

CORRECTIONAL OFFICERS AND WORK-RELATED ENVIRONMENTAL ADVERSITY: A CROSS-OCCUPATIONAL COMPARISON

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This study explores differences in perceived work-related environmental adversity between correctional officers and those in other occupations in order to gain a clearer understanding of how prisons may impact those who work there. The Work-Related Environmental Adversity Scale (WREAS) was developed in order to assess the perceptions of employees across a range of occupations, including correctional officers. The instrument was completed by 440 participants and, as hypothesized, results indicate that correctional officer perceptions of work-related environmental adversity were significantly higher than the perceptions of those employed in all other occupations assessed (with the exception of police and emergency service workers). Further analyses of sub-scales indicated that correctional workers identify a number of specific environmental factors that impact their perceptions and subsequent well-being. The results of this study identify the importance of empirically assessing occupational workplace adversity as a component of the overall understanding of correctional officer well-being.

Keywords: well-being; occupation; prison; personnel; stress; wellness

Like many other frontline service personnel, correctional officers often work within a highly stressful work environment (Kunst, 2011). Among other things, it has been suggested that prison settings require officers to continually manage a range of unique, stressful, and often unpredictable workplace difficulties as part of their role (Ghaddar, Mateo, & Sanchez, 2008; Harrell, 2011). Within this environment, officers can at times be exposed to highly traumatic or dangerous situations and, as a result, are a group with one of the highest rates of workplace-related injury and illness of any occupation in the United States (Bureau of Labor Statistics, 2014). For example, compared to those in the greater community, correctional officers have a higher prevalence of negative physical and psychological consequences related to workplace stress (see e.g., Johnson et al., 2009). Specific consequences include higher rates of depression (Sui et al., 2014); post-traumatic stress (Spinaris, Denhof, & Kellaway, 2012); substance abuse (see e.g., Svenson et al., 1995);

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heart disease (see e.g., Harenstam, Palm, & Theorell, 1988); and a heightened risk of developing a range of stress-related conditions (see e.g., Anson, Johnson, & Anson, 1997; Cheek & Miller, 1983; Harenstam et al., 1988). Given these findings, it is not surprising that correctional officers tend to engage in significant levels of absenteeism and other related, negative behaviors (Lambert, Edwards, Camp, & Saylor, 2005) as well as have one of the highest occupational burn-out rates of any profession (Hurst & Hurst, 1997; Keinan & Malach-Pines, 2007).

Given the above, it is not surprising that there has been a substantial increase in the development and implementation of preventative programs aimed at addressing the negative impacts of workplace stress and adversity across numerous high-risk occupational environments including: the police service (see e.g., Arnetz, Nevedal, Lumley, Backman, & Lublin, 2008), the military (see e.g., Griffith & West, 2013), emergency services (see e.g., Varker & Deville, 2012) and nursing (see e.g., McDonald, Jackson, Wilkes, & Vickers, 2012). Similar initiatives have also begun to be implemented within correctional settings (see e.g., Bravo-Mehmedbasic et al., 2009; Finn, 2000; Leo, 2011; McCraty, Atkinson, Lipsenthal, & Arguelles, 2009; Shochet et al., 2011). As the prevalence of these programs has increased, however, so too has the call for evidence-based confirmation of their applicability and effectiveness (Dunt, 2009; Eidelson, 2011, 2012; Morgan & Garmon Bibb, 2011).

This call for evidence-based confirmation is not surprising given that the demonstration of a clear need for any training program is a first and fundamental step in the process of intervention development (Allen, 2006; Gagne, Wager, Gola, & Keller, 2005). As such, it may be argued that training programs designed to assist individuals in managing adversity must first provide evidence that the intended recipients actually perceive their environment as particularly adverse (Trounson & Pfeifer, 2013). Cross-occupational studies that specifically examine differences in perceived work-related environmental adversity may be one method of addressing this issue. Findings from such research would contribute to an evidence-based rationale for implementation and would provide guidance as to the types of occupational environments most in need of such training programs.

Despite the existence of a substantial literature examining correctional officer well-being and related health outcomes (Brower, 2013), there still remains a relative paucity of cross-occupational research that empirically establishes that working as a correctional officer is more adverse and stressful than working within other occupational environments (Dowden & Tellier, 2004). It appears that there is also a limited amount of research providing a deeper understanding of the specific environmental factors that contribute to the perception of workplace adversity for correctional officers (Trounson & Pfeifer, 2013). As such, conducting comparative research examining cross-occupational differences in relation to specific environmental factors that contribute to perceptions of workplace adversity will provide valuable insight into officers' unique environmental context. Such research is pivotal to informing the development of future workplace initiatives aimed at addressing workplace adversity in corrections.

