Secondary Publication

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The effect of occupational status on health : Putting the social in socioeconomic status

Date of secondary publication: 17.10.2025

Version of Record (Published Version), Article

Persistent identifier: urn:nbn:de:bvb:473-irb-110867x

Primary publication

Combs, Aidan; Freeland, Robert E.; Hudak, Katelin M. Alfaro; Mumford, Elizabeth A. (2023): The effect of occupational status on health : Putting the social in socioeconomic status, in: Heliyon, London [u.a.]: Elsevier, Vol. 9, Nr. 11, e21766, pp. 1–10, doi: 10.1016/j.heliyon.2023.e21766.

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Heliyon 9 (2023) e21766

Contents lists available at ScienceDirect

Heliyon

journal homepage: www.cell.com/heliyon

The effect of occupational status on health: Putting the social in socioeconomic status

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ARTICLE INFO

Keywords:
Socioeconomic status
Social psychology
Occupations
Affect control theory
United States
Law enforcement

ABSTRACT

High status occupations support positive health outcomes through providing access to both material and psychosocial resources. However, common measures of occupational status such as occupational prestige scores fail to capture cultural esteem that certain occupations can provide because they are primarily associated with the material dimensions of status, like income. Drawing on Weberian conceptions of status and a body of social psychological research on the measurement of cultural meaning, we argue that measuring people's ratings of their occupations on three dimensions—evaluation (good/bad), potency (powerful/weak), and activity (active/inactive)—provides an occupational status indicator that more fully captures psychosocial resources like esteem that are associated with health than more commonly used occupational prestige scores. Using a nationally representative longitudinal health and wellbeing survey of 940 American law enforcement officers collected between 2020 and 2022, we evaluate the predictive ability of evaluation, potency, and activity (EPA) ratings across thirteen measures of health and wellbeing. We find that EPA ratings were significant and positive predictors of eleven of thirteen outcomes with stronger effects for mental health outcomes compared to physical health outcomes. EPA ratings were more predictive than more commonly used occupational prestige scores. We conclude that EPA ratings are better predictors of health outcomes than occupational prestige scores and so may allow health researchers to better understand the relationship between occupational status and health.

1. Introduction

Socioeconomic status (SES), typically operationalized using a combination of indicators of income, education, and occupational status, is considered a fundamental cause of physical and mental health and wellbeing [1]. It is associated with shorter life expectancy [2], increased rates of depression [3], and higher morbidity and mortality across a wide range of conditions [4]. Occupation is commonly used as an indicator of SES in studies of the effects of SES on health because occupations are tied to material resources that support health, such as income and health coverage [5]. However, growing evidence finds that material resources are not the primary

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https://doi.org/10.1016/j.heliyon.2023.e21766
Received 11 September 2023; Received in revised form 26 October 2023; Accepted 27 October 2023
Available online 28 October 2023
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driver of health and wellbeing [6,7]. Occupations can also affect health through psychological processes such as job stress. They also provide access to health-promoting psychosocial resources [8] including subjective assessments of social status [9], control [10], and organizational justice [11]. Measures of occupational status are commonly employed as a component of SES measures in order to capture these subjective assessments of social standing.

Occupational prestige scores have been a predominant method of operationalizing the social aspect of occupations. Research has identified two issues with this approach. First, despite being commonly used to operationalize the social aspects of occupations [12,13], occupational prestige scores do not reflect subjective estimates of social esteem but instead primarily reflect occupational prerequisites and material rewards, especially education and income [14–16]. Second, prestige scores have traditionally been conceptualized and presented as a macro-level indicator by averaging the perceptions of individual respondents to the level of the occupation [17] with the explicit intent to "purge our prestige scores of variation related to differences among the raters."[18,4]. But recent research has shown that this approach misses much significant individual-level variation [19–22].

This research suggests that to better capture the complex mix of material and psychosocial factors linking occupations to health, an ideal occupational status indicator should directly operationalize the cultural esteem workers feel their occupational identities afford them. Consequently, we offer EPA ratings, a multidimensional semantic differential scale used extensively in social psychology to quantify cultural sentiments along three dimensions—evaluation (good vs. bad), potency (bad vs. good), and activity (active vs. quiescent)—as a predictor of health and wellbeing [23]. We demonstrate the utility of this approach by using EPA ratings to predict a wide range of mental and physical health outcomes in a recent, nationally representative, longitudinal study of law enforcement officers. This data set gives us the unique opportunity to test the predictive utility of occupational EPA ratings for health. We compare the predictive utility of EPA ratings to that of officers' assessments of their occupational prestige. Results demonstrate that not only do officers' EPA ratings significantly predict a wide range of health and wellbeing outcomes, but they do so better than prestige evaluations. By offering a measure that better captures the underlying social dimensions of occupational status, this study offers health researchers new methodological and theoretical tools for understanding the link between perceived cultural status positions and a wide range of health outcomes.

1.1. Affect control theory and EPA ratings

Weber [24] famously theorized that there are three related but independent bases of power: economic or class power, political power, and status. He defined status as a form of symbolic social power rooted in cultural evaluations of esteem that lead to structured relations of deference [24]. Although status meanings are often tied to occupational class positions, status hierarchies emerge at the level of interpersonal interaction where perceptions of esteem, respect, and honor for self and others lead to structured relations of superiority and deference that condition behaviors, evaluations, and emotional responses [25]. Given the relationship between individual beliefs and their cumulative effects, status scholars contend that understanding status requires examining how "processes at the micro level work together with those at the macro level to create the mutually sustaining patterns of inequality among social groups"[26,12].

In this study, we use affect control theory (ACT), a formal, mathematical theory of cultural, identity, and behavior, and its measurement model, EPA ratings, to quantify cultural sentiments and their association with a range of health outcomes [27,28]. Rooted in the symbolic interactionist tradition, ACT uses quantitative ratings of identities, behaviors, and emotions and impression formation equations to predict the behaviors and emotional responses for actors during social interactions [29]. Interactions, and the corresponding equations that describe them, are structured in an actor-behavior-object format to reflect the simple subject-verb-object grammar. Widely shared cultural meanings for all interaction elements, including actors, behaviors, and emotions, are quantified along three universal affective dimensions: evaluation (good vs. bad), potency (powerful vs. weak), and activity (active vs. passive) [30].

EPA ratings have the potential to provide novel insights into the relationship between occupational status and health because they are both descriptive and prescriptive. Descriptively, people's individual-level subjective assessments provide a quantitative indicator of their location within their cultural landscape that can be used to predict a broad range of conditions and outcomes [31,32]. They are prescriptive in that cultural sentiments provide shared social expectations to workers and others for what is considered appropriate behavior and emotional responses during interactions. ACT theorizes that cultural meanings condition behaviors because people will perform behaviors that are consistent with the EPA dimensions associated with their identities. For example, if a person views themselves as highly potent, they will perform similarly potent actions such as commanding or leading. Similarly, sentiments structure how people are expected to emotionally respond to situations. Positive self-sentiment can bolster positive affect, reduce the degree to which people internalize negative interactions, and possibly moderate stress associated with negative interactions in ways not available to those who see themselves more negatively [33].

