



# **EMS Provider Mental Health During COVID-19: A Pandemic**

## **Within a Pandemic**

**Aditya C. Shekhar**

**Published on August 10, 2021**

### **Abstract**

Introduction: The COVID-19 pandemic has led to worsening mental health across many facets of society. Due to their proximity to the pandemic, in-hospital and prehospital providers have been especially affected.

Methods: A survey designed to examine EMS provider mental health during the COVID-19 pandemic was shared through social media and through word-of-mouth. A total of 122 respondents – with an average of 16 years of experience in EMS – took the survey.

Results: Survey responses indicated alarming deteriorations in EMS provider mental health took place during the COVID-19 pandemic. Respondents reported: 1) significant policy and guideline alterations have negatively impacted job performance and satisfaction; 2) decreases in agency morale; 3) increased stress; 4) worse mental health when compared with non-pandemic times; and 5) increases in hostility/aggression, loneliness and sadness, and weight gain coinciding with

decreases in exercise. Important results worth highlighting include: 84.6% of respondents indicated morale within their agency has decreased; 88% of respondents reported feeling slightly or significantly more stressed when compared with non-pandemic times; 70.9% of respondents reported their mental health is either slightly or significantly worse when compared with non-pandemic times; and 33.3% of respondents reported starting to think about changing careers due to the pandemic.

Conclusions: Our data emphasize the toll the pandemic has taken on EMS providers nationwide. In the immediate term, EMS agencies and leaders should consider ways to improve morale and provider mental health as the pandemic reaches its final stages and during the post-pandemic period. Second, planning and care should take place to prevent similar deteriorations in mental health from taking place during future large-scale events that tax the EMS system.

## **Background**

Since the onset of the COVID-19 pandemic, experts have raised concerns about significant deteriorations in mental health as a result of the pandemic and the dramatic social changes that have resulted.<sup>1</sup> One population that has been identified as being particularly at-risk for mental health concerns are in-hospital providers and first responders.<sup>2,3</sup> During non-pandemic times, studies suggest first responders and healthcare workers already face an elevated risk of mental health concerns, including burnout, depression, and PTSD.<sup>4-8</sup>

As early as the first quarter of 2020, research suggested health care workers were facing unprecedented levels of stress as a result of the pandemic. One study examining 1257 professionals from 34 hospitals in China between January and February 2020 found high levels of symptoms of depression, anxiety, insomnia, and distress – the prevalence and severity of these

symptoms increased with individuals who were closer to what was the epicenter of the pandemic at the time.<sup>9</sup>

The pandemic has changed EMS and public safety as a whole dramatically. Masks and other forms of personal protective equipment (PPE) are now recommended for routine use in EMS.<sup>10</sup> Many national and international studies indicate changes to overall EMS call volume and changes to the incidence of specific call types have taken place.<sup>11,12</sup> These changes have the potential to negatively affect EMS provider mental health.

Studies specifically examining mental health among first responders have reported alarming results. One study of 189 first responders between June and August 2020 found increased alcohol consumption, as well as more severe symptoms of anxiety and depression.<sup>3</sup> Another study examining a variety of frontline medical staff (both in-hospital and prehospital providers) reported the presence of “feelings of isolation, lack of support and understanding by family or friends, decreased or forced removal in immediate social interaction (e.g., within family and friend circles), sentiments of being infected or dirty, increased feelings of sadness and anxiety, and reluctance to ask for help or get treatment (e.g., self-approval of being isolated)”.<sup>13</sup>

## **Methods**

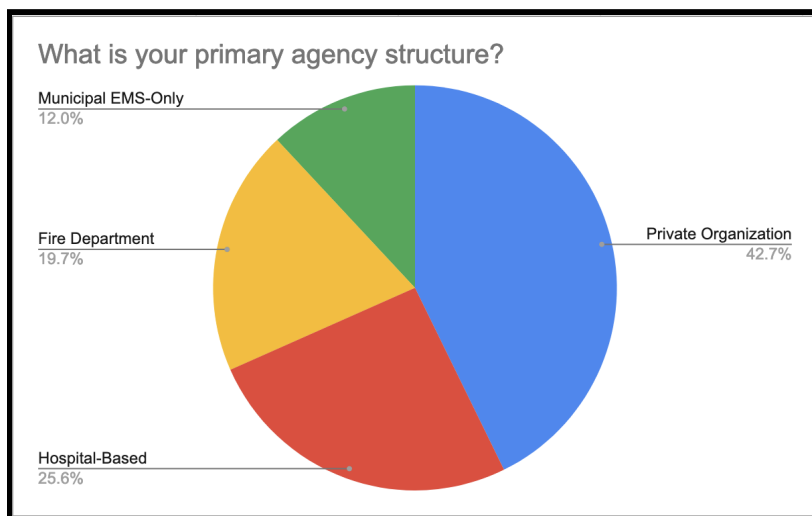
To better understand how the COVID-19 pandemic has affected EMS providers’ mental health, we designed and disseminated a survey specifically designed to gauge various important predictors of job satisfaction and overall mental health.

The survey consisted of items that asked participants about their agency setting, how the pandemic has affected their call volume, how their agency has organizationally responded to the

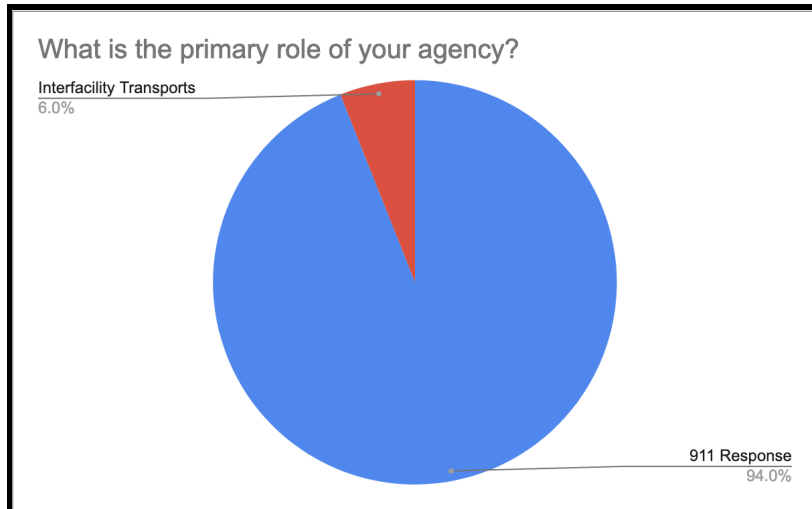
pandemic, their feelings about the pandemic, their perception of stress and how their stress-related behaviors have been altered during the pandemic.