One current difficulty in examining perceived work-related environmental adversity across occupations is the lack of an appropriate measurement instrument. Although numerous self-report questionnaires are available that examine the impact of an individual's working environment on their physical and psychological health (see e.g., Aust, Rugulies, Skakon, Scherzer, & Jensen, 2007; McCusker, Dendukuri, Cardinal, Katofsky, & Riccardi, 2005), there are very few instruments that assess the level of perceived adversity existing within one's workplace (see e.g., Andrews et al., 2012). In addition, most measurement instruments are often either occupation-specific (Biggam, Power, Macdonald, Carcary, & Moodie, 1997; Lambert, Benight, Harrison, & Cieslak, 2012; Senol-Durak, Durak, & Gençöz, 2006) or event-specific (see e.g., Tehrani, Cox, & Cox, 2002), limiting their applicability to general cross-occupational comparisons and their ability to inform specifically the development of workplace initiatives for correctional officers.

In addition to the above, a review of the literature indicates that there is also a lack of self-report measurement instruments that can effectively evaluate employees' perceptions of adversity within their work environment in a way that negates individual perceptions of the impact of the environment on one's psychological or physical well-being. This is particularly important to consider when measuring perceived adversity within high-risk work environments, as individuals working in such situations (e.g., correctional officers) may be more likely to deny or underplay their experience of workplace stress due to a desire to present a 'tough image' (Cheek & Miller, 1983; Veneziano, 1984).

In order to address these limitations, a new measure of work-related environmental adversity was developed as part of this study. Unlike existing instruments, the current measure was designed to reduce the type of response bias described above by encouraging respondents to consider their working environment from a depersonalised viewpoint, requesting respondents to evaluate the nature of their working environment rather than report their personal stress reactions. Furthermore, the measure was designed to be used cross-occupationally and provides a general measure of work-related adversity that is not limited to any single event.

This study aims to fill two specific gaps in the existing literature. First, it aims to develop a valid and reliable measure of perceived work-related environmental adversity (i.e., the Work-Related Environmental Adversity Scale; WREAS). Second, the current study also aims to address the gap in the literature identified by Dowden and Tellier (2004) by assessing whether correctional officers perceive a greater level of work-related environmental adversity than those in other occupational roles and, if so, whether it is associated with a heightened level of stress reactions. The collection and analyses of these perceptions will subsequently assist with the systematic development of a sound evidence-base for the implementation of proactive psychological training within the field of corrections.

Based on the above, a number of specific hypotheses may be identified. First, given that previous research indicates that perception of adverse psychosocial factors in the workplace is related to an elevated risk of subsequent stress reactions (Gilbert-Ouimet, Trudel, Brisson, Milot, & Vezina, 2014), it is hypothesized that scores on the WREAS will

positively correlate with established measures of perceived stress. More specifically, it is predicted that scores on the refined WREAS will be significantly and positively related to scores on the Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983) as well as the stress sub-scale of the DASS-21 (Lovibond & Lovibond, 1995).

Second, it is hypothesized that correctional officers will perceive significantly more work-related environmental adversity than those in other general community occupational roles, as measured by the WREAS. Finally, it is predicted that a significant positive correlation will exist between perceived workplace adversity and reported stress reactions in the correctional officer sample and that this association will be stronger for correctional officers than for those working in other general community occupational roles.

METHOD

Participants

A total of 461 participants completed the online survey. Respondents who completed less than 70% of the WREAS items were excluded from analysis, resulting in a final sample of 440. The sample consisted of 202 males and 238 females ranging in age from 18 to 67 years ($M = 35.81$, $SD = 10.63$). The average number of hours worked per week was 37.33 ($SD = 11.68$), with approximately 59.1% of all participants having attained a university degree.

Materials

After responding to a number of demographic items (e.g., gender, age, level of education, occupational affiliation, number of hours worked per week), respondents completed the Perceived Stress Scale (PSS; Cohen et al., 1983), DASS-21 (Lovibond & Lovibond, 1995), and the WREAS.

