Tech Science Press

Mental Status and Psychological Needs of Chinese Police Officers in a Highly Impacted City during the COVID-19 Pandemic

Xu Zhu[1], Meng Xia[1], Yingzhe Hu[1], Lin Zhang[1,*], Yun Lu[2], Ying Zhang[1] and Xudong Guo[1]

[1]School of Psychology, Central China Normal University, Key Laboratory of Adolescent Cyberpsychology and Behavior, Ministry of Education, Key Laboratory of Human Development and Mental Health of Hubei Province, Wuhan, 430079, China
[2]Department of Counseling, Higher Education, and Special Education, University of Maryland, College Park, MD 20742, USA
*Corresponding Author: Lin Zhang. Email: lin_zhang@mail.ccnu.edu.cn
Received: 19 April 2020; Accepted: 11 June 2020

Abstract: The purpose of the study was to investigate the mental status and psychological needs of police officers during the COVID-19 outbreak in China. The Anti-Pandemic Public Mental Status Scale and self-administered Psychological Needs Scale were administered online to police officers in Y city, a significant sub-central city of Hubei Province, where was affected by the pandemic the most seriously. A total of 5,467 valid questionnaires were collected, of which female police accounted for 17.7%. Compared with the national public and Y city public data previously measured using the Anti-Pandemic Public Mental Status Scale, this study found that 24.6% of the Y city police suffered maladaptive problems. The mental status of the national public was the best, followed by the Y city police. The mental status of the Y city public was the worst. Moreover, there was a significant interaction between gender and unit type of Y city police ($p = 0.02$). The mental status of female police working in prisons was worse than their male counterparts ($p = 0.01$). Furthermore, psychological needs survey results showed that the police most wanted to learn the topics of self-adjustment and family relations. The most desired psychological assistances were relaxation and stress reduction, while the percentage of willingness to choose psychological counseling was low. During the pandemic, some police officers showed obvious psychological symptoms and the mental health services could be provided according to their psychological needs.

Keywords: COVID-19; public security police; mental health; psychological needs

1 Introduction

At the end of 2019, a new type of coronavirus pneumonia (*Corona Virus Disease 2019*, COVID-19) broke out in the city of Wuhan, Hubei Province of China. On January 31, 2020, the World Health Organization (WHO) declared this outbreak a Public Health Emergency of International Concern (PHEIC) and, on March 11, COVID-19 a global pandemic. According to the WHO, as of May 27, 2020, there were 5,488,825 confirmed cases and 349,095 cumulative deaths worldwide [1].

During the COVID-19 outbreak in China, the police undertook a series of rescue duties. In Hubei Province, 63,000 police officers and 56,000 auxiliary police officers fought on the frontline against the pandemic. In Wuhan, 19,000 police officers and 19,000 auxiliary police officers were on duty and participated in the war against the COVID-19 [2]. According to Xinhuanet, since the outbreak of the COVID-19, police officers in Wuhan, Hubei province, the hardest-hit area of the pandemic in China, have participated in the screening of 13 million people, have conducted more than 100,000 epidemiological investigations; as of April 2, 2020, 60 police officers and 35 auxiliary police in China had died on the front line of fighting against the pandemic [3].

Police officers face a higher risk than most people of experiencing potentially traumatic events (PTE), such as witnessing scenes of death and being attacked. The British Police Federation investigated 17,000 police officers in 2016 and found that the police officers' mental health was much worse than the general population [4]. Hargreaves et al. surveyed about 130,000 police officers absent from work due to illness in the UK, and found that in the past 5 years, half of the police officers took sick leave due to mental health-related diseases [5]. A study in Australia showed that the prevalence of mental illness in police officers and people serving emergency services was higher than that in other occupations [6]. A study of police in the disaster-stricken areas of the Wenchuan earthquake in China showed that, compared with civilians, the overall level of mental health of the police was lower and they experienced more health problems [7].

This pandemic may cause some police to face special pressure. For example, in a closed environment such as a prison, prison guards must perform their supervisory duties on the one hand, and prevent and control the epidemic on the other hand. An article published on the Lancet points out that the prisons are "in no way equipped" to deal with COVID-19 [8]. According to the US Bureau of Prisons (BOP), as of May 22, 2020, 1,594 federal inmates and 194 BOP workers had been infected with the COVID-19 [9]. In China, as of February 20, 2012, five prisons in three provinces including Hubei, Zhejiang, and Shandong reported confirmed cases, and 230 cases were confirmed in Wuhan Women's Prison in Hubei [10], which put huge pressure on the guards.

