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5.26\*7\*\*8987\*

**SOLA 4951/SOLA9451**

**RESEARCH THESIS A**

"#\$%&! ' (\$&#!) \*#\$+, -!.....Y  
0 ' (\$&#!) \*#\$+, -!\$()!& ' (-1, #\$\$# ' (!# 2 \* -!% ' 3!& ' 13- \*!& ' (4\* ( ' 3!.....Y  
0 ' (\$&#!) \*#\$+, -!\$()!& ' (-1, #\$\$# ' (!# 2 \* -!% ' 3!\$)) #+' (\$, !, \* &#13\*3-5) \* 2 ' (-#3\$# ' 3-5, \$6! -#\$%!!.....Y  
728 ' 3#\$ (#!, + (9-!.....Y  
0 ' 13- \*!) \*#\$+, -!.....Y  
03\* )#!8 ' + (#-!.....Y  
0 ' (\$&#!: ' 13-!.....;  
" 1 2 2 \$3<!\$ ( )! = + 2 -! ' %!# : \*!& ' 13- \*!.....;  
"#1) \* (#!, \* \$3(+(>! ' 1#& ' 2 \* -!.....;  
?@!AB ' (-C!\$ ( )!DE!D3' >3\$ 2!F\* \$3(+(>!G1#& ' 2 \* -!.....;  
0 ' 13- \*!F\* \$3(+(>!G1#& ' 2 \* -!A2 \$88\* )#!?!?@!D3' >3\$ 2!\$ ( )!DE!F\* \$3(+(>!G1#& ' 2 \* -!6\* , ' HC!!  
J \* \$& : + (>! -#3\$#\* >+ \* -!.....||  
0 ' 13- \*! -& : \* ) 1, \*!.....K  
= - - \* - - 2 \* (#!.....L  
= - - \* - - 2 \* (#! ' 4\*34+\*H!.....L  
J : \* -+ -! =!A " GF= I MKN5 " GF=MIKNC! = - - \* - - 2 \* (#!.....D  
D3\* - \* ( #\$\$# ' ( !.....M  
" 162+ - - + ' ( !.....M  
P \$39+ (>!.....NQ  
@R\$ 2+ ( \$# ' ( -!.....NQ  
" 8\* & \$, !& ' (-) \* 3\$#+' (!\$ ( )! -188, \* 2 \* ( #3<!\$ - - \* - - 2 \* (#!.....NQ  
J : \* -+ -! S #: ) 3\$H\$, T! " 1-8\* (-+ ' (T!\$ ( )!J+ 2 \*!@R#\* (-+ ' (!U!.....NQ  
@R8\* &#\* )!3\* - ' 13& \* -!% ' 3! -#1) \* (#-!.....NN  
0 ' 13- \*! \* 4\$, 1\$#+' (!\$ ( )!) \* 4\* , ' 82 \* (#!.....N/  
D3+V\* -!.....N/  
B \* \$, #: ! \$ ( )! " \$% \* #<!.....N/  
=&\$) \* 2+&! : ' ( \* -#<!\$ ( )!8, \$>+\$3+ - 2!.....N;  
=) 2+ (+-#3\$#4\*! 2 \$##\*3-!\$ ( )!, + (9-!.....N;  
=88\* ( )+R! =!!!@ (>+ ( \* \* 3-! = 1 -#3\$, +\$!A@ =C!O ' 28\*#\* (&+ \* -!.....NK  
!