Work-related Environmental Adversity Scale (WREAS). The WREAS was designed to measure differences in perceived workplace adversity across occupational categories to assist in the establishment of an evidence base for the implementation of proactive psychological training programs within correctional settings. The concept of adversity was defined as the experience of hardship or suffering associated with trauma, distress, difficulty, or a tragic event (Luthar, Cicchetti, & Becker, 2000; Luthar & Cicchetti, 2000; Rutter, 1999). For the purposes of the current study, perceived work-related environmental adversity was defined as an individual's view of their work environment as one in which such markers of adversity are likely to occur.

The WREAS is comprised of seven distinct concepts that have been previously associated with the experience of stress or adversity and have been examined across a range of occupational environments. As such, these seven factors were considered relevant and important markers of the presence of workplace adversity. Factors identified included perceived environmental threat (Rasmussen, Høgh, & Andersen, 2013); environmental unpredictability (Brody, 1984); need for vigilance (Warm & Parasuraman, 2008); expectation of workplace trauma (Denhof, Spinaris, & Morton, 2014; Rasmussen et al., 2013);

work-life separation (Armstrong, Atkin-Plunk, & Wells, 2015; Hämmig & Bauer, 2014); inability to achieve workplace respite (Drach-Zahavy & Marzuq, 2013); and the preoccupation with potential negative consequences of one's actions (Pabst, Brand, & Wolf, 2013).

Items were designed to be unidirectional and easy to understand as well as encourage respondents to consider their working environment from a depersonalised viewpoint. Items were presented as statements to which respondents indicated their level of agreement on a 7-point Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*). The WREAS was designed to allow interpretation of either the total scale score or at the sub-scale level, providing a more detailed profile of the factors contributing to respondents' perception of work-related environmental adversity. Examination of the psychometric properties of the WREAS on item, sub-scale, and full-scale levels resulted in the development of a refined WREAS scale consisting of 36 final items (see results section for refinement process).

The refined 36-item WREAS measures an individual's perception of workplace adversity by assessing respondents' perceptions in relation to the seven aforementioned underlying adversity factors. The Environmental Threat sub-scale consists of seven items measuring the level of perception that one's safety is compromised within one's work environment. Environmental Unpredictability is measured with five items and can be conceptualised as the perception that one's work environment is unpredictable. The Action Consequence sub-scale comprises five items designed to quantify the perception that one's actions can result in serious negative consequences while at work. Need for Vigilance is measured with four items and can be understood as the perception of the need for continued, heightened attentiveness or hyper-awareness within one's work environment. Five additional items comprise the Expectation of Workplace Trauma sub-scale and are designed to measure the level of perceived likelihood that one will be exposed to traumatic events in their work environment. The Inability to Achieve Workplace Respite sub-scale consists of five items measuring the level of perceived lack of reprieve from one's occupational environment or occupational role at work. Finally, the Workplace/Life Separation sub-scale (five items) measures the perception that work invades one's personal life.

A full-scale score can be determined by aggregating an individual's score on each item and dividing it by the number of items to which they responded. Thus, full-scale scores range from 1-7, with higher scores indicating higher levels of perceived work-related environmental adversity. Sub-scale scores are derived in a similar manner, providing total sub-scale scores ranging from 1 to 7, with higher scores indicating a heightened perception of workplace adversity on any given sub-scale.

Perceived Stress Scale (PSS). The PSS (Cohen et al., 1983) was used to assess the convergent validity of the WREAS. The PSS is a self-report measure designed to quantify participants' level of perceived stress and has been shown to be a reliable and valid measure (Cohen et al., 1983; Lavoie & Douglas, 2011). The 10-item version of the PSS has demonstrated good internal reliability ($\alpha = .84$ to $.86$) and construct validity in past studies (Cohen, Tyrrell, & Smith, 1991, 1993; Cohen & Williamson, 1991).

Depression Anxiety Stress Scale (DASS-21). The DASS-21 (Lovibond & Lovibond, 1995) is a well-established, standardized measure of depression, anxiety, and stress that also was used to assess the convergent validity of the WREAS. The stress sub-scale of the DASS-21 comprises seven items on which respondents rated the level of stress-related symptoms they experienced over the past week. Past research has demonstrated the DASS-21 to be a reliable and valid measure (Antony, Bieling, Cox, Enns, & Swinson, 1998; Henry & Crawford, 2005; Sinclair et al., 2012).

Education and Occupation. Level of education was used to assess the discriminant validity of the WREAS while criterion validity was assessed through examination of score differences between high-risk (e.g., police and correctional officers) and low-risk (e.g., sales and administrative staff) occupational categories.

