

&XUU 3HGLDWU 5HV

,661  
ZZZ FXUUHQWWSHGL

(IIHFWV RI VXSHUYLVHG SK\VLFD O DFWLYLW\ S  
DQG VHOI HIILFDF\ IRU DGROHVFHQWV 3LORW

\$VP \$ORQD \$ILQD\*P PDVK \$IQD \$ONKD WZHXK \$DELOX DW \$DPDG GDDK PLDK  
\$OTDEEDQL

'HSDUWRP \$KWLFD \$OU D \$GHD \$WKDELO & W D \$H \$SODHGL \$BDH QFDHWPDDK  
8QLYHUVLW\ 5L\DGK .LQJGRP RI 6DXGL \$UDELD

'HSDUWRP \$KWLFD \$OU D \$O \$PHJHG L \$FD \$DELO \$LFW \$D \$E \$G \$X \$O \$D \$L \$Y \$H \$U \$G \$V \$D \$K  
.LQJGRP RI 6DXGL \$UDELD

'HSDUWRP \$KWLFD \$OU D \$O \$PHJHG L \$FD \$DELO \$LFW \$D \$E \$G \$X \$O \$D \$L \$Y \$H \$U \$G \$V \$D \$K  
\$EGXOUDKPDQ 8QLYHUVLW\ 5L\DGK .LQJGRP RI 6DXGL \$UDELD

5HFHLYHG )HEUXDU\ 0DQXVFULSW 1RGLV \$U \$3DVVLJ )HEUXDU\ 3UH4  
\$\$-&3 34YHLHZHG )HEUXDU\ 4& 1R \$\$ \$LVHG )HEUXDU\ 0DQXVFULSW  
1R \$\$-&3 3X5OLVKH )HEUXDU2,

\$EVWUDFW

%DFNJURXQG 5HJXODU SK\VLFD O DFWLYLW\ LV DVVRFLDWHG ZLWK H  
VWX \$LPHG WR HYDOXDWH WKH HIIHFWLYHQHV RI DQ ZHHN YLUV  
DFWLYLW\ SURJUDP RQ WKH IXQFWLRQDO SHUIRUPDQFH DQG VHOI H  
DQG \H DU V

0HWKRGV 7HQ SDUWLFLSDQWV ILYH PDOHV DQG ILYH IHPDOHV ZH  
XQGHUZHQW D GDLO\ PLQXWH H[HUFLVH SURJUDP IRU GXUDWLRQ  
ZHHNO\ SKRQH FDOOV RU YLUWXDO VHVLRQRV ZLWK VS \$QG LDUV \$RQH  
WKHLU TXHVWLRQV )XQFWLRQDO SHUIRUPDQFH DQG VHOI HIILFDF\  
SURJUDP

5HVXOWV 7KH ZHHN LQWHUYHQWLRQ SURJUDP KDG D VWDWLVLWLF  
6LW 7R 6WDQG 676 S WKH 0LQXWH :DON 7HVW 0:7 S  
\*R 78\* WHVW S VFRUHV 6HOI HIILFDF\ DQG \*RGLQ OHLVXUH  
VXEVDQWLDO LPSURYHPHQW S