Disaster events have different effects on the mental health of police of different genders. A study of the police's mental health after large-scale traumatic events found that female police suffered more psychological stress than men [11]. Among the police who participated in the emergency rescue of 9/11, the proportion of female police suffering from post-traumatic stress disorder was significantly higher than that of male police [12].

On the one hand, most police think that they need to understand mental health knowledge and are willing to receive mental health services [13]. On the other hand, mental health services are somewhat stigmatized among the police community. The police culture makes the police reluctant to expose their psychological problems, so many police prefer to suffer in silence. This culture of masculinity, emotional self-control, and the stigma of help-seeking make them resist seeking psychological help [14,15]. On March 18, 2020, the Chinese Center for Disease Control and Prevention issued the psychological counseling work plan for the COVID-19. Article 5 of that notice urges the strengthening of psychological services for first responders, such as the police [16]. Understanding the psychological needs of the police during the pandemic can better provide mental health services for them.

Hubei Province was the Chinese area most seriously affected by the pandemic, and within it, Y city, as the provincial sub-central city, was especially hard hit. This study investigated the mental status and psychological needs of police officers who were on duty in Y city during the pandemic, compared the differences of mental status between the police and the public, studied the impact of gender and unit type on the mental status of the police, explored the psychological needs of the police, and hope to provide better psychological services for them.

2 Method

2.1 Subjects and Data Collection

Over a three-day period (March 4 to March 7, 2020), online questionnaire links were distributed to every police officer in Y city as an internal administrative notice. 5,727 (76.4%) of those questionnaires were completed. We excluded participants whose completion time was too long or too short (i.e., whose average of completion time was longer than 500 s or shorter than 20 s). 5,467 (95.5%) of the obtained questionnaires were retained. Participants were primarily male (82.3%) and included all police units in Y city, including police officers and auxiliary police, who were collectively referred to as police in this study. 1,105 (20.2%) worked in the direct units of the Y city Municipal Bureau of Public Security, 1,410 (25.8%) worked in the district branches, 2,730 (49.9%) worked in the county branches, 222 (4.1%) were in guard positions (such as prisons and drug rehabilitation centers, which were greatly affected in the pandemic).

In order to compare the mental status of the police and the public during the pandemic, one data of the psychological state of the public during the pandemic was also used [17]. The public was assessed by the same measurement tools as this study, and the data was collected by a separately online program. After filling in, participants can know their mental status and obtain corresponding psychological self-help resources. From February 9 to March 17, 2020, the public was surveyed from all over the country, and 114,128 (96.1%) valid questionnaires were obtained. Participants covered 34 provincial-level administrative regions, 1.1% of which (1290) were from Y city. 44.6% of the participants (50,883) were men, 55.4% (63,245) were women, and the average age was 23.53 ± 9.64 years.

This research was approved by the Life Science Ethics Committee of Central China Normal University.

2.2 Measures

Anti-Pandemic Public Mental Status. Participants completed a 10-item Anti-Pandemic Public Mental Status Scale (APPMSS) as a measure of their mental health, 5 items of which are from "DSM-5 Self-Rated Level 1 Cross-Cutting Symptom Measure-Adult" (e.g., feeling more irritated, grouchy, or angry than usual), the rest five items are compiled according to this pandemic (e.g., I feel that there is virus everywhere). The scale measures symptoms including sleep, depression, irritation, compulsion, somatization, anxiety, fear and hypochondria. Each item is scored on a 5-point frequency scale (0 = always, 1 = often, 2 = sometimes, 3 = few, 4 = none). The total score, the sum of the items, is the Mental Symptom Index (MSI), with higher scores representing worse mental status. The internal consistency in a previous study was 0.89 [17]. In this study, *Cronbach alpha* 0.77.

The total scores of the scale are ranked by using the criteria sample. The demarcation score is calculated on the basis of the formula proposed by Jacobson et al. [18], and the test sample was divided into two grades: adaptive and non-adaptive, furthermore, the score which is higher than the average score of the non-adaptive sample by one standard deviation is calculated as the demarcation of the serious non-adaptive level [19], as a result, 13 and 23 are the demarcation scores. MSI can be categorized into 3 levels: 0–13 points indicate a very difficult adaptation; 14–23 points indicate some difficulties in adaptation; 24–40 points indicate a good adaptation.