The survey was shared to respondents by email, through word-of-mouth, and through social media. The first response was received on October 15, 2020, and the last response was received on June 21, 2021.

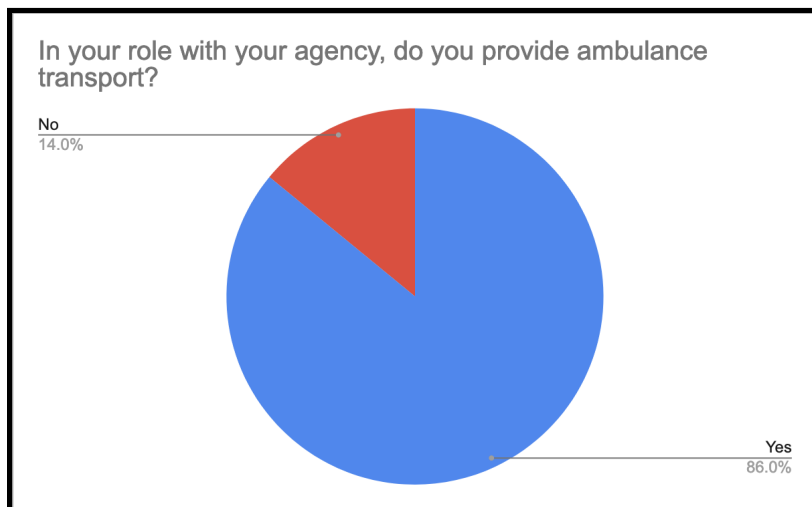
A total of 122 respondents took the survey. Respondents had an average of 16 years in EMS; answers ranged from 0.5 years to 46 years.



A majority (43.1%) provided EMS care as a member of a private organization, 25% provided care as a member of a hospital-based EMS system, 19.8% provided care as a member of a fire department, and 12.1% provided care as a member of a municipal EMS department.

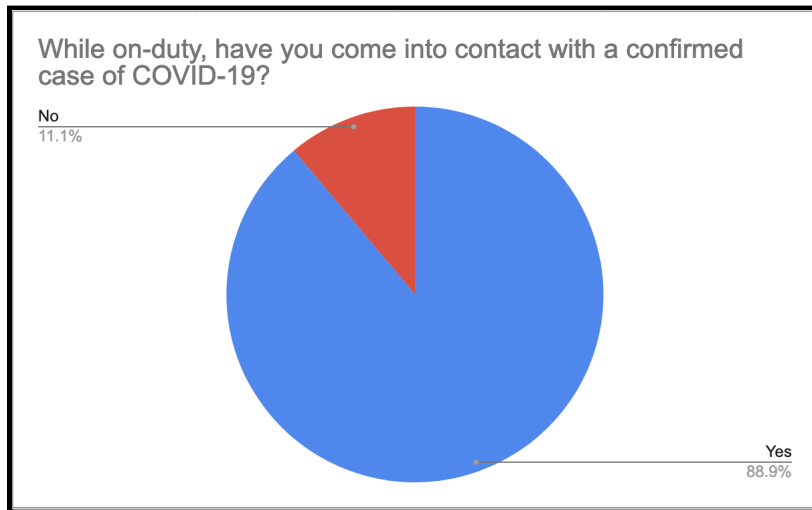


Nearly all respondents (93.9%) worked in an agency that responds to 911 calls at the time of survey completion – the remaining 6.1% of respondents provided interfacility transport.

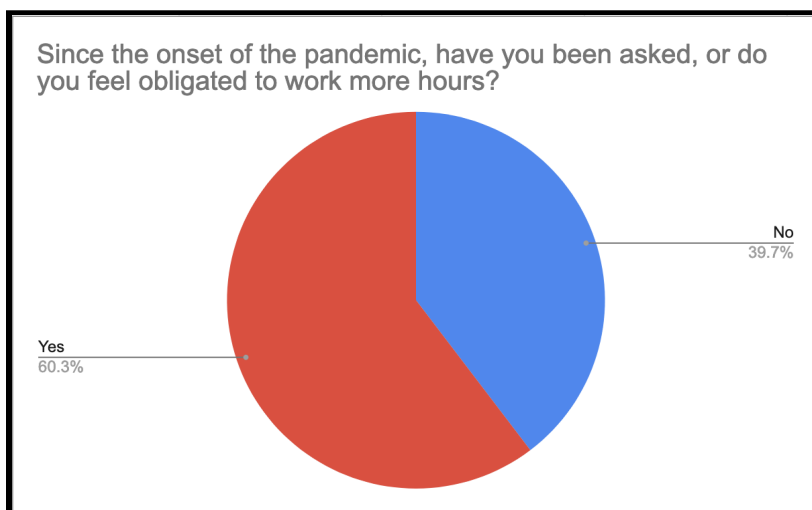


Nearly all respondents (87.1%) work in a role that involves ambulance transport. The 14.0% of respondents who reported not providing ambulance transport might work in a first-response role (eg. non-transporting fire apparatus or law enforcement) or in the in-hospital setting.

