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* Project          : ZRHM-REXA-07-JP
*
* Program name     : T1502042902_ZRHM-REXA-07_V1.sas
*
* Author           : L. Yan
*
* Date created     : 05/20/2015
*
* Purpose          : Table T1502042902
*
* Revision History :
*
* Date            Author      Ref      Revision (Date in YYYYMMDD format)
*
*****;

%let prgname=T1502042902_ZRHM_REXA_07_JP_V1;
options mprint;

options sasautos=("W:\pmp07\macros" sasautos) notes;
%init(delivery=9);

%titlecsv(prgname=&prgname., version=3);

%put &title1;
%put &title2;
%put &APPENDIX;
%put &endpoint;
%put &outname.;

options missing="";

%macro cal_sumary_pvalue(where=, outnum=, var=, in=, pflg=, decimal=1);
proc sort data=&in. out=anadt_&outnum.;
by usubjid;
where &where. ;
run;

proc sort data=anadt_&outnum.;
by trtd;
run;

proc means data = anadt_&outnum. noprint;
by trtd;
var &var.;
output out=xlab_&outnum. n=n mean=mean median=med std=sd min=min max=max q1=q1 q3=q3 lclm=lclm uclm=uclm;
run;

data xlab_&outnum.;
set xlab_&outnum.;
n1 = trim(left(compress(put(n, 8.))));
%if &decimal=1 %then %do;
if sd > . then mean1 = (trim(left(compress(put(mean, 8.%eval(&decimal+1))))))||' ('||trim(left(compress(put(ceil(sd*1000)/1000, 8.%eval(&decimal+2))))))||')';
else mean1 = (trim(left(compress(put(mean, 8.%eval(&decimal+1))))))||' (NA)';
ci1=trim(left(compress(put(floor(lclm*100)/100, 8.%eval(&decimal+1))))||', '||trim(left(compress(put(ceil(uclm*100)/100, 8.%eval(&decimal+1))))));
%end;
%if &decimal=0 %then %do;
if sd > . then mean1 = (trim(left(compress(put(mean, 8.%eval(&decimal+1))))))||' ('||trim(left(compress(put(ceil(sd*100)/100, 8.%eval(&decimal+2))))))||')';
else mean1 = (trim(left(compress(put(mean, 8.%eval(&decimal+1))))))||' (NA)';
ci1=trim(left(compress(put(floor(lclm*10)/10, 8.%eval(&decimal+1))))||', '||trim(left(compress(put(ceil(uclm*10)/10, 8.%eval(&decimal+1))))));
%end;

median1 = trim(left(compress(put(med, 8.%eval(&decimal+1)))));
q1q3 = trim(left(compress(put(q1, 8.%eval(&decimal+1))))||', '||trim(left(compress(put(q3, 8.%eval(&decimal+1))))));
;
min1 = trim(left(compress(put(min, 8.%eval(&decimal+0))))||', '||trim(left(compress(put(max, 8.%eval(&decimal+0))))));
run;

proc transpose data = xlab_&outnum. out=xlab_1_&outnum.;
id trtd;
var n1 mean1 ci1 median1 q1q3 min1;
run;

data rep_&outnum.;
length _name_ _1 _2 _3 ord1 $100;
set xlab_1_&outnum.;
ord1="&outnum";

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ordnum=input(ord1, best.);
if upcase(_name_)="N1" then do; _name_="n"; sord=0; end;

if upcase(_name_)="MEAN1" then do; _name_="Mean (SD)"; sord=1; end;
if upcase(_name_)="CI1" then do; _name_="95% CI"; sord=2; end;
if upcase(_name_)="MEDIAN1" then do; _name_="Median"; sord=3; end;
if upcase(_name_)="Q1Q3" then do; _name_="Q25, Q75"; sord=4; end;
if upcase(_name_)="MIN1" then do; _name_="Min, Max"; sord=5; end;
run;

data rep;
set rep rep_outnum.;
run;
%mend;

