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SOLDIER STRESS, ATTITUDES AND BELIEFS RELATED TO COVID-19 FOLLOWING DEPLOYMENT

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BACKGROUND

US Military strategic and operational effectiveness requires managing and adjusting to emerging and novel threats, including disease outbreaks, in real time. The Coronavirus-19 (COVID-19) pandemic represents such a threat and presents both direct and indirect challenges to the US military (Kalkman, 2020). Direct threats include the disease burden borne by service members and associated impacts on operational readiness; as of June 14th, 2021, the US Department of Defense (DoD, 2021) reported a total of 299,565 COVID-19 cases, 4,134 hospitalizations, and 354 deaths among military service members, DoD employed civilians, dependents and contractors. The Army, the largest service branch, experienced the greatest share of this disease burden.

In addition to the direct morbidity and mortality impacts of COVID-19, the pandemic forced service members and military institutions to confront myriad indirect challenges, from adopting new health and safety practices and adjusting to new social norms, to managing non-duty related stressors in personal and family contexts, to reconsidering strategic priorities and deployments in order preserve the capacity to respond to external threats while meeting rapidly changing domestic needs (Burke et al., 2020, Kalkman, 2020). While Soldiers continued to perform their traditional military duties during the pandemic, the Army's operational expectations grew beyond external threat management to include domestic logistical and supply functions. Soldiers were mobilized to assist with civilian-led public health measures including testing and vaccination efforts (McGee & Michael, 2020). Thus, an effective Army response to direct and indirect threats posed by COVID-19 required both preserving traditional operational readiness and expanding capacity to manage novel personnel and logistical demands in support of domestic public health goals.

The Army's ability to respond to this rapidly evolving constellation of demands is contingent on healthy, well-regulated Soldiers. As a result, maximizing the effectiveness of public health interventions and facilitating uptake of disease prevention and mitigation measures, as well as supporting Soldiers' ability to cope with additional COVID-19 related life stressors, is a key determinant of the Army's overall COVID-19 response. As of June 14th, 2021, DoD reported that 840,592 service members (including 275,900 Army personnel) and 253,134 DoD employed civilians had been fully vaccinated. However, evidence shows that public health measures depend on both organizational messaging and individual behavioral compliance (Paul, Steptoe & Fancourt, 2021; Fischer et al., 2020). Thus, any successful Army-led pandemic response effort requires understanding Soldiers' attitudes, beliefs, and pandemic-related stress, as well as building and maintaining trust in leaders to disseminate accurate and reliable COVID-19 related information. These requirements are even more important in an information environment characterized by politicization and widespread pandemic-related misinformation.

This technical report presents preliminary findings of a larger study with Army Soldiers deployed from February to March 2021, related to attitudes, beliefs, stress, and leadership trust around COVID-19. Understanding and responding to Soldier concerns about COVID-19 impacts and building trust in leadership to manage an effective institutional response is critical to achieving current strategic and operational objectives and to applying lessons learned to inform future responses to similar threats.

METHODS

Procedures

These data come from a convenience subsample of United States Army service members who participated in a supplemental survey (n=94) assessing experiences and attitudes towards COVID-19. The parent study (n=242) recruited active duty service members from one battalion at a single Army base in the United States to examine risk and protective factors for service members' health and wellbeing outcomes. The sample was recruited in the First week of December 2019, and participants were then deployed outside the United States and returned to the United States in late Fall 2020. Service members were contacted about the supplemental survey related to their COVID-19 experiences and attitudes between February 3 and March 3, 2021.

For the parent study, participants were recruited through in-person verbal solicitations (at the company level). Service members were informed of the opportunity to participate by battalion leadership. In-person recruitment took place at the base where the battalion was preparing for deployment. Written informed consent was obtained from all study participants and contact information (email addresses and mobile phone numbers) were collected for subsequent study contact. Four study team members participated in recruitment, consent, and survey administration in person. Eligibility criteria were active duty status and assignment to the collaborating battalion. The original convenience sample had no refusals as service members came to a central location where the study was being conducted only if they were interested in participating.

For the COVID-19 supplemental survey, participants were contacted via email and texted via mobile phone. Five members of the study team worked to contact the participants. Three attempts were made to connect with all of the original study participants. A total of 96 persons were successfully contacted and 2 refused, yielding the final sample of 94. The supplemental survey was delivered online. Participants were given a $50 gift card as compensation for their time. Additional consent for the supplemental survey was collected online, through a secure document service. The supplemental survey focused on post-deployment experiences including experiences and attitudes regarding COVID-19.

