positive" "nmss.ability\_taste\_food\_smell"  
[3] "nmss.severe\_taste\_smell\_loss"

# A tibble: 4 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive nmss.ability\_taste\_food\_smell n Prop  
 <fct> <fct> <int> <dbl>  
1 Negative No 136 0.84  
2 Negative Yes 25 0.16  
3 Positive No 27 0.46  
4 Positive Yes 32 0.54

# A tibble: 10 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive nmss.severe\_taste\_smell\_loss n Prop  
 <fct> <fct> <int> <dbl>  
 1 Negative Minimal 3 0.12  
 2 Negative Mild 12 0.48  
 3 Negative Moderate 3 0.12  
 4 Negative Severe 4 0.16  
 5 Negative I cannot taste or smell at all 3 0.12  
 6 Positive Minimal 4 0.12  
 7 Positive Mild 4 0.12  
 8 Positive Moderate 6 0.19  
 9 Positive Severe 7 0.22  
10 Positive I cannot taste or smell at all 11 0.34

Adding missing grouping variables: `covid\_test\_positive`

[1] "covid\_test\_positive"   
[2] "nmsw.drink\_problems\_choking\_difficulty"  
[3] "nmsw.regularly\_night\_pass\_urine"   
[4] "nmsw.sex\_difficult\_finding"   
[5] "nmsw.weak\_standing\_feeling\_light"   
[6] "nmsw.acting\_moving\_sleep\_talking"   
[7] "nmsw.double\_vision"

# A tibble: 4 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive nmsw.drink\_problems\_choking\_difficulty n Prop  
 <fct> <fct> <int> <dbl>  
1 Negative No 140 0.88  
2 Negative Yes 20 0.12  
3 Positive No 56 0.97  
4 Positive Yes 2 0.03

# A tibble: 4 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive nmsw.regularly\_night\_pass\_urine n Prop  
 <fct> <fct> <int> <dbl>  
1 Negative No 89 0.56  
2 Negative Yes 71 0.44  
3 Positive No 42 0.72  
4 Positive Yes 16 0.28

# A tibble: 4 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive nmsw.sex\_difficult\_finding n Prop  
 <fct> <fct> <int> <dbl>  
1 Negative No 141 0.9   
2 Negative Yes 15 0.1   
3 Positive No 49 0.86  
4 Positive Yes 8 0.14

# A tibble: 4 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive nmsw.weak\_standing\_feeling\_light n Prop  
 <fct> <fct> <int> <dbl>  
1 Negative No 102 0.64  
2 Negative Yes 58 0.36  
3 Positive No 35 0.6   
4 Positive Yes 23 0.4

# A tibble: 4 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive nmsw.acting\_moving\_sleep\_talking n Prop  
 <fct> <fct> <int> <dbl>  
1 Negative No 134 0.85  
2 Negative Yes 24 0.15  
3 Positive No 51 0.88  
4 Positive Yes 7 0.12

# A tibble: 4 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive nmsw.double\_vision n Prop  
 <fct> <fct> <int> <dbl>  
1 Negative No 142 0.89  
2 Negative Yes 17 0.11  
3 Positive No 54 0.93  
4 Positive Yes 4 0.07

Adding missing grouping variables: `covid\_test\_positive`

[1] "covid\_test\_positive"   
[2] "tinnitus.ears\_noises\_minutes\_head"   
[3] "tinnitus.ears\_noises\_minutes\_head\_frequency"  
[4] "tinnitus.noises\_worry\_worst\_upset"

# A tibble: 4 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive tinnitus.ears\_noises\_minutes\_head n Prop  
 <fct> <fct> <int> <dbl>  
1 Negative No 134 0.83  
2 Negative Yes 27 0.17  
3 Positive No 50 0.85  
4 Positive Yes 9 0.15

# A tibble: 7 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive tinnitus.ears\_noises\_minutes\_head\_frequency n Prop  
 <fct> <fct> <int> <dbl>  
1 Negative Not now 2 0.07  
2 Negative Some of the time 16 0.59  
3 Negative Now most or all of the time 9 0.33  
4 Positive Not now 1 0.11  
5 Positive Some of the time 4 0.44  
6 Positive Now a lot of the time 2 0.22  
7 Positive Now most or all of the time 2 0.22

# A tibble: 7 x 4  
# Groups: covid\_test\_positive [2]  
 covid\_test\_positive tinnitus.noises\_worry\_worst\_upset n Prop  
 <fct> <fct> <int> <dbl>  
1 Negative Not at all 7 0.26  
2 Negative Slightly 17 0.63  
3 Negative Moderately 3 0.11  
4 Positive Not at all 1 0.11  
5 Positive Slightly 5 0.56  
6 Positive Moderately 2 0.22  
7 Positive Severely 1 0.11