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/*=====
| Covance Study Number      : 000000106343
| Program Name              : f_qsu_ls_fas.sas
| Purpose                   : Figure 15.1.2.5.2
| Input Data                : tflds.t_15_02_04_53_02_f
| Output Data               : F_15_01_02_05_02
| Macros Called             :
| Originally Performed by   :Jyothsna Reddy
| Date                     : 28MAY2015
|
|=====
| Modification History
|-----
| Modified by              :
| Modification Date        :
| Modification Description :
+=====*/

options replace;
proc datasets lib=work kill memtype=data nolist;
run;

%m_printto;
%let tfлно=F_15_01_02_05_02;

PROC FORMAT;
VALUE XAXIS
    4.5='1'
    9='2'
    13.5='3'
    18='4'
    22.5='5'
           45='30'
           67.5='60'
           90='90'
    0='Baseline'
;

RUN;

/* Standard - leave this */
%let TFL_Part=%scan(&_SASPROGRAMFILE,-3,%str());

/* Standard - leave this */

data _null_;
    tmp="%TFL_Part";
    if tmp not in ("dev" "qc") then call symput("TFL_Part", "prod");
    call symput('TFLpath', compress("&_SASPROGRAMFILE",""));
run;

options notes source source2 nofullstimer validvarname=upcase
nonumber nodate orientation=portrait missing=' ';
ods graphics on; /* As we are effectively using ODS graphics we need to ensure that it is turned on */
ods graphics / height=12cm width=16cm noborder; /* Removes border around the image */
ods path reset;
/* please include styles template */
%include "/cvn/projects/prj/development/000000106343/dev/figures/figtplt.sas";
ods rtf toc_data file="/cvn/projects/prj/data/000000106343/TFL/dev/Tables/&tfлно..rtf" style=t106343_g1 startpage=yes headery=1440 footery=1440 ;

ods exclude all;

data forest;
    length trta $50;
    set tflds.t_15_02_04_53_02_f;
    trta=difftyp;
    if TRTA="THSm2.2vs.mCC" then TRTAN=1;
    if TRTA="THSm2.2vs.SA" then TRTAN=2;

    if not missing(TRTA) and parcat2="Total Score";
run;

proc sort data=forest out=forest1;
    by parcat2n ;
run;

proc sort data=forest out=uqparam nodupkey;
    by parcat2n ;
run;

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data extra(keep=parcat2n trta trtan avisitn);
  set uqparam;
  avisitn=100;
  TRTA="THSm2.2vs.mCC" ;
  TRTAN=1;
  output;
  avisitn=100;
  TRTA="THSm2.2vs.SA" ;
  TRTAN=2;
  output;
  run;

data dforest1(keep= param paramn avisit1 trtan trta avisitn avisit mean LCLM UCLM gmean tpt);
format gmean 6.2;
length tpt 3 avisit1 8;
  set forest1(rename=(parcat2=param upper=uclm lower=lclm ESTIMATE=mean)) extra;
  IF avisitn=100 THEN avisit1=0;
  IF avisitn=98 THEN avisit1=0;
  IF avisitn=10 THEN avisit1=0;
  IF avisitn=101 THEN avisit1=1;
  IF avisitn=102 THEN avisit1=2;
  IF avisitn=103 THEN avisit1=3;
  IF avisitn=104 THEN avisit1=4;
  IF avisitn=105 THEN avisit1=5;
  IF avisitn=130 THEN avisit1=6;
  IF avisitn=160 THEN avisit1=7;
  IF avisitn=190 THEN avisit1=8;
  if not missing(lclm) then lclmx = 0.1*floor(lclm/0.1);
  if not missing(uclm) then uclmx = 0.1*ceil(uclm/0.1);
  tpt=avisit1;
  paramn=1;
  if not missing(mean) then mean=round(mean,0.1);
  gmean=mean;IF AVISITN=99 THEN DELETE;
  run;
proc sort data=dforest1;
  by param ;
run;

/*Use a proc summary to find the maximum value of the Y axis which needs to be presented for the first plot*/
proc summary data=dforest1;
  by param ;
  var UCLM;
  output out =axis1 max=max1 ;
run;

proc summary data=dforest1;
  by param ;
  var lclm;
  output out =axis2 min=min1;
run;

data maxaxis1;
  merge axis1 axis2(drop=_type_ _freq_);
  by param ;
  if not missing(max1) then max2=(ceil(max1));
  if not missing(min1) then min2=floor(min1);
  /*Use mod 2 to ensure axis limit is an even number so the increment can be 2*/
  if not missing(max2) then mod_max=mod(max2,2);
  if not missing(min2) then mod_min=mod(min2,2);

  if not missing(max2) and mod_max=0 then max12=max2;
  else if not missing(max2) and mod_max=1 then max12=max2+1;
  if not missing(min2) and mod_min=0 then min12=min2;
  else if not missing(min2) and mod_min=1 then min12=min2-1;
  min=put(min12,best.);
  max=put(max12,best.);
run;

data adbx3;
  merge dforest1 maxaxis1;
  by param ;
  par=1;
run;