K.! Z('H,\*>\*!'%!\*(>(\* \*3+(>!) \* ->(!83\$&#&\*!\$(!&'(#\*R#1\$,!%\$&# '3-!+28\$&#(>!#: \*!  
\*(>(\* \*3+(>!)+-&+8,+(\*.!  
L.! b() \*3-#\$(+(>! '%!#: \*!-&'8\*!83+(&+8,\*-!('32-T!\$&&'1(#\$6+,#\*-\$(!)6'1()-!'%!  
-1-#\$(,\$6,\*!\*(>(\* \*3+(>!83\$&#&\*!+(!#: \*!-8\*&+!&!)+-&+8,+(\*.!  
O.! =88,+&\$#+'(! '%!\*-#&6,+ -: \*)!\*(>(\* \*3+(>!2 \*#: ') -!# '!&'28,\*R!\*(>(\* \*3+(>!83'6,\*2!  
- ',4+(>.!  
g.! ^,1\*(#!\$88,+&\$#+'(! '%!\*(>(\* \*3+(>! \*#&:(+\_1\*-T!# ',-!\$(!)3\*- '13&\*-.!  
M.! =88,+&\$#+'(! '%!-<-\*2\$#&!\*(>(\* \*3+(>!-<(#: \*-+-\$(!)!) \* ->(!83'&\*--\*-.!  
NQ.! =88,+&\$#+'(! '%!-<-\*2\$#&!\$883'\$&: \*-!# '!# : \*!&'()1&#!\$(!)2\$(\$>\*2\*(#! '%!\*(>(\* \*3+(>!  
83'0\*&#-!.!  
NN.!@# :&\$,&'()1&#!\$(!)83'%--+'(\$,\$&&'1(#\$6+,#<.!  
N/!@% \* &#4\*!'3\$,!\$(!)H3+##\*(!&'221(+&\$#+'(!(!83'%--+'(\$,\$(!),\$<!)'2\$+(-!  
N;.!03\*\$#4\*!T+(( '4\$#4\*!\$(!)83'\$&#4\*!) \*2\*\$('13.!  
NI.!D3'%--+'(\$,!1-\*!\$(!)2\$(\$>\*2\*(#! '%!+(%'32\$#+'(!.  
NK.!G3)\*3,<!2\$(\$>\*2\*(#! '%!-\*,%T!\$(!)83'%--+'(\$,!&'()1&#.!  
NL.!@% \* &#4\*!#\*\$2!2\*26\*3- :+8!\$(!)#!\*\$2!,\*\$)\*3- :+8.!

J: +-&'13-\*!+-!) \* ->(\* )#!'\$)3\*--!#: \*!,\*\$3(+(>'1#&'2\*-!6\*,'H!\$(!)#!&'33\*-8'()(>!  
@(>(\* \*3-!=1-#3\$,+\$! "#\$>\*!N!0'28\*##(&<!"#\$(\$3)-!%'3!D3'%--+'(\$,!@(>(\* \*3-!\$-! -: 'H(!  
J: \*!%1,,!+,+#! '%!"#\$>\*!N!0'28\*##(&<!"#\$(\$3)-!2\$<16\*!'1(!)+(!=88\*())R! =.!  
!  
=#\*3!-1&&\*--%1,,<!&'28,\*#(>!#: +-&'13-\*T!<'1!- : '1,)!6\*!\$6,\*!# 'W!

=#!#: \*!&'(&,1-+'(! '%!#: +-&'13-\*T!-#1)\*(-!- : '1,)!6\*!\$6,\*!# 'W!  
N.! Y\*4\*,'8!\$!) \* ->(!'3!\$!83'&\*--!'3!+(4\*-#>\$\*!\$!: <8'#: \*-+-%',,'H+(>!)1-#3<!\$(!)  
83'%--+'(\$,!\*(>(\* \*3+(>!-\$(\$3)-!AOT!gT!MT!NQC!  
/! 03#&\$,;<13\*%,\*&#!'(!\$!-8\*&\$,+&#6')<! '%!9('H,\*>\*!3\*,\$#\*)!#!# : \*+3!#: \*-+&# '8+&!A;C!  
;.! =88,<!-&+\*(#&+&!\$(!)!(>(\* \*3+(>!2 \*#: ') -!# '!- ',4\*!\$(!)\*(>(\* \*3+(>!83'6,\*2.!AOC



6\*!&' 28,\*#\*)!\$( )!-162+##\*)!#!P\*3,+() \*!Z\$<!( )!18,'\$)\*)!#!#: \*!" GF=! IMKN5MIKN!



