Unwanted Workplace Experiences DEOCS 4.1
Construct Validity Summary

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Background

In 2014, the Defense Equal Opportunity Management Institute (DEOMI) released the DEOMI Organization Climate Scale (DEOCS) 4.0 for military and civilian members in the Department of Defense. DEOMI initiated development of DEOCS 4.1 in May 2016. This effort includes various updates to improve climate factors and individual items on the DEOCS. While DEOCS 4.0 does include scales that target some forms of unwanted workplace experiences (e.g. sexual harassment, discrimination, sexual assault), the Sexual Assault Prevention and Response Office (SAPRO) requested RAND Corporation to develop a new scale that could be used in DEOCS 4.1.

The following describes an abbreviated version of the original RAND Military Workplace Study (RMWS) Sexual Harassment Scale. RAND developed a subset of four-item, five-item, and six-item scales from the original measure. The purpose of these abbreviated scales is to provide a more succinct method for identifying perceptions of unwanted experiences in the workplace[1]. For DEOCS 4.1, the frequency of affirmative responses will be used to indicate the number of unwanted workplace experiences.

Based on the recommendations provided by RAND, DoD SAPRO and researchers at DEOMI determined that the five-item scale would be the best for use on the DEOCS. The shortened scale measures experiences associated with sexual misconduct (Morral, Gore, & Schell, 2014), and is hereafter referred to as the Unwanted Workplace Experiences Scale. The experiences assessed in the scale were derived from DoD Directive 1350.2, and are listed below.

- *Sexually hostile work environment*: a workplace characterized by persistent or severe unwelcome sexual advances, or verbal or physical conduct that offends service members
- *Sexual quid pro quo*: incidents in which someone uses his or her power or influence within the military to attempt to coerce sexual behavior in exchange for a workplace benefit
- *Gender discrimination*: incidents in which service members are subjected to mistreatment on the basis of their gender that affects their employment conditions

Minor changes were made to the items to accommodate the general timeline in which the DEOCS is administered (e.g., rather than providing a specific date for the respondents to base their responses, we asked them to base their responses on "the last 12 months"). To see a detailed account of the development of the original measure and its abbreviated versions, please refer to the Volume 1 Design of the 2014 RMWS (Morral et al., 2014).

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[1] Although RAND developed these items with the intention of measuring prevalence of experiences, the different sampling methodology used for the DEOCS indicates that the results of these items from the DEOCS should **only** be interpreted as a general heuristic of unit members' perceptions of these experiences.

Data Analysis

The purpose of this study is to determine if the Unwanted Workplace Experiences measure is a psychometrically sound instrument within DEOMI's typical sample[2]. Therefore, the remaining sections contain information on the data analysis performed on the five item measure. These include the sample description, item descriptive statistics, reliability analysis, item frequencies, principal component analysis, and aggregation statistics. The results of additional analyses of the RMWS can be examined within Morral et al. (2014). DEOMI will also conduct additional analyses (e.g., validation, aggregation of full units) following administration of DEOCS 4.1.

Sample

This section shows the demographic characteristics of the respondents who completed the Unwanted Workplace Experiences items piloted on the DEOCS September 14 – 20, 2016. These items were tested on a recent sample of individuals following their participation on the DEOCS ($n = 12,305$) using a dichotomous Yes/No scale (1=yes, 2=no). See Table 1 for further information regarding the Service affiliation and other demographic details of the sample. The variables are displayed according to the individual respondents' selections (except for branch of Service, which is reported by the organization's survey administrator). Table 2 presents the items that were tested.

Table 1.
Sample Demographics of the Unwanted Workplace Experience Items Piloted on DEOCS

	n	%
Branch of Service		
Army	4,437	36%
Navy	3,345	27%
Marine Corps	1,675	13.6%
Air Force	1,604	13%
Coast Guard	102	0.8%
National Guard	718	5.8%
Component		
Active Duty	7,065	83.9%
Reserve	1,358	16%
Gender		
Male	9,172	74.5%
Female	3,133	25.5%
Employment Type		
Military	9,229	77%

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[2] The DEOCS is a management tool that allows Commanders to assess critical organizational climate dimensions that can impact the organization's effectiveness as well as meet policy requirements. It is a confidential, command-requested organizational development survey used to assess the shared perceptions of an organization's members. Commanders are required by the NDAA FY13 to administer the DEOCS to their units within 120 days of taking command and annually thereafter while in command of that unit. Therefore, all unit members are given the opportunity to complete the DEOCS, making the DEOCS a census sample collected on an annual basis.

