

)RUFHG ([HUFLVH IRU)UHH]LQJ RI *DLW LQ 3R
3DWLHQWV

9DQHVV . +LQPRQHODPESURQ (P&WULV *UHJRWKULQ *DLQHM 6DOON *RQJDOR - 5HYXHOWD
'HSDUWPHQW RI 1HXURVFLHQFHV OHGLFDO 8QLYHUVLW\ RI 6RXWK &DUROLQD &KDUOHVWRQ 6& 86\$

6XEMHFWV SDUWLFLSDWHG LQ D)RUFHG ([HUFLVH SURWRFRO FRQVLVWLQJ RI
SURJUHVVLYH VSOLW EHOW WUHDGPLOO ZDONLQJ RQ D 6SRUWV \$UW PRWRUL]H
WUHDGPLOO WLPHV D ZHHN IRU ZHHNV 7KH WUDLQLQJ SURWRFRO UHSOLFDFW



)LJXUH YHUDJH YHORFLWLHV FP V
SORWWHG DJDLQVW VWXG\ YLVLWV

ZHOO DV D UHGXFWRQ LQ IDOOV DQG I
\$OWKRJK ZH ZHUH XQDEOH WR FDSWXUH
DV PHDVXUH E\ WKH)R*4 LQ WKH JURXS
KHWHURJHQHLW\ RI)R* ZHUH HOXFLGDW
FKDUDFWHUL\ R* GHYHORS REMHFWLYH
6HOP VHOHFWHG ZDONLQVSHG

\$FNQRZOHGJHPHQWV

'LVFXVVLQRQ

7KLV LV WKH ILUVW VWXG\ WR RXU NQRZOHGJH GHVLJQHG WR GHWHUPLQH WK
LQ 3DUNLQVRQDV GLVHDVH
HIIHFW RI D IRUFHG H[HUFLVH SURWRRO LQ SDWLHQWV ZLWK 1/5)R* :H
FKRVH WR VWXG\ SDWLHQWV ZKR KDG XGHUJHQH ELODWHUDO 671 '% IRU WZR
UHDVRQV WKH\ KDYH JRRG FRQWURO RI XWHLOORS UHOSOLVLYHDOHPSWRPARU
(HW FRQWLQXH WR H[SHULHQFH GLVDEOLQJPRW PBLQJ WUZPRG RSDPWLFDL RX
PRGHO RI 1/5)R* DQG ZLWK WKH LQFUHQV LQ XVH RI '% LQ WKH
WUHDWPHQW RI 3' WKHUH LV DQ LQFUHDVHG \$IRULQGH GHYHORSKHQDFWUUL
HIIHFWLYH WKHUDSLHV IRU WKH WUHDWPHQW RI 3' UHODVW WR URPRG RSDPPLQJ
PHGLFDWLRQV DQG '%

:H ZHUH DEOH WR VKRZ WKDW WKLV SURWRRO FHWKWHUJHQH LOR SHUWRWPLQDQ
SDWLHQW SRSXODWLRQ)XUWKHUPRUH ZHOHFWHQJH PDPDWRU *DILVGRQWYUH
GHPRQVWUDWLQJ WKH SRVLWLYH HIIHFW RHHUFLVHORQL WKH DFRWRI VOPSWR P
RI 3' @ 7KH VWXG\ GLG QRW PHHW LWV SULPHUHQV SRJQW RGLWYXDFWLRQ LQ SH
)R* VHYHULW\ DV PHDVXUH E\ WKH)R* 4 UHODVW WR 1'XUWLSH SLOR VWXGLHV
KDYH IDOHG WR PHHW SULPDU\ HQGRLQV WJLWQ WDPHYWUJ5)R*FFHOOLQL '%
3RVVLEOH H[SODQDWRQV IRU WKLV ILQGLQJ H[KDELGLWDLRQ WUHDWPHQW RI YDLW LQ
RI YDOLGDWHG REMHFWLYH RXWFRPH PHDVXUH DFRWRI WUHDWPHQW RI WZR SK
RXU FRKRUW DQG GLIIHUHQFHV LQ SKHQRPQRORJ\ EHWZHHQ WKH PRUH
FRPPRQ\ VWXGLHG OHYRGRSD UHVSQRVLYH)R* DQG 1/5)R*) \$PDUHOO 0 6FKRHQD

6XEJURXS DQDO\VLV UHYHDOHG RSSRVLRQV WR UHVSQRVLYH WUHDWPHQWV WUHDWPHQWV
SDUDPHWHUV IRU UHVSQRGHU DQG QRQ UHVSQRGHU JURXS V &OHDUO\ WKLV KDV
DQ LPSDFW RQ WKH ILQGLQJV RI WKH JURXS DQDO\VLV DQDO\VLV WUHDWPHQWV DQV
LQGLYLGXDO HIIHFW 2QH SDWLHQW LQ WKH DQDO\VLV WUHDWPHQWV DQDO\VLV WUHDWPHQWV
ZRUVHQLQJ IDOOV 7KLV PD\ EH DWULEXWDEOH WR FRQFXUUHQW RUWKRVWDV
EOHSDKURVSDVP DQG DGYDQFHG DJH \HUV ROG 0RUH LPSRUWDQWO\
WKLV ILQGLQJ KLJKOLJKW WKH IDFW WKDW)R* LV D KHWHURJHQHRXV
SKHQRPQRQ LQ D KHWHURJHQHRXV GLRHOH 6HOP 6HOP DWLQJ OHYRGRSD
UHVSQRVLYH)R* IURP 1/5)R* LV WKH ILUVW WUHDWPHQWV DQDO\VLV WUHDWPHQWV
VXEJURXS KRZHYHU RWKHU GLIIHUHQFHV UHPDLQ ZKLFK PD\ SUHGLFW
UHVSQRVH WR WUHDWPHQW

,Q WKH DEVHQFH RI D YDOLGDWHG REMHFWLYH RXWFRPH PHDVXUH IRU)R*
WKH XVH RI REMHFWLYH PHDVXUHPHQWV RI VSDWLRWHPSRUDO SDUDPHWHUV FDQ
EH D YDOXDEOH VXUURJDWH RXWFRPH :H DFNQRZOHGJH WKHVH DUH QRW
YDOLGDWHG FRUUDWHV RI)R* VHYHULW\ KRZHYHU UHSUHVHQW REMHFWLYH
ILQGLQJV ZKLFK UHVSQRGHG LQ VRPH FDVHV WR RXU LQWHUYHQWLRQ DQG
VKRXOG EH LQFOXGHG LQ IXWXUH VWXGLHV H[SDQGLQJ RQ WKHVH ILQGLQJV 7KH
REVHUYDWLRQ WKDW DOO SDUDPHWHUV PRYHG LQ WKH VDPH GLUHFWLRQ LQ
UHVSQRGHUV DQG QRQ UHVSQRGHUV IXUWKHU VXSSRUW WKHLU YDOLGLW\ 7KH
ILQGLQJV FDQ KHOS JXLGH IXWXUH VWXGLHV DPHG DW IXUWKHU FKDUDFWHUL\]
1/5)R* DQG GHWHUPLQLQJ SUHGLFWRUV RI UHVSQRVH

&RQFOXVLRQV

7KLV IRUFHG H[HUFLVH SURWRRO OHG WR D UREXVW LPSURYHPHQW LQ JOREDQ
3' VHYHULW\ DV PHDVXUH E\ WKH WRWDO 0'6 83'56 LQ SDWLHQWV DV