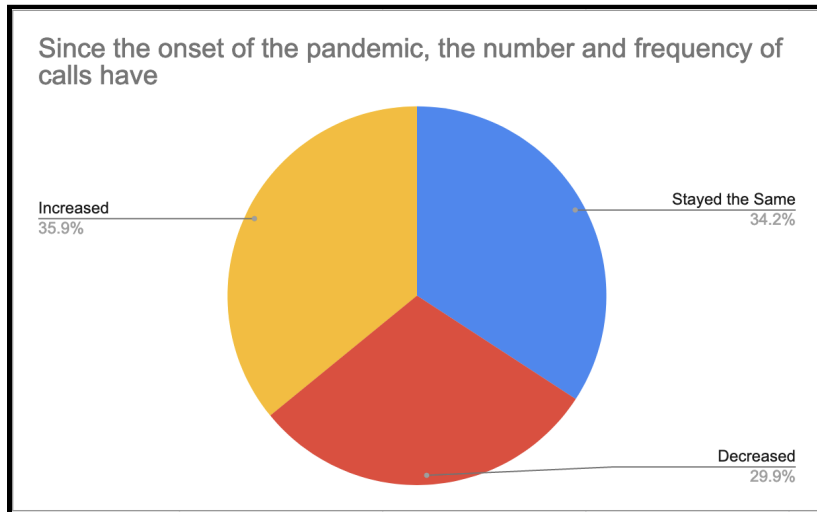
## Agency Responses to COVID-19



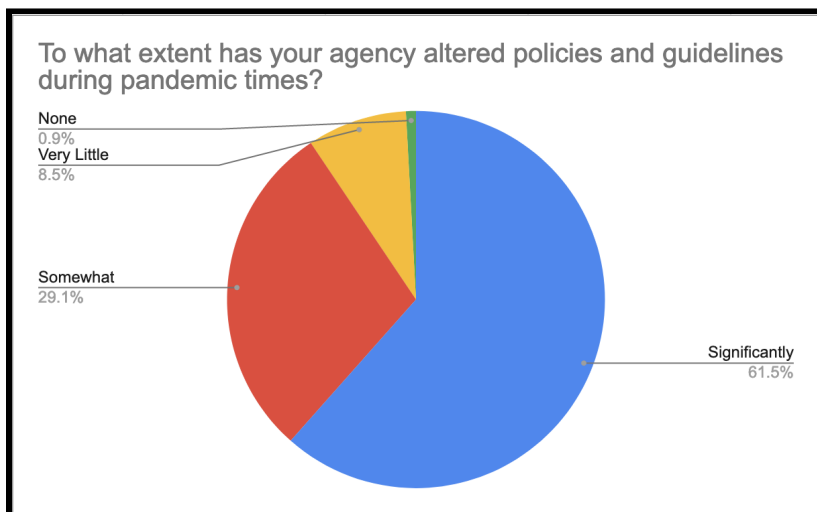
Nearly all respondents (88.8%) had come into contact with a confirmed case of COVID-19. Just 11.2% reported not having come into contact with a confirmed case of COVID-19. Respondents were also asked to estimate what percentage of calls involve COVID-positive individuals. On average, respondents reported 27% of calls involved COVID-positive individuals; answers ranged from 0% to 90%.



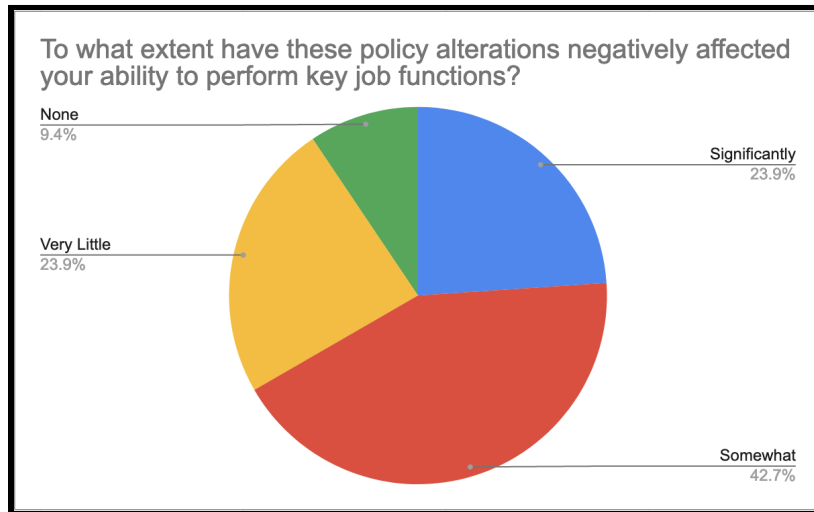
Just over sixty percent of respondents (60.3%) reported being asked or feeling obligated to work more hours. This could be due to a shortage of personnel, an increase in calls, or an organizational culture focusing on working extra during the pandemic.



National-level analyses have indicated changes in EMS call volume have taken place during the COVID-19 pandemic.<sup>11,12</sup> We were curious to see if any salient trends could be gathered from our respondents. Interestingly, respondents indicated a balanced mixture of scenarios: some reported increasing call volume, others reported decreasing call volume, and another group reported no major changes. The magnitude of increases or decreases in call volume was not quantified.

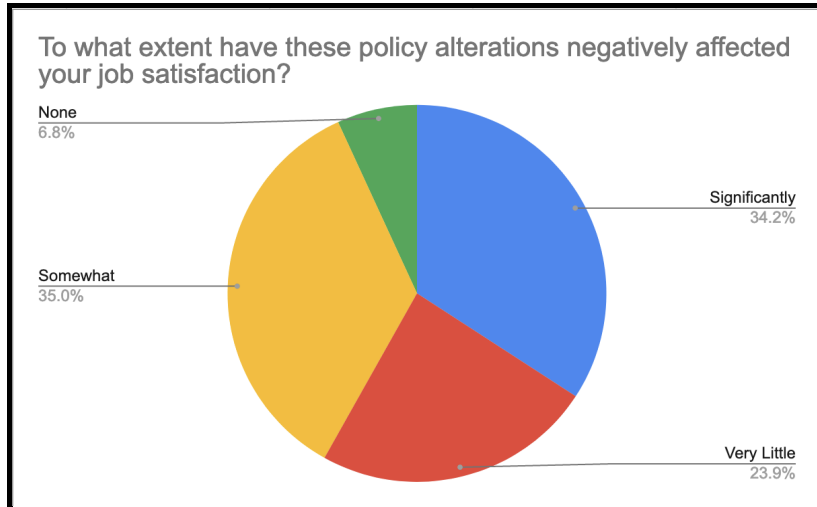


As mentioned previously, the pandemic has caused dramatic shifts in EMS as a field. More than 90% of respondents indicate that their agencies have altered policies and guidelines during pandemic times. The changes were reported to be significant by 61.5% of respondents, somewhat by 29.1% of respondents, and minimal by 8.5% of respondents. Whether changes were significant, somewhat, or minimal was determined by each individual respondent.

