

& DQ % RG\ \* URXS 7KHUDS\ DIWHU % DULDWULF  
5HJDLQ" \$ & OLQLFDO ([SHULHQFH

OLFDQW\ RI DUUR \* & XFFLQLHOOR & 3HFRUDUR \* DQG \* DOOHWWD '

'HSUWPHQW RI 1HXURVFLHQFH 5HSURGXFWLYH 6FLHQFH DQG 2GRQWVWRPDWRORJ\ 6FKRRO RI OHGLFL

& RUUVHSRQGLQJD\ XWIRU\ FDQWL 'HSUWPHQW RI 1HXURVFLHQFH 86' 3V\ FKLDWU\ 826 (DWLQJ 'LVRUGH  
ORELOH )D[ PLF(DQW\#XQLQD LW

5HFHLYHG -GDWH \$ FFHSHWG -GDWH 3XEOLVK\ GDWH

& RS\ ULJKW OLFDQWL ) HW DO 7KLV LV DQ RSHQ DFFHVV DUWLFOH GLVWULEXWHG XQGHU WKH WHUPV  
XVH GLVWULEXWLRQ DQG UHSURGXFWLRQ LQ DQ\ PHGLXP SURYLGHG WKH RULJLQDO DXWKRU DQG VRXU

\$EVWUDFW

, QWURGXFWLRQ :HLJKW UHJDLQ PD\ RFFXU ZLWK EDULDWULF VXUJHU\ DQG LW  
VXUJHU\ UHODWHG IDFWRUV 7KH SHUVLVWHQFH RI ERG\ VKDSH FRQFHUQ DQG XQ  
ULVN IDFWRU IRU ZHLJKW UHJDLQ :HLJKW ORVV DIWHU % DULDWULF VXUJHU\ GH  
FRPSRQHQW RI % RG\ , PDJH EXW QRW WKH HPRWLRQDO RQH 7KH DLP RI WKLV VW  
FDQ UHSIDLW WKH ERG\ LPDJH HPRWLRQDO FRPSRQHQW DFKLHYLQJ ZHLJKW PDLQW

0HWKRGS\ DWLHQWV PHDQ DJH 6' " ZRPHQ PHQ PHDQ % RG\ 0DVV , QG  
VXIIHULQJ IURP RQVHW REHVLW\ ZHUH HQUROOHG LQ WKLV VWXG\ \$OO SDUWLFL  
VXUJHU\ 7KH\ XQGHUZHGW ERG\ JURXS SV\ FKRWKHUDS\ WR UHLQIRUFH ERG\ LPDJH

5HVXOWV 5HVXOWV RI ERG\ JURXS WKHUDS\ ZHUH D VLJQLILFDQW LQFUHDVH RI  
WKH RWKHUV DQG D EHWWHU WHQGHQF\ WR DFFRPSOLVK QHZ H[SHULHQFHV 1R G  
UHLQIRUFHFW SURFHVV UHODWHG WR VOHHYH DQG JDVWULF E\ SDVV

& RQFOXV\ W\ FKRWKHUDS\ LV DQ HIIHFVLYH WRRO LQ FKDQJLQJ ERG\ , PDJH DQG UH  
PRUH HIIHFVLYH LQ DFKLHYLQJ DQG VWUXFWXULQJ ZHLJKW VWDELOLW\ DQG UHDQ

.H\ZRUG% DULDWULF VXUJHU\ :HLJKW ORVV % RG\ LPDJH \*URXS  
WKHUDS\ :HLJKW PDLQWHQDQFH

, QWURGXFWLRQ

:HLJKW UHJDLQ PD\ RFFXU ZLWK DOO WKUHH RI WKH PRVW FRPPRQ  
SURFHGXUHV 5RX[ HQ < JDVWULF E\ SDVV VOHHYH JDVWUHFWRP\ DQG JDVWULF  
EDQGLQJ DQG LW GHSHQGV RQ QXWULWLRQDO SV\ FKROJLFDO DQG VXUJHU  
UHODWHGHU\ DQG LW UHJDLQ IHZ VVXGLHV GLUHFWO\ LQYHVWLJDWLQJ WKH  
FOLQLFDO IDFWRUV GHWHUPLQD\ QH\ UHJDLQ WKW UHJDLQ 3RRU RXWFRPH  
VXUJHU\ PD\ KDSHQ DV IROORZ XS VVXGLHV XQGHUOLQH VWUHVVLQJ WKH  
LPSRUWDQFH RI SV\ FKLDWULF RU SV\ FKROJLFDO IDFWRUV LQ LQGXFLQJ LW > @  
H SHUVLVWHQFH RI ERG\ VKDSSH\ UHJDLQ\ QH\ UHJDLQ XQHDVLQHVV  
GHWHUPLQLQJ WKH LQDELOLW\ WR UHFRJQLJH RQH VHOI DV DQ LQGLYLGXDO ZLW  
RZQ GHVLUH DQG FDSDFLW\ LV FRQVLGHUHG D ULVN IDFWRU IRU ZHLJKW UHJDL  
> @ 3V\ FKRWKHUDS\ LV WKH PRVW XVHIXO LQVWUXPHQW WR UHFRQVWUXFW ERG  
LPDJH DQG DFKLHYH ZHLJKW PDLQWHQDQFH > @

LV