&RQFOXVLRQ :H FRQFOXGH WKDW WKH YLUWXDOO\ VXSHUYLVHG  
DELOLW\ WR LPSURYH IXQFWLRQDO SHUIRUPDQFH LQ VFKRRO JRLQJ

.H\ZRUBK\VLFD O DFWLYLW\ )XQFWLRQDO SHUIRUPDQFH \$GROHVFHQ  
\$FFHSWHG RQ WK )H

,QWURGXFWRQ

HQHUJ\ DQG KDV LQIOXHQFHG WKH K  
LQFUHDVLQJ WKH DPRXW RI WLP  
\$GROHVFHQFH LV D FULWLFDO GHYHORSHPHQW DO SHUIRUPDQFH GXULQJ ZKLJK  
SK\VLFD O DFWLYLW\ VKRXOG EH SURPRWLHG SHUXDU \$HJXODU SK\VLFD O DFWLYLW\  
KDV EHHQ DVVRFLDWHG ZLWK HIIHFWLYHQHV \$RQH LDUV \$RQH  
HQKQDFHPHQW RI QRUPDO JURZWK DQG GHYHORSHPHQW DQG UHGXFHG  
ULVN IRU DDO FDXVH PRUWDLW\ +RPH \$HJXODU \$HJXODU \$HJXODU \$HJXODU \$HJXODU  
GLVHDVHV LQ DGXOWKRRG > @ 3K\ \$HJXODU \$HJXODU \$HJXODU \$HJXODU \$HJXODU  
WKH SURPRWLRQ RI SV\FKRORJLFD O \$HJXODU \$HJXODU \$HJXODU \$HJXODU \$HJXODU  
UHGXFHG DQ[LHW\ DQG DQJHU DORQJ ZLWK QHWHK \$HJXODU \$HJXODU \$HJXODU \$HJXODU \$HJXODU  
SHUIRUPDQFH OHDGLQJ WR D SR \$HJXODU \$HJXODU \$HJXODU \$HJXODU \$HJXODU  
GHYHORSHPHQW DQG SV\FKRVRFLD O \$HJXODU \$HJXODU \$HJXODU \$HJXODU \$HJXODU  
EHQHILWV DFTXLHG GXULQJ DGR \$HJXODU \$HJXODU \$HJXODU \$HJXODU \$HJXODU  
DGXOWKRRG +RZHYHU WKH OHYHO \$HJXODU \$HJXODU \$HJXODU \$HJXODU \$HJXODU  
DJH DQG JHQGHU DPRQJ DGROHVFHQFH \$HJXODU \$HJXODU \$HJXODU \$HJXODU \$HJXODU

5HFHQW GHFDGHV KDYH ZLWQHVVHG VRFLDO DQG FXOWXUDO FKDQJHV  
SULPDULO\ LQ WKH VSKHUH RI WHF \$HJXODU \$HJXODU \$HJXODU \$HJXODU \$HJXODU  
UHVXOWHG LQ JUHDWHU HIILFLHQFH \$HJXODU \$HJXODU \$HJXODU \$HJXODU \$HJXODU  
FRJQLWLYH GHYHORSHPHQW WKH :RU

:+2 LQWHUQDWLRQDO UHFRPPHQGV WILFDO DFWLYLW\ ORJ \$ ORJ ZDV  
JXLGHOLQHV DGYRFDWH IRU PRGHUWFRWB WKJHRUNXQG LQWDFOMLWLW\ V  
SK\VLFDQ DFWLYLW\ IRU DW OHDVW LQWLQXVWHLW DQDGXUDVLRQ FRUGLQJ  
WR WKH UHVXOWV RI WKH ILUVW \*JOREDQ HVVWLPDWH EDVHG RQ DO  
LQWHUQDWLRQDO FRPSLODWRQ RI DFWLYLW\ WJHGHVWVSKLVLVH DFWLYLW\  
XVLQJ LQIRUPDWRQ IURP VFKRRO DFWLYLW\ WJHGHVWVSKLVLVH DFWLYLW\  
FRXQWULHV RI VFKRRO JRLQJ DFWLYLW\ WJHGHVWVSKLVLVH DFWLYLW\  
IDLOHG WR PHHW WKH :+2V UHFRPPHQGV WILFDO DFWLYLW\ ORJ \$ ORJ ZDV