Psychological Needs. The self-administered 5-item Psychological Needs Scale was used to measure the psychological needs of police during the pandemic, which contains five items, measuring the degree of psychological stress, the degree of need for psychological support, the psychological knowledge one wants to know, the types of psychological help one wants to get, and the ways one wants to get. The degree of psychological stress is scored on a 4-point frequency scale (from 1 = no stress to 4 = very much), and the degree of need for psychological support is scored on a 3-point frequency scale (from 1 = no need to 3 = very much), and the rest items are multiple-choice questions. All items and options are listed in Tab. 3.

2.3 Data Analysis Methods

The statistical analysis was performed using SPSS 23.0. A Chi-square test was utilized to compare the differences in the level of mental status between groups. One-way ANOVA and two-way ANOVA were applied to test the differences in MSI between groups and the interaction of gender and unit. Frequency statistics were reported regarding the psychological needs.

3 Results

3.1 Comparison of Level of Mental Status: Y City Police, Y City Public and the National Public

One-way ANOVA revealed significant differences in the mental status between the three datasets (F (2, 119,592) = 234.00, $p < 0.001$, $\eta_p^2 = 0.004$). Bonferroni post-hoc test indicated that the MSI from low to high were the national public, Y city police and Y city public ($p < 0.001$).

However, to develop a more complete picture of the level of adaptation that these three groups were experiencing, we conducted a second set of analyses using the three categories presented in Tab. 1. That table depicts the level of Mental Status of Y city police, Y city public, and the national public. Chi-square test revealed significant differences in the level of mental status between the three groups, ($\chi^2(4) = 385.62$, $p < 0.001$). At each level, the ratios of the level of MSI among the three groups differed significantly ($p < 0.001$). Y city public had the highest rates of a very difficult adaptation and some difficulties in adaptation. The rate of a very difficult adaptation of Y city police was lower than that of the national public, while the rate of some difficulties in the adaptation of Y city police was higher than that of the national public.

Table 1: Level of mental status of Y city police, Y city public and the national public (%)

	Y city police (N = 5,467)	Y city public (N = 1,290)	National public (N = 112,838)[a]
A very difficult adaptation	3.0	10.2	4.2
Some difficulties in adaptation	21.6	31.4	17.5
A good adaptation	75.3	58.4	78.3

[a]National public does not include Y city public.

3.2 Comparisons of MSI and Item Scores Among Y City Police, Y City Public and the National Public

Each item of the APPMSS focused on a particular kind of difficulty that the respondent might be experiencing. Therefore, to develop a more fully differentiated picture of the relative areas of difficulty people in each of the three samples were experiencing, we compared the item scores among Y city police, Y city public and the national public (see Tab. 2). One-way ANOVAs revealed significant between-group differences in all of the 10 comparisons. These comparisons suggest that the three groups could be differentiated by the extent to which they reported difficulty with across the problem areas, with Y city police scoring highest on the sleep factor while Y city public scoring highest on the rest factors ($p < 0.001$).

3.3 ANOVA of MSI with Gender and Unit Type of Y City Police

A two-way ANOVA was applied to analyze the differences of MSI in gender (female and male) and unit type (the direct units of the Y city Municipal Bureau of Public Security, the district branches, the county branches, the guard positions) among the Y city police. The results revealed that the main effect of the unit type was significant (F (3, 5,459) = 4.45, $p < 0.001$, $\eta_p^2 = 0.002$). The main effect of gender was significant (F (1, 5,459) = 6.61, $p = 0.01$, $\eta_p^2 = 0.001$). The interaction between the two factors was significant (F (1, 5,459) = 3.18, $p = 0.02$, $\eta_p^2 = 0.002$). A simple effect analysis found that, regarding the

Table 2: Comparisons of MSI and item scores among Y city police, Y city public and the national public

	Y city police (N = 5,467)		Y city public (N = 1,290)		National public (N = 112,838)[a]		F
	Mean	SD	Mean	SD	Mean	SD	
Sleep	1.42	1.19	1.10	1.16	0.58	0.93	2,203.17***
Depression	0.90	1.01	1.34	1.22	1.00	1.13	82.95***
Irritation	0.88	0.99	1.30	1.19	0.86	1.06	104.94***
Hypochondria	0.39	0.72	0.74	0.96	0.43	0.80	98.99***
Compulsion	2.03	1.19	2.13	1.19	1.61	1.26	388.27***
Somatization	0.70	0.96	0.83	1.04	0.51	0.87	198.31***
Anxiety	0.75	0.85	1.25	1.06	0.78	0.92	171.19***
Fear	0.61	0.79	1.28	1.03	0.88	0.96	326.04***
Total	9.04	6.80	12.49	8.22	8.32	7.26	234.00***