Measures

The exact wording of all the COVID-19 questions is included in an appendix in this report. No statistical tests were performed as the sample size is too small and under-powered for statistical comparisons. In some instances we have collapsed categories of Likert scale items for clarity. All data was processed in Stata.

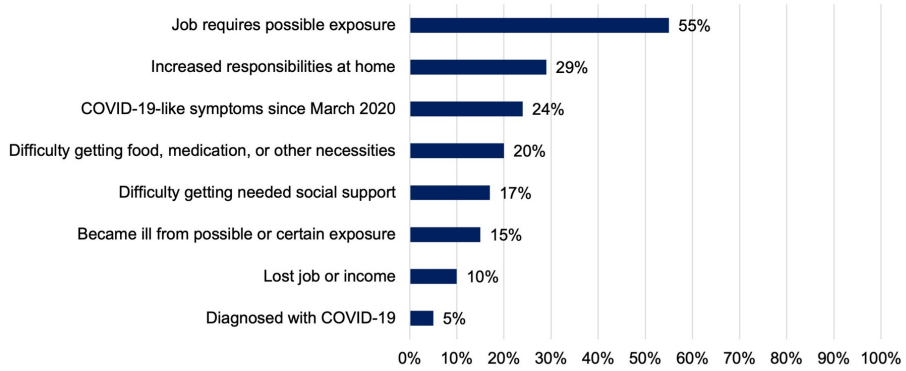
RESULTS

A post-deployment social networks and health in the Army survey was conducted in California with 94 total participants.

Table 1. Respondent characteristics	n (mean)	% (SD)
Age	26.8	6.1
Gender		
Male	84	87.5
Female	12	12.5
Race/Ethnicity		
White	41	45.1
Black	19	20.9
Latinx	17	18.7
Asian	6	6.6
Another race	8	8.8
Marital status		
Single	35	37.2
Married	52	55.3
Divorced	3	3.2
Separated	3	3.2
Widowed	1	1.1
Education		
H.S. diploma /GED	50	54.3
Some college	16	17.4
Associate's degree	10	10.9
Bachelor's degree +	16	17.4
Rank		
Private First Class	2	2.1
Specialist	21	22.3
Corporal	12	12.8
Sergeant	30	31.9
Staff Sergeant	16	17.0
Sergeant First Class	4	4.3
First Lieutenant	4	4.3
Captain	3	3.2
Retired	1	1.1
Civilian	1	1.1

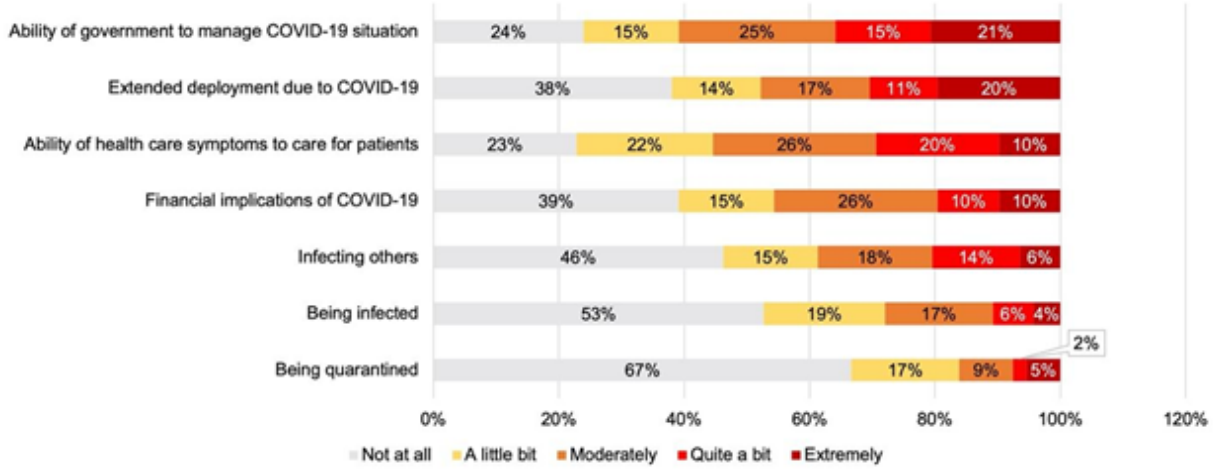
Participants were asked to indicate the number of stressful experiences they had experienced related to the ongoing coronavirus outbreak; 5% had ever been diagnosed with coronavirus, whereas 24% had experienced coronavirus-like symptoms at some point since March 2020. Over half (55%) endorsed experiencing stress because their job required possible exposure to COVID-19, while 15% reported that they became ill from possible exposure. In addition, 29% of soldiers reported increased responsibilities at home, 20% reported having had difficulty getting food, medication, or other necessities, and 17% reported they had difficulty getting needed social support. Data showed that one in ten (10%) participants reported lost jobs or income due to COVID-19.