RESULTS

Psychometric Properties of the WREAS

As this study is the first to use the WREAS, the refinement process and psychometric properties of the final 36-item instrument are first presented, followed by the results comparing level of perceived work-related environmental adversity across occupational categories. Based on scale-development recommendations outlined by Clark and Watson (1995), a systematic process was implemented in both the development and refinement of the item pool. To assess the discriminability of the proposed items, all 57 were initially screened for evidence of floor and ceiling effects, extreme standard deviation, and severe skewness and/or kurtosis. To assess the underlying factor structure of each of the seven sub-scales of the WREAS and to assist in the item refinement process, a set of one-factor congeneric confirmatory factor analytic measurement models for each sub-scale were then run using AMOS version 20. Items demonstrating weak factor loadings (i.e., $\lambda < .35$) with their respective sub-scale as well as weak inter-correlations with other items within each sub-scale (i.e., $< .35$) were identified for potential exclusion. The potential impact of item deletion on sub-scale alpha levels was then examined to assess the impact of item exclusion. These processes resulted in the identification of 13 items that displayed a range of psychometric properties indicative of poor fit with other related sub-scale items. These 13 items were excluded from the scale due to their poor psychometric properties and possible redundancy.

A multifactorial seven-factor model was then tested through Confirmatory Factor Analysis (CFA) using the remaining 44 items. A second order CFA was run with adversity set as a higher factor predicting all seven latent adversity factors. The results revealed that the model was not an acceptable fit with the data, $\chi^2(895) = 3001.48, p < .001, CFI = .86, TLI = .86, RMSEA = .07, \text{estimate } 90\% \text{ CI: } (.07, .08), SRMR = .09$. Examination of the modification indices suggested the inclusion of a correlational pathway between the Work/Life Separation and Inability to Achieve Workplace Respite sub-scales and between the Environmental Threat and Action Consequence sub-scales. These correlational pathways were included, and the revised model was then tested. Although inclusion of correlational pathways increased the model fit, the results indicated that the model was still not an ac-

ceptable fit with the data. Examination of the modification indices, squared multiple correlations and standardized residuals revealed eight, poorly-fitting items. All 8 were omitted from the final WREAS, and a final CFA was conducted using the remaining 36 items. Results indicated that the revised 36-item model was an acceptable fit with the data, $\chi^2(585) = 1526.21, p < .001$, CFI = .92, TLI = .92, RMSEA = .06, estimate 90% CI: (.06, .06), SRMR = .06. The final 36-item WREAS displayed acceptable psychometric properties on full scale, sub-scale, and item levels. Standardized regression weights, standard errors, and significance levels for each of the 36 items comprising the final WREAS are presented in Table 1. Means, standard deviations, theoretical ranges, and Cronbach's alpha for the full scale WREAS and each of the seven sub-scales are presented in Table 2.

Construct Validity for the WREAS

A number of construct validity analyses were conducted in order to provide preliminary evidence of both convergent and discriminant validity for the WREAS.

Convergent Validity. Positive (albeit weak), significant correlations were found between WREAS full-scale scores and both the PSS ($r = .15, n = 368, p < .01$) and the DASS-21 stress sub-scale ($r = .14, n = 366, p < .01$) when examined across the whole sample irrespective of occupational affiliation. Furthermore, when examined solely within the correctional officer sample, these correlations between WREAS scores and both the PSS ($r = .67, n = 37, p < .001$) and DASS-21 stress sub-scale ($r = .40, n = 37, p < .05$) increased substantially in strength. Fisher's r-z transformation was computed to assess whether the difference between correlations for correctional officers and the rest of the sample were significant. Results indicated that there was in fact a significant difference between officers and the rest of the sample in relation to the strength of the correlation between perceived work-related environmental adversity and the PSS, $z = 3.26, p < .01$. No significant difference was identified between officers and the rest of the sample in relation to the strength of the correlation between perceived work-related environmental adversity and the DASS-21 stress sub-scale, $z = 1.28, p > .05$.

Discriminant Validity. Participants' level of education was used as a measure of discriminant validity for the WREAS. As expected, no significant relationship was found between WREAS full-scale scores and respondents' level of education ($p > .05$), providing preliminary evidence of discriminant validity.

