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Supplemental Materials for

Mental health stigma and help-seeking intentions in police employees

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Listing of Supplemental Material(s):

- Supplemental Methods
- Supplemental Results

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Supplemental Methods

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Data Collection Details

Before distributing the survey, we collected feedback on survey questions, methods, and participants from management and union representatives of one partnering agency (including both sworn and civilian staff). Anonymous survey data were collected using the Qualtrics platform. Based on best practices for anonymous data collection in longitudinal research (Audette et al., 2020), we asked participants to generate a unique alphanumeric code that would allow us to link future survey responses to this initial response. To further protect participants' identity and encourage honest responding, information on demographics and job characteristics were collected using sufficiently broad bins to preclude identification of individual respondents. Participants were allowed and encouraged (in recruitment emails and advertisements at briefings) to complete the survey during work time, but were not compensated for their participation. The median time to complete all survey questions was 25 minutes. The measures obtained from participants (in order) included:

1. Demographics and job information. This in-house measure asked participants to report their employer, civilian/sworn status, job position, tenure working in law enforcement, gender identity, age range, race, ethnicity, and relationship status.
2. Patient-Reported Outcomes Measurement Information System, 29-item version (PROMIS-29; Hays et al., 2018), a brief assessment of anxiety, depression, fatigue, sleep disturbances, ability to participate in social roles and activities, physical function, pain interference, and pain intensity. Primary analyses included standardized t-scores for anxiety and depression subscales.

3. Perceived Stress Scale, 10-item version (PSS-10; Cohen & Williamson, 1988), assessing the degree to which life events are appraised as stressful. Analyses used total scores.
4. Perceived Stigma and Barriers to Care for Psychological Problems (Britt et al., 2008), which contains two factors related to perceived public stigma of seeking help for mental health problems (i.e., "what would others think about me if I sought help?") and other barriers to care. Wording for some items from this scale, originally developed for use in military populations, was modified to be relevant to police employees. An additional item of high relevance for police employees was also incorporated ("I would worry about my personal problems being part of my work records"). The adapted version contained 5 items for barriers to care and 7 items for perceived public stigma. Analyses focused on total scores for the perceived public stigma items.
5. Self-Stigma of Seeking Help Scale (Vogel et al., 2006), a 10-item scale assessing beliefs about what it would mean to seek professional help for mental health concerns (i.e., "what would I think about myself if I sought help?"). Self-stigma can be conceptualized as the internalization of perceived public stigma of seeking help (Vogel et al., 2007).
6. Mental Help Seeking Attitudes Scale (Hammer et al., 2018), a 9-item scale that asks participants to indicate their attitudes about seeking help from a mental health professional. Bipolar pairs of words are presented in response to the prompt: "If I had a mental health concern, seeking help from a mental health professional would be …", with pairs such as "Useless / Useful", "Good / Bad", and "Disempowering / Empowering". This scale measures one's general perceptions (positive or negative) of mental health counseling (Vogel et al., 2007). Bipolar responses were converted to a 1-7 range and sum scores were used for analysis, with higher scores indicating more positive attitudes.

7. Past and future utilization of mental health resources. This in-house measure was informed by previous research on mental health resources in Canadian public safety personnel (Carleton et al., 2020), with additional items added based on input from law enforcement partners and the investigator's previous research experience. Fourteen potential resources for mental health support were listed, and participants were asked whether they had used each resource in the past 12 months, longer than 12 months ago, or never at all. For any resources used in the past, they were also asked to rate how helpful they found each resource. Finally, the same 14 resources were presented and participants were asked to indicate their willingness to utilize this resource in the future if they needed mental health support ("would not consider"/"might consider"/"would definitely consider using this resource to support my mental health"). For data analysis, we summed the total number of resources utilized in the past 12 months and the total number of resources participants would maybe or definitely utilize in the future.
8. Agency culture and climate related to mental health. Perceptions of the agency culture and climate related to mental health was assessed using 4 Likert items with response options from "strongly disagree" to "strongly agree": "My department cares about the mental health of its employees"; "My department is doing enough to support the mental health of its employees"; "My department has policies and practices in place that protect employees who seek out help with mental health concerns"; "I am aware of the mental health resources that are available to me from my department". An additional open-ended question asked participants, "What can your department start doing to better support employee mental health?". These items were primarily collected as feedback for participating agencies and data were not used in the current analysis.