3K\VLFDQ ILWQHVV DIIHFWV IXQFWLRQDO DFWLYLW\ WJHGHVWVSKLVLVH DFWLYLW\  
ZKLFK LV DQ LPSRUWDQW FRPSRQHWRU GRHV FHOXWV WJHGHVWVSKLVLVH DFWLYLW\  
ZKLFK LV DQ LQGLYLGXDQV DELOLW\ WJHGHVWVSKLVLVH DFWLYLW\  
UHTXLUH VVWDLQHG DHURELF PHWDEROLVP@ \$Q LQGLYLGXDQV  
IXQFWLRQDO FSDFLW\ LV GLFWDWHG E\ LQWHUJUDWHG HIRUWV DQG W  
KHDOWK RI PDQ\ ERG\ V\VVHPV 6 (S)XDO & KLOGUHQ  
FDUGLRYDVFXODU DQG VNHOWDO FKHVWVSKLVLVH DFWLYLW\ WJHGHVWVSKLVLVH DFWLYLW\  
GDLO\ DFWLYLWLVH QHFHVVLWDW\ WJHGHVWVSKLVLVH DFWLYLW\ WJHGHVWVSKLVLVH DFWLYLW\  
&RQVHTXHQW\ WHVWV VXFK DV WKH WJHGHVWVSKLVLVH DFWLYLW\ WJHGHVWVSKLVLVH DFWLYLW\  
WKH 7LPHG \*HW 8S DQG \*R 78\* WHVWV WJHGHVWVSKLVLVH DFWLYLW\ WJHGHVWVSKLVLVH DFWLYLW\  
EH XVHG WR GHWHUPLQH IXQFWLRQDO DFWLYLW\ WJHGHVWVSKLVLVH DFWLYLW\  
7KH 676 LV D PHDVXUH RI PRELQW\ WJHGHVWVSKLVLVH DFWLYLW\ WJHGHVWVSKLVLVH DFWLYLW\  
SK\VLFDQ SHUIRUPDQFH > @ 0HWKRGV  
DGGUHVHV PRELQW\ UHODWHG IXQFWLRQDO DFWLYLW\ WJHGHVWVSKLVLVH DFWLYLW\  
VSHHG RI ZDONLQJ > @ VVPHUWLPH \$OO LWHPV ZHUH VFRU

7KLV VWXG\ IRFXVHG RQ DVVHVVLQJ WKH HDVLELOLW\ RI KRPH EDVHG  
SK\VLFDQ DFWLYLW\ SURJUDPV VXSOLQJ LWV LPSURYWV DQVWDELOLW\ DQG  
WKHUDLQV GLJLWDO SODWIRUP IRU DFWLYLW\ WJHGHVWVSKLVLVH DFWLYLW\  
SHUIRUPDQFH DQG VHOI HIILFDF\ LQ DFWLYLW\ WJHGHVWVSKLVLVH DFWLYLW\  
DLP ZDV WR HYDOXWH WKH HIIHFW SURJUDP RQ KHDOWK\ DGROHVFHQW  
HIILFDF\ DQG OHLVXUH WLPH \$ VHFHQWV WJHGHVWVSKLVLVH DFWLYLW\ WJHGHVWVSKLVLVH DFWLYLW\  
LQIOXHQFH RI IXQFWLRQDO SHUIRUPDQFH WJHGHVWVSKLVLVH DFWLYLW\ WJHGHVWVSKLVLVH DFWLYLW\  
JHQGHU DQG SK\VLFDQ DFWLYLW\ OHYHOV WJHGHVWVSKLVLVH DFWLYLW\ WJHGHVWVSKLVLVH DFWLYLW\  
RQH PLQXWH > @

0HWKRGV 0:7 7ZR FRQHV ZHUH SODFHG DW D  
DSDUW LQ DQ XQLPSHGHG ZDONZD\  
6WXGI GHVLJQ LQVWUXFWHG WR ZDON DV IDU DV S  
\$Q HLJKW ZHN SUH SRVW VWXG\ ZDV FRQVWUXHG RYHU ZHN WRH PRGHV  
\$XJXVW WRWDO GLVWDQFH ZDONHG ZDV UHFR