**A**

7#!+-!+(#\* ( ) \* )!# : \$#!J : \* -+ -! =!& ' 4 \* 3!# : \* ! -& ' 8+( >T!8,\$ ( ( +(>T!\$( )!& ' 2 8, \*#+( >!  
83\* 8\$3\$#+' ( -!% ' 3!# : \*!83' d\* &#.!  
N.! D3' d\* &#!D,\$ (! i !# : +-!H+,!& ' 2 83+- \*!\$!N` /!8\$> \*!) ' &1 2 \* (#! \*R8,\$+( +(>!# : \*!d1 -#%+&\$#+' (!% ' 3!  
# : \*+3!83' d\* &#T!\$!3' 1> :!, \$< ' 1#! '%!\$!8,\$ (! '%!H' 39!# : 3' 1> : ' 1#!# : \*!83' d\* &#T!+( &,1)+(>!\$( <!



	/.! " * 2+(\$3! D3* - *(\$#+' (! ;.! D3'>3*--!a*8'3#! !	O! ! NQ!	NQ j! ! K j!	" 18*34+- '35=--*-- '3!AKQ5KQC! ! " 18*34+- '3!
J: * -+!0!	N! ^+(\$,!a*8'3#! /.! D\$3#&+8\$#+' (! ;.! D3* - *(\$#+' (! '%!H'39			





! If there is a significant difference between the male and female and age groups



?\*, 'H!\$3\*!# :+(>-!#'!&' (-+) \*3!H: \* (!81##+(>!# ' > \*#: \*3!#: \*!,#\*3\$#13\*!\$(!)83'>3\* --!3\*4\*H!  
)&'12\*(#!

<p>F#*3\$#13*!a*4*H! !</p>	<p>(W a , a a ?)  ! ?3+*%!6\$&amp;9&gt;3'1(!# '!83'd*&amp;#! ! "122\$3&lt;! '%!,#*3\$#13*!3*, *4\$(!# '!83'd*&amp;#! ! 7)*(#%+&amp;\$#+' (! '%!&gt;\$8-m!+(!#: *!,#*3\$#13*! ! D3'6,*2! "#\$*2*(#!A+(%'32*)!6&lt;!&gt;\$8-!+(!#: *!, ,#*3\$#13*C! ! B&lt;8'#: * -+!\$(!)\$+2-!</p>	<p>KQ j!</p>	<p>N/'NK!</p>
<p>D3'd*&amp;#!D,\$(!  D3'd*&amp;#! Y*8*( )*(#! D3*8\$3\$#+'(-!</p>	<p>AH a a a a ?) ! ! D3'8'-'*!)!"',1#'(5@R8*3+2*(#\$,!P*#:' )', '&gt;&lt;! ! J: * -+!#2*,+( *!i!%'3!( *R#!#H'!#*32-! o! n1-#%+&amp;\$#+' (! '%!#2*!\$, '&amp;\$#+' (!%'3!*\$&amp;:! #\$-9! ! =4\$,\$6,*!3*- '13&amp;* -!+) * (#%+* )! ! a*_1+3*)!#3\$+((&gt;!\$(!)18-9+,+(&gt;!+) * (#%+* )!</p>	<p>/Q j!</p>	<p>;`K!</p>

(Ca a a a ?) W a

D3'd\*&#!-8\*&%+&T!61#!2\$<!+(&,1)\*!  
! @4+)\*(&\*!'!#3\$+((>!')(!-8\*&%+&!\*\_1+82\*(#!  
! @4+)\*(&\*!'!-'2\*!18-9+,+(>!+(!(\*H!  
- '%H\$3\*52\*#:' )-!  
! D3\*,+2+(\$3<!3\*-1,#-!  
! D3\*,+2+(\$3<!-9\*#&: \* -!  
! 0'28'(\*(#-58\$3#-!'3)\*3\* )!



J: \*!,\$#\*!8\* (\$,#<!+\$88,+\*)!8\*3!&\$,\* ( )\$3!)\$<!A+ (&,1)+( >!H\*\*9\* ( )-\$ ( )!816,+&! : ',+)\$<-C!#:\$#!  
#: \*!\$--\*--2\* (#!+!'4\*3)1\*!J: \*3\*!+!( '!'83' `3\$#\$!'!# : \*!,\$#\*!8\* (\$,#<!% '3!-162+--+ ' (-!2\$) \*!  
8\$3#!H\$<!# : 3' 1>: !\$!)\$<.!  
!