Figure 1. Perception of threats posed by COVID-19



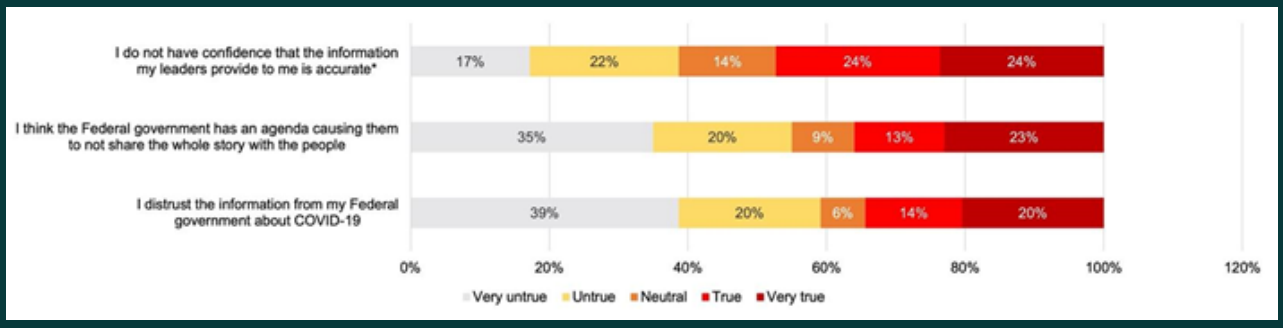
Participants were also asked about their trust in government systems to manage the COVID-19 pandemic. Most (61%) were moderately to extremely worried about the government's ability to manage the pandemic, and 56% were moderately to extremely worried about the ability of the health system to care for COVID-19 patients if the situation worsened. Just over a quarter (27%) were moderately to extremely worried about being infected with coronavirus. While most (67%) of participants did not report being worried about being quarantined, 46% endorsed moderate to extreme worry about financial implications as a result of the COVID-19 pandemic. In addition, 48% of participants said they were moderately to extremely worried about extended deployment, while 39% were moderately to extremely worried about infecting others.

Figure 2. Among of worry felt about COVID-19



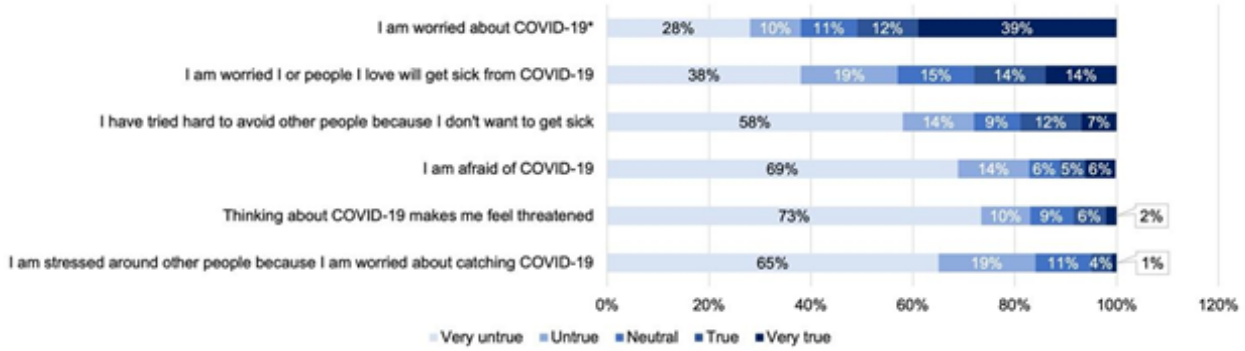
While the DoD (2021) reports working closely with the Federal Emergency Management Agency, the Department of Homeland Security, the Department of Health and Human Services, and the State Department to support domestic COVID-19 prevention and intervention goals, 34% of study participants said it was true or very true that they distrusted information about COVID-19 from the Federal Government. Similarly, 36% of respondents reported that it was true or very true that the Federal government has an agenda causing them not to give the whole story to people. Of great concern, 48% said it was true or very true that they did not have confidence in the accuracy of leader-provided information about COVID-19. Exploration of the frequency and source of accessing media related to COVID-19 showed that 29% of participants checked traditional media and 32% checked social media between 1 and 5 times daily. Of those who reported accessing COVID-19 information at least once daily, 58% of participants reported checking social media compared to 48% who reported checking traditional media. Among the minority of participants who reported checking some form of media more than 10 times per day, twice as many (11%) checked social media compared to traditional media (5%).