[a]National public does not include Y city public; ***$p < 0.001$.
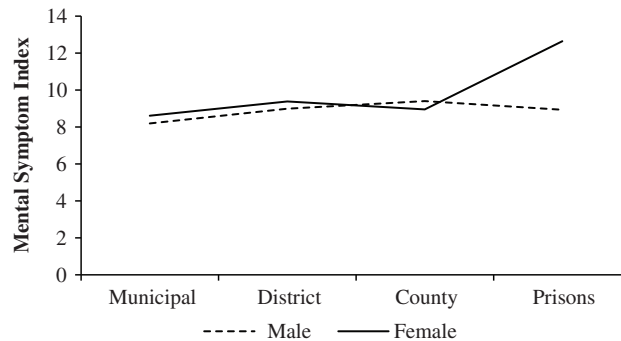
Figure 1: Interaction effect for gender and unit type of Y city police in MSI

guard positions, the total score of mental symptoms of female police was significantly higher than that of men police ($p = 0.01$), while there was no significant difference of the total score of mental symptoms in gender in other unit types ($p > 0.05$) (see Fig. 1).

3.4 Results of Investigation on Psychological Needs of Y City Police

Tab. 3 summaries the psychological needs of Y city police. More than 70% of Y city police were under stress. Among the police officers suffering pretty much and very much pressure, 60.48% did not think that they needed psychological support. With respect to "the knowledge you want to know," self-adjustment and caring for the family were the areas of information in which this sample was most interested. Relaxation and stress relief were the most frequently endorsed psychological needs, and relaxing activities and reading articles were the most endorsed means of receiving assistance, while group counseling, text consultation and hotline were among the least preferred means of receiving assistance. Regarding the "other" answers, many mentioned a need for a reunion with family members.

4 Discussion

During the pandemic, 21.6% of Y city police had some difficulties in adaptation, and 3.0% suffered a very difficult adaptation. Research on Australian police showed that after experiencing a large-scale PTE,

Table 3: Results of investigation on psychological needs of Y city police

Item	Option	Percentage (%)	Item	Option	Percentage (%)
Degree of Psychological stress	No stress	24.6	Type of Psychological Needs	Relaxation	52.8
	A little	55.6		Popularization of psychological knowledge	26.2
	Pretty much	15.7		Emotional counseling	24.7
	Very much	4.1		Team support	20.2
Needs of Psychological Support	No need	86.1		Relationship between police and the public	16.1
	Need	12.5		Family issues	15.7
	Very much	1.4		Others	17.1
The Topic They Want to Know	Self-adjustment	68.0	Preferred Way of Receiving Psychological Support	Relaxing activities	64.1
	Caring for parents	63.8		Reading articles	30.7
	Helping children	52.5		Video and audio materials	30.1
	Getting along with partner	43.6		Organizational life	16.2
	Others	10.3		Chatting	8.5
				Group counseling	7.3
				Text consultation	5.6
				Hotline	3.8
				Others	12.3

Note: $N = 5,467$.

approximately 24% of the police experienced clinically significant psychological distress [11]. Y city police scored highest on the sleep factor, which was probably resulted from the intensity of workload during the pandemic and the need for night shift for many positions, which was consistent with previous research reporting sleep problems of the police after experiencing PTE [20].

Some studies indicated that the mental status of police was better than that of the public after a disaster [11], while some other studies reported the opposite result [7]. In this study, the mental status of Y city police was better than that of Y city public, which may be related to the time of data collection. The data of Y city public was collected from February 9 to March 17, mainly from February 9 to February 19, which was when Y city identified the most newly confirmed cases every day. The data of Y city police were collected from March 4 to March 7, during which Y city reported no new confirmed cases. In addition, during the pandemic, Y city police received much training on how to prevent the COVID-19, which increased the sense of control over the COVID-19. The sense of control can help to maintain mental health [21].

The study found that there was no significant difference in MSI between the male and female police officers in the direct units of the municipal bureau, the district branches, and the county branches, which was consistent with previous research [22]. The mental status of female police in the guard positions was worse than that of male police, possibly because the outbreak of COVID-19 in Wuhan Women's Prison of Hubei led to increased pressure on the prevention and control in the prison system. Studies showed

that female police officers were more likely to feel a lack of support when working under high pressure [23,24], which led to a worse mental condition.