For example, if police commanders and line officers understand that the role of a commander is expected to have greater evaluation, potency, and activity compared to a line officer, these shared meanings would orient their behavior towards one another. For instance, the commander's higher potency self-perception should lead commanders to perform actions that display or require power more often, like leading, instructing, and ordering, which can foster positive feeling associated with powerful, agentic actions. If discrepancies should occur—such as a line officer acting disrespectfully—commanders can draw on these meanings to conclude that it was the line officer was the one out of line with expectations. Instead of internalizing the disrespectful interaction, in other words, the commander could more easily attribute it to the line officer.

In addition, EPA ratings have the potential to be useful in examining a wide range of outcomes because of their quantitative, universal structure. Because EPA ratings are quantitative, they enable sentiments to be directly modeled while controlling for other

conflating factors. Unlike theory or culture specific measures, EPA ratings were developed from cross-cultural research that sought to identify fundamental, universal dimensions of meaning [34,35]. In other words, evaluation, potency, and activity are the primary dimensions from which social reality is constructed and more theory- and context-specific concepts are built [36]. This means that EPA dimensions are not discrete concepts tied to any specific theory but factors in abstract cultural meaning space able to span concepts across a wide range of theories. For example, Rogers et al. [37] demonstrate that evaluation and potency capture much of the semantic content of warmth and competence used to operationalize meanings within the stereotype content model. In addition, its universality has not only enabled extensive cross-cultural research [38–40] but has also allowed it to be used across a wide range of subjects from crime [41] and deviance [42] to sexuality [43] and consumerism [44] and—of particular relevance for this study—both occupational status [14,45,46] and mental health [31,47]. More extensive lists of research can be found in Robinson and Smith-Lovin (2018) [23] and the 2023 special double issue of the American Behavioral Scientist devoted to ACT [48].

2. Data and methods

To examine associations between EPA ratings and wellbeing, we use data from the Officer Safety and Wellness (OSAW) Initiative, a longitudinal, nationally representative survey of law enforcement and correctional officers focusing on health and wellbeing [49]. This is an ideal data set for several reasons. First, it includes measures of EPA, occupational prestige, an extensive set of physical and mental health outcomes, and individual sociodemographic characteristics and occupational features, allowing us to investigate the link between status and wellbeing while controlling for a broad range of confounding factors. Second, this data set provides the unique opportunity to investigate these relationships within a group of people who share an occupation. This allows us to disentangle the effects of EPA and prestige perceptions, which vary substantially within our sample [50], from the effects of job requirements and material resources and rewards, which vary much less within the sample than between people in different occupational categories. Public debate regarding the cultural meaning and value of the law enforcement profession during the study period (January 2020–March 2022) likely increased variation of law enforcement officer (LEO) EPA and prestige perceptions. This, when combined with the particular salience of status and respect for LEOs, makes law enforcement a particularly useful occupation to select for the purpose of testing the associations of occupational EPA ratings and health outcomes. In addition, studying the impact of cultural meanings on LEO wellbeing is of particular practical importance given current public discourse around, recent policy changes regarding, and staffing challenges within law enforcement agencies [51,52].

OSAW was a collaborative project between the NORC at the University of Chicago and the Police Executive Research Forum. Researchers identified the sample using a two-stage approach. First, researchers selected a representative sample of law enforcement agencies across the US, including municipal, county, Bureau of Indian Affairs, and state police/highway patrol agencies, and requested rosters of all full-time sworn officers. Next, researchers randomly selected officers from each agency, sampling from each roster according to agency size. Female officers were oversampled 2:1. The study design and survey instruments were reviewed and approved by the NORC at the University of Chicago's Institutional Review Board. Participating LEOs were fully informed regarding the study and

Table 1
Demographic and job characteristics of LEOs. Weighted proportions are provided in parentheses. Variables for which values are only given for the 2020 wave are constant across both waves.

	2020	2021
Gender identity		
Female	251 (0.21)	
Male	689 (0.79)	
Ethnoracial identity		
White	708 (0.82)	
Black	79 (0.05)	
Latino/a	93 (0.08)	
Multiracial or other	59 (0.05)	
Rank		
Line officer	568 (0.58)	532 (0.53)
Supervisor	199 (0.2)	196 (0.19)
Commander	173 (0.22)	184 (0.24)
Other	0 (0)	27 (0.04)
Years as a sworn LEO		
0-5	80 (0.09)	76 (0.08)
6-10	123 (0.14)	120 (0.13)
11-15	160 (0.17)	132 (0.13)
16-20	199 (0.19)	179 (0.18)
21+	377 (0.41)	428 (0.47)
Department size		
Small	179 (0.36)	
Medium	46 (0.1)	
Large	715 (0.54)	
Total		
	940	940

provided consent to participate. Full detail is provided by Mumford et al. [49].

We use data from two waves of the OSAW Initiative. All independent and dependent variables were measured in both waves. Officers were initially surveyed in 2020 (January 2020 through January 2021) and resurveyed in 2021 (February 2021 through March 2022). Our final analytic sample contains the 940 LEOs who completed at least part of the surveys in both study waves. Descriptive statistics of the sample are provided in Table 1. Survey weights were calculated to account for nonresponse bias, and we employ them in all analyses to ensure results are representative of law enforcement officers employed in the United States.

Our dependent variables include thirteen measures of mental health, stress, and stress-related physical health as detailed in Table 2. Ten of these measures are summary scores of established indices. The remaining three (self-rated health, GI diagnosis, and hypertension diagnosis) are single survey items.

We now turn to our primary independent variables—officers' EPA ratings of their occupation. EPA ratings are a well-validated quantitative summary of three universal affective dimensions of affective cultural meaning: *evaluation* (good vs. bad), *potency* (powerful vs. weak), and *activity* (active vs. quiescent) using bipolar scales ranging from 4 to 4. Typically, these scores are together conceptualized and reported as a point in a three-dimensional space, in the format (*evaluation, potency, activity)*. EPA ratings are used extensively in social psychology and sociology to quantify cultural sentiments and model social action [48].

Occupations rated high in evaluation have greater cultural status and are afforded greater esteem and deference. High potency occupations generally have greater power and material resources, such as income and education [14]. Activity does not have a strong theoretical link to esteem or power but is still a determinant of social action. We include the full set of EPA ratings in our analyses to explore how they may impact officers' health.