9. Previous mindfulness training. Participants were asked whether they participated in an 8-week mindfulness training class previously provided to some sworn personnel through our research center (Grupe, Smith, et al., 2021; Grupe, Stoller, et al., 2021). For participants who took part in this training, follow-up questions asked how frequently they had engaged in mindfulness practices over the past month and whether they had found benefit in these practices.
10. Questionnaires assessing impact and experiences related to COVID-19. We administered validated surveys to assess COVID-19 fear, direct experiences, and personal impact (Conway et al., 2020). Additional questionnaires were developed for this study to assess 1) police-specific experiences of COVID-19 (i.e., impact on the work experience), 2) work-related stress related to different aspects of the COVID-19 epidemic, and 3) coping strategies used to address COVID-related stress. Items were derived largely from surveys administered to healthcare workers during a coronavirus outbreak in Saudi Arabia in spring 2014 (Khalid et al., 2016) and from the Brief COPE (Carver, 1997).

Data Analysis Details

Statistical analysis was conducted using RStudio (version 1.2.5042; RStudio Team, 2020) in the R programming environment (version 3.6.3; R Core Team, 2020). Figures were created using the ggplot2() (Wickham, 2016) and ggpubr() (Kassambara, 2020) libraries. We conducted linear regression analyses in RStudio to test pre-registered hypotheses concerning factors associated with individual differences in help-seeking attitudes (Hypothesis 1) and past or future (intended) utilization of resources to address mental health concerns (Hypothesis 2). Our pre-registration proposed using the lmerTest() library to account for the non-independence of

participants within each agency, but due to non-convergence errors (likely due to the small number of agencies), we instead conducted linear regression analyses using the lm() library. While the specific variables differed across analyses, all models took the same essential form, namely:

lm(DV ~ IV + agency + civilianCommissioned + gender + yearsExperience)

where 'agency' was a categorical variable indicating 1 of 3 law enforcement agencies; 'civilianCommissioned' was a categorical variable based on job classification; 'gender' was a categorical variable with possible values of male, female, or non-binary; and 'yearsExperience' was a factor with levels of 0-5, 5-9, 10-14, 15-19, and 20+ years of experience working in a police agency. Some models included a moderator variable of previous mindfulness training or psychological distress symptoms (operationalized as the standardized sum score of scores on the Perceived Stress Scale and PROMIS anxiety and depression scores) in addition to the IV.

For regression analyses, univariate outliers were defined as scores on the measure of interest greater than 3 SD from the mean and distinct from the distribution. Model outliers were defined as data points with Cook's D values greater than a cutoff threshold of 4/df that were disconnected from the distribution. Univariate and multivariate outliers were excluded from analyses on a casewise basis.

In addition to running separate regression models for individual dependent variables, we used the lavaan() library (Rosseel, 2011) to conduct a path analysis empirically testing the fit of a model linking together perceived stigma of help-seeking, self-stigma of help-seeking, help-seeking attitudes, and help-seeking intentions (Lin, 2021). We initially included the same covariates from regression analyses as exogenous variables (civilian/commissioned status,

gender, and years of work experience), but removed agency from the model as it had no impact on any endogenous variables (all *p*s > 0.4). To test hypothesized moderators of this path leading to help-seeking intentions, we constructed a model with additional exogenous variables corresponding to prior mindfulness training and psychological distress symptoms.

Supplemental Results

Demographics and self-report data: differences between commissioned and civilian staff

Across the three agencies, 276 individuals clicked on the Qualtrics link, 259 provided informed consent and at least some survey data, and 249 completed all surveys. The 259 individuals who answered questions about work information included 195 commissioned and 64 civilian staff. The number of individuals providing informed consent was approximately 20-30% of employees from each of these agencies, which generally reflects the ratio of civilian/sworn staff in these departments. The two groups had similar age distributions, and both groups were overwhelmingly white (94% of participants who reported race) and non-Hispanic (93%). Civilian staff had less experience in law enforcement than commissioned staff (62% of civilian staff had fewer than 10 years of experience, compared to 38% of commissioned staff), and 69% of civilian staff reported female gender compared to 40% of commissioned staff.