The survey on psychological needs presented that 60.48% of the police who suffered pretty much and very much pressure did not think that they needed psychological support. In police culture, emotional responses caused by work-related stress are often regarded as weak performances [25]. Seeking psychological help is stigmatized in the police community, as the police are afraid that they will be treated strangely by the others if they ask for mental service [26]. They are also worried that disclosing their mental health issues will adversely affect their career development, so they are unwilling to ask for psychological help [27]. Reducing the mental health stigma among the police is an important method to promote their mental health.

With respect to the preferred way of receiving psychological support, the police focused on self-adjustment and hoped to benefit by relaxing activities instead of consulting. Usually, people want to deal with their own psychological problems without the help of others, and they question the effectiveness of mental health services, which will prevent them from accessing mental health services [28]. Studies found that police officers were more reluctant to seek psychological counseling because of their higher self-shame and public shame [26]. Therefore, relaxing activities, self-help video and audio materials are more acceptable ways for the police to obtain help. In addition, the family was the topic that the police were most concerned about, and many mentioned that they wanted to reunite with their families. The risk and quarantine caused by the pandemic may increase the concerns of the police about the family.

This study also has some limitations. First, the inconsistency in sampling time may affect the interpretation of the results of this study. Secondly, many symptoms were measured by one item respectively, which may cause the problems of reliability and validity in the analysis.

5 Conclusions

The results of this study showed that the mental status of the national public was the best, followed by the Y city police. The mental status of the Y city public was the worst. Female police officers in guard positions were in even worse psychological conditions. A large percentage of police officers were reluctant to seek psychological help. The police focused on self-adjustment and family relations, and hoped to get help by relaxing activities instead of consulting. Mental health services should be provided to the police according to their needs.

Conflicts of Interest: The authors declare that they have no conflicts of interest to report regarding the present study.

References

1. World Health Organization. (2020). Coronavirus disease (COVID-19) situation report-128. *https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports*.
2. China Police Network. (2020). National public security organs adhere to the frontline of anti-epidemic to protect people's health and safety. *http://news.cpd.com.cn/n3559/202005/t20200520_910557.html*.
3. Xinhuanet. (2020). Remembering! 60 public security police and 35 auxiliary police sacrificed on the frontline when fighting against the pandemic. *http://www.xinhuanet.com/politics/2020-04/04/c_1125813007.htm*.
4. Houdmont, J., Elliott-Davies, M. (2016). Police federation of England and Wales 2016 officer demand, capacity, and welfare survey: initial report—descriptive results. *https://www.polfed.org/media/14061/welfare-survey-2016-pfew-descriptive-results-report-v30.pdf*.

5. Hargreaves, J., Husband, H., Linehan, C., Mckee, C. (2017). Police workforce, England and Wales, 30 September 2016. *Statistical Bulletin*. *https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/586508/police-workforce-sep16-hosb0217.pdf*.

6. Harman, G. (2019). Answering the call: mental health needs of police and emergency services personnel. *Australian Journal of Emergency Management, 34(1),* 23–25.

7. Zhang, F. H., Xin, Y., Chen, D., Chen, Y. P. (2010). Reseacrh of police's mental health and influence factors in badly damaged regions one year after earthquake. *Chinese Journal of Clinical Psychology, 18(1),* 76–78.

8. Burki, T. (2020). Prisons are in no way equipped to deal with COVID-19. *Lancet, 395(10234),* 1411–1412. DOI 10.1016/S0140-6736(20)30984-3.

9. Federal Bureau of Prison. (2020). COVID-19 cases. *https://www.bop.gov/coronavirus/*.

10. The Beijing News. (2020). Infection occurred in 5 prisons across the country, 505 people were diagnosed and 11 officials were removed from office. *http://www.bjnews.com.cn/feature/2020/02/21/692967.html*.

11. Kerswell, N. L., Strodl, E., Johnson, L., Konstantinou, E. (2020). Mental health outcomes following a large-scale potentially traumatic event involving police officers and civilian staff of the Queensland police service. *Journal of Police and Criminal Psychology, 35(1),* 64–74. DOI 10.1007/s11896-018-9310-0.