	n	%
Civilian	2,722	22%
Seniority		
Junior Enlisted (E1 – E3)	1,625	17.6%
Non-Commissioned Officer (E4 – E6)	4,546	49.3%
Senior Non-Commissioned Officer (E7 – E9)	1,196	13%
Junior Officer (O1 – O3)	1,082	11.7%
Senior Officer (O4 and above)	780	8.5%

Table 2.
Proposed Items for DEOCS 4.1

Item
1. While under your current senior leader within the last 12 months, did someone from your workplace:

    a. Repeatedly tell sexual "jokes" that made you uncomfortable, angry, or upset?

    b. Embarrass, anger, or upset you by repeatedly suggesting that you do not act like a man/woman is supposed to? For example, if you are a male, being called "a woman, a fag, or gay"; if you are a female, being called "a dyke, or butch."

    c. Make repeated sexual comments about your appearance or body that made you uncomfortable, angry, or upset?

    d. Make attempts to establish an unwanted romantic or sexual relationship with you? These could range from repeatedly asking you out for coffee to asking you for sex or a 'hook-up'.

    e. Intentionally touch you in a sexual way when you did not want them to? This could include touching your genitals, breasts, buttocks, or touching you with their genitals anywhere on your body.

Descriptive Statistics and Reliability

This section provides descriptive statistics and reliability for the items. Table 3 presents the descriptive statistics. Kuder-Richardson 20 (KR20; Kuder & Richardson, 1937) was used to obtain the reliability for the scale instead of traditional reliability statistics, because these items use a dichotomous (i.e., coded zero or one) rather than continuous scale. The means for the items range from 1.95 to 1.98, with adequate internal consistency ($\rho_{KR20} = .81$). Upon reviewing the alpha if item deleted results, no items displayed negative item-total correlations or reduced the scale alpha below an acceptable range; thus, all five items were retained. Table 4 provides additional information regarding the reliability of the items. Table 5 provides the frequency of responses.

Table 3.
Item Statistics for Unwanted Workplace Experience

	M	*SD*	Skewness	Kurtosis
While under your current senior leader within the last 12 months, did someone from your workplace:				
a. Repeatedly tell sexual "jokes" that made you uncomfortable, angry, or upset?	1.95	0.21	-4.21	15.70
b. Embarrass, anger, or upset you by repeatedly suggesting that you do not act like a man/woman is supposed to? For example, if you are a male, being called "a woman, a fag, or gay"; if you are a female, being called "a dyke, or butch."	1.96	0.21	-4.42	17.55
c. Make repeated sexual comments about your appearance or body that made you uncomfortable, angry, or upset?	1.97	0.18	-5.19	24.91

d. Make attempts to establish an unwanted romantic or sexual relationship with you? These could range from repeatedly asking you out for coffee to asking you for sex or a 'hook-up'.	1.98	0.15	-6.25	37.04
e. Intentionally touch you in a sexual way when you did not want them to? This could include touching your genitals, breasts, buttocks, or touching you with their genitals anywhere on your body.	1.98	0.15	-6.21	36.61

Table 4.
KR-20 Alpha if item deleted

	Scale *M* if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Alpha if Item Deleted
While under your current senior leader within the last 12 months, did someone from your workplace:				
a. Repeatedly tell sexual "jokes" that made you uncomfortable, angry, or upset?	7.87	0.29	.59	0.78
b. Embarrass, anger, or upset you by repeatedly suggesting that you do not act like a man/woman is supposed to? For example, if you are a male, being called "a woman, a fag, or gay"; if you are a female, being called "a dyke, or butch."	7.87	0.31	.57	0.79
c. Make repeated sexual comments about your appearance or body that made you uncomfortable, angry, or upset?	7.86	0.31	.67	0.76
d. Make attempts to establish an unwanted romantic or sexual relationship with you? These could range from repeatedly asking you out for coffee to asking you for sex or a 'hook-up'.	7.85	0.34	.62	0.78
e. Intentionally touch you in a sexual way when you did not want them to? This could include touching your genitals, breasts, buttocks, or touching you with their genitals anywhere on your body.	7.85	0.35	.60	0.78