Ma

P\$39+(>!>1+) \* ,+ (\* -!% '3!\$--> (2\* (#!-162+--+ ' (-!H+,,!6\*!83' 4+ ) \* )!\$#!# : \*!-\$2\*!#2\*!\$-!  
\$--> (2\* (#!) \*\$#,-!# ' !\$--+-#H# : !2\*\*#(>!\$--\*--\$6,\*!3\*\_1+3\*2\* (#-!" 162+--+ ' (-!H+,,!6\*!  
2\$39\*)!\$&&'3)+(>!# ' !# : \*!2\$39+(>!>1+) \* ,+ (\* -!83' 4+ ) \* ) .!

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J: \*3\*!+-( '!'R\$2!% '3!# : +-!&' 13- \* .!

!

7%<' 1!:\$4\*!R8\*3+\* (&\*)!\$(!+,,(\*--!'3!2+-)\$4\* (#13\*!6\* <' ( )!<' 13!&' (#3' ,!# : \$#!H+,,!+ (#3%\*3\*!H# : !  
<' 13!\$--\*--2\* (#!8\*3%'32\$(&\*T!<' 1!\$3\*! \*,+>6,\*!# ' !\$88,<!% '3! "8\*&\$,! 0' (-) \*3\$#+' (!83+'3!# ' !  
-162+##(>!\$(!\$--\*--2\* (#! '3!+##+(>!\$(!\*R\$2.!!  
!

!# : \$#!bX " S!( ' H! : \$-!\$!^+#!# ' ! " +#!5! " 162+#!31, \*T!H : +& : !2\* \$(-!# : \$#!+!<' 1!-#H(!\*R\$2!  
'3!-162+#!\$!8+\* &\* ' !% !\$--\*--2\* (#T!<' 1!\$3\*! ) \* &,\$3+(>!<' 13- \*,%1%#! \* ( '1> : !# ' ! ) ' !- ' !\$( ) !&\$ ( ( ' #!  
, \$#\*3!\$88,<!% '3! "8\*&\$,! 0' (-) \*3\$#+' ( .!  
!

^'3! ) \*\$#,-! ' % ! \$88,<+(>! % '3! "8\*&\$,! 0' (-) \*3\$#+' ( ! \$( ) ! &' ( )#+' (-! % '3! # : \*! \$H\$3) ! '%!  
-188,\*2\* (#\$3<!\$--\*--2\* (#T!8,\*\$- \*! - \*\*!# : \*!+(% '32\$#+' ( ! ( !bX " Sf-! "8\*&\$,! 0' (-) \*3\$#+' ( !  
8\$>\*.!

E

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a\*\_1\* -#-!% '3!# : \*--!H# : )3\$H\$,T!-1-8\* (-+ ' (! '3! \*R#\* (-+ ' (!- : ' 1,)!6\*!2\$) \*!+(!H3+##(>!# ' !# : \*!  
J: \*--!0' '3)+(\$# '3.!J: \*% ',, ' H+(>!83' &\*)13\* -!\$( ) !31, \* -!H+,,!6\*!\$88,+\*)!H: \* (!\$!-#1) \* (#!H+ : \* -!  
# ' !H# : )3\$H! '3' 2T! '3! -1-8\* ( ) ! "GF=IMKN5" GF=M!KN.! J: \*-\*!31,\* -! -188,\*2\* (#!# : \*!bX " S!  
) \*\$),+(\*-T!&' ( )#+' (-T!\$( ) !83' &\*)13\* -!% '3!H# : )3\$H+(>!%3' 2!\$!&' 13- \* .!!!  
DF@=" @!XGJ@W! !

!