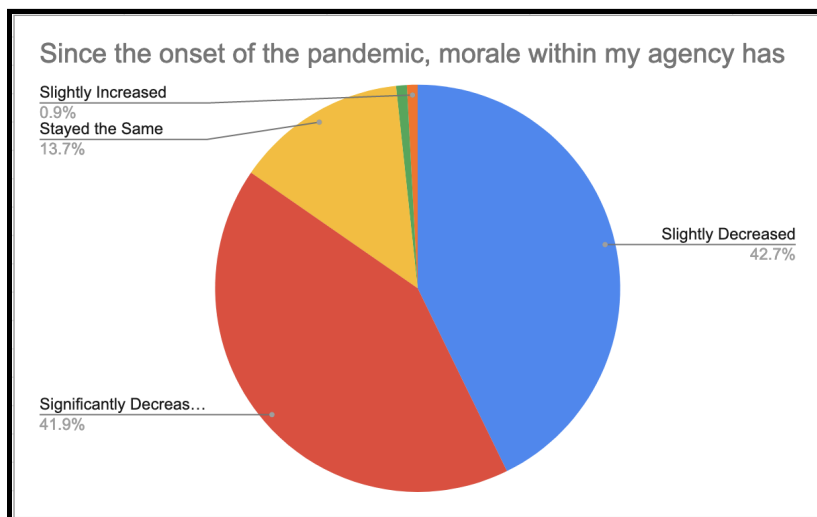


How the policy alterations instituted as a result of COVID-19 affect performance of job tasks is an important area of concern, especially if new policies and guidelines have reduced EMS performance. A majority of respondents indicated policy alterations negatively affected their ability to perform key job functions. Having said that, it is certainly possible that many of the policy alterations that were put in place were justifiable based on the overall risk-benefit ratio.

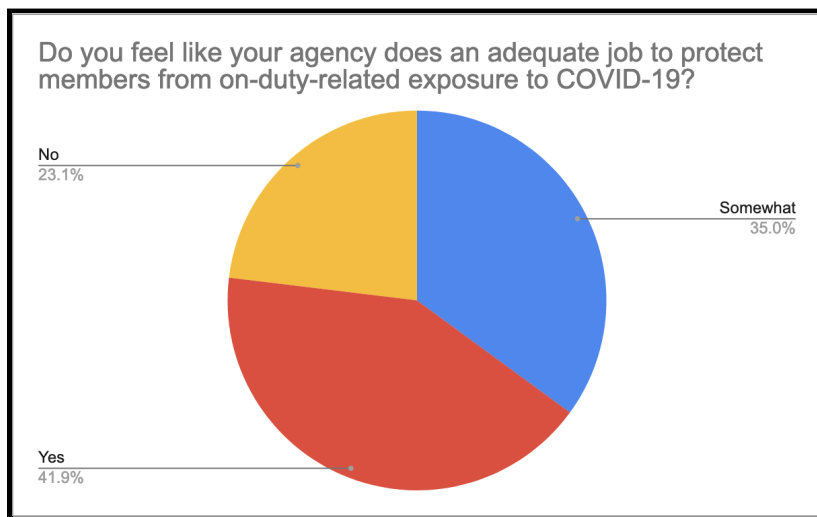




Understanding how the policy alterations that took place as a result of COVID-19 affected job satisfaction will deepen our insight into provider mental health. If providers reported policy changes overwhelmingly reduced job satisfaction, it might be reasonable to conclude that deteriorations in EMS provider mental health could be partially attributable to policy alterations. Almost 70% of respondents indicated that policy alterations have negatively impacted job satisfaction. As mentioned previously, it is still possible that the policy alterations that were put in place were justifiable based on their benefit relative to decreases in job satisfaction.

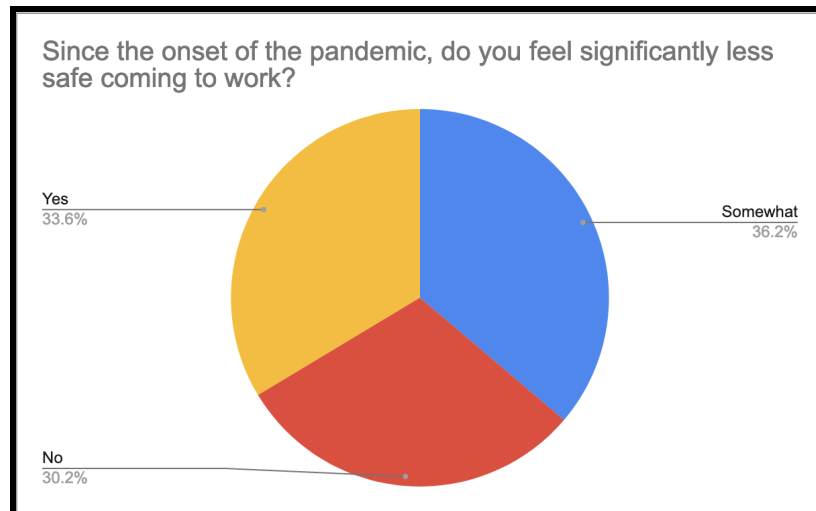


An alarming majority of respondents (84.6%) indicated that morale within their agencies has decreased. This is very concerning, given how agency morale likely correlates with job satisfaction and overall mental health.<sup>14</sup> When including respondents who indicated morale has stayed the same, we learn that, in 98.8% of agencies represented in this survey, morale has either stayed the same or decreased. In other words, agency morale increased in just 1.2% of agencies represented by this survey.

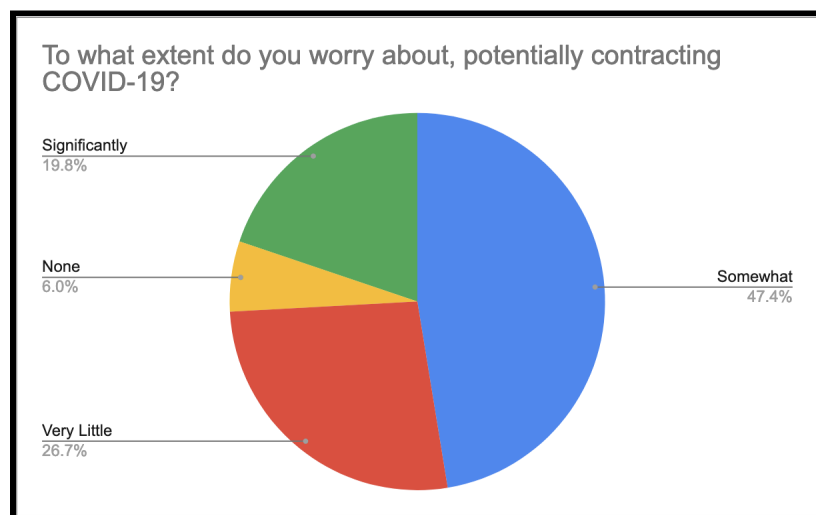


We feel the question of how much providers felt that their agency protects them from on-duty exposure to COVID-19 correlates with both job satisfaction and overall mental health.