We collected officers' EPA ratings consistent with standard practice in cultural affective sentiment data collections [30]. Respondents rated their occupation on each of the evaluation, potency, and activity dimensions using nine-point bipolar Likert scales. Each of these scales was anchored on each end by adjectives "good/bad" (evaluation), "powerful/powerless" (potency), and "fast/-slow" (activity). This data collection instrument is pictured in Fig. 1.

To demonstrate the utility of EPA ratings, we compare their effect as the key independent measures of interest to the effects of occupational prestige scores, a commonly used measure of social status in health research [5]. We measure officer's ratings of occupational prestige on a five-point Likert scale ranging from "not prestigious at all" to "great deal of prestige."

Two notable events occurred during 2020 that may have affected cultural sentiments and wellbeing: the onset of the COVID-19 pandemic (and resulting impact on the responsibilities and health of "essential workers") and protests against police brutality following the murder of George Floyd [64]. Consequently, we account for time by including a variable representing the period in which the officer took their survey. Period 1 was defined as prior to March 13, 2020, when COVID-19 was declared a national emergency (77 % of 2020 wave; 727 responses); period 2 was defined as between March 13 and May 25, 2020, when George Floyd was killed by a law enforcement officer (9 % of the 2020 wave; 85 responses); and subsequent periods covered three month windows thereafter.

In all models, we control[1] for gender identity and ethnoracial identity. We also control for job characteristics: LEO rank (line officer, supervisor, commander, or other), years as a sworn officer (binned in increments of 5 years), and department size. We include these job characteristic controls as proximate indicators of the job conditions officers experience and material resources they have, including their levels of income and education. Survey weights were used in all analyses to account for sample nonresponse bias and ensure representativeness.

We use multiple imputation to fill in missing responses on all variables used in analyses[2] using the R package *mice.* [65] We impute ordinal variables using polytomous regression for ordered data ("polr" method), categorical variables using polytomous regression for unordered data ("polyreg" method), and dichotomous variables using logistic regression ("logreg" method). We calculate index summary measures after imputing any missing item responses. The model coefficients and standard errors we report are pooled across 5 models estimated on separately imputed datasets.

We model the relationship between EPA ratings and health outcomes using multilevel models with random intercepts for respondent.[3] We selected model distributional forms based on the variable distributions and, where more than one model was plausible, by comparing leave-one-out cross validation scores between options (see Table 3).

To test the utility of EPA ratings relative to occupational prestige scores, we compare estimates from three sets of models. All contain the control variables listed above. Additionally, the first set of models includes each of the three EPA rating dimensions as independent variables. The second set uses occupational prestige. The third set includes both EPA and occupational prestige. All models are estimated in a Bayesian framework using the R package *brms* [66].

3. Results

Turning first to the association between our independent and dependent variables, Table 3 contains E, P, A, and prestige

[1] The results we report here are qualitatively similar if we estimate models without control variables.

[2] In the multiple imputation models, we include core demographic and job characteristics (gender and ethnoracial identities, rank, years as a sworn LEO, and department size) and any other variables correlated with the target variable at a level of 0.6 or greater.

[3] The sampling strategy led to two levels of grouping: observations within respondents and respondents within departments. Models accounting for both levels by including random intercepts for department in addition to respondent were estimated, but are not shown because department-level random intercepts substantially worsened model fit metrics. Variance components analysis shows that very little variance is explained at the department level.

Table 2
Dependent variables.

	Variable	Description	Summary measure
Mental health-related	Distress Tolerance Scale (DTS) [53]	A 15-item index for measuring ability to tolerate emotional distress, divided into four subscales. 5-Point Likert scale responses (0–4).	Mean of the four subscale means
	Perceived Stress Scale (PSS-10) [54]	A ten-item instrument measuring the degree to which situations in one's life are seen as stressful. Responses are given on 5-point Likert scales (0–4).	Mean of the item responses.
	Maastricht Questionnaire (MQ) [55, 56]	A scale for measuring vital exhaustion, or feelings of fatigue, irritability, and demoralization. Scale includes ten items with yes/no response options.	Number of items to which a respondent answered "yes."
	Mental Health Index (MHI-5) [57]	Emotional wellbeing subset of the Short Form Survey. Five question index.	Sum of responses rescaled with a linear transformation to range from 0 to 100.
	Patient Health Questionnaire—two item (PHQ-2) [58]	A two-item index for diagnosing and monitoring depression.	Sum of responses. Ranges from 0 to 6.
	Suicidal Behaviors Questionnaire—Revised (SBQ-R) [59]	A four-question index for measuring past suicidal behavior.	Weighted sum of question responses rescaled to range from 0 to 15.
	Primary Care Posttraumatic Stress Disorder Screen (PC-PTSD) [60]	A four-item instrument for assessing whether a clinical interview for PTSD is appropriate. Yes/no response options.	Number of items to which a respondent answered "yes".
Physical health-related	PROMIS Sleep Disturbance Short Form 4a (PROMIS-SD)	A 4-item index measuring perceived sleep quality on 5-point Likert scales.	Sum of responses. Ranges from 4 to 20.
	Patient Health Questionnaire—15 item (PHQ-15) [61]	Measures how much the respondent is bothered by various physical issues on a scale from 0 (not at all) to 2 (bothered a lot).	Sum of responses. Ranges from 0 to 30.
	Neurocognitive deficit scale (ND) [62]	A 27-item index measuring difficulties with memory, focus, and executive function on 5-point Likert scales.	Mean of the item responses.
	GI diagnosis	Response to: "Have you ever been diagnosed with a gastrointestinal disorder (e.g., acid reflux, gastritis, irritable bowel syndrome, other)?"	0: If ever diagnosed 1: Never diagnosed
	Hypertension diagnosis	Response to: "Has a doctor or nurse ever said that you have high blood pressure or hypertension?"	0: If ever diagnosed 1: Never or only during pregnancy
	Self-rated health (SRH) [63]	A single question asking respondents to rate their overall health on a 5-point scale from "poor" to "excellent".	Question response. Ranges from 1 to 5.