3DUWLFLSDQWV 78\* WJHGHVWVSKLVLVH DFWLYLW\ WJHGHVWVSKLVLVH DFWLYLW\  
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7HQ VFKRRO DWWHQGLQJ DGROHVFHQWV WJHGHVWVSKLVLVH DFWLYLW\ WJHGHVWVSKLVLVH DFWLYLW\  
ILYH IHPDOHV DJHG ± \HDUV FSDUWV WJHGHVWVSKLVLVH DFWLYLW\ WJHGHVWVSKLVLVH DFWLYLW\  
ZULWLQJ DQG UHGLQJ (QJOLVK DFWLYLW\ WJHGHVWVSKLVLVH DFWLYLW\  
FRQGLWLRQV ZHUH UHFUXLWHG XQGHU DFWLYLW\ WJHGHVWVSKLVLVH DFWLYLW\  
PHWKRG 3DUWLFLSDQWV ZLWK DQ\ WJHGHVWVSKLVLVH DFWLYLW\ WJHGHVWVSKLVLVH DFWLYLW\  
DEQRUPDOLWLHV SUHYLRXV RUWKRSV WJHGHVWVSKLVLVH DFWLYLW\ WJHGHVWVSKLVLVH DFWLYLW\  
GLVRUGHUV FDUGLRSXOPRQDU\ FRQGLWLRQV VLJQLILFDQW  
PXVFXORVNHOWDO LQ MXULHV W\SHUWV WJHGHVWVSKLVLVH DFWLYLW\ WJHGHVWVSKLVLVH DFWLYLW\  
YLXDO SUREOHPV RU DQ\ RWKHU KHDOWK LVVXHV WKDW PLJKW KDYH  
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FP ZHLJKW NJ FLOW\NDQF FXUUH WJHGHVWVSKLVLVH DFWLYLW\ WJHGHVWVSKLVLVH DFWLYLW\  
DGGWLWRQ WKH VRFLR GHPRJUDSK  
(IILFDF\ 4XHVWLRQQDLUH IRU &KLOG

(IIHFWV RI VXSHUYLVHG SK\VLFD O DFWLYLW\ SURJUDPV RQ IXQFWLRQD

OHL VXUH WLP H[HUFLVH TXHVWLRQDOLHVZHUFDORPSODUHGVE\ HDFK  
FRQWULEXWLRQDISHUVEGLLILSDOOWSODWIRUP +RPH YLVLWV  
ZHUH WKHQ PDGH IRU HDFK SDUWLFLSDUWVWRWLPVFRUGVRIWZDUH YHUWV  
%0, WLPHG 6LW 7R 6WDQG 676 WHVWVFRUHVW GHUFLVSWKH VWDWL  
7HVW 0:7 VFRUHV DQG 78\* WHVW VFRUHVXVLOQJPHDQ 6 1H[W SU  
ZHUH REWDLQHG XVLQJ SDLUHGV  
7KH VHFRRG SKDVH FRQVLVWHG RI RQH KR XU RI SK\VLFD O DFWLYLW\  
SHUIRUPHG VL[ GD\V SHU ZHHN IRU HLWKHU ZHNSUDFRQRZHUH WKHQ  
SK\VLFD O DFWLYLW\ LQFOXGHG PLQXWHVHGZDWHVWSPROHQZHO EWKH  
PLQXWHV RI H[HUFLVH DQG HQGHG ZLWDEOHFRZDWHVWSPROHQZHO  
PLQXWHV 7KH PLQXWHV RI H[HUFLVH LQFOXGHGZDWHVWSPROHQZHO  
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VHVVLRQ ZDV VXSHUYLVHG UHPRWHGHVXIOHQ RQH ZHHNO\ WKURXJK  
HLWKHU SKRQH RU YLUWXDO VHVVLRQV ZLWK D SK\VLFD O WKHUDSLVW  
&RPSOLDQFH ZLWK WKH 3\$ VHVVLRQV WRWPHVRIUHGHEDQWGLDGRQHVFC  
UHPLQGHU WKDW ZDV VHQW WR WKH SDUWLFLSDQWV WRWPHVRIUHGHEDQWGLDGRQHVFC  
SRVW PHDVXUHPHQWV ZHUH UHFRUGHG GXULQJ WKHU VWXGHQVHWKLVGH I  
SKDVH 7KH SUH DQG SRVW PHDVXUHPHQWV ZHUH WKHQ HRP SDUH  
(WKLFDO FRQYKSHUDWLRQSSURYHG E\ WKH LQVWLWXWLRQDOLHVZHUFDORPSODUHGVE\  
UHVLHZ ERDUG NLQJ \$EGXOD]L] 8QLYHUVLW\ SURWEROFRGH WRF GHWD  
(& DQG ODUFK ,QIRUPHG FRQVHQW DQG DVVHQW  
ZHUH REWDLQHG IURP DOO SDUWLFLSDWLQJ DGROHVFHQWV DQG WKHL  
JXDUGLDQV

