Odds Ratio Plot

Demonstration of plotting odds ratio data.

Data comes from Supplementary Table 1 used in Figure 1 of "*Real-time tracking of self-reported symptoms to predict potential COVID-19*" Menni et al, Nature Medicine (2020). https://doi.org/10.1038/s41591-020-0916-2

Requires the spreadsheet file '`41591_2020_916_MOESM3_ESM.xlsx`' to be in the '`data`' folder


```
rpathFolder = "data/MenniNatMed" ;  % Correct if this script is run from
folder above 'source'.
rdataFullFilename = fullfile(rpathFolder,
"41591_2020_916_MOESM3_ESM.xlsx") ;

if ~exist(rdataFullFilename,"file")
    pathThisScript  = fileparts(matlab.desktop.editor.getActiveFilename) ;
    pathAboveScript = fileparts(pathThisScript) ;
    rdataFullFilename = fullfile(pathAboveScript, rdataFullFilename)  ;
end
```

Read in the spreadsheet data.You can use `uiimport` to start the Import Tool and gain an understanding of the data and how it might be read. With a basic table such as this, the data can be read into a table easily:

```
TB = readtable(rdataFullFilename)
```

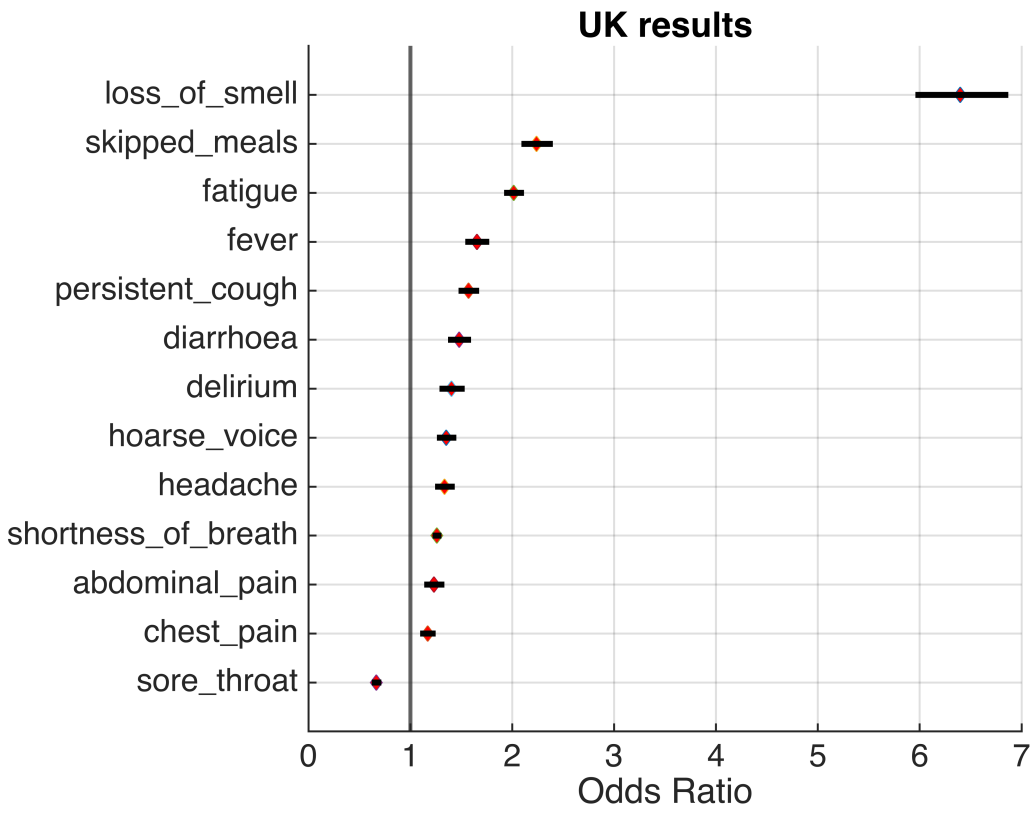
TB = 13×7 table

	var	o_uk	l_uk	u_uk	o_us	l_us	u_us
1	'loss_of_smell'	6.3974	5.9576	6.8697	10.005	8.2324	12.16
2	'skipped_meals'	2.2393	2.0903	2.399	1.6137	1.3567	1.9193
3	'fatigue'	2.0157	1.9202	2.1158	1.3394	1.1834	1.516
4	'fever'	1.6528	1.5393	1.7748	1.0523	0.86337	1.2827
5	'persistent_cough'	1.5712	1.4733	1.6755	1.1638	0.97934	1.3829
6	'diarrhoea'	1.4788	1.3703	1.596	1.1682	0.97156	1.4046
7	'delirium'	1.4045	1.2861	1.5338	0.97673	0.79881	1.1943
8	'hoarse_voice'	1.3529	1.2608	1.4517	1.0755	0.88662	1.3045
9	'headache'	1.3362	1.2432	1.436	1.0359	0.86925	1.2344
10	'shortness_of_breath'	1.2613	1.2186	1.3055	1.0664	0.9753	1.166
11	'abdominal_pain'	1.2315	1.1363	1.3346	0.96804	0.78443	1.1946
12	'chest_pain'	1.1701	1.0965	1.2486	0.83942	0.70412	1.0007
13	'sore_throat'	0.66696	0.62177	0.71545	0.54882	0.45705	0.65902

TB is a table, here with 13 variables (one row for each symptom) and 7 columns.

The columns can be accessed using dot notation, for example: `uk_lower_odds = TB.l_uk`

```
nvar = size(TB,1) ; % number of variables (1 here indicates the rows
dimension)

hfig = figure('Name','Odds Plot') ; % open new figure and axes, get handles
hax = axes ;

hold on

% Loop over each variable in the table, ploting a marker at the actual odds
ratio (o_uk)
% and drawing a line from the lower (l_uk) to upper (u_uk) data for the UK
% only.
% Space each line vertically by 1.

for ivar = 1:nvar
    % plot marker first, then the line so that the line is in front
    plot(TB.o_uk(ivar), ivar, ...
        'MarkerSize',6,'Marker','diamond', 'MarkerFaceColor','red') % plots
marker


    xs = [TB.l_uk(ivar) TB.u_uk(ivar)] ; % start and end x coordinates of
line
    ys = [ivar          ivar] ;          % start and end y coordinates of
line
    plot(xs, ys, 'LineWidth',3,'Color','k') % plots line
end

xline(1,'Linewidth',2) ; % A vertical line to show where odds ratio = 1.

grid on  % helps reader

% Improve plot appearance and labelling
xlabel('Odds Ratio')
title('UK results')

hax.YTick = [1:nvar] ;
hax.YTickLabel = TB.var ; % Use the variable (symptom) names for the y axis
labels.
hax.TickLabelInterpreter = 'none' ; % Otherwise it treats "_" as a LaTeX
character.
hax.FontSize = 16 ; % this has to come AFTER text has been written
hax.YDir = 'reverse' ;
hax.LineWidth = 1 ;
```



Comparison with the figure in the journal shows that the journal figure does not include sore throat or headache.

```
% If you want a log x-scale, uncomment these lines
% hax.XScale = 'log' ;
% hax.XTick = [0.5 1 2 4 8] ;
% hax.XLim = [0.4 8.1] ;
```