Figure 3. Amount of trust in information received about COVID-19 from the federal government and military leadership



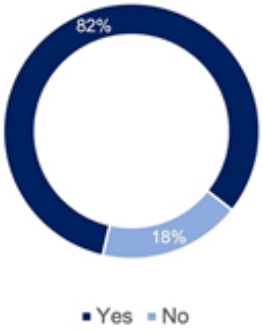
A series of questions was asked to better understand participants' perceptions of the threat posed by COVID-19. Data showed that over two-thirds (69%) of soldiers felt no perceived COVID-19 threat, responding to the statement "I am afraid of the coronavirus (COVID-19)" with "not true at all". Similarly, 73% endorsed the "not true at all" category when asked if COVID-19 made them feel threatened. Relatively fewer participants (58%) endorsed "not true at all" when asked if they avoided others so they didn't get sick. Participants appeared to be substantially more concerned about the health of others than about getting sick themselves; only 5% said it was true or very true that they felt stressed around others due to the possibility of getting sick. In contrast, 28% reported feeling worried about people they love getting sick from COVID-19.

Figure 4. Perception of threat posed by COVID-19



Although military institutions adopted recommended health and safety practices, the availability and use of personal protective equipment (PPE) continues to pose domestic and global challenges. While these data were collected a year into the COVID-19 pandemic, the necessity of reusing PPE was evident. Among participants, 82% indicated they had received orders to use personal protective equipment, 81% reported having used PPE at work since the pandemic began, and 58% reported having had to reuse PPE

Figure 5. Rate of respondents receiving orders to use PPE and belief that PPE should be used

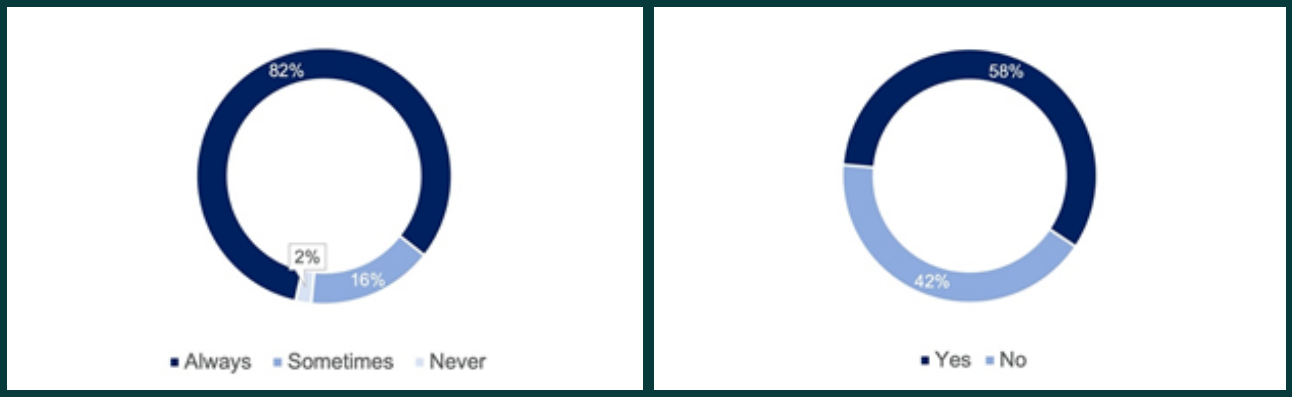


(a) Received orders to use PPE (n=91)

(b) Agree that PPE should be used (n=16)

Note: Respondents in (b) include only those who did not receive orders to use PPE.