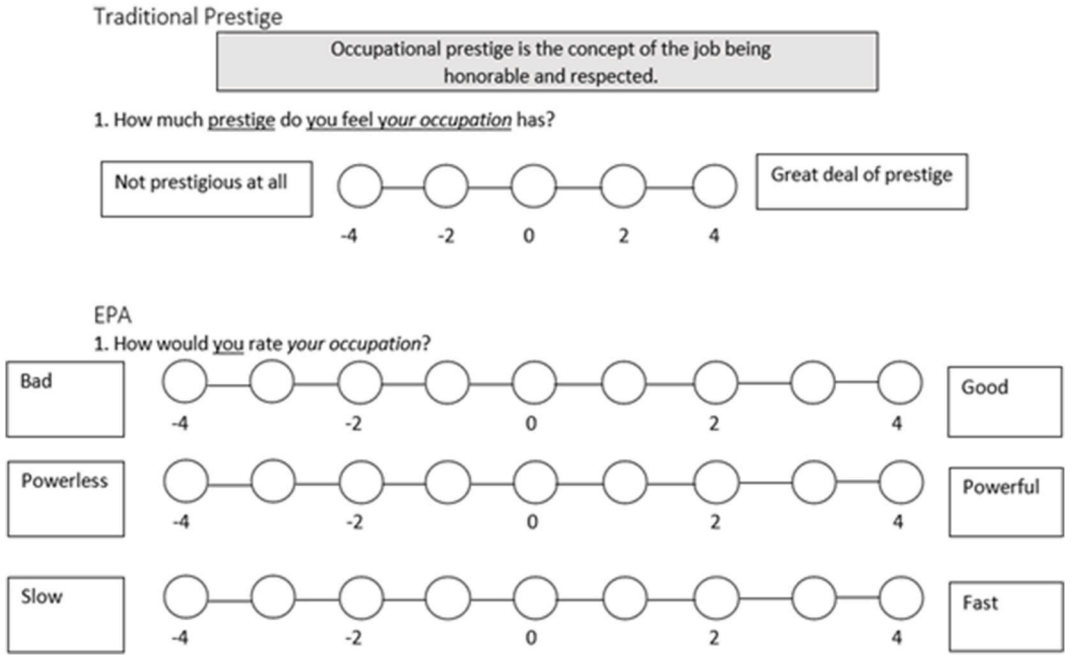

Fig. 1. Survey instrument used to measure independent variables (EPA ratings and occupational prestige scores). For illustrative purposes, we show the numeric values to show how we coded responses. Respondents did not see numeric values when taking the survey.

Table 3
Coefficient estimates for models predicting health outcomes.

DV	EPA model			Prestige model	Combined model			
	E	P	A	Prestige	E	P	A	Prestige
Mental								
DTS[1a]	0.10 (0.02) ***	0.01 (0.02)	0.01 (0.02)	0.07 (0.02) ***	0.10 (0.02) ***	0.00 (0.02)	0.01 (0.02)	0.04 (0.02)*
PSS-10[1a]	0.11 (0.02) ***	0.05 (0.02)**	0.00 (0.02)	0.08 (0.02) ***	0.10 (0.02) ***	0.04 (0.02)*	0.00 (0.02)	0.05 (0.02) **
MQ[1a]	0.32 (0.06) ***	0.21 (0.07)**	0.03 (0.06)	0.28 (0.06) ***	0.29 (0.06) ***	0.16 (0.07)*	0.04 (0.06)	0.18 (0.06) **
MHI-5[2a]	2.95 (0.42)***	1.81 (0.42)***	0.24 (0.41)	2.56 (0.48)***	2.71 (0.42)***	1.42 (0.42) ***	0.31 (0.41)	1.55 (0.48)**
PHQ-2[1b]	0.56 (0.10) ***	0.05 (0.09)	0.12 (0.10)	0.40 (0.09) ***	0.53 (0.10) ***	0.01 (0.10)	0.10 (0.11)	0.27 (0.10) **
SBQ-R[1c]	0.07 (0.05)	0.02 (0.05)	0.08 (0.05)	0.13 (0.04)**	0.07 (0.05)	0.04 (0.05)	0.07 (0.05)	0.12 (0.05) **
PC-PTSD[1c]	0.28 (0.08) ***	0.29 (0.09) ***	0.14 (0.10)	0.45 (0.10) ***	0.22 (0.09)*	0.21 (0.09)*	0.15 (0.11)	0.35 (0.11) **
Physical								
PROMIS-SD[1a]	0.26 (0.08)**	0.20 (0.09)*	0.11 (0.12)	0.32 (0.08) ***	0.23 (0.09)**	0.15 (0.09)	0.10 (0.12)	0.21 (0.09)*
PHQ-15[1a]	0.16 (0.10)	0.47 (0.14) ***	0.02 (0.12)	0.27 (0.09)**	0.15 (0.10)	0.44 (0.14) **	0.02 (0.12)	0.11 (0.10)
ND[1a]	0.07 (0.02) ***	0.01 (0.02)	0.02 (0.02)	0.05 (0.02)**	0.07 (0.02) ***	0.01 (0.02)	0.02 (0.02)	0.03 (0.02)
Hypertension[1d]	0.12 (0.20)	0.22 (0.23)	0.03 (0.20)	0.23 (0.19)	0.09 (0.21)	0.19 (0.23)	0.05 (0.20)	0.16 (0.21)
GI issues[1d]	0.37 (0.19)	0.06 (0.20)	0.09 (0.19)	0.03 (0.15)	0.39 (0.20)*	0.09 (0.21)	0.08 (0.19)	0.13 (0.17)
SRH[2b]	0.12 (0.09)	0.31 (0.10)**	0.00 (0.10)	0.33 (0.10)***	0.09 (0.09)	0.25 (0.10)*	0.01 (0.11)	0.25 (0.10)*

*p < 0.05, **p < 0.01, ***p < 0.001.
[1] Lower outcome values indicate better wellbeing.[2] Higher outcome values indicate better wellbeing.
[a] Gaussian model. [b] Ordinal logistic model (coefficients in log odds units). [c] Poisson model (coefficients in log odds units). [d] Logit model (coefficients in log odds units). DTS: Distress Tolerance Scale; PSS-10: Perceived Stress Scale; MQ: Maastricht Questionnaire (vital exhaustion); MHI-5: Mental Health Index; PHQ: Patient Health Questionnaire (depression); SBQ-R: Suicidal Behavior Questionnaire; PC-PTSD: Primary Care Posttraumatic Stress Disorder Screen; PROMIS-SD: sleep disturbance; PHQ-15: Patient Health Questionnaire (physical issues); ND: neurocognitive deficit; SRH: self-rated health.