Discouragingly, only a minority of respondents (41.9%) reported feeling that their agency does an adequate job protecting members from an on-duty exposure. Only 23.1% reported “No”, and 35.0% reported “Somewhat”. This question is less about whether agencies are actually protecting members and more about whether members are feeling protected. We hypothesize that members who do not feel adequately protected will have lower job satisfaction and, in turn, worse mental health.

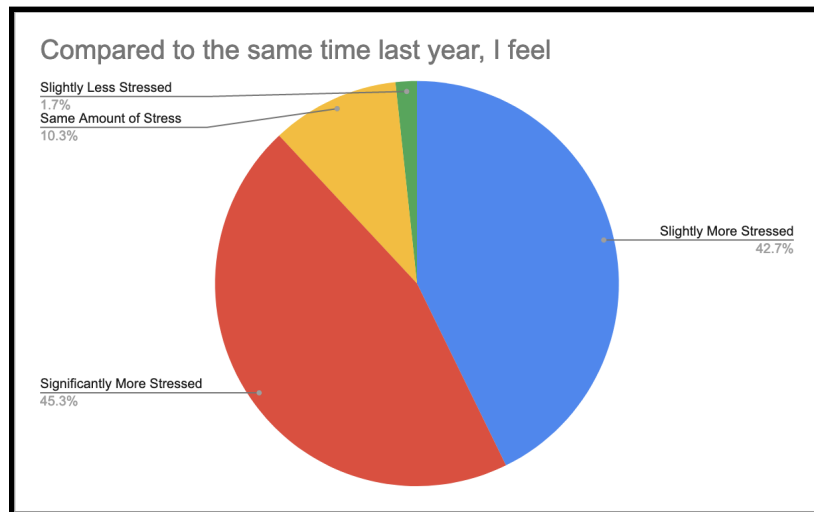


Like with the previous item, we hypothesize that individuals who feel unsafe coming to work as a result of the pandemic will have lower job satisfaction and worse mental health. Nearly 70% of our respondents reported being somewhat or significantly less safe coming to work.

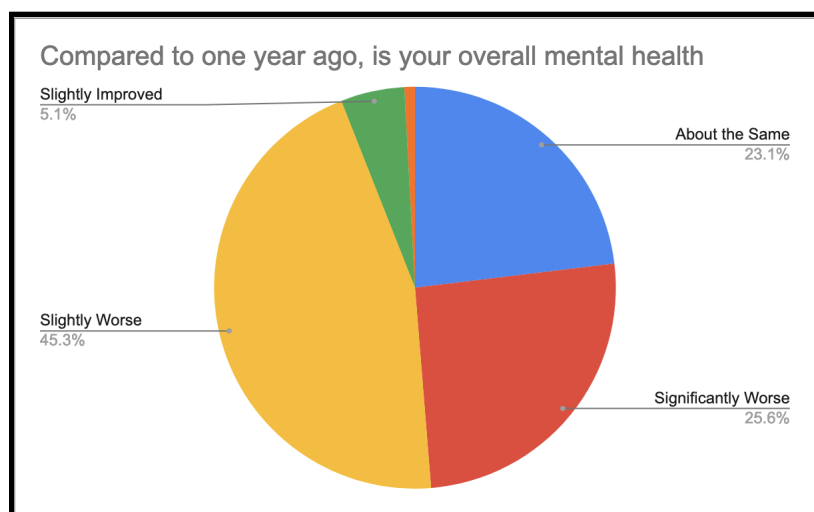


Nearly fifty percent of respondents (47.4%) reported being somewhat worried about potentially contracting COVID-19. Nearly twenty percent of respondents (19.8%) reported being significantly worried about contracting COVID-19. Just 6.0% of respondents reported no fears about contracting COVID-19. It is important to note that many responded to this question at a time when no vaccines were available and much less was known about the illness.

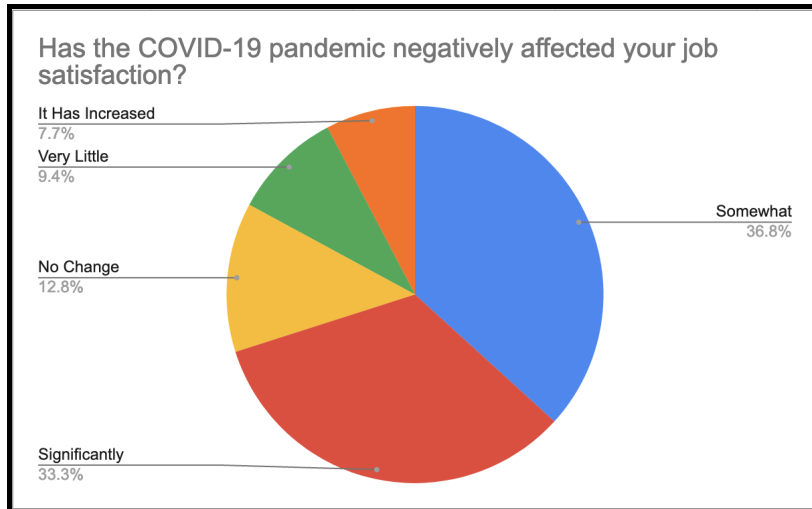
## Provider Mental Health During COVID-19



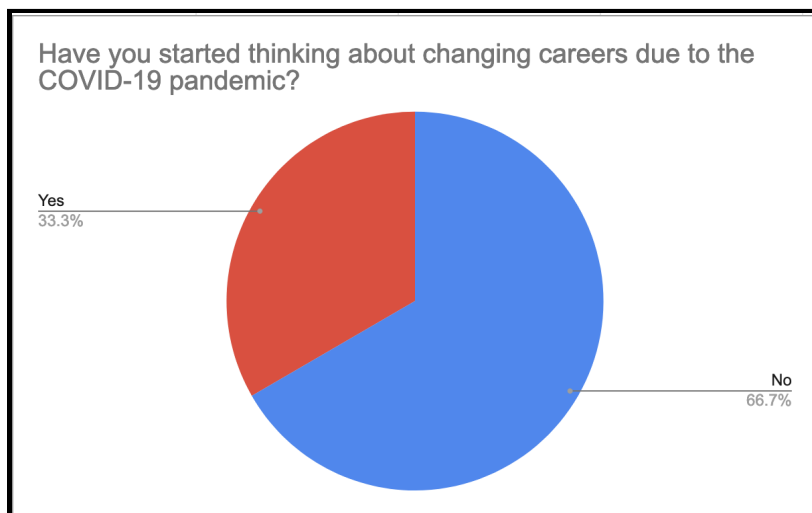
Alarming, almost ninety percent of respondents (88%) reported feeling either slightly more stressed or significantly more stressed than they were during non-pandemic times. Alarming, 45.3% of respondents reported feeling significantly more stressed. Just 12% of respondents reported feeling slightly less or equally stressed as non-pandemic times.