Figure 6. Rate of PPE use among respondents

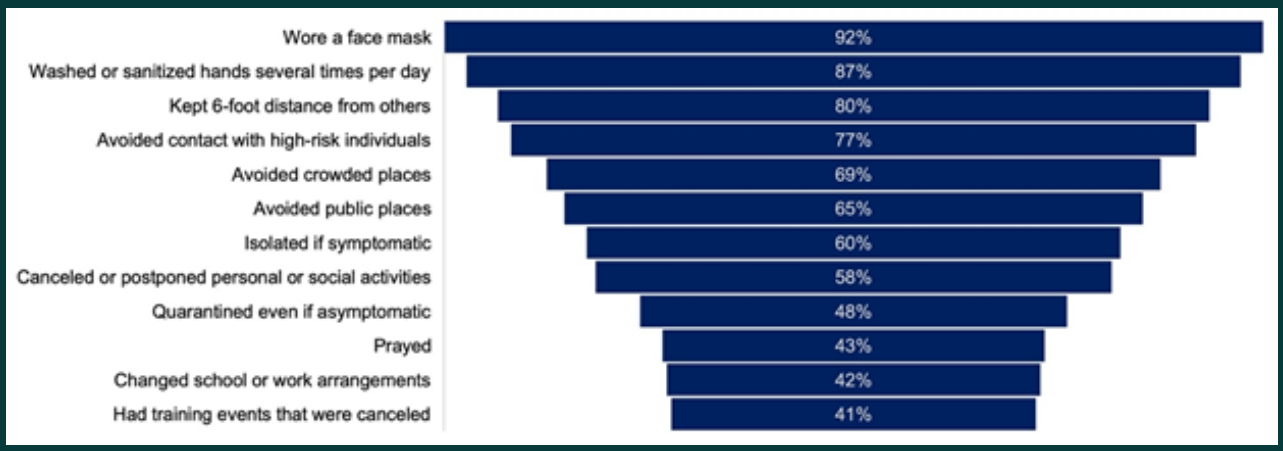


(a) Use PPE (n=92)

(b) Had to re-use PPE (n=90)

Most participants reported that they had engaged in recommended COVID-19 safety behaviors in the the last 7 days including wearing a mask (92%); washing or sanitizing their hands several times per day (87%); keeping a 6-foot distance from others (80%); and avoiding contact with high-risk individuals (77%). Other personal protection efforts included avoiding crowded places (69%), avoiding public places (65%), and cancelling or postponing personal or social activities (58%).

Figure 7. Precautionary measures taken against COVID-19 in the past week



DISCUSSION

The military has a long history of successfully adapting to emergent threats to the security of the United States. Yet pandemics, including COVID-19, represent a unique threat to the country both directly and indirectly through the impact on armed forces personnel and the overall military establishment. Information about service members' attitudes, beliefs, stress, and leadership trust around COVID-19 can help to address issues related to organizational readiness in the military that can undermine operational integrity and performance. The following passages discuss central findings and implications from our present study, which offers perspective on these issues.

Service members were, by and large, more worried about the threat of COVID to loved ones than themselves. This aligns with value placed on collectivism and self-sacrifice that are deeply embedded in military culture. Indeed, an orientation that prioritizes group cohesion, welfare, and needs is a cornerstone of military culture. Likewise, military service valorizes stoicism and a more relaxed attitude toward death in that preservation of one's life is perceived as secondary or of lesser importance than the greater good or others' well-being (Bryan et al., 2012). Moreover, it is not uncommon for people in general to worry more about loved ones, which may be amplified among military personnel whose specialized resiliency training (Cacioppo et al., 2011) may lead to differential threat evaluations for themselves relative to loved ones. Two contextual issues may have influenced these differential threat perceptions. On one hand, soldiers did not have any time to prepare or provide direct assistance to their families because they deployed before the pandemic; this likely increased their perceptions of threat for loved ones, especially when soldiers had family members who were vulnerable to (e.g., elderly) or had died from COVID. On the other hand, many planned military exercises were cancelled or changed as a result of the pandemic, which essentially meant that soldiers were placed in lockdown to protect them from COVID exposure; this likely decreased their perceptions of threat to self. Notably, threat perceptions regarding loved ones are not without operational implications. Previous work has shown that family resilience contributes to military readiness, namely the ability of service members to successfully accomplish their missions (Schumm et al., 2001). Therefore, the military should consider implementing touchpoints to assess how service members are perceiving the threat of a pandemic, such as COVID, to loved ones to detect and mitigate threat levels that pose a risk to operational integrity/performance and related national security interests.