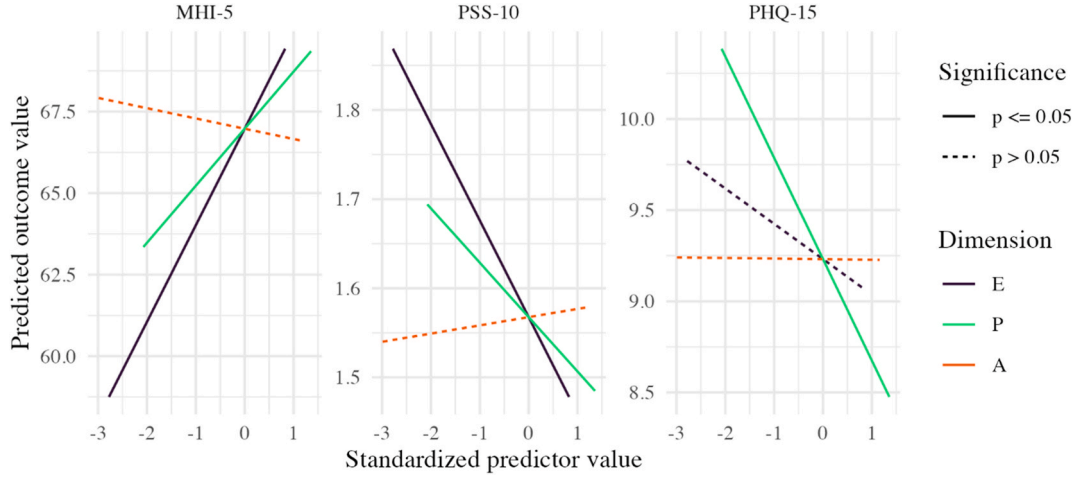

Fig. 2. Predicted values for the EPA model on the Mental Health Index (MHI-5; left panel; higher indicates better mental health), Perceived Stress Scale (PSS-10; center panel; higher indicates more stress), and Patient Health Questionnaire (PHQ-15; right panel; higher indicates more bothersome physical health issues) as a function of standardized E, P, and A ratings. All other predictors are held constant at reference values. Outcomes are predicted across the range of EPA values observed in the sample.

coefficients for three models across all dependent variables. To provide a sense of the substantive meaning of these effects, Fig. 2 shows predicted outcome values for the MHI-5, PSS-10, and PHQ-15 for given values of E, P, and A values, holding all other predictors constant at reference or mean values.

Three patterns are evident across most health outcomes. First, effects of evaluation, potency, and prestige are frequently statistically significant and, when significant, always protective. The activity dimension did not predict any of the outcomes and so appears to not be as closely tied to health as the other dimensions of cultural meaning for law enforcement. LEOs who rate their job as higher on the evaluation, potency, and prestige scales report higher levels of health and wellbeing consistently across a remarkable number of measures of health. The EPA model predicts that a 1-standard deviation increase in evaluation rating is associated with a predicted increase of 3.4 points on the MHI-5 (100-point scale; see Table 1 for dependent variable information) and a 0.12-point decrease on the PSS-10 (5-point scale). A 1-standard deviation increase in potency rating is associated somewhat smaller changes on the MHI-5 and PSS-10, and a decrease of 0.6 points on the PHQ-15 (30-point scale).

Second, the protective effects of perceived status on mental health tend to be larger and more consistently statistically significant than effects on physical health. This result is unsurprising because we measure health and perceived status simultaneously. We expect the effects of stress due to low perceived job status to manifest more quickly and so be easier to capture in our data for mental health. Effects on physical health would be expected to require time to accumulate and thus are best studied using data collected over a longer period of time.

Finally, and perhaps most importantly, operationalizing social status using EPA ratings appears to be more useful than operationalizing it using occupational prestige scores. When prestige is used alone as a predictor of wellbeing, people who rate their professions higher in prestige are statistically more likely to report more desirable scores on eleven of the thirteen individual wellbeing outcomes. However, the magnitude of these statistically significant effects decreases substantially across the wellbeing outcomes when EPA ratings are added to the model—by a mean value of 34 %. By contrast, significant evaluation effects decrease in magnitude by a mean of 9 % and significant potency effects decrease in magnitude by a mean of 20 % when prestige is added to the model. This asymmetry indicates that EPA measures capture much the same information as perceived prestige, but also encompass additional information relevant to wellbeing. Conversely, perceived prestige captures only a small amount of relevant information not also captured by EPA.

4. Discussion and conclusions

In this paper we contend that occupational prestige scores, a common indicator of occupational status commonly used in health research, primarily reflect material conditions and neglect the psychosocial element of occupational status. Consequently, we offer EPA ratings, a multidimensional measure of cultural meaning used extensively in social psychology and sociology, to directly quantify the structure of cultural sentiments along three dimensions of evaluation (good vs. bad), potency (powerful vs. weak), and activity (active vs. quiescent). Modeling the effect of both EPA ratings and occupational prestige scores, we find that officers who rate policing as more good, powerful, and prestigious report higher levels of wellbeing across a wide variety of outcomes, with particularly large effects on mental health. However, cultural sentiments appear to encompass occupational prestige and capture additional information relevant to predicting wellbeing to varying degrees. Consistent with prior research, we contend this is because prestige scores primarily act as a subject proxy of income and education which can already be modeled directly. Our findings are also consistent with prior work showing that occupational prestige primarily predicts the potency cultural sentiment dimension and adds to a growing body of literature emphasizing the utility of cultural sentiments over ratings of occupational prestige for predicting wellbeing, emotions, and behaviors [14].

Our work has some notable limitations. First, we cannot effectively test whether the relationship we find between cultural sentiment and wellbeing is causal, and if so, in which direction the relationship runs. Future work should employ data containing more waves and spanning a longer period of time to better untangle the nature of cultural sentiment effects on wellbeing.

Second, though studying people within a single occupation offers unique advantages in terms of identifying the results of EPA and prestige perceptions, because it is a single occupation more research is needed to establish whether these same patterns are apparent across other occupations. Additionally, more work is needed to determine the extent to which occupational health differences can be explained by between-occupation differences in cultural meaning.

Our work supports the idea that occupations are connected to health through not only the material rewards they provide and requirements they demand, but also through the psychosocial resources they offer workers. This suggests that one way to improve LEO health outcomes—and perhaps the health outcomes of other workers, if future research corroborates our findings in other professions—may be through interventions to improve their perceptions of the cultural locations of their jobs. Health research focused on law enforcement well-being has tended to categorize the challenges of policing as occupational versus organizational stressors, and studies over the last decade have pointed to organizational stressors as the dominant challenge [67–69]. A thematic analysis of organizational stressors in law enforcement highlights, however, that investigation to date has been limited to internal agency factors [70]. Moreover, while research has focused on organizational and operational stressors such as performance or media depictions of protests and group conflicts, little attention has been paid to the social interactional processes that might affect officer well-being [71]. For example, qualitative work by Mumford et al., 2022 [50] illustrated officers' awareness and sensitivity to being criticized on social media for their performance, a phenomenon noted by agencies struggling to recruit new personnel [72,73].

The multidimensional indicator of cultural location that we present here allows for directly quantifying dimensions of occupational status outside of material class conditions, opening new theoretical avenues and providing methodological tools to facilitate future work on the relationship between the subjective aspects of socioeconomic status and health. Given the health concerns within a sector

that is struggling to recruit adequate personnel, expanding practitioner and researcher perspectives to attend to multi-dimensional social status issues would be constructive [74–76].