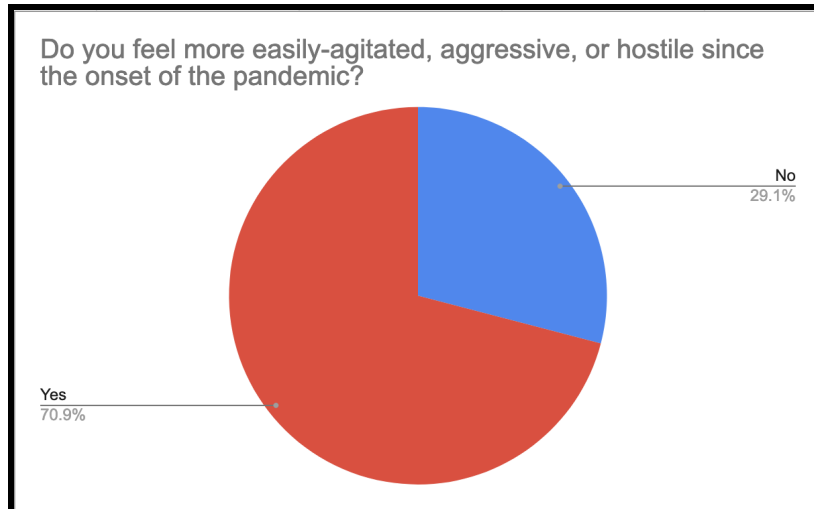
Just over seventy percent (70.9%) of respondents reported their mental being either slightly worse or significantly worse; 45.3% of respondents chose slightly worse, while 25.6% chose significantly worse.



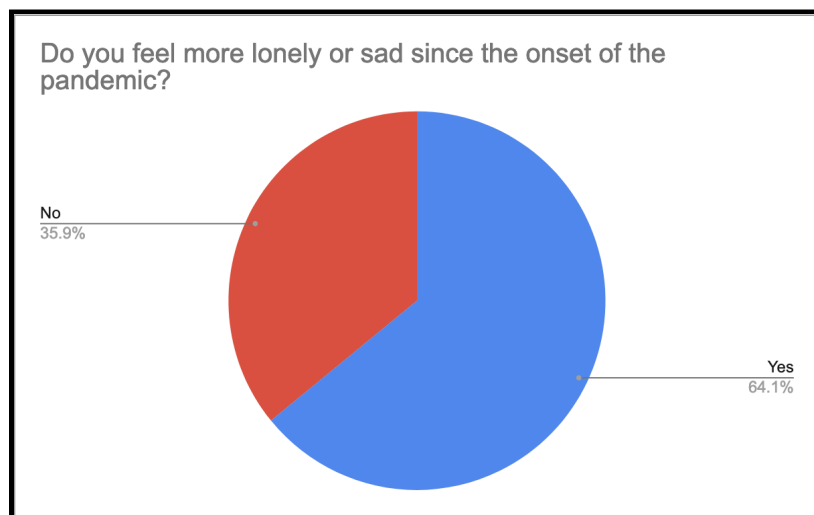
A majority of respondents (70.1%) reported the pandemic negatively affected job satisfaction either somewhat (36.8%) or significantly (33.3%).



About one-third of respondents reported that they began thinking about changing careers as a result of the COVID-19 pandemic. This is especially concerning, considering the current shortage of EMS personnel.<sup>15</sup>

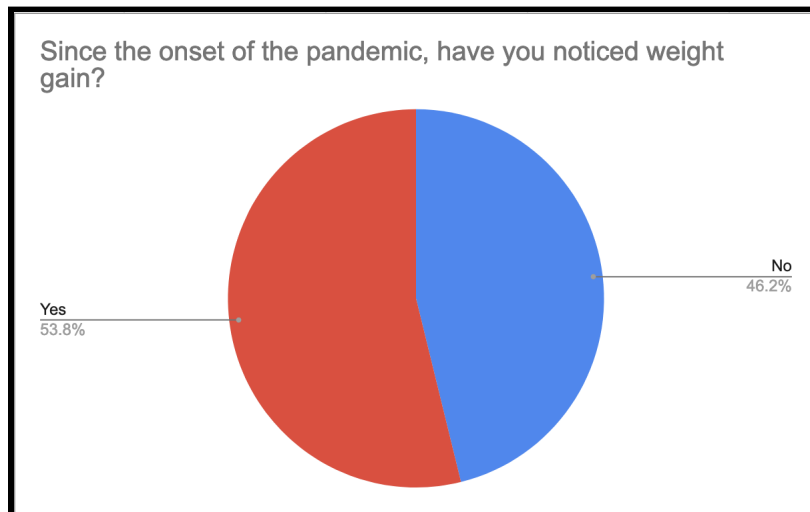


Many (70.9%) of respondents reported feeling more easily-agitated, aggressive, or hostile since the onset of the pandemic. Increased hostility, agitation, and aggression can be concerning signs of deteriorating mental health.<sup>16</sup> This has even been studied in first responders specifically.<sup>17</sup>

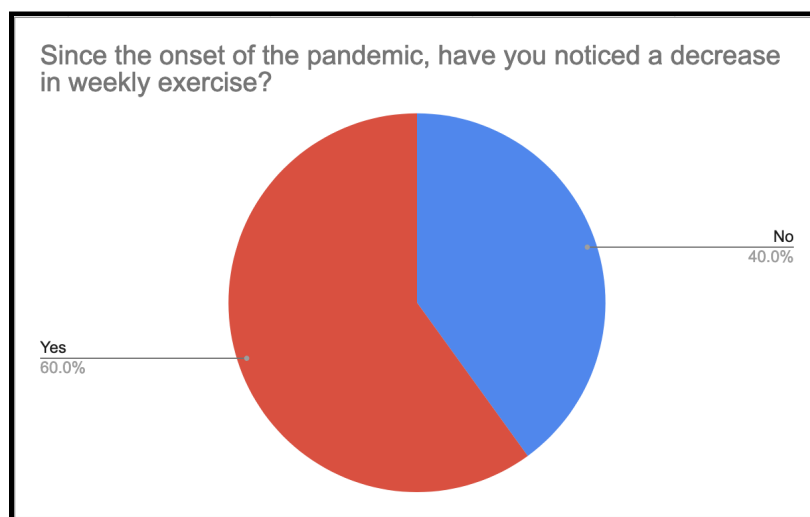


Self-reported loneliness and sadness are concerning signs of deteriorating mental health.<sup>18</sup> More than sixty percent (64.1%) of respondents reported feeling more lonely or sad since the start of the pandemic.