%macro cal_summary_pvalue1(where=, outnum=, var=, in=, pflg=, decimal=1);
proc sort data=&in. out=anadt_&outnum.;
by usubjid;
where &where. ;
run;

proc sort data=anadt_&outnum.;
by trtcd;
run;

proc means data = anadt_&outnum. noprint;
by trtcd;
var &var.;
output out=xlab_&outnum. n=n mean=mean median=med std=sd min=min max=max q1=q1 q3=q3 lclm=lclm uclm=uclm;
run;

data xlab_&outnum.;
set xlab_&outnum.;
n1 = trim(left(compress(put(n, 8.))));
%if &decimal=1 %then %do;
if sd > . then mean1 = (trim(left(compress(put(mean, 8.%eval(&decimal+1))))))||' ('||trim(left(compress(put(ceil(sd*1000)/1000, 8.%eval(&decimal+2))))))||')';
else mean1 = (trim(left(compress(put(mean, 8.%eval(&decimal+1))))))||' (NA)';
ci1=trim(left(compress(put(floor(lclm*100)/100, 8.%eval(&decimal+1))))||', '||trim(left(compress(put(ceil(uclm*100)/100, 8.%eval(&decimal+1))))));
%end;
%if &decimal=0 %then %do;
if sd > . then mean1 = (trim(left(compress(put(mean, 8.%eval(&decimal+1))))))||' ('||trim(left(compress(put(ceil(sd*100)/100, 8.%eval(&decimal+2))))))||')';
else mean1 = (trim(left(compress(put(mean, 8.%eval(&decimal+1))))))||' (NA)';
ci1=trim(left(compress(put(floor(lclm*10)/10, 8.%eval(&decimal+1))))||', '||trim(left(compress(put(ceil(uclm*10)/10, 8.%eval(&decimal+1))))));
%end;

median1 = trim(left(compress(put(med, 8.%eval(&decimal+1)))));
q1q3 = trim(left(compress(put(q1, 8.%eval(&decimal+1))))||', '||trim(left(compress(put(q3, 8.%eval(&decimal+1))))));
;
min1 = trim(left(compress(put(min, 8.%eval(&decimal+0))))||', '||trim(left(compress(put(max, 8.%eval(&decimal+0))))));
run;

proc transpose data = xlab_&outnum. out=xlab_1_&outnum.;
id trtcd;
var n1 mean1 ci1 median1 q1q3 min1;
run;

data rep_&outnum.;
length _name_ _1 _2 _3 ord1 $100;
set xlab_1_&outnum.;
ord1="&outnum";
ordnum=input(ord1, best.);
if upcase(_name_)="N1" then do; _name_="n"; sord=0; end;

if upcase(_name_)="MEAN1" then do; _name_="Mean (SD)"; sord=1; end;
if upcase(_name_)="CI1" then do; _name_="95% CI"; sord=2; end;
if upcase(_name_)="MEDIAN1" then do; _name_="Median"; sord=3; end;
if upcase(_name_)="Q1Q3" then do; _name_="Q25, Q75"; sord=4; end;
if upcase(_name_)="MIN1" then do; _name_="Min, Max"; sord=5; end;
run;

data rep;
set rep rep_outnum.;
run;
%mend;

proc sort data=adam.adsl out=trt;
by usubjid;

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where FASFL="Y";
run;

data trt;
set trt;
if TRT01A="THSm2.2" then trtcd=1;
else if TRT01A="mCC" then trtcd=2;
else if TRT01A="SA" then trtcd=3;
run;

proc sort data=adam.adlb out=anald;
by usubjid;
where paramcd in ("HBA1C") and avisitn>=100 and FASFL="Y" and anl01f1="Y";
run;

data anald;
set anald;
if aval>. then logaval=log(aval);
run;

proc sort data=anald out=check(keep=paramn avisitn avisit) nodupkey;
by paramn avisitn avisit;
run;

data trt_1;
set trt;
run;

data anald;
set anald;
if TRTA="THSm2.2" then trtcd=1;
else if TRTA="mCC" then trtcd=2;
else if TRTA="SA" then trtcd=3;
run;

data check;
set check;
ord=_n_;
run;