Table 1. *Standardized Regression Weights, Standard Errors and Significance Levels for Each of the 36 items of the Work-related Environmental Adversity Scale (WREAS)*

| Item number | β | <i>SE</i> |
|--|---------------------------|------------------|
| Environmental Threat | | |
| Item 1 | .86* | .02 |
| Item 4 | .88* | .01 |
| Item 15 | .86* | .02 |
| Item 24 | .88* | .02 |
| Item 28 | .80* | .02 |
| Item 31 | .90* | .01 |
| Item 34 | .90* | .01 |
| Environmental Unpredictability | | |
| Item 3 | .73* | .03 |
| Item 13 | .87* | .02 |
| Item 19 | .85* | .02 |
| Item 25 | .86* | .02 |
| Item 36 | .88* | .01 |
| Action Consequence | | |
| Item 10 | .66* | .03 |
| Item 12 | .85* | .02 |
| Item 16 | .86* | .02 |
| Item 27 | .78* | .02 |
| Item 30 | .85* | .02 |
| Need for Vigilance | | |
| Item 8 | .74* | .03 |
| Item 20 | .83* | .02 |
| Item 23 | .87* | .02 |
| Item 29 | .77* | .03 |
| Expectation of Workplace Trauma | | |
| Item 2 | .83* | .02 |
| Item 9 | .75* | .02 |
| Item 32 | .93* | .01 |
| Item 33 | .93* | .01 |
| Item 35 | .88* | .02 |
| Inability to Achieve Workplace Respite | | |
| Item 5 | .72* | .03 |
| Item 18 | .88* | .01 |
| Item 21 | .90* | .01 |
| Item 22 | .78* | .03 |
| Item 26 | .88* | .02 |
| Work/Life Separation | | |
| Item 6 | .71* | .03 |
| Item 7 | .80* | .03 |
| Item 11 | .91* | .02 |
| Item 14 | .69* | .03 |
| Item 17 | .76* | .03 |

Note. * = $p < .001$.

Table 2. Means, Standard Deviation, Theoretical Ranges, and Cronbach's Alpha for the Full-scale and each of the Seven Sub-scales of the WREAS

| | <i>M</i> | <i>SD</i> | <i>α</i> | <i>n</i> |
|--|----------|-----------|----------|----------|
| WREAS Full Scale | 3.52 | 1.38 | .97 | 383 |
| WREAS Sub-scales | | | | |
| Environmental Threat | 2.69 | 1.74 | .95 | 428 |
| Environmental Unpredictability | 3.78 | 1.78 | .92 | 427 |
| Action Consequence | 3.58 | 1.85 | .90 | 433 |
| Need for Vigilance | 4.12 | 1.77 | .87 | 427 |
| Expectation of Workplace Trauma | 3.36 | 1.96 | .94 | 432 |
| Inability to Achieve Workplace Respite | 4.23 | 1.63 | .92 | 423 |
| Work/Life Separation | 3.56 | 1.49 | .88 | 430 |

Note. $N = 440$. α = Cronbach's alpha co-efficient.

Occupational Differences on the WREAS

Means and standard deviations for the WREAS scores according to occupational category are presented in Table 3. A one-way, between groups ANOVA was conducted to compare perceptions of work-related environmental adversity across occupational categories. Occupational category was used as the independent variable, while full-scale total scores on the WREAS were used as the dependent variable. Levene's test of Homogeneity of Variances was found to be insignificant ($p > .05$), suggesting equal variance between occupational groups. There was a significant difference between occupational categories in perceived work-related environmental adversity, $F(12, 382) = 28.83$, $p < .001$. Post-hoc comparisons using Tukey's HSD test indicated that correctional officers scored significantly higher than all other occupational categories, with the exception of police and emergency services personnel (see Table 3).

Table 3. Mean Total Scores and Standard Deviations for the 36-item Work-related Environmental Adversity Scale (WREAS) by Occupational Categories

| Occupational Category | <i>M</i> | <i>SD</i> | <i>Range</i> | <i>n</i> |
|--------------------------------|----------|-----------|--------------|----------|
| Correctional officers | 5.36 | .86 | 3.81-6.81 | 37 |
| Police officers | 5.51 | .76 | 4.28-6.64 | 18 |
| Emergency services personnel | 4.87 | .96 | 2.44-6.25 | 19 |
| Military personnel | 3.20* | 1.25 | 1.44-5.39 | 18 |
| Healthcare professionals | 3.96* | 1.07 | 1.42-5.89 | 24 |
| Managerial personnel | 3.03* | 1.02 | 1.28-5.81 | 71 |
| Tradespersons | 3.92* | 1.06 | 1.36-6.64 | 34 |
| Teachers | 3.22* | 1.10 | 1.25-5.33 | 41 |
| Admin/Clerical personnel | 2.56* | .96 | 1.11-4.61 | 31 |
| Sales personnel | 3.01* | 1.14 | 1.11-5.22 | 26 |
| Science and research personnel | 2.57* | .96 | 1.00-4.50 | 25 |
| IT personnel | 2.35* | 1.01 | 1.19-4.81 | 19 |
| Other | 3.02* | .79 | 1.86-4.67 | 20 |

Note. * = Total WREAS mean scores found to be significantly different to correctional officers at $p < .001$ level.