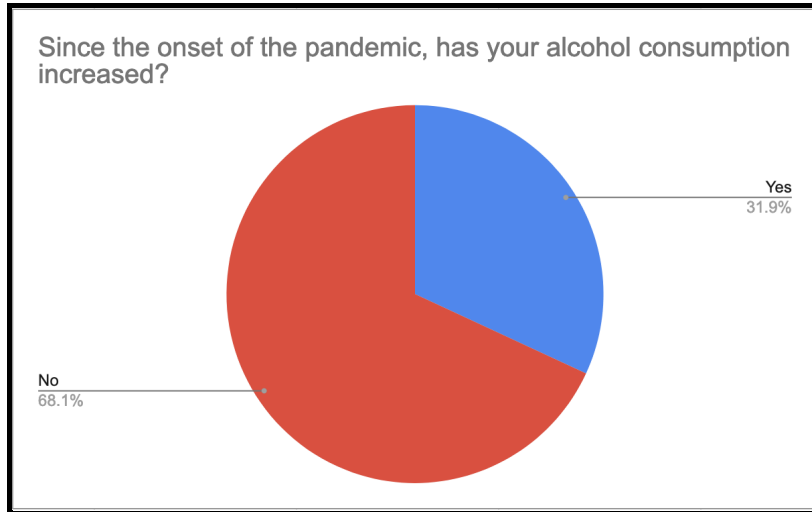
## Positive and Negative Coping Strategies



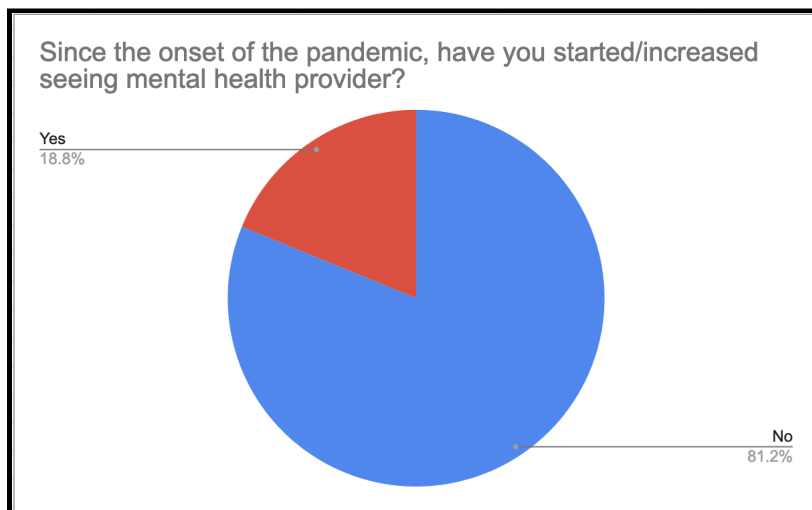
Just over half (53.8%) of providers reported weight gain since the onset of the pandemic. Other studies have reported weight increases in various populations.<sup>19</sup>



Sixty percent of respondents reported a decrease in weekly exercise. Like with weight gain, other studies have also reported decreases in exercise or physical activity and increases in sedentary behaviors.<sup>19,20</sup> It is worth noting that, unlike many other professions, EMS providers did not transition to remote work – this means that survey respondents likely still received a modest amount of physical activity at work, unlike individuals who transitioned to remote work.



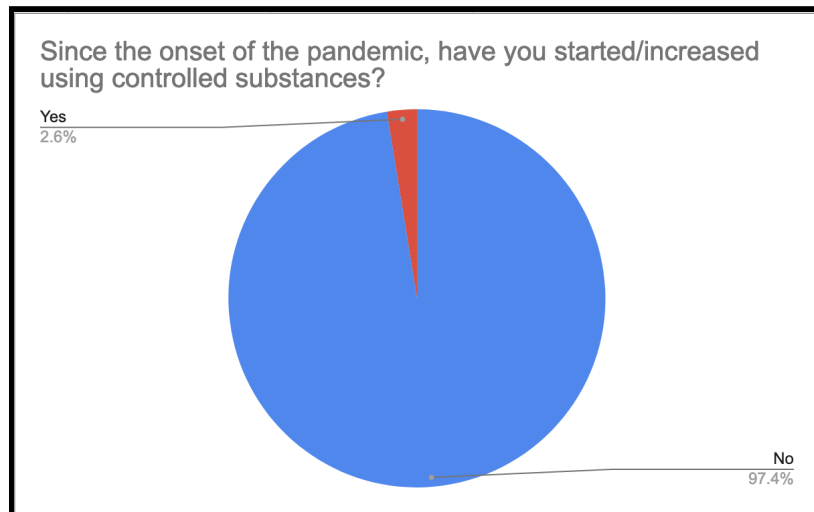
Increased reliance on addictive substances (eg. alcohol) can be correlated with mental health concerns.<sup>21</sup> Just over thirty percent of respondents reported (31.9%) increases in alcohol consumption.



Recipients of care from mental health professionals often report improved mental health.<sup>22,23</sup> Almost twenty percent (18.8%) of respondents reported that they either started seeing a new mental health provider or increased the frequency that they saw their current mental health provider. It is worth noting that some individuals who answered “No” for this question might have had their mental health needs well taken care of by a current provider and, thus, they



selected no. That being said, it is also likely that many who answered “No” for this question do not receive adequate mental health care.



As mentioned earlier, substance use often goes hand-in-hand with mental health concerns.<sup>21</sup> Several respondents (2.6%) reported starting using controlled substances or increasing the frequency that they use controlled substances during the pandemic. Although the survey was anonymous, it is certainly possible that respondents who started using or increased using controlled substances during the pandemic answered “No” to this question out of fear of getting in trouble.

