

# Residual Injury, PTSD and Body Image Distress following Intimate Partner Violence: Psychophysiological Assessment for Comparative Cues

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## ABSTRACT

This study explored women's psychophysiological responses to a ranges of idiographic photographs: (1) The participant's residual mark or scar and their contralateral body region; and compared this reactivity to nonidiographic photographs: (2) A comparison individual's mark and their contralateral body region; and standardized images (3) Photographs of neutral, positive and negative pictures. To date, 22 female participants, who have experienced past-year moderate to severe IPV and have an IPV-related mark or scar, have completed this ongoing study. Participants' skin conductance responses (SCR) evidenced exaggerated reactivity to the idiographic scar compared to all other images and corrugator electromyogram (EMG) responses evidenced levels of reactivity that were comparable to the standardized negative images and nonidiographic scar. Exploratory correlational analyses revealed significant positive correlations between the skin conductance reactivity and symptoms of PTSD. Implications of these findings for injury, residual injury and PTSD were discussed.

## INTRODUCTION

❖ Women evidence disproportionate risk for both PTSD and intimate partner violence (IPV) which may be linked through the under examined pathway of injury. Previous research has conceptualized injury as a single dimension with an acute onset, short rise and course. However, after acute injuries have healed, residual injuries, defined as permanent alterations in appearance such as marks or scars, may remain.

❖ These residual injuries may serve as a cue, provoking or maintaining symptoms of PTSD.

❖ PTSD has a number of psychophysiological correlates each of which may inform the pathophysiological pathways to the disorder. For example, associations between PTSD and EMG could highlight aspects of negative emotionality (frontalis or corrugator EMG) (Pole, 2007). While researchers have examined and documented physiological reactivity to idiographic trauma triggers, the test of the IPV-related mark or scar as an idiographic trigger is as yet unexplored.

❖ Documentation of the residual injury and exploration of related cues as provoking psychophysiological reactivity expands the theoretical conceptualization of injury beyond an acute and unidimensional construct and supports further generative research on residual injury as associated with PTSD.

## METHOD

❖ 22 adult female victims of intimate partner violence presenting from the community (18%) or domestic violence shelters (82%) participated in this study. All participants had an IPV-related residual injury that constituted an appearance-related change, typically a mark or scar (91%) or missing teeth (8%).

❖ Women had been involved within a romantic relationship for at least three months (modal length of relationship = 5 years) and experienced moderate to severe IPV.

❖ The assessment included self-report and interview measures of psychological functioning including symptoms of PTSD (Foa, Jaycox, Cashman & Perry, 1997), Body Image Distress (Rosen & Reiter, 1993), Depression (Beck, Steer, Ball & Ranieri, 1996) and subjective health concerns (Pennebaker, 1982).

❖ Following the completion of an interview and self-report assessments, participants' residual injury was photographed under standardized conditions using a Nikon D1x digital camera within a designated room using a 36" by 48" Westcott Photobasics Softbox, a B800 Flash Unit and a LS3050 Light Stand to produce even and controlled lighting against a blue floor-ceiling backdrop. After the photograph women participated in a psychophysiological paradigm in which they were presented with standardized neutral, negative and positive images (Lang, Ohman, & Vaitl, 1988), idiographic and nonidiographic scar and contralateral body regions-all in randomized order.

Table 1. Select Nonparametric Correlations Among Measures and Scar Reactivity

	PTSD Severity	Depression	Physical Complaints	Body Image Distress
SCR own scar	.57*	.27	.00	.22
SCR other scar	.06	-.01	-.04	-.35
EMG own scar	.40	.18	.07	.10
EMG other scar	.40	.11	.11	.05

\*p < .05 (two tailed)

### Photographic Stimuli: Idiographic Scar and Contralateral Body Region



Contusion and Laceration from Partner kicking leg and pushing participant down the stairs



Contralateral Body Region

### Photographic Stimuli: Sample Standardized IAPS Images



IAPS Negative



IAPS Neutral



IAPS Positive

## Results

Figure 1.