PROC SQL;

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CREATE TABLE ADBX3_X AS
SELECT PARAM, TRTA, AVISIT, mean, lclm, uclm
FROM ADBX3;
QUIT;
PROC EXPORT DATA=ADBX3_X DBMS=XLSX OUTFILE="/cvn/projects/prj/data/000000106343/TFL/dev/Tables/&tflno...xlsx" REPLACE;
SHEET=Sheet1;

title;
footnote;
proc sort data=adbx3;
by par;
data paging; /* paging is derived normally as with RTF type TFL */

    set adbx3 end=last;
    page = 1;
    if tpt=1 then newvis=4.5;
    else if tpt=2 then newvis=9;
    else if tpt=3 then newvis=13.5;
    else if tpt=4 then newvis=18;
    else if tpt=5 then newvis=22.5;
    else if tpt=6 then newvis=45;
    else if tpt=7 then newvis=67.5;
    else if tpt=8 then newvis=90;
    else newvis=tpt;
run;

proc sort data=paging out=uniqpar nodupkey;by paramn;run;

%let maxpage=1;

/*Figure Output*/
/* _____ */
%macro graph();
%do i=1 %to 1; /* paging can either be done through a do loop or multiple macro calls */
%do j=1 %to &maxpage %by 1;

data plot1;
    set paging;
    parm=strip(param);
    drop param;
    rename parm=param;
run;

proc sql noprint;
    select param into:param trimmed
    from plot1;
quit;

data plot;
    set plot1;
    call symput("max1",max);
run;
proc sort data=plot; by avisitn;run;

proc template;
    define statgraph splot ;
        begingraph ;
            layout overlay / border=false
                xaxisopts=(linearopts=(tickvaluelist=(0 4.5 9 13.5 18 22.5 45 67.5 90) TICKVALUEFITPOLICY=ROTATE) label="Study D
ay")
                yaxisopts=(linearopts=(tickvaluesequence=(start=-2 end=&max1 increment=2) viewmin=-2 viewmax=&max1)
                    label="Total Score") cycleattrs=false;
            referenceline y=0 / lineattrs=(pattern=solid);

            seriesplot x=newvis y=mean / index=trtan primary=true group=trta display=(markers) legendlabel="mean" name="series";
            scatterplot x=newvis y=gmean / index=trtan group=trta yerrorlower=/*lclmx*/lclm yerrorupper=/*uclmx*/uclm legendlabel="mean"
                name="scatter" ;
            discretelegend "series";
        endlayout;
    endgraph;
    end;
run;

ods select all;

ODS ESCAPECHAR='^';
ODS RTF PREPAGE="^S={outputwidth=100% just=1 font_size=12pt font_weight=bold background=white foreground=black font_face=arial}^R/RT
F'\QL' Figure 15.1.2.5.2 QSU-brief Total Scores Least Squares Mean and 95% CI - FAS";

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ods rtf style=t106343_g1;
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proc sgrender data=plot template=splot; /* applies the above template to the specified data */  
FORMAT newvis XAXIS.;  
run;
```

```
ODS RTF TEXT="^S={outputwidth=100% just=1 font_size=9pt background=white foreground=black font_face=arial}^R/RTF'\QL' Note: mCC = Me  
nthol conventional cigarettes; SA = Smoking abstinence; THSm2.2 = Tobacco Heating System 2.2 Menthol.";
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```
ODS RTF TEXT="^S={outputwidth=100% just=1 font_size=9pt background=white foreground=black font_face=arial}^R/RTF'\QL' Note: Baseline  
is the last assessment prior to first product use in mCC/THS 2.2 arms on Day 1 or last assessment prior to 10:00 AM in SA a
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ODS RTF TEXT="^S={outputwidth=100% just=1 font_size=9pt background=white foreground=black font_face=arial}^R/RTF'\QL' Note: QSU-brie  
f scores reported on a 7-point scale. Higher values indicate greater intensity of urge.";
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ODS RTF TEXT="^S={outputwidth=100% just=1 font_size=9pt background=white foreground=black font_face=arial}^R/RTF'\QL'";
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ODS RTF TEXT="^S={outputwidth=100% just=1 font_size=9pt background=white foreground=black font_face=arial}^R/RTF'\QL' Appendix 15.2.  
4.53.2";
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%let tflprg=f_qsu_ls_fas;
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ODS RTF TEXT="^S={outputwidth=100% just=1 font_size=9pt background=white foreground=black font_face=arial}^R/RTF'\QL' Study ID:ZRHM-  
REXA-08-US. Program: &tflprg..sas &sysdate Status: &status. (Page &j of &maxpage)";
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%end;
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%end;
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```
%mend graph;
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```
%graph;
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```
ods _all_ close;
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```
ods graphics / reset;
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%m_logchk;
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