%*cal_summary_pvalue(where=1, outnum=1, var=aval, in=anald, pflg=1);

data rep;
run;

data _null_;
set check;
call execute ('%cal_summary_pvalue(where=%str(avisitn='||avisitn||' and paramn='||paramn||' ), outnum='||ord||', var=aval, in=anald);');
run;

data rep1;
set rep;
run;

data rep;
run;

data _null_;
set check;
if avisitn>100;
call execute ('%cal_summary_pvalue1(where=%str(avisitn='||avisitn||' and paramn='||paramn||' ), outnum='||ord||', var=PCHG, in=anald);');
run;

data rep2;
set rep;
rename _1=_4 _2=_5 _3=_6;
run;

data frep;
merge rep1 rep2;
by ordnum sord;
run;

data frep;
set frep;
ord=ORDNUM;
run;

data frep;
merge frep(in=a) check;
by ord;
if a;
if avisitn>.;
run;

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proc sort data=trt_1 nodupkey;
by trtcd usubjid;
run;

proc freq data = trt_1 noprint;
tables trtcd/ out= denom;
run;

data _null_;
set denom end=eof;

retain total 0;

total = total+count;

if trtcd= 1 then do;
call symput('trt1', trim(left(put(count,8)))));
end;
if trtcd= 2 then do;
call symput('trt2', trim(left(put(count,8)))));
end;
if trtcd= 3 then do;
call symput('trt3', trim(left(put(count,8)))));
end;

run;

%put trt1=&trt1 trt2=&trt2 trt3=&trt3;

data smalln;
set frep;
if _name_="n";
run;

data smalln;
set smalln;
_name_="Missing, n(%)";
sord=0.1;
if _1 ne "" then _1=strip(put((&trt1-input(_1, best.)), 8.0))||" ("||strip(put((&trt1-input(_1, best.))*100/&trt1, 8.1))
||")";
if _2 ne "" then _2=strip(put((&trt2-input(_2, best.)), 8.0))||" ("||strip(put((&trt2-input(_2, best.))*100/&trt2, 8.1))
||")";
if _3 ne "" then _3=strip(put((&trt3-input(_3, best.)), 8.0))||" ("||strip(put((&trt3-input(_3, best.))*100/&trt3, 8.1))
||")";

if _4 ne "" then _4=strip(put((&trt1-input(_4, best.)), 8.0))||" ("||strip(put((&trt1-input(_4, best.))*100/&trt1, 8.1))
||")";
if _5 ne "" then _5=strip(put((&trt2-input(_5, best.)), 8.0))||" ("||strip(put((&trt2-input(_5, best.))*100/&trt2, 8.1))
||")";
if _6 ne "" then _6=strip(put((&trt3-input(_6, best.)), 8.0))||" ("||strip(put((&trt3-input(_6, best.))*100/&trt3, 8.1))
||")";

run;
/*
data frep;
set frep smalln;
run;
*/
data frep;
set frep;
if _1 in ("0 (0.0)" " ") and _2 in ("0 (0.0)" " ") and _4 in ("0 (0.0)" " ") and _5 in ("0 (0.0)" " ") and _3 in ("0
(0.0)" " ") and _6 in ("0 (0.0)" " ") then delete;
run;

data frep;
set frep;
if _1 in ("0 (0.0)") then _1="0";
if _2 in ("0 (0.0)") then _2="0";
if _3 in ("0 (0.0)") then _3="0";
if _4 in ("0 (0.0)") then _4="0";
if _5 in ("0 (0.0)") then _5="0";
if _6 in ("0 (0.0)") then _6="0";
run;

proc sort data=frep;
by paramn avisitn avisit sord;
run;

proc sort data=anald out=fmt(keep=paramn param) nodupkey;

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by paramn param;
run;

data fmt;
set fmt;
fmtname="grp";
start=paramn;
label="Parameter: "||strip(param);
run;

proc format cntlin=fmt;
run;

%macro cal_part_main();

data frep;
set frep;
avisit=propcase(avisit);

if AVISIT="Day 0" then avisit="Baseline";

%do i = 1 %to 100;
  if (&i-1)*1<ordnum<=&i*1 then pagen=&i;
%end;

run;

%mend;

%cal_part_main();
data frep;
set frep;
space=" ";
run;

%global totalpage1;

data _null_;
set frep end=eof;

if eof then do;
call symput('totalpage1', trim(left(put(pagen,8)))));
end;

run;