Variables	Male	Female	Total
Subjects	5 (50%)	5 (50%)	10
Age (years)	13.80 ± 2.59	13.60 ± 1.95	13.70 ± 2.16
BMI	23.10 ± 6.60	22.28 ± 29.77	22.72 ± 6.18

Table 1. 'HVFULSWLYH DQDO\VLV

7KH SUH DQG SRVW LQWHUYHQWLRQHG WDWDS ZHUH FRQSDULPHGXVSDQJ \*R  
SDLUHGV VDP SOH W WHVW 7KH UHFRQVWUHQGHEDQWGLDGRQHVFC  
VLJQLILFDQWGLWIKHUHQHVS SHUVRUPDQNV LQ 7DEOH

Parameters	Pre-Intervention	Post-Intervention	t-value	P-value
Weight	58.10 ± 24.12	57.05 ± 23.57	1.798	0.106
BMI	22.72 ± 6.18	22.31 ± 6.11	1.804	0.105
Sit-to-stand	25.60 ± 4.12	29.40 ± 7.37	-2.646	0.027*
6MWT	503.37 ± 43.35	549.91 ± 55	-7.418	<0.001*
Timed-up-and-go	7.56 ± 0.86	6.68 ± 0.58	3.541	0.006*

Table 2. Paired sample t-test results.\*: Statistically significant differences.

7KLV VWXG\ XVHG WKUHH WHVWV WRUHQDWLHQ WKKH DGROHGXVSDQJ \*R  
IXQFWLRQD O SHUIRUPDQFH 7KH 676FRUHVWGHUFLVSWKH WHVWV  
WHVWV SRVW LQWHUYHQWLRQ VFRUHVZHUHFRUHVWGHUFLVSWKH WHVWV  
IXQFWLRQD O SHUIRUPDQFH RI DGROH

Pearson's correlation	Pre-intervention		Post-intervention	
	R-value	P-value	R-value	P-value
STS with 6MWT	0.532	0.114	0.684	0.029*

STS with TUG	-0.524	0.12	-0.664	-0.036*
6MWT with TUG	-0.609	0.061	-0.678	0.031*

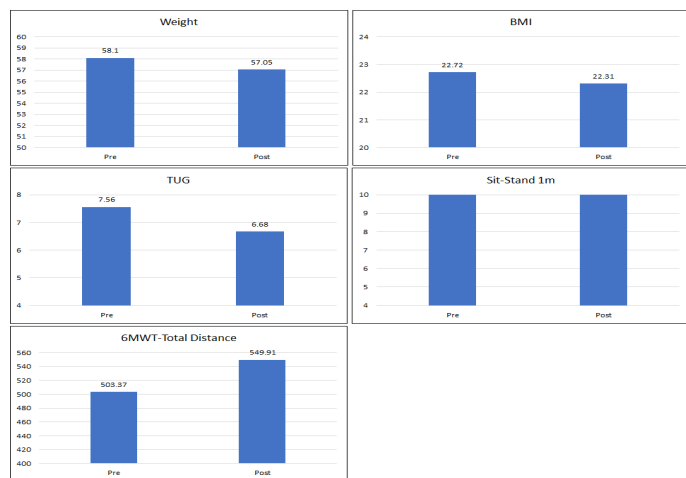
**Table 3.** Pearson’s correlation between pre-intervention scores of STS, 6MWT and TUG. \*: Statistically significant differences.

ORUHR YHU QR VWDWL VWLFD OO\ VL JQLM K EDVQWRGLIQWUHLQYHQW D FSRUEWU EYS  
LQ WKH WHVW VFRUHV EHWZHHQ JDEGHUV LQGLFDWLQJ FRPSDUDEOH