A set of one-way, between groups ANOVA's were then performed to explore differences between occupational groups on each of the seven sub-scales of the WREAS. Means and standard deviations for each of the sub-scales of the WREAS by occupational category are presented in Table 4. Post hoc comparisons using the Tukey's HSD test indicated significant differences were found between correctional officers and other occupational categories on all sub-scales of the WREAS at the $p < .001$ level (see Table 4).

Table 4. Means and Standard Deviations for Each of the Seven Sub-scales of the WREAS by Occupational Category and Significant Differences in Mean Scores between Correctional Officers and all other Occupational Categories

| Occupational Category | ET | EU | AC | NV | WT | WR | WL | n |
|--------------------------------|---------------|--------------|--------------|--------------|---------------|---------------|---------------|-----------|
| Correctional officers | 5.40 | 6.12 | 5.81 | 6.29 | 5.73 | 5.14 | 3.21 | 37 |
| | (1.14) | (.74) | (.98) | (.76) | (1.01) | (1.37) | (1.55) | |
| Police officers | 5.01 | 5.95 | 5.95 | 5.75 | 6.21 | 5.12 | 4.50* | 18 |
| | (1.21) | (1.18) | (1.07) | (.85) | (.87) | (1.16) | (1.30) | |
| Emergency services personnel | 3.46* | 5.64 | 5.66 | 5.69 | 6.09 | 4.74 | 3.89 | 19 |
| | (1.69) | (1.23) | (1.12) | (1.23) | (.97) | (1.68) | (1.38) | |
| Healthcare professionals | 2.76* | 4.43* | 3.83* | 3.97* | 4.88 | 4.45 | 3.76 | 24 |
| | (1.46) | (1.38) | (1.40) | (1.36) | (1.66) | (1.71) | (1.36) | |
| Tradespersons | 3.81* | 4.02* | 5.03 | 4.87* | 3.19* | 3.86* | 3.21 | 34 |
| | (1.34) | (1.28) | (1.24) | (1.21) | (1.28) | (1.38) | (1.40) | |
| Military personnel | 2.41* | 3.35* | 3.61* | 3.95* | 2.77* | 3.44* | 3.09 | 18 |
| | (1.44) | (1.36) | (1.86) | (1.72) | (1.34) | (1.43) | (1.09) | |
| Managerial personnel | 1.79* | 3.11* | 2.51* | 3.44* | 2.54* | 4.28 | 3.85 | 71 |
| | (1.05) | (1.37) | (1.17) | (1.42) | (1.48) | (1.52) | (1.55) | |
| Teachers | 1.89* | 3.36* | 2.88* | 3.94* | 2.40* | 4.58 | 4.22* | 41 |
| | (1.18) | (1.51) | (1.41) | (1.73) | (1.12) | (1.72) | (1.40) | |
| Admin/Clerical personnel | 1.61* | 2.93* | 2.20* | 2.98* | 2.35* | 3.80* | 3.16 | 31 |
| | (1.02) | (1.38) | (1.12) | (1.32) | (1.69) | (1.69) | (1.61) | |
| Sales personnel | 2.38* | 3.18* | 3.27* | 4.07* | 2.64* | 4.51 | 2.96 | 26 |
| | (1.40) | (1.76) | (1.74) | (1.79) | (1.50) | (1.81) | (1.34) | |
| Science and Research personnel | 1.89* | 2.60* | 3.04* | 2.90* | 2.78* | 2.86* | 2.88 | 25 |
| | (1.08) | (1.28) | (1.59) | (1.60) | (1.54) | (1.51) | (1.29) | |
| IT personnel | 1.53* | 2.40* | 2.02* | 2.99* | 1.95* | 3.43* | 3.11 | 19 |
| | (.89) | (1.41) | (1.08) | (1.76) | (1.40) | (1.57) | (1.59) | |
| Other | 1.99* | 3.00* | 2.65* | 3.42* | 2.24* | 4.19 | 4.09 | 20 |
| | (.95) | (1.52) | (1.27) | (1.53) | (1.54) | (1.09) | (1.15) | |

Note. * = WREAS sub-scale mean scores found to be significantly different for correctional officers at $p < .001$ level. ET = environmental threat, EU = environmental unpredictability, AC = action consequence, NV = need for vigilance, WT = expectation of workplace trauma, WR = inability to achieve workplace respite, WL = workplace/life separation.