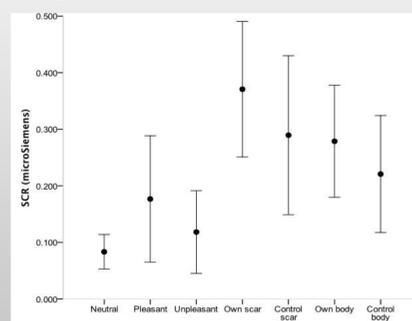
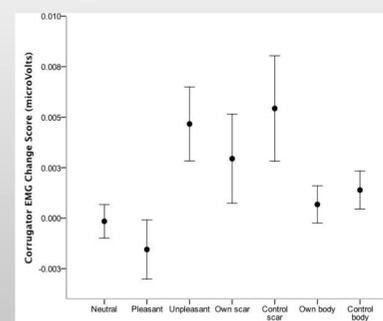


Figure 2.



Figures 1-2: Skin conductance (upper left), corrugator EMG (upper right) in response to standardized emotional, idiographic and nonidiographic scars and idiographic and nonidiographic, contralateral body regions. Error bars show +/- 1 standard error. Due to artifacts in the data SCR only has 17 participants.

## ASSESSMENT PROCEDURES

❖ Participants were seated in a comfortable armchair in a dimly illuminated, sound attenuated room. Picture stimuli were presented on a 17-inch computer monitor and controlled via a computer using E-Prime software. Data were collected at 1000 Hz using a Biopac MP150 system.

❖ The psychophysiological protocol included:

❖ Four-minute resting baseline during which the participant was instructed to relax but not to close their eyes

❖ Next, a series of images were presented in random order onscreen: Neutral Images (2 different pictures, 2 presentations), Pleasant, Moderately Arousing Images (2 different pictures, 2 presentations), Unpleasant, Moderately Arousing Images (2 different pictures, 2 presentations), digital photograph of each participant's most distressing mark or scar or other appearance alteration (1 picture, 2 presentations), a nonidiographic mark or scar (1 picture, 2 presentations) and the participant's and a comparison contralateral body region (1 picture for each, 2 presentations)

❖ Each image was presented for 6 sec, followed by an intertrial interval of at least 10 sec (range: 10-20 sec) in order to allow electrodermal activity to return to baseline and to reduce the likelihood of anticipatory reactivity

## RESULTS AND DISCUSSION

❖ For SCR, participants evidenced patterns of exaggerated physiological reactivity to their idiographic scar compared to all other images. For corrugator EMG, participants evidenced levels of reactivity to their idiographic scar that were comparable to the standardized negative images and nonidiographic scar. Findings suggest that these marks or scars may be serving as trauma-related cue, particularly association with increased arousal.

❖ For both SCR and EMG, reactivity upon exposure to the nonidiographic scar suggest that these associations may have generalized to other scar images. Based on spontaneous comments by some participants, they assumed the comparison scars were the result of IPV.

❖ The contralateral body region was designed to serve as a control for viewing one's body without injury. However, given the patterns of reactivity it is possible that these body regions are still trauma-connected as they are often proximal to the appearance change and participants may reflect on their alteration (and its impact) when they see the unaffected place on their body.

❖ The hypothesized trauma associations were bolstered by the significant correlation between SCR and PTSD symptoms and trend association between EMG and PTSD symptoms following exposure to the idiographic scar.

❖ Different patterns of physiological reactivity across indices may be associated with dimensions of emotional valence (corrugator EMG) and magnitude of arousal (SCR). Corrugator EMG in particular may be more reactive to negative affect, generally (Vanoyen, Witvliet, & Vrana, 1995). If this pattern is replicated, further examination of valence and arousal associated with the images and the association with reactivity may clarify these different patterns of response.

❖ If residual injuries are an embodied trauma-related cue, then exposure to the residual injury could be incorporated into empirically supported treatments for PTSD, such as prolonged exposure.

## REFERENCES

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