Because EPA ratings operationalize universal affective dimensions of meaning capable of spanning theories and situations, they offer many opportunities for future research. Given their universality, EPA ratings could prove useful for bridging disparate approaches both within and across disciplines. For example, because stress is the implied mechanism linking self-sentiments to health outcomes, future work should examine the link between EPA dimensions and prominent theories of stress such as the stress process model [77, 78]. While research has tied ACT to other social psychological theories [37], a fruitful avenue for interdisciplinary research would be to compare it to theories of culture and meaning found in other disciplines such as anthropology [79,80].

While this study lays the groundwork by controlling for demographic characteristics including gender and ethnoracial identity and investigating average effects across these categories, future research should examine how meanings might vary by these characteristics and what implications any variation has. Additionally, while we focus on the relationship between self-sentiments and health outcomes, future research should investigate public perceptions of officers and possible effects of discrepancy between self and public sentiments.

Ethics statement

The Institutional Review Board at NORC at the University of Chicago (#FWA00000142) reviewed and approved the study design and survey instruments (protocol 17.04.08).

Data availability statement

Data is forthcoming at ICPSR in 2024 as an update to this archive: https://www.icpsr.umich.edu/web/ICPSR/studies/37821.

CRediT authorship contribution statement

Aidan Combs: Writing – review & editing, Writing – original draft, Visualization, Methodology, Formal analysis, Data curation, Conceptualization. **Robert E. Freeland:** Writing – review & editing, Writing – original draft, Methodology, Conceptualization. **Katelin M. Alfaro Hudak:** Writing – review & editing. **Elizabeth A. Mumford:** Writing – review & editing, Supervision, Funding acquisition.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

This work was supported by National Institute of Justice grant number 2018-R2-CX- 0026, awarded to NORC at the University of Chicago. Data was collected in partnership with the Police Executive Research Forum.

The authors would like to thank Dr. David Russell at Appalachian State University and Dr. Lynn Smith-Lovin at Duke University for comments on early versions of the manuscript.

Preliminary results were presented at the 2023 annual meeting of the Southern Sociological Society.

References

[1] B.G. Link, J. Phelan, Social conditions as fundamental causes of disease, J. Health Soc. Behav. 35 (1995) 80–94, https://doi.org/10.2307/2626958.
[2] R. Chetty, M. Stepner, S. Abraham, et al., The association between income and life expectancy in the United States, 2001-2014, JAMA 315 (16) (2016) 1750–1766, https://doi.org/10.1001/jama.2016.4226.
[3] S.A. Everson, S.C. Maty, J.W. Lynch, G.A. Kaplan, Epidemiologic evidence for the relation between socioeconomic status and depression, obesity, and diabetes, J. Psychosom. Res. 53 (4) (2002) 891–895, https://doi.org/10.1016/S0022-3999(02)00303-3.
[4] B. Bosworth, Increasing disparities in mortality by socioeconomic status, Annu. Rev. Publ. Health 39 (1) (2018) 237–251, https://doi.org/10.1146/annurev-publhealth-040617-014615.
[5] K. Fujishiro, J. Xu, F. Gong, What does "occupation" represent as an indicator of socioeconomic status?: exploring occupational prestige and health, SSM 71 (12) (2010) 2100–2107, https://doi.org/10.1016/j.socscimed.2010.09.026.
[6] N.E. Adler, K. Newman, Socioeconomic disparities in health: pathways and policies, Health Aff. 21 (2) (2002) 60–76, https://doi.org/10.1377/hlthaff.21.2.60.
[7] J.J.X. Tan, M.W. Kraus, N.C. Carpenter, N.E. Adler, The association between objective and subjective socioeconomic status and subjective well-being: a meta-analytic review, Psychol. Bull. 146 (11) (2020) 970–1020, https://doi.org/10.1037/bul0000258.
[8] A.B. Bakker, E. Demerouti, The job demands-resources model: state of the art, J. Manag. Psychol. 22 (3) (2007) 309–328.
[9] K.A. McLaughlin, E.J. Costello, W. Leblanc, N.A. Sampson, R.C. Kessler, Socioeconomic status and adolescent mental disorders, Am. J. Publ. Health 102 (9) (2012) 1742–1750, https://doi.org/10.2105/AJPH.2011.300477.
[10] M. Marmot, H. Bosma, H. Hemingway, E. Brunner, S. Stansfeld, Contribution of job control and other risk factors to social variations in coronary heart disease incidence, Lancet 350 (9073) (1997) 235–239, https://doi.org/10.1016/S0140-6736(97)04244-X.
[11] J. Siegrist, N. Wege, Adverse psychosocial work environments and depression: a narrative review of selected theoretical models, Front. Psychiatr. 11 (2020), https://doi.org/10.3389/fpsyt.2020.00066.
[12] Donald J. Treiman, Occupational Prestige in Comparative Perspective, Academic Press, 1977.
[13] E. Bukodi, S. Dex, J.H. Goldthorpe, The conceptualisation and measurement of occupational hierarchies: a review, a proposal and some illustrative analyses, Qual. Quantity 45 (3) (2011) 623–639, https://doi.org/10.1007/s11135-010-9369-x.

