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*****;
* Project          : ZRHM-REXA-07-JP
*
* Program name     : T1502043502_ZRHM-REXA-07_V1.sas
*
* Author          : L. Yan
*
* Date created     : 05/20/2015
*
* Purpose         : Table T1502043502
*
* Revision History :
*
* Date           Author      Ref      Revision (Date in YYYYMMDD format)
*
*****;

%let prgname=T1502043502_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(wher=, outnum=, var=, in=, pflg=, decimal=1);

proc sort data=&in. out=anadt_&outnum.;
by usbjid;
where &wher. ;
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 means data = anadt_&outnum. noprint;
by trtcd;
var logaval;
output out=xlab1_&outnum. n=n mean=mean lclm=lclm uclm=uclm std=std;
run;

data xlab1_&outnum. ;
set xlab1_&outnum. ;

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Estimate1 = exp(mean); /* Ratio of geometric mean */
LowerCL   = exp(lclm); /* 95% CI lower bound */
UpperCL   = exp(uc1m); /* 95% CI upper bound */
CVperc=100*sqrt(exp(std**2)-1);
run;

data xlab1_&outnum.;
length geomean geoci $100;
set xlab1_&outnum.;
geomean=strip(put(Estimate1, 8.2))||" ("||strip(put(ceil(CVperc*100)/100, 8.2)) ||")";
geoci=strip(put(floor(LowerCL*100)/100, 8.2))||", "||strip(put(ceil(UpperCL*100)/100, 8.2));
keep trtcd geomean geoci;
run;

proc sort data=xlab1_&outnum.;
by trtcd;
run;

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

data xlab_&outnum.;
merge xlab_&outnum.(in=a) xlab1_&outnum.;
by trtcd;
run;

proc transpose data = xlab_&outnum. out=xlab_1_&outnum.;
id trtcd;
var n1 /*geomean geoci*/ MEDIAN1 Q1Q3 MIN1 MEAN1 ci1;
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_)="GEOMEAN" then do; _name_="Geometric Mean (CV%)"; sord=1; end;
if upcase(_name_)="GEOCI" then do; _name_="95% CI of Geometric Mean"; sord=2; end;

if upcase(_name_)="MEAN1" then do; _name_="Mean (SD)"; sord=8; end;
if upcase(_name_)="CI1" then do; _name_="95% CI of Mean"; sord=9; end;
if upcase(_name_)="MEDIAN1" then do; _name_="Median"; sord=5; end;
if upcase(_name_)="Q1Q3" then do; _name_="Q25, Q75"; sord=6; end;
if upcase(_name_)="MIN1" then do; _name_="Min, Max"; sord=7; 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*1000)/1000, 8.%eval(&decimal+2))))))||')';
%end;

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00)/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 MEDIAN1 Q1Q3 MIN1 MEAN1 ci1;
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_)="GEOMEAN" then do; _name_="Geometric Mean (CV%)"; sord=1; end;
if upcase(_name_)="GEOCI" then do; _name_="95% CI of Geometric Mean"; sord=2; end;

if upcase(_name_)="MEAN1" then do; _name_="Mean (SD)"; sord=8; end;
if upcase(_name_)="CI1" then do; _name_="95% CI of Mean"; sord=9; end;
if upcase(_name_)="MEDIAN1" then do; _name_="Median"; sord=5; end;
if upcase(_name_)="Q1Q3" then do; _name_="Q25, Q75"; sord=6; end;
if upcase(_name_)="MIN1" then do; _name_="Min, Max"; sord=7; end;
run;

data rep;
set rep rep_&outnum.;
run;

%mend;

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

data anald;
set adam.Adqssu;
if trta in ("mCC" "THSm2.2" "SA") and aval>. and fasfl="Y" and paramcd in ("QSUFAC1", "QSUFAC2", "QSUTOTAL") and avis
itn>=100 and anl01fl="Y";
run;

data anald;
set anald;
if aval>0 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);

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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||', va
r=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;

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(%)";

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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="0 (0.0)" then _1="0";
if _2="0 (0.0)" then _2="0";
if _3="0 (0.0)" then _3="0";
if _4="0 (0.0)" then _4="0";
if _5="0 (0.0)" then _5="0";
if _6="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;
by paramn param;
run;

data fmt;
set fmt;
if param="Reward" then param="Parameter: Factor 1 - Reward";
if param="Relief" then param="Parameter: Factor 2 - Relief";
if param="Total Score" then param="Parameter: Total Score";
run;

data fmt;
set fmt;
fmtname="grp";
start=paramn;
label=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;

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data odata.&prgname.;
set frep;
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;

%*title(prgname1=&prgname.);

%trtrtfg(pgmname=&outname., pgmid=1, new=0, style=, bookmark=%lowercase(&outname.));

%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);
define pagen /order order=internal noprint;
define paramn /order order=internal noprint;
define avisitn /order order=internal noprint;
define avisit /order " " flow style(column)=[cellwidth=10% just=1];
define sord /order order=internal noprint;

define _name_ /display " " flow style(column)=[cellwidth=15% just=1];
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;

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 Ment
hol.";
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 prod
uct 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 "Note: QSU-brief scores reported on a 7-point scale. Higher scores indicate greater intensity of urge.";
line @1 " ";
line @1 "&APPENDIX.";
line @1 "Study ID:ZRHM-REXA-07-JP Program: &fprgname..sas Status: &repversion./&fdate. Page: &i.
of &totalpage1";
endcomp;
run;
%end;

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%mend;  
%reppart;  
  
ods listing;  
ods rtf close;
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