Relative to commissioned staff, civilian staff reported significantly greater levels of perceived stress ($t(250) = 2.27$, $p = 0.024$, 95% CI [0.28, 3.89]), anxiety ($t(250) = 3.66$, $p < 0.001$, 95% CI [1.78, 5.87]), and depression ($t(250) = 3.95$, $p < 0.001$, 95% CI [2.26, 6.75]). Group differences for anxiety and depression (but not perceived stress) remained significant when controlling for gender and years of work experience. The two groups did not differ in

perceived stigma, self-stigma, or mental help-seeking attitudes (all $|t\text{s}| < 1.4$, all $p\text{s} > 0.1$). Commissioned staff reported utilizing a greater number of resources for mental health support in their lifetime ($t(248) = 2.07$, $p = 0.04$, 95% CI [0.04, 1.53]), and a trend toward greater utilization in the past 12 months ($t(248) = 1.79$, $p = 0.07$, 95% CI [-0.05, 1.16]) and greater intended future utilization ($t(247) = 1.71$, $p = 0.09$, 95% CI [-0.09, 1.30]).

Relationships between prior mindfulness training, stigma, and help-seeking attitudes

We tested the hypothesis that prior mindfulness training would be associated with reduced stigma and more positive attitudes related to mental health help-seeking. Among 184 sworn staff with complete data, 58 (31.5%) reported having previously participated in an 8-week mindfulness training program. Controlling for agency, age, and years of police service, prior mindfulness training was associated with a trend-level reduction in perceived public stigma ($t(174) = -1.70$, $p = 0.09$, $b = -2.16$, 95% CI [-4.67, 0.35]) but not self-stigma ($t(174) = -1.06$, $p = 0.29$, $b = -1.34$, 95% CI [-3.84, 1.16]), and a trend toward more positive help-seeking attitudes ($t(174) = 1.68$, $p = 0.10$, $b = 0.31$, 95% CI [-0.06, 0.67]).

Relationships between psychological distress, stigma, and help-seeking attitudes

We tested the hypothesis that individuals with greater symptoms of psychological distress (a composite index of anxiety, depression, and perceived stress) would report greater help-seeking stigma and more negative help-seeking attitudes. Consistent with hypotheses, greater psychological distress was associated with greater perceived stigma ($r_{partial}(250) = 0.36$, 95% CI [0.25, 0.47], $p < 0.001$), greater self-stigma ($r_{partial}(250) = 0.24$, 95% CI [0.12, 0.35], $p < 0.001$), and more negative attitudes related to mental health help-seeking ($r_{partial}(249) = -0.20$, 95% CI [-

0.32, -0.08], $p = 0.001$), controlling for agency, civilian/commissioned status, age, and years of police service.

Past help-seeking and help-seeking intentions: Descriptive data

Commissioned personnel reported utilizing slightly more mental health resources than civilian staff over the past 12 months ($t(109.3 = 1.74$, $p = 0.08$, $b = 0.56$, 95% CI [-0.08, 1.19]) and overall ($t(112.3 = 2.04$, $p = 0.04$, $b = 0.79$, 95% CI [0.02, 1.55]). Across all respondents, the most frequently utilized lifetime resources were "support from a spouse, partner, or family member" (87.3% of respondents), "support from a friend outside of law enforcement" (81.7%), and "support from a friend within law enforcement" (78.9%), followed by "mindfulness or meditation" (68.1%) and "critical incident stress debriefing" (64.9%). The least utilized resources by far were "crisis hotline" (2.0%) and "police chaplain" (1.6%), the latter of which was not an available resource for participants in these agencies.

We also asked participants to indicate which of these resources they would maybe or definitely seek out if they needed mental health support in the future. One participant was removed from these analyses for being an outlier, as they endorsed 0/14 resources (the next lowest value was 4/14). The top five resources participants would seek out remained unchanged from the most frequently used past resources. Notably, whereas "support from a supervisor or police leadership" was the 6th most frequently utilized resource in the past (53.8%), this resource fell to #10 for resources likely to be utilized in the future (30.7%).

Relationships between mindfulness training and psychological distress on past help-seeking and future help-seeking intentions

We tested the role of prior mindfulness training and psychological distress symptoms on past mental health help-seeking behavior and future help-seeking intentions. Controlling for agency, age, and years of police service, prior mindfulness training was associated with greater utilization of mental health resources over the past 12 months ($t(173) = 2.50$, $p = 0.01$, $b = 0.84$, 95% CI [0.18, 1.50]) and a trend toward greater intended future utilization ($t(173) = 1.63$, $p = 0.10$, $b = 0.63$, 95% CI [-0.13, 1.40]). Controlling for agency, civilian/commissioned status, age, and years of police service, greater psychological distress was associated with *greater* utilization of mental health resources over the past 12 months ($r_{partial}(248) = 0.13$, 95% CI [0.01, 0.26, $p = 0.03$), but *lower* intended future utilization of these resources ($r_{partial}(248) = -0.16$, 95% CI [-0.28, -0.04], $p = 0.01$).

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