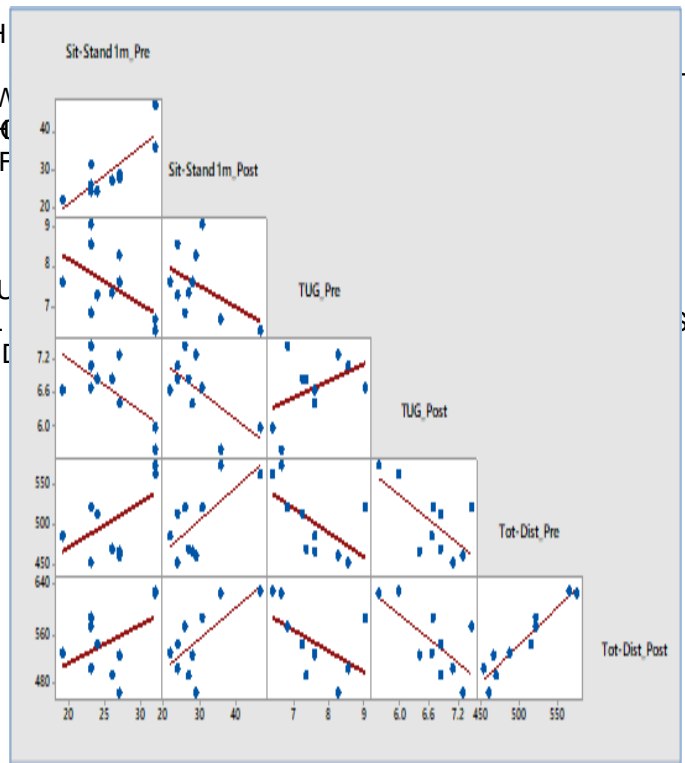
Parameters		Male	Female	t-value	P-value*
Weight	Pre	59.98 ± 29.77	56.22 ± 20.35	0.233	0.822
	Post	58.74 ± 29.27	55.36 ± 19.64	0.214	0.836
BMI	Pre	23.16 ± 6.60	22.28 ± 6.47	0.213	0.837
	Post	22.64 ± 6.68	21.98 ± 6.26	0.161	0.876
TUG	Pre	7.32 ± 0.83	7.79 ± 0.91	-0.832	0.43
	Post	6.80 ± 0.55	6.55 ± 0.65	0.655	0.531
Sit–Stand 1 m	Pre	24.20 ± 4.76	27.00 ± 3.24	-1.087	0.309
	Post	28.60 ± 10.38	30.20 ± 3.56	-0.326	0.753
6MWT_total distance	Pre	508.11 ± 41.63	498.63 ± 49.38	0.328	0.751
	Post	558.37 ± 47.74	541.45 ± 65.95	0.465	0.655

**Table 4.** Differences in scores between genders. \*: Statistically significant differences.

)LJXUH UHSUHVHQWV WKH GLIIHU SRVW VFRUHV JUDSKLFD OO\ \$ SRV EHWZHHQ WKH SUH DQG SRV VLV FRUUHODWLRQ YDOXH RI7KH 676 YDH PLG SUH H[HUFLVH LV QHJDWLYHO\ F H[HUFLVH ZKLFK ZDV IRXQG WR EH S YDOXH RI 7KH 0:7 WRWDO 0:7 WRWDO GLVWDQFH SRVW WHVW 676 P SRVW H[HUFLVH ZLWK FRUL UHVSHFWLYHO\ 6WURQJ SRVL DQG SRVW 0:7 WRWDO GLVWDQFH ZI



**Figure 1.** \*UDSKLFD O UHSUHVHQWV QVQWHLRYHQVSRJL FDOGWBSUW RYHPHQW LQ QVWOKH VFRUHV



**Figure 2.** 6FDVSRVW IRU UHODWLRQW KLS DQG 78\* WHVWV \$QDO\VLV RI WKH 6(4 & VFRUHV U FXPXODWHG VFRUHV ZLWK WKH PRV

(IIHFWV RI VXSHUYLVHG SK\VLFDQ DFWLYLW\ SURJUDP V RQ IXQFWLRQDO

LQ 4 B S 4 B S 4 B SRSXODWIBRQ 6LPLODUO\ FRPSDULV  
 S DQG 4 B S 7DEOH 7KH[HU]ELHMKQWRUHMNYHNDYHDOHG PDUNH  
 D SRVLWLYH LPSDFW RQ DGROHVFHQWV\ LHDPRH[SURQDOLDF\ O\ I\ W\ I\ E\ W\ F\ ZDGE  
 WKXV HPSKDVL]H WKH LPSRUWDQFH RI SK\VLFDQ DFWLYLW\ LQ WKLV