%put totalpage1=&totalpage1;

data odata.&prgname.;
set frep;
run;

%*title(prgname1=&prgname.);

%trtrtfpg(pgmname=&outname., pgmid=1, new=0, style=, bookmark=%lowcase(&outname.));
/*
title1 j=1 h=9pt "Study ID: ZRHM-REXA-07-JP" j=r "Page ^{thispage} of ^{lastpage}";
title2 " ";
title3 bold j=1 "&title1 &title2";
title4 "^R/RTF'\brdrb\brdrs ' ";

footnote1 "^R/RTF'\brdrb\brdrs ' ";
footnote2 j=1 h=9pt "Note: mCC = Menthol conventional cigarettes; SA = Smoking abstinence; THSm2.2 = Tobacco Heating Sys
tem 2.2 Menthol .";
footnote3 j=1 h=9pt "Note: Percentages are based on the number of subjects indicated in the column header (N).";
footnote4 j=1 h=9pt "Note: * % change from baseline, where baseline is defined as the last assessment prior to first ran
domized product use in mCC / THS 2.2 Menthol";
footnote5 j=1 h=9pt "arms or the last assessment prior to 10 AM on Day 1 in the SA arm";
footnote6 j=1 h=9pt " ";
footnote7 j=1 h=9pt "Program: &prgname." j=c "Status: &repversion./&fdate." j=r "&APPENDIX.";
*/

%macro reppart;

%do i = 1 %to &totalpage1;
proc report data=frep headskip headline spacing=4 nowd split='-' style=[outputwidth=100%] style(header column)=[protect
specialchars=off];
where pagen=&i.;

column pagen paramn avisitn avisit sord _name_ (" \brdrb\brdrs THSm2.2 (N=&trt1.)" _1 _4) space (" \brdrb\brdrs mCC (N=&
trt2.)" _2 _5) space (" \brdrb\brdrs SA (N=&trt3.)" _3 _6);

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define pagen /order order=internal noprint;
define paramn /order order=internal noprint;
define avisitn /order order=internal noprint;
define avisit /order "Time point" flow style(column)=[cellwidth=10% just=l];
define sord /order order=internal noprint;

define _name_ /display "Statistic" flow style(column)=[cellwidth=15% just=l];
define _1 /display "Raw value" flow style(column)=[cellwidth=10% just=c];
define _4 /display "% Change(*)" flow style(column)=[cellwidth=10% just=c];
define space /display " " flow style(column)=[cellwidth=0.5% just=c];

define _2 /display "Raw value" flow style(column)=[cellwidth=10% just=c];
define _5 /display "% Change(*)" flow style(column)=[cellwidth=10% just=c];
define space /display " " flow style(column)=[cellwidth=0.5% just=c];

define _3 /display "Raw value" flow style(column)=[cellwidth=10% just=c];
define _6 /display "% Change(*)" flow style(column)=[cellwidth=10% just=c];

COMPUTE after avisitn ;
LINE @1 "";
ENDCOMP;

break after pagen/page;

compute before pagen;
line @1 "";
endcomp;

compute before _page_ /style=[fontweight=bold fontsize=3.75];
line @1 "&title1 &title2";
line @1 " ";
LINE @1 paramn grp.;

line @1 "^R/RTF'\brdrb\brdrs\brdrw30\brsp20\b ' ";
endcomp;

compute after _page_/style=[fontsize=1.75];
line @1 "Note: mCC = Menthol conventional cigarettes; SA = Smoking abstinence; THSm2.2 = Tobacco Heating System 2.2 Menthol.";
line @1 "Note: Percentages are based on the number of subjects indicated in the column header (N).";
line @1 "Note: * % change from baseline, where baseline is defined as the last assessment prior to first randomized product use in mCC / THS 2.2 Menthol";
line @1 "arms or the last assessment prior to 10 AM on Day 1 in the SA arm";
line @1 " ";
line @1 "&APPENDIX.";
line @1 "Study ID:ZRRM-REXA-07-JP Program: &fprgname..sas Status: &repversion./&fdate. Page: &i. of &totalpage1";
endcomp;
run;
%end;

%mend;
%reppart;

ods listing;
ods rtf close;

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