DISCUSSION

This study provides a number of unique contributions to the existing literature on occupational well-being, especially with regard to correctional officers. First, it offers the possibility of a new self-report instrument capable of quantifying an individual's perception of adversity within their working environment. Second, the results provide a preliminary examination of the psychometric properties of the WREAS as well as identifying a number of specific sub-components related to perceived workplace adversity (e.g., envi-

ronmental threat, need for vigilance). The results also provide empirical support for the hypothesis that correctional officers perceive their working environment as more adverse than those working in a number of other professions and analogous to those working within other high-risk professions, such as police and emergency services. The present study also provides a deeper understanding of the specific adversity factors that may lead correctional officers to perceive their working environment as particularly challenging. Finally, the findings offer some preliminary evidence that perceptions of workplace adversity may be more strongly associated with reported stress reactions for officers than those in other general community professions.

Psychometric Properties of the WREAS

Overall, the psychometric properties of the 36-item WREAS appear to be largely satisfactory. In terms of reliability, the total scale and each of the seven sub-scales were found to be internally consistent. Confirmatory Factor Analysis indicates that the proposed theoretical model was a reasonable fit for the data. In terms of validity, the WREAS displayed acceptable criterion validity values. As predicted, a significant (albeit weak) positive correlation was identified between WREAS scores and scores on both the PSS and the stress sub-scale of the DASS-21. However, these results were reflective of the type of tangential relationship assumed to exist between perceived work-related environmental adversity and self-reported stress reactions. Work-related adversity is likely to be only one of numerous factors that contribute to the development of stress reactions in employees, which may explain the weakness of the observed correlation between WREAS scores and existing measures of perceived stress. Furthermore, the fact that respondents working within high-risk work environments (i.e., correctional officers, police, and emergency service workers) scored high on the WREAS provides further evidence of the validity of the instrument. Finally, in line with predictions, preliminary evidence of discriminant validity also was attained through demonstrating no significant relationship between WREAS scores and respondent's level of education.

Occupational Differences

Comparing levels of perceived work-related environmental adversity between correctional officers and other occupational categories provided several valuable insights. When compared at the full-scale level, correctional officers scored significantly higher on the WREAS than all other occupational categories assessed, with the exception of police and emergency services personnel. These findings provide support for the hypothesis that correctional officers perceive significantly more work-related environmental adversity than those in other general community occupational roles. Furthermore, these findings are consistent with past research (see e.g., Kunst, 2011) and with current available industry statistics (see e.g., Bureau of Labor Statistics, 2014) that identify the occupation as one that often involves high levels of risk to personal safety.

It is particularly notable that correctional officers scored significantly higher than military personnel on the full-scale and all seven sub-scales of the WREAS. In fact, examination of mean scores across occupational categories indicated that military personnel scored more similarly to that of the general community than any of the high-risk occupation-

al categories assessed such as police, emergency service workers, and correctional officers. These findings are inconsistent with past research that has indicated that military personnel demonstrate heightened prevalence rates of stress-related illnesses (Hourani, Williams, & Kress, 2006) and are prone to experience adverse and traumatic events within their working environment. Although there are several potential factors that may have contributed to this unexpected finding it is most likely due to sampling issues. Of the 18 military personnel sampled in the study, 14 had not been deployed to a theatre of war or engaged in war-like service. This provides important contextual information and a potential explanation for the relatively low WREAS scores attained for military personnel. It is likely that the duties of military personnel when not deployed may resemble the duties found in other community occupations, such as those found in administrative or office-based occupational roles.

The results of the current study provide evidence that correctional officers perceive a significantly heightened level of work-related environmental adversity compared to those working in other general community occupations and akin to those working in police and emergency service sectors. Furthermore, it should be noted that the correlations between WREAS scores and established measures of physical and psychological manifestations of stress were significantly stronger for correctional officers than for the rest of the sample. These findings further highlight the need for industry-based training and provide the foundations for an evidence-based rationale for the implementation of preventative psychological training programs aimed at addressing the effects of workplace adversity within the correctional industry.