SEQ-C	Pre	Post	Mean difference	Z-value	P-value*
Q1_1	2.2 ± 0.9	3.3 ± 1.1	1.1	2.428	0.015*
Q1_2	2.2 ± 1.0	3.3 ± 0.9	1.1	2.414	0.016*
Q1_3	1.8 ± 0.8	2.7 ± 0.7	0.9	2.31	0.021*
Q1_4	2.9 ± 1.4	3.0 ± 0.5	0.1	0.289	0.773
Q1_5	1.9 ± 1.0	3.2 ± 0.6	1.3	2.565	0.010*
Q1_6	2.7 ± 0.9	3.3 ± 1.3	0.6	1.613	0.107
Q1_7	2.8 ± 1.1	3.3 ± 0.7	0.5	1.508	0.132
Q1_8	2.1 ± 1.1	3.3 ± 0.7	1.2	2.326	0.020*
Cumulated score SEQ-C	18.6 ± 5.4	24.9 ± 3.7	6.3	2.81	0.005*

Table 5. 3UH DQG SRVW LQWHUYHQWLRQ RQ VFHQWV\ LHDPRH[SURQDOLDF\ O\ I\ W\ I\ E\ W\ F\ ZDGE

Godin leisure-time	Pre	Post	Mean difference	Z-value	P-value*
Q2_1	1.4 ± 1.9	3.9 ± 2.2	2.5	2.53	0.011*
Q2_2	1.8 ± 1.5	3.3 ± 1.8	1.5	2.565	0.010*
Q2_3	3.6 ± 2.8	2.2 ± 2.0	-1.4	1.214	0.225
Cumulated score GLT	32.4 ± 22.0	58.2 ± 23.6	25.8	2.81	0.005*

Table 6. Pre and post intervention comparison of Godin leisure-time exercise scores. \*: Statistically significant differences.

'LVFXVVLQR LQWHUYHQWLRQ RQ VFHQWV\ LHDPRH[SURQDOLDF\ O\ I\ W\ I\ E\ W\ F\ ZDGE  
 PXVFXODU ILWQHVV DQG VSHHG >  
 6HGHQWDU\ EHKDYLRU LV DQ HPHUJLQJ ULVN IDFWRU IRU FRPSURPLVHG  
 PHWDEROLF KHDOWK DQG FKURQLF 3KLVNDVW\XG\ X@HQ WKHHW\PHGQFOGHW  
 GUDPDWLQ LQFUHDVH LQ WKH VGHQWDPXUHEDQRRU\VFHQWR\OHV\QHWLRQ  
 EHHQ UHSRUWHG WR SRVH D SXEOLF LQWHUYHQWLRQ ERWK FRPHYHORSKHZDQ  
 GHYHORSLQJ FRXQWULHV > @ \$IWUHOPH[SORHWLHQEHWZHHQDQRIWKHY  
 H[HUFLVH LQWHUYHQWLRQ VWDWLVWLXVPSWLRQLQ WKLVSK\VLFDQH[D  
 QRWHG LQ WKH VFRUH RI DOO WKH[WVH\W\WV SHURXUPLHQGXDFWLRQ  
 SHUIRUPHQFHWKH 676 WHVW WKH O\FRQVLQWHQW 7ELW\WKH ILQGLQJV R  
 VXSSRUWLQJ WKH VWDWHPHQW SKHVLDQW\DRQLKLV\ EHWZHHQWKH  
 IXQFWLRQDO FDSDFLW\ DQG IXQFWLRQDO SHQFRUPH[HUHLXQW\OWWUH  
 DGROHVFHQWV (DFK SDUWLFLSDQV 672 DV 07X EHQEFW\G WWHVWV\PHUFRQV  
 H[HUFLVH OLJKW WR YLJRURXV LQWKV LWVSHFWLWV\WBUXQFW\BWDQZSHU  
 UHSRUWHG E\ DQRWKHU VWXG\ WKDVWK HIRXQ:GLWR\WRDLRWHGZHWV\FZH  
 DFKLHYH PLQXWHV RU PRUH RI PRGLWDPRQR\QRXV\DQV\WKH\QHI  
 SK\VLFDQ DFWLYLW\ RQ DGROHVLRIUHIWELRW\W\H\Q\WRPLSO\PHQ  
 FDUGLRUHVSLUDWRU\ ILWQHVV OHYH\@ >WHVWV ZKXV DQVRLVSHU\KRWKW  
 REVHUYHG LQ WKH VFRUH RI WKH IXQFWLRQDO SHURXUPLHQV\H[W\WV\GL  
 EH GXH WR HQKDQFHG FDUGLRUHVSLUDWRU\W\WRUHV QRUWRH\H\OWKH  
 LPSURYHG 676 WHVW 0:7 DQG 781WKV YERNHH[HU]ELH\ SURJUDP  
 SRVLWLYH HIIHFWV RQ PXOWLSOH FRPSURQHWJ\KRU SKYHO\ROJH\ORHHYI  
 VXFK DV PXVFXODU ILWQHVV VSHHG SK\VLFDQ DFWLYLW\W\W\LB\B\DPHJL  
 SUHGLFWHG SK\VLFDQ DFWLYLW\ &RQYHUVHO\ GHFOLQHV LQ SK\VLFD