$\rho_{KR20} = .81$

Table 5.
Frequencies of Unwanted Workplace Experiences

	Yes		No	
	Yes	%	No	%
While under your current senior leader within the last 12 months, did someone from your workplace:				
a. Repeatedly tell sexual "jokes" that made you uncomfortable, angry, or upset?	596	4.8%	11,709	95.0%
b. Embarrass, anger, or upset you by repeatedly suggesting that you do not act like a man/woman is supposed to? For example, if you are a male, being called "a woman, a fag, or gay"; if you are a female, being called "a dyke, or butch."	547	4.4%	11,758	95.6%
c. Make repeated sexual comments about your appearance or body that made you uncomfortable, angry, or upset?	412	3.3%	11,893	96.7%
d. Make attempts to establish an unwanted romantic or sexual relationship with you? These could range from repeatedly asking you out for coffee to asking you for sex or a 'hook-up'.	293	2.4%	12,012	97.6%
e. Intentionally touch you in a sexual way when you did not want them to? This could include touching your genitals, breasts, buttocks, or touching you with their genitals anywhere on your body.	296	2.4%	12,009	97.6%

Principal Component Analysis

Principal component analysis (PCA) was conducted on the five Unwanted Workplace Experience items. Two measures to test fit between the data and the PCA were utilized. The Bartlett Test of Sphericity (BTS; Snedecor & Cochran, 1983) examines the hypothesis that the correlation matrix is an identity matrix. The obtained value of this test statistic for sphericity was large, and the associated significance level was small (X^2 (10) = 20,054.49; $p < .00$). This allows us to reject the null hypothesis that the correlation matrix is an identity and to conclude that the factor analysis is an appropriate method to utilize for these data (Norusis, 1993). The Kaiser Meyer-Olkin (KMO) measure of sampling adequacy (Kaiser & Rice, 1974) was also used to compare the sum of the squared correlation coefficients and the squared partial correlation coefficients. The obtained statistic was .83, indicating a very good fit, and suggests that a factor analysis is an appropriate statistical method to utilize for analyzing these data.

The PCA yielded a one factor solution, which suggests that the theoretical definition of Unwanted Workplace Experiences as a single construct is supported. Refer to Table 6 for more information.

Table 6.
Principal Component Analysis Pattern Matrix of Unwanted Workplace Experience Items

Items	Component 1
While under your current senior leader within the last 12 months, did someone from your workplace:	
a. Repeatedly tell sexual "jokes" that made you uncomfortable, angry, or upset?	.74
b. Embarrass, anger, or upset you by repeatedly suggesting that you do not act like a man/woman is supposed to? For example, if you are a male, being called "a woman, a fag, or gay"; if you are a female, being called "a dyke, or butch."	.72
c. Make repeated sexual comments about your appearance or body that made you uncomfortable, angry, or upset?	.81
d. Make attempts to establish an unwanted romantic or sexual relationship with you? These could range from repeatedly asking you out for coffee to asking you for sex or a 'hook-up'.	.78
e. Intentionally touch you in a sexual way when you did not want them to? This could include touching your genitals, breasts, buttocks, or touching you with their genitals anywhere on your body.	.77

Note. All items loaded on to one factor.

ICC

This section provides the demographic characteristics of the sample of individuals used for the aggregation statistics. These individuals belong to units[3] containing 16 or more

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[3] There are two important caveats specific to the DEOCS methodology and this particular data collection: (1) The DEOCS typically remains open for 21 to 30 days, and this data collection is representative of individuals who completed the research blocks of the DEOCS between 14 September 2016 and 20 September 2016; therefore, the sample reflects partial units/organizations. (2) Respondents are aggregated to the unit-level through a grouping

individuals (n of units = 146). The Service branches for each unit were selected by the survey administrator. The Service branch representation of this sample includes: 29% Army (n = 1,568), 34.9% Navy (n = 1,884), 19.9% Marine Corps (n = 1,074), 6.9% Air Force (n = 372), 2.4% Joint Command (n = 127), 0.8% Coast Guard (n = 44), and 6.2% National Guard (n = 335). The majority of respondents are male (n = 4,109; 76%).

Intraclass correlations were calculated to determine the amount of variance that can be explained by the unit (LeBreton & Senter, 2008). In other words, *ICC(1)* explains the total variance that can be explained by group membership. Thus, an *ICC(1)* of 0.10 can be interpreted as 10% of the variability in individual's responses can be explained by group membership (Bliese, 2000). *ICC(1)* can be interpreted similarly to effect size, with a value of 0.01 considered a "small" effect, a value of 0.10 considered a "medium" effect and a value of 0.25 considered a "large" effect (LeBreton & Senter, 2008).