12. Bowler, R. M., Han, H., Gocheva, V., Nakagawa, S., Alper, H. et al. (2010). Gender differences in probable posttraumatic stress disorder among police responders to the 2001 world trade center terrorist attack. *American Journal of Industrial Medicine, 53(12),* 1186–1196. DOI 10.1002/ajim.20876.

13. Li, C. B., Ma, B. H., Ang, Q. Q., Xu, S. H. (2005). A time-point survey on the mental health service needs of police in a district of Shanghai. *China Journal of Health Psychology, 13(5),* 350–352.

14. Bell, S., Eski, Y. (2016). Break a leg—it's all in the mind: police officers' attitudes towards colleagues with mental health issues. *Policing, 10(2),* 95–101.

15. Evans, R., Pistrang, N., Billings, J. (2013). Police officers' experiences of supportive and unsupportive social interactions following traumatic incidents. *European Journal of Psychotraumatology, 4(1),* 19696. DOI 10.3402/ejpt.v4i0.19696.

16. Disease Control and Prevention Bureau. (2020). The notification of the psychological counseling work plan during the COVID-19 outbreak. *http://www.nhc.gov.cn/jkj/s3577/202003/0beb22634f8a4a48aecf405c289fc25e.shtml*.

17. Zhu, X., Hu, Y. Z., Wang, T. T., Zhong, J., Yan, Y. P. et al. (in press). Investigation on the mental health of the public during the outbreak of the COVID-19. *Chinese Mental Health Journal*.

18. Jacobson, N. S., Truax, P. (1991). Clinical significance: a statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology, 59(1),* 12–19. DOI 10.1037/0022-006X.59.1.12.

19. Barkham, M., Margison, F., Leach, C., Lucock, M., Mellor-Clark, J. et al. (2001). Service profiling and outcomes benchmarking using the CORE-OM: toward practice-based evidence in the psychological therapies. *Journal of Consulting and Clinical Psychology, 69(2),* 184–196. DOI 10.1037/0022-006X.69.2.184.

20. West, C., Bernard, B., Mueller, C., Kitt, M., Driscoll, R. et al. (2008). Mental health outcomes in police personnel after hurricane Katrina. *Journal of Occupational and Environmental Medicine, 50(6),* 689–695. DOI 10.1097/JOM.0b013e3181638685.

21. Pei, G. G., Li, W. D., Zhang, J. X., Lei, R. (2009). Perceived control, perceived organizational support, job burnout and psychological health of officer in Chinese armed police force: an structural equation modeling study. *Chinese Journal of Clinical Psychology, 17(1),* 115–117.

22. Li, Y. Q., Ren, Z. H., Jiang, G. R. (2016). Meta-analysis on the mental health of the Chinese policemen of public security organization. *Advances in Psychological Science, 24(5),* 692–706. DOI 10.3724/SP.J.1042.2016.00692.

23. Violanti, J. M., Fekedulegn, D., Hartley, T. A., Charles, L. E., Andrew, M. E. et al. (2016). Highly rated and most frequent stressors among police officers: gender differences. *American Journal of Criminal Justice, 41(4),* 645–662. DOI 10.1007/s12103-016-9342-x.

24. Zhang, M. (2017). An empirical study on the mental status of frontline anti-terrorist police in Xinjiang. *Journal of People's Public Security University of China (Social Science Edition), 187(3),* 1–8.

25. Kurtz, D. L. (2008). Controlled burn: the gendering of stress and burnout in modern policing. *Feminist Criminology, 3(3),* 216–238. DOI 10.1177/1557085108321672.

26. Karaffa, K. M., Koch, J. M. (2016). Stigma, pluralistic ignorance, and attitudes toward seeking mental health services among police officers. *Criminal Justice and Behavior, 43(6),* 759–777. DOI 10.1177/0093854815613103.

27. Bowler, R. M., Kornblith, E. S., Li, J., Adams, S. W., Gocheva, V. V. et al. (2016). Police officers who responded to 9/11: comorbidity of PTSD, depression, and anxiety 10–11 years later. *American Journal of Industrial Medicine, 59(6),* 425–436. DOI 10.1002/ajim.22588.

28. Ghuman, S. J., Brackbill, R. M., Stellman, S. D., Farfel, M. R., Cone, J. E. (2014). Unmet mental health care need 10–11 years after the 9/11 terrorist attacks: results from 2011–2012 World Trade Center health registry. *BMC Public Health, 14(1),* 491. DOI 10.1186/1471-2458-14-491.