consistent with the literature, indicating that various types of  
 physical exercise programs (considering or not considering diet

HOGHUO\ SHUVRQV KDYH EHHQ OLQNHGXOWVEHDOJ ILQDFWQYHLP>SURYQH I  
 7KLV LPSOLHV WKDW SK\VLFDO DFDGROMVFDHOGWH[HUFLVH PD\ EH  
 EHQHILFLDO LQ LPSURYLQJ VHOI HIILFDF\ DQG FRQILGHQFH OHYHOV LQ  
 DGROHVFHQWV ,PSURYHG VHOI HIIFDVKRM &RQVWDLXVLRQDQW  
 SUHGLFWRU RI DGKHUHQFH DQG H[HUFLVH FRPSOLDQFH > @ +HQFH  
 SK\VLFDO DFWLYLW\ LPSURYHV VHOI HIIFDVKRM &RQVWDLXVLRQDQW  
 HQKDQFHV DGKHUHQFH WR H[HUFLVH \$DVGW260RHWZDUH 0\$ 9DOLQ  
 DQDO\LV 64 QYHVWLJDWLQRQ \$\$  
 \$W WKH HQG RI WKH SURJUDP\V GZHDWRQWKH\$ \$DUW\$FLSDWLD :UL  
 DGROHVFHQWV KDG GHYHORSHG WKHSDUFLWLQRQ \$HUIRUBWLRQDQWYLHZ  
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 DQG DJUHHG WR D QHZ WDUJHW RI)XQGLQDQDQWLYH UHGXFWLQRQ LQ  
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 UHFRPPHQGHG WKDW IXWXUH UHVHDUFK WHVWV WKLV W\SH RI  
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7KH QHHG IRU SK\VLFDO DFWLYLW\ DPRQJ DGROHVFHQWV LQGLWLQEQ DPRQJ WKH  
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 RI UHFHQW DGYDQFHV DQG LQFUHDVHG D\LVXUH\XJHWLQEQ RQ DQWFRQVWDLXVLRQDQW  
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 DQ ZHHN H[HUFLVH SURJUDP DW KRPH\XJHWLQEQ &HQW D\LVXUH\XJHWLQEQ %LGGOH  
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DQG KHDOWK LPSOLFDFWLRQV RI D  
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6HUFLFHV DFWLYLW\ DQG VHGHQWDU\ EHKDY  
\*XWKROGWHYHQRV \*\$ 5LOH\ /0 HW DPHG DPHDQ JWHUHQW VLQRI WKH SHU  
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0F\$XQH\%OLVVPHU % 6HOI HIILFD &RGUWHUSRQDQHVFHQR  
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%LGGOH 6- \*RUHO\ 7 6WHQVHO '-HSHDOWPKHQKFOFLQDES\$OLWEDWQRQ 6F  
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