A small to medium effect was found for the items, suggesting that 5% of an individual's responses can be attributed to unit membership. *ICC(2)* is an estimate of the reliability of the group means (Bliese, 2000). Thus, an *ICC(2)* indicates whether groups can be reliably differentiated based on the group mean. Although there are no strict standards of acceptability for *ICC(2)* values, Glick (1985) recommended an *ICC(2)* cutoff of .60; the obtained *ICC(2)* score was .57.

The discriminant power of the Unwanted Workplace Experience scale was assessed using one-way Analysis of Variance (ANOVA) procedures. Hays (1981) suggests that an F ratio > 1.00 provides the minimal evidence for differences across groups. Within the current sample, the F ratio across units exceeded this criterion [F (195, 5403) = 2.31, p < .01].

Thus, taken together, the pattern of the interrater agreement indices and results of the one-way ANOVA provide initial support for aggregating these data to the unit level. Aggregation statistics will be further explored once we acquire additional DEOCS 4.1 data following its release.

Conclusion

The results from the above analyses of data piloted on the DEOCS suggest that the items adapted from the abbreviated RMWS Sexual Harassment Scale provide a reliable unidimensional scale. To see a detailed account of the development of the 2014 RMWS, see Morral et al. (2014). The objective for placing these items on the DEOCS 4.1 is to use them as a general heuristic of unit members' perceptions of these experiences. Future analyses (e.g., validation) will be conducted following administration of the DEOCS 4.1. The Unwanted Workplace Experience items displayed above in Table 2 were not modified following these analyses, and will be used as written in DEOCS 4.1.

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variable that can identify who belongs to which unit, and these units vary in size. For example, Commanders in the Air Force requesting the DEOCS may oversee a single Squadron, Group, or Wing. Therefore, a unit may comprise multiple commands. Due to these limitations, the fidelity of the aggregation statistics presented in the current paper may attenuate aggregation statistics (Ehrhart, Schneider, & Macey, 2014).

References

Agle, B. R., Sonnenfeld, J. A., & Srinivasan, D. (2006). Does CEO charisma matter? An empirical analysis of the relationships among organizational performance, environmental uncertainty, and top management team perceptions of CEO charisma. *Academy of Management Journal, 49*(1), 161-174.

Bliese, P. D. (2000). Within-group agreement, non-independence, and reliability: Implications for data aggregation and analysis. *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions*. K. J. Klein and S. W. J. Kozlowski (Eds.). San Francisco, CA: Jossey-Bass.

Burke, M. J., & Dunlap, W. P. (2002). Estimating interrater agreement with the average deviation index: A user's guide. *Organizational Research Methods*, *5*(2), 159-172.

Ehrhart, M.G., Schneider, B., & Macey, W.H. (2014). *Organizational Climate and Culture*. New York, NY: Routledge.

Glick, W. H. (1985). Conceptualizing and measuring organizational and psychological climate: Pitfalls in multilevel research. *Academy of Management Review, 10*, 601-616.

Harvey, R. J., & Hollander, E. (2004). Benchmarking rwg interrater agreement indices: Let's drop the .70 rule of-thumb. Paper presented at. *The Annual Conference of the Society for Industrial and Organizational Psychology*.

Hays, W. L. (1981). *Statistics*. New York: Holt, Rinehart, & Winston.

Kaiser, H.F., & Rice, J. (1974). Little Jiffy, Mark IV. *Educational and Psychological Measurement, 34*, 111 -117.

Kuder, G. F., & Richardson, M. W. (1937). The theory of the estimation of test reliability. *Psychometrika, 2*, 151–160.

LeBreton, J. M., & Senter, J. L. (2008). Answers to 20 questions about interrater reliability and interrater agreement. *Organizational Research Methods, 11*(4), 815-852.

Morral, A. R., Gore, K. L., & Schell, T L. (2014). The 2014 RAND military workplace study. *Sexual Assault and Sexual Harassment in the U.S. Military.* Santa Monica, CA: RAND Corporation.

Norusis, M.J. (1993). SPSS for Windows Base System User's Guide Release 6.0, SPSS Inc.

Snedecor, G. W., & Cochran, W. G. (1989). *Statistical Methods*, Eighth Edition, Iowa State University Press.