N.! 7(!\*4\*3<!&\$-\*!H: \*3\*!\$!-#1) \* (#!H+ : \* -!# ' !8' -#8' (\*!&' 28,\*#+' (! ' !# : \*!# : \* -+T!+. \* !# ' !  
-1-8\* ( ) ! H'39! \$( ) ! &' 28,\*#\*!# : \*!# : \* -+!+(!\$!,\$#\*3! - \* -+ ' (T! H3+##\* (!\$883' 4\$,' !# ' !# : \*!  
-18\*34+- '3!21-#!%3-#16\*!'6#\$+ ( ) !6\*% '3\*!-162+##(>!\$!H3+##\* (!3\*\_1\* -#!# ' !# : \*!J: \*--!0' `'  
'3)+(\$# '3.!

!

J: \*!-18\*34+- '3!2\$<13\*%1-\*!\$883' 4\$,'3!\$!4\$3+\*#<' !% '3\*\$-\$- ' (-T!\*>.!# : \$#!# : \*! ( \* &\* --\$3<!



/.! =!-#1) \* (#!H: '!+-!8\*32+##\*)!#!H#: )3\$H!H#: '1!%\$,13\*!%3' 2!-16d\*&#! "GF=IMKN5MIKN!  
-: '1,)!3\*`\* (3',!+(!#: \*!%' ,,'H+(>!- \*--+ '(!H#: !\$! J: \*--+!X' 2+(\$#+' (!^'32.!X'#!#: \$#!  
1() \*3! ('32\$,! &+3&12-#\$(&\* -!) +-&' (#(1\$#+' (!H#: '1#!%\$,13\*!'3!%+(\$(&+,\$! 8\* (\$,#<! +-!  
8'--+6,\*!' (<!18!#!#: \*!0\* (-1-!Y\$#\*.!  
!

;.! S: \* (!\$!-#1) \* (#!+-!>3\$ (#\* )!\$ (!\*R#\* (-+' (!#: \*3\*!2\$<16\*!\$!8\* (\$,#<13\* -1,#+(>+(!\$!3\*)1&#+' (!  
'#!#: \*!#: \*--+! 2\$39.!J: +-!H+,!6\*!+28' -\*)!\$&&'3)+(>!#!!31,\*-!\$883'4\*)!6<!#: \*!J: \*--+!





'#: \*3H+ - \*! '6#\$+ (! \$! a+-9! = - - \* - - 2 \* (#! % ' 3! \$883' 4\$,! 6<! #: \*+3! -18\*34+ - '3! \$()! 6<! #: \*! " 8\$&\*!  
P\$(\$>\*3!+(!H: ' - \*!-8\$&\*!#: \*!H'39!+-!# '!6\*!) ' (\*.!  
!

a+-9! = - - \* - - 2 \* (#!#\* 28,\$#\* -!% ' 3! "D=0@ "T!@ sb7DP@XJ!\$()!DaG0@Yba@ " ! \$3\*!\$4\$+,\$6,\*!' (!  
#: \*! 2 ' ' ),\*! -+\*!.! a+-9! = - - \* - - 2 \* (#-! \$()! \*R\$28,\* -! \$3\*! \$,3\*\$)\$<! \$4\$+,\$6,\*T! #: 3' 1>: ! < ' 13!  
-18\*34+ - '3!% ' 3!2\$(<!\$&#4+#+\* -.!0 ' 28,\*#\* )!'3!2 ' )+#+\*)!4\*3-+' (-!- : ' 1,)!6\*!-162+##\* )!\$-!-> (\* )!  
:\$3)!&'8+\* -!\$()!P " !S '3)!\* , \* &#3' (+!4\*3-+' (-!# ' !Z+\$(!^' (>!0 :+(!A9%.&:+( [ 1(-H.\* )1.\$1C.!

**A**

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bX" S!:\$-!\$(!' (>' +(>!&' 2 2#2 \* (#!# ' !% ' -#\*3+(>!\$!&1,#13\*! '%!, \*\$3(+(>!+(%' 32 \* )!6<!\$&\$) \* 2+&!  
+ (#\* >3+<.! =,,! bX" S! -#1) \* (#-! :\$4\*!\$!