The rationale for the implementation of such programs is strengthened by the fact that similar initiatives already function within other occupational groups found to perceive high levels of work-related environmental adversity (i.e., police and emergency services). For instance, in 2009 the US Army established the \$125 million dollar Comprehensive Soldier Fitness (CSF) program, which was quickly adopted as part of standard soldier training. The goal was to address the high prevalence of mental illness amongst US Army personnel introducing a preventative approach that encouraged the development of mental wellness through fostering psychological resilience (Casey, 2011). Since the implementation of the CSF program, other military institutions have implemented their own resilience-based training programs (Bowles & Bates, 2010; Morgan & Garmon Bibb, 2011). For example, after a comprehensive independent review of mental health issues within the Australian Defence Force (ADF; Dunt, 2009), the Australian government committed \$83 million dollars to a four-year mental health reform (Department of Defence, 2009). The review stipulated that the Mental Health Strategy should specifically include components of preventative resilience training. In response, the ADF expanded their "BattleSMART," Self-Management and Resilience Training program to improve the psychological resilience of ADF members (Boer, 2009). The correctional industry may benefit from considering the implementation of similar, evidence-based, preventative, training programs designed specifically for correctional settings (Trounson & Pfeifer, in press).

The sub-scale level results outlined in the present study also provide valuable insight into how correctional officers view their work environment and the specific factors

that may contribute to their heightened perception of work-related environmental adversity. The findings suggest that correctional officers perceive their work environment as being both highly threatening and unpredictable. Furthermore, correctional officers appear to perceive their work environment as one in which they are highly likely to experience traumatic events and one which warrants a heightened level of both constant vigilance and extreme caution in relation to their actions. Moreover, correctional officers endorsed these perceptions more strongly than those in other general community occupational roles. In contrast, the differentiation between correctional officers and those working within general community occupational roles was far less clear with regard to both their perception of their ability to achieve workplace respite at work, and their ability to effectively separate their work and home lives.

These findings may have a number of important implications for the development of interventions designed to assist correctional officers to manage perceived work-related environmental adversity. For example, training programs designed for correctional officers may benefit from either directly addressing, or addressing the negative effects of, employees' perceptions of workplace threats, their perception of environmental unpredictability, and their heightened expectation of experiencing workplace trauma. It should be noted, however, that although correctional officers scored more similarly to the general public on both the Work/Life Separation and Inability to Achieve Workplace Respite sub-scales, both were found to be associated with the self-reporting of stress reactions within the correctional officer sample. This suggests that both factors still may be important to address in the development of proactive psychological training programs, despite officers scoring similarly to those in the greater community. Furthermore, although correctional officers scored particularly high on the Need for Vigilance sub-scale, it was not significantly associated with self-reported stress reactions, suggesting that the need for hyper-vigilance may not be an effective target for preventative training programs.

There were a number of limitations inherent in the present study that warrant acknowledgement. Although the PSS and stress subscale of the DASS-21 were included as convergent validity measures, it may have been appropriate to also include an established measure of work stress to assist with further establishing the convergent validity of the WREAS, and future research should address this. Secondly, as the current study predominantly sampled non-deployed military personnel as compared to deployed personnel actively engaged in war-like duties, comparisons between correctional officers and military personnel should be interpreted with a high degree of caution.

Further research is warranted that can examine differences in perceived work-related environmental adversity between military personnel engaged in war-like services and those non-deployed military personnel to provide a deeper understanding of the association between deployment and workplace adversity in a military context. Moreover, further research providing a comprehensive examination of the unique psychometric properties of the 36-item WREAS would be useful. In addition, further research examining intra-occupational differences in work-related environmental adversity would be a welcome addition to the literature. For example, an exploration of the impact of proximity to inmates on both

full-scale and sub-scale WREAS scores within correctional officer samples may prove a valuable extension of the current study.

In conclusion, this research has provided new insight into the ways in which the working environment of correctional officers may differ from the working environments of other professions found within the general community. It demonstrated that correctional officers perceive a heightened level of work-related environmental adversity compared with those in other professions and akin to that observed in police and emergency service workers. It has also provided a deeper understanding of the types of factors that may underpin the work-related environmental adversity perceived by correctional officers. Furthermore, this study provides the scientific community with a new self-report questionnaire capable of measuring an individual's perception of work-related environmental adversity. It is hoped that the results of this study will encourage a deeper exploration of work-related environmental adversity and provide an evidence-based rationale for the development and implementation of preventative, psychological training programs aimed at assisting correctional officers to better manage the adversity they face in the workplace.

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