[14] R.E. Freeland, J. Hoey, The structure of deference: modeling occupational status using affect control theory, Am. Socio. Rev. 83 (2) (2018) 243–277.
[15] D.L. Featherman, R.M. Hauser, Prestige or socioeconomic scales in the study of occupational achievement? Socio. Methods Res. 4 (4) (1976) 403–422, https://doi.org/10.1177/004912417600400401.
[16] R.M. Hauser, J.R. Warren, Socioeconomic indexes for occupations: a review, update, and critique, Socio. Methodol. 27 (1) (1997) 177–298, https://doi.org/10.1111/1467-9531.271028.
[17] K. Nakao, J. Treas, Updating occupational prestige and socioeconomic scores: how the new measures measure up, Socio. Methodol. 24 (1994) 1–72, https://doi.org/10.2307/270978.
[18] M. Hout, Social and economic returns to college education in the United States, Annu. Rev. Sociol. 38 (1) (2012) 379–400, https://doi.org/10.1146/annurev.soc.012809.102503.
[19] F.B. Lynn, G. Ellerbach, A position with a view: educational status and the construction of the occupational hierarchy, Am. Socio. Rev. 82 (1) (2017) 32–58, https://doi.org/10.1177/0003122416671743.
[20] L. Valentino, The segregation premium: how gender shapes the symbolic valuation process of occupational prestige judgments, Soc. Forces 99 (1) (2020) 31–58, https://doi.org/10.1093/sf/soz145.
[21] F. Accominotti, F. Lynn, M. Sauder, The architecture of status hierarchies: variations in structure and why they matter for inequality, RSF 8 (6) (2022) 87–102.
[22] L. Valentino, Status lenses: mapping hierarchy and consensus in status beliefs, RSF 8 (7) (2022) 89–110.
[23] D.T. Robinson, L. Smith-Lovin, Affect control theories of social interaction and self, in: Peter J. Burke (Ed.), Contemporary Social Psychological Theories, Stanford University Press, 2018, pp. 139–165.
[24] M. Weber, Economy and Society, University of California Press, 1978.
[25] C.L. Ridgeway, H.R. Markus, The significance of status: what it is and how it shapes inequality, RSF 8 (7) (2022) 1–25, https://doi.org/10.7758/RSF.2022.8.7.01.
[26] C.L. Ridgeway, Why status matters for inequality, Am. Socio. Rev. 79 (1) (2014) 1–16, https://doi.org/10.1177/0003122413515997.
[27] D.R. Heise, Expressive Order: Confirming Sentiments in Social Actions, Springer Science & Business Media, 2007.
[28] Lynn Smith-Lovin, David R. Heise, Analyzing Social Interaction: Advances in Affect Control Theory, Routledge, 2016.
[29] Neil Joseph MacKinnon, Symbolic Interactionism as Affect Control, State University of New York Press, 1994.
[30] David R. Heise, Surveying Cultures: Discovering Shared Conceptions and Sentiments, John Wiley & Sons, 2010.
[31] A. Kroska, S.K. Harkness, Stigma sentiments and self-meanings: exploring the modified labeling theory of mental illness, Soc. Psychol. Q. 69 (4) (2006) 325–348, https://doi.org/10.1177/019027250606900403.
[32] P.A. Thoits, Self, identity, stress, and mental health, in: C.S. Aneshensel, J.C. Phelan, A. Bierman (Eds.), *Handbook Of the Sociology Of Mental Health*. Handbooks of Sociology and Social Research, Springer Netherlands, 2013, pp. 357–377, https://doi.org/10.1007/978-94-007-4276-5_18.
[33] S. Foy, R.E. Freeland, A. Miles, K. Rogers, L. Smith-Lovin, Emotions and affect as source, outcome and resistance to inequality, in: J.D. McLeod, E.J. Lawler, M. Schwalbe (Eds.), *Handbook Of the Social Psychology Of Inequality*. Handbooks of Sociology and Social Research, Springer Netherlands, 2014, pp. 295–324, https://doi.org/10.1007/978-94-017-9002-4.
[34] Charles E. Osgood, William H. May, Murray S. Miron, Cross-Cultural Universals of Affective Meaning, University of Illinois Press, 1975.
[35] Charles E. Osgood, George J. Suci, Percy Tannenbaum, The Measurement of Meaning, University of Illinois Press, 1957.
[36] W. Scholl, The socio-emotional basis of human interaction and communication: how we construct our social world, Soc. Sci. Inf. 52 (1) (2013) 3–33, https://doi.org/10.1177/0539018412466607.
[37] K.B. Rogers, T. Schröder, W. Scholl, The affective structure of stereotype content: behavior and emotion in intergroup context, Soc. Psychol. Q. 76 (2) (2013) 125–150, https://doi.org/10.1177/0190272513480191.
[38] J. Zhao, Modeling impression formation processes among Chinese and Americans, Am. Behav. Sci. 67 (2) (2023) 240–269, https://doi.org/10.1177/00027642211066025.
[39] H.W. Smith, T. Matsuno, M. Umino, How similar are impression-formation processes among Japanese and Americans? Soc. Psychol. Q. 57 (2) (1994) 124–139, https://doi.org/10.2307/2786706.
[40] D.J. Kriegel, M. Abdul-Mageed, J.K. Clark, et al., A multilevel investigation of Arabic-language impression change, Int. J. Sociol. 47 (4) (2017) 278–295, https://doi.org/10.1080/00207659.2017.1372102.
[41] Boyle KM. Doing gender, avoiding crime: the gendered meaning of criminal behavior and the gender gap in offending in the United States. Soc Psychol Q. Published online Forthcoming:019027252311678. doi:10.1177/01902725231167845.
[42] W. Kalkhoff, Delinquency and violence as affect-control: reviving the subcultural approach in criminology, Electron. J. Sociol. 6 (2002) 1–28.
[43] A. Schneider, A model of sexual constraint and sexual emancipation, Social. Perspect. 48 (2) (2005) 255–270, https://doi.org/10.1525/sop.2005.48.2.255.
[44] D.B. Shank, R. Lulham, Symbolic interaction with consumer products: an affect control theory approach, Soc. Compass 10 (7) (2016) 613–622, https://doi.org/10.1111/soc4.12381.
[45] R.E. Freeland, C.E. Harnois, Bridging the gender wage gap: gendered cultural sentiments, sex segregation, and occupation-level wages, Soc. Psychol. Q. 83 (2) (2020) 129–151, https://doi.org/10.1177/0190272519875777.
[46] N.J. MacKinnon, T. Langford, The meaning of occupational prestige scores: a social psychological analysis and interpretation, Socio. Q. 35 (2) (1994) 215–245.
[47] K.M. Boyle, K.B. Rogers, Self-sentiments and depressive symptoms: a longitudinal analysis, Am. Behav. Sci. 67 (1) (2023) 36–59, https://doi.org/10.1177/00027642211066031.
[48] A. Kroska, B. Powell, K.B. Rogers, L. Smith-Lovin, Affect control theories: a double special issue in honor of David R. Heise, Am. Behav. Sci. 67 (1) (2023) 3–11, https://doi.org/10.1177/00027642211066044.
[49] E.A. Mumford, B.G. Taylor, W. Liu, J. Barnum, S. Goodison, Law Enforcement Officers Safety and Wellness: A Multi-Level Study, National Institute of Justice, 2020, p. 21.
[50] E.A. Mumford, K. Alfaro Hudak, M.M. Liotta, M.S. O'Leary, A.S. Ramey, Occupational prestige and job satisfaction in high-stress public safety work, Policing: J. Pol. Pract. 17 (2023), https://doi.org/10.1093/police/paac049 paac049.
[51] C.A. Monteiro, E.C. Moura, W.L. Conde, B.M. Popkin, Socioeconomic status and obesity in adult populations of developing countries: a review, Bull. World Health Organ. 82 (12) (2004) 940–946.
[52] J.E. Wright II, D. Gaozhao, K. Dukes, D. Templeton, The power of protest on policing: black Lives Matter protest and civilian evaluation of the police, Publ. Adm. Rev. 83 (1) (2023) 130–143, https://doi.org/10.1111/puar.13498.
[53] J.S. Simons, R.M. Gaher, The distress tolerance scale: development and validation of a self-report measure, Motiv. Emot. 29 (2) (2005) 83–102, https://doi.org/10.1007/s11031-005-7955-3.
[54] S. Cohen, G. Williamson, Perceived stress in a probability sample of the United States, in: S. Spacapan, S. Oskamp (Eds.), The Social Psychology of Health, SAGE Publications, 1988, pp. 31–67.
[55] A. Shahid, K. Wilkinson, S. Marcu, C.M. Shapiro, Maastricht vital exhaustion questionnaire (MQ), in: A. Shahid, K. Wilkinson, S. Marcu, C.M. Shapiro (Eds.), STOP, THAT and One Hundred Other Sleep Scales, Springer New York, 2011, pp. 215–217, https://doi.org/10.1007/978-1-4419-9893-4_49.
[56] A. Appels, P. Höppener, P. Mulder, A questionnaire to assess premonitory symptoms of myocardial infarction, Int. J. Cardiol. 17 (1) (1987) 15–24, https://doi.org/10.1016/0167-5273(87)90029-5.
[57] J.E. Ware, M. Kosinski, J.E. Dewey, How to Score Version 2 of the SF-36® Health Survey, QualityMetric Incorporated, Lincoln, 2000.
[58] B. Löwe, K. Kroenke, K. Gräfe, Detecting and monitoring depression with a two-item questionnaire (PHQ-2), J. Psychosom. Res. 58 (2) (2005) 163–171, https://doi.org/10.1016/j.jpsychores.2004.09.006.
[59] A. Osman, C.L. Bagge, P.M. Gutierrez, L.C. Konick, B.A. Kopper, F.X. Barrios, The suicidal Behaviors Questionnaire-Revised (SBQ-R): validation with clinical and nonclinical samples, Assessment 8 (4) (2001) 443–454.