## Conclusions

These data suggest alarming deteriorations in EMS provider mental health took place as a result of the COVID-19 pandemic. EMS-specific causes for deteriorations in mental health during the pandemic could be related to increases in workload, changes to policies and procedures that negatively impact job performance and job satisfaction, and fears about contracting COVID-19 whilst on-duty. EMS providers are likely also affected by the general decline in mental health that is facing the general population.

The effects of the decline in mental health can be visualized by the decrease in agency morale, decrease in job satisfaction, increase in stress, and worsened mental health reported by a majority of respondents. The link between job satisfaction and overall mental health has been well-established by the industrial/organizational psychology field. A majority of respondents to the survey also indicated worrying increases in risk factors of deteriorating mental health, including increased hostility and increased loneliness/sadness. Asking about coping strategies also revealed concerning patterns: a majority of respondents reported increases in weight gain and decreases in weekly exercise, and some reported increases in alcohol consumption or substance use.

The availability of job-related mental health services varies based on organization and geographic region, however, few respondents reported starting consultation with a new mental health provider or increasing the frequency they visit a current mental health provider. Given the signs suggesting deteriorations in provider mental health, it is disheartening to see so few respondents accessing services that could potentially help them. Low adoption of mental health services might be attributable to a lack of access to services and/or stigma surrounding accessing them. A promising area of research could involve understanding what motivates providers to seek or not seek care for their mental health. Such research has the potential to identify what barriers stand between EMS providers and mental health care.

The results of our survey have important implications for EMS in both the immediate term and the long term. In the immediate term, EMS agencies and leaders should consult with their personnel and with each other on how to improve mental health within EMS, with the goal of bringing provider mental health higher than it was during pre-pandemic times. The next few months – as the pandemic is projected to decrease in intensity and restrictions on citizens are

being lifted – will be crucial in determining the state of mental health in EMS moving forward after the pandemic. In the long term, these results should advocate for planning and efforts directed towards preventing similar situations where EMS resources are taxed from inflicting a devastating toll on EMS provider mental health.

## References

1. Pfefferbaum B, North CS. Mental health and the Covid-19 pandemic. *New England Journal of Medicine*. 2020 Apr 13.
2. Taylor WD, Blackford JU. Mental health treatment for front-line clinicians during and after the coronavirus disease 2019 (COVID-19) pandemic: a plea to the medical community.
3. Vujanovic AA, Lebeaut A, Leonard S. Exploring the impact of the COVID-19 pandemic on the mental health of first responders. *Cognitive Behaviour Therapy*. 2021 Jul 4;50(4):320-35.
4. Kleim B, Westphal M. Mental health in first responders: A review and recommendation for prevention and intervention strategies. *Traumatology*. 2011 Dec;17(4):17-24.
5. Castellano C, Plionis E. Comparative analysis of three crisis intervention models applied to law enforcement first responders during 9/11 and Hurricane Katrina. *Brief Treatment and Crisis Intervention*. 2006 Nov 1;6(4):326.
6. Benedek DM, Fullerton C, Ursano RJ. First responders: mental health consequences of natural and human-made disasters for public health and public safety workers. *Annu. Rev. Public Health*. 2007 Apr 21;28:55-68.

7. Brooks SK, Chalder T, Gerada C. Doctors vulnerable to psychological distress and addictions: treatment from the Practitioner Health Programme. *Journal of Mental Health*. 2011 Apr 1;20(2):157-64.
8. Lanza A, Roysircar G, Rodgers S. First responder mental healthcare: Evidence-based prevention, postvention, and treatment. *Professional Psychology: Research and Practice*. 2018 Jun;49(3):193.
9. Lai J, Ma S, Wang Y, Cai Z, Hu J, Wei N, Wu J, Du H, Chen T, Li R, Tan H. Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. *JAMA network open*. 2020 Mar 2;3(3):e203976-.
10. The Centers for Disease Control and Prevention. Summary of Key Changes for EMS Guidance. Interim Guidance for EMS.
11. Lerner EB, Newgard CD, Mann NC. Effect of the Coronavirus Disease 2019 (COVID-19) Pandemic on the US Emergency Medical Services System: A Preliminary Report. *Academic Emergency Medicine*. 2020 Aug;27(8):693-9.
12. Shekhar AC, Effiong A, Ruskin KJ, Blumen I, Mann NC, Narula J. COVID-19 and the Prehospital Incidence of Acute Cardiovascular Events (from the Nationwide US EMS). *American Journal of Cardiology*. 2020 Nov 1;134:152-3.
13. Zolnikov TR, Furio F. Stigma on first responders during COVID-19. *Stigma and Health*. 2020 Sep 17.
14. Motowidlo SJ, Borman WC. Relationships between military morale, motivation, satisfaction, and unit effectiveness. *Journal of Applied Psychology*. 1978 Feb;63(1):47.
15. Snyder S. Ambulance services face national paramedic shortage. *EMS1 – Syndication of The Blade (Toledo, OH)*. March 28, 2019.

16. Friedman AS, Cowitz B, Cohen HW, Granick S. Syndromes and themes of psychotic depression: A factor analysis. *Archives of General Psychiatry*. 1963 Nov 1;9(5):504-9.
17. Wagner S, Pasca R, Crosina J. Hostility in firefighters: personality and mental health. *International Journal of Emergency Services*. 2016 May 3.
18. Kendler KS, Heath AC, Martin NG, Eaves LJ. Symptoms of Anxiety and Symptoms of Depression: Same Genes, Different Environments? *Arch Gen Psychiatry*. 1987;44(5):451–457. doi:10.1001/archpsyc.1987.01800170073010.
19. Bhutani S, Dellen MR, Cooper JA. Longitudinal weight gain and related risk behaviors during the COVID-19 pandemic in adults in the US. *Nutrients*. 2021 Feb;13(2):671.
20. Zachary Z, Brianna F, Brianna L, Garrett P, Jade W, Alyssa D, Mikayla K. Self-quarantine and weight gain related risk factors during the COVID-19 pandemic. *Obesity research & clinical practice*. 2020 May 1;14(3):210-6.
21. Cranford JA, Eisenberg D, Serras AM. Substance use behaviors, mental health problems, and use of mental health services in a probability sample of college students. *Addictive behaviors*. 2009 Feb 1;34(2):134-45.
22. Beck AT (ed.). *Cognitive therapy of depression*. Guilford press; 1979.
23. Dobson KS. A meta-analysis of the efficacy of cognitive therapy for depression. *Journal of consulting and clinical psychology*. 1989 Jun;57(3):414.