A substantial segment of service members endorsed stress related to unmet basic needs (i.e., food, medication, or other necessities). Specifically, one out of every five respondents expressed having difficulty with satisfying basic needs. Although meta-analytic work found similar rates for past-month food insecurity among low-income veterans (22.5%; Pooler et al., 2021), it is unexpected and alarming to discover that active-duty military members are facing such resource problems. That no soldier lost their Army job due to the pandemic does not mean that the financial security of their household was unaffected (e.g., partner job loss, secondary job), which could have contributed to additional stress related to basic need insecurity for soldiers and their families during deployment; although a rear detachment is responsible for the provision of family support, support providers may have lacked robust training about how to best support families in an unprecedented pandemic. For perspective, there is no way to know from this study exactly when these service members experienced resource challenges; for instance, needs may have been unmet during the initial stage of the pandemic when escalating needs outpaced organizational readiness and response. Nonetheless, similar to family threat perceptions above, the current inability or uncertainty about one's future ability to meet basic needs can have operational consequences. For example, a recent systematic review found that nutritional deficiencies can negatively impact cognitive performance in military personnel (Martin et al., 2020). Therefore, a robust infrastructure should be maintained so that service members do not encounter barriers in accessing basic needs.

A worrisome degree of mistrust in the government and, even more so, leadership was observed. To reiterate, many service members held perceptions that the Federal government was not being transparent with the public about COVID for political reasons and lacked confidence in both the government as well as their leaders to provide accurate COVID information. Although the timing of the study (i.e., early in Biden presidency) makes it difficult to know whether these government perceptions were administration-specific, a lack of trust in one's government at any time should be viewed with measured concern. The level of government mistrust among our sample of army personnel may reflect broader national trends and/or situational context. Many countries have found a decline in government trust in recent years, which may worsen during crises (Skali et al., 2021). With that said, the impact of mistrust in one's government among military personnel may have distinct and potentially more serious consequences than comparable mistrust in civilian populations. Mistrust in one's leadership is especially consequential as trust is critical to group cohesion and related organizational effectiveness within the military (e.g., Lyons et al., 2018; Bjornstad & Ulleberg, 2020; Bryan et al., 2012). Distrust in leaders might also lead to vaccine refusals among military personnel, which can compromise their health and associated operational readiness.

Importantly, soldiers tend to rely on family members for information on current events during deployment; thus, soldiers' distrust in leadership may have grown during the pandemic, particularly if COVID-19 information came from family members who were confused about the virus or who had been exposed to disinformation or misinformation. Therefore, an investment in initiatives that identify sources of mistrust and tailor programming to address them is worthwhile until the effects of such mistrust can be further scrutinized.

LIMITATIONS

There are limitations to this work that must be acknowledged. First, findings are derived from a convenience sample and as a result caution is warranted regarding generalizability to all Soldiers and active duty service members; notably, our sample for this supplemental study is disproportionately comprised of non-commissioned officers. Second, because the sample size is relatively small, we cannot examine subgroup differences nor conduct statistical tests with sufficient power to make inferences. Third, these data capture attitudes toward COVID-19 in early 2021, but the survey was written in summer 2020 prior to vaccine distribution; we surveyed soldiers prior to most of the US population being vaccinated and we have no information about vaccination status nor attitudes toward vaccines.

FUTURE DIRECTIONS

There are many potential directions for future research related to service members' attitudes, beliefs, stress, and leadership trust around COVID-19. First, a larger, more representative study is necessary to determine the generalizability of our findings; replication will bolster confidence in developing actionable priorities and designing strategic plans to address them. Second, the military may benefit from exploring whether COVID risk perceptions differ according to military occupational specialty (i.e., MOS); this will help to assess the utility of targeted programming to address differential threat perception across MOS. Third, follow-up studies should aggressively seek to inventory the scale of unmet need and identify personal or systemic factors that lead to greater unmet need. Fourth, subsequent work should strive to better understand the relationship between government/leadership trust (or mistrust) and information-seeking behavior (e.g., reliance on different sources of information, like social media). Similarly, future research should aim to elucidate contributors to government/leadership mistrust, including exposure to misinformation (e.g., Ognyanova et al., 2020). It is also important to investigate mistrust in leadership and whether it flows from enlisted to NCOs and/or from NCOs to commissioned officers and to better understand the sources and consequences of this mistrust in leadership. Lastly, there may be age-cohort differences in perceptions of disease threat and vaccine uptake that should be explored.

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