[60] A. Prins, P. Ouimette, R. Kimerling, et al., The primary care PTSD screen (PC–PTSD): development and operating characteristics, Prim. Care Psychiatr. 9 (1) (2004) 9–14, https://doi.org/10.1185/135525703125002360.
[61] K. Kroenke, R.L. Spitzer, J.B.W. Williams, The PHQ-15: validity of a new measure for evaluating the severity of somatic symptoms, Psychosom. Med. 64 (2) (2002) 258–266, https://doi.org/10.1097/00006842-200203000-00008.
[62] Lynda A. King, Daniel W. King, S.V. Dawne, J. Knight, R.E. Samper, Deployment risk and resilience inventory: a collection of measures for studying deployment-related experiences of military personnel and veterans, Mil. Psychol. 18 (2) (2006) 89–120, https://doi.org/10.1207/s15327876mp1802_1.
[63] D. Garbarski, Research in and prospects for the measurement of health using self-rated health, PUBOPQ 80 (4) (2016) 977–997, https://doi.org/10.1093/poq/nfw033.
[64] M.D. White, C. Orosco, B. Terpstra, Investigating the impacts of a global pandemic and george floyd's death on crime and other features of police work, Justice Q. JQ 40 (8) (2022) 1–28, https://doi.org/10.1080/07418825.2021.2022740.
[65] S. van Buuren, K. Groothuis-Oudshoorn, mice: multiple imputation by chained equations in R, J. Stat. Software 45 (3) (2011) 1–67, https://doi.org/10.18637/jss.v045.i03.
[66] P.C. Bürkner, brms: an R package for Bayesian multilevel models, J. Stat. Software 80 (1) (2017), https://doi.org/10.18637/jss.v080.i01.
[67] D.R. McCreary, I. Fong, D.L. Groll, Measuring policing stress meaningfully: establishing norms and cut-off values for the operational and organizational police stress questionnaires, Police Pract. Res. 18 (6) (2017) 612–623, https://doi.org/10.1080/15614263.2017.1363965.
[68] R. Ricciardelli, "Risk it out, risk it out": occupational and organizational stresses in rural policing, Police Q. 21 (4) (2018) 415–439, https://doi.org/10.1177/1098611118772268.
[69] T. Varker, M.J. Dennison, H. Bancroft, et al., Mental health, operational stress, and organizational stress among sworn and unsworn police personnel, Traumatology 29 (2) (2023) 330–337, https://doi.org/10.1037/trm0000399.
[70] D. Acquadro Maran, N. Magnavita, S. Garbarino, Identifying organizational stressors that could be a source of discomfort in police officers: a thematic review, IJERPH 19 (6) (2022) 3720, https://doi.org/10.3390/ijerph19063720.
[71] A. Sodhi, N. Aguilar, D.E. Choma, J.M. Steve, D. Patton, M. Crandall, Social media representations of law enforcement within four diverse Chicago Neighborhoods, J. Contemp. Ethnogr. 49 (6) (2020) 832–852, https://doi.org/10.1177/0891241620943291.
[72] Faye C. Elkins, Recruitment and retention in tough times-voices from the field. https://cops.usdoj.gov/html/dispatch/11-2022/recruitment_retention.html. (Accessed 29 August 2023). U.S. Department of Justice Office of Community Oriented Policing Services Accessed.
[73] International Association of Chiefs of Police. The State of Recruitment: A Crisis for Law Enforcement. https://www.theiacp.org/sites/default/files/239416_IACP_RecruitmentBR_HR_0.pdf.
[74] E.A. Mumford, W. Liu, B.G. Taylor, Profiles of U.S. Law enforcement officers' physical, psychological, and behavioral health: results from a nationally representative survey of officers, Police Q. 24 (3) (2021) 357–381, https://doi.org/10.1177/1098611121991111.
[75] T.E. Sergi, K.B. Bode, D.A. Hildebrand, J.J. Dawes, J.M. Joyce, Relationship between body mass index and health and occupational performance among law enforcement officers, firefighters, and military personnel: a systematic review, Curr. Dev. Nutr. 7 (1) (2023), 100020, https://doi.org/10.1016/j.cdnut.2022.100020.
[76] E.A. Mumford, W. Liu, B.G. Taylor, S. Ramey, Profiles of us law enforcement officers' diagnosed health conditions: results from a probability-based sample of officers, J. Occup. Environ. Med. 63 (5) (2021) 422–431, https://doi.org/10.1097/JOM.0000000000002162.
[77] W.R. Avison, C.S. Aneshensel, S. Schieman, B. Wheaton, Advances in the Conceptualization of the Stress Process: Essays in Honor of Leonard I. Pearlin, Springer Science & Business Media, 2009.
[78] L.I. Pearlin, E.G. Menaghan, M.A. Lieberman, J.T. Mullan, The stress process, J. Health Soc. Behav. 22 (4) (1981) 337–356, https://doi.org/10.2307/2136676.
[79] W.W. Dressler, Culture and the Individual: Theory and Method of Cultural Consonance, Routledge, 2017.
[80] W.W. Dressler, J.R. Bindon, The health consequences of cultural consonance: cultural dimensions of lifestyle, social support, and arterial blood pressure in an African American community, Am. Anthropol. 102 (2) (2000) 244–260.