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Career versus volunteer firefighters: Differences in perceived availability and barriers to behavioral health care

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Abstract

Due to occupational stress and exposure to potentially traumatic events, firefighters are at an increased risk for the development of many behavioral health conditions. While volunteer and career firefighters represent two distinct subgroups, little research has examined differences in the availability of, and barriers to, behavioral health care between these populations. This study examined perceived availability and barriers to behavioral health care services among 2,156 career and 227 volunteer firefighters. Volunteer firefighters were less likely to report availability of drug and alcohol or family and couple services, but more likely to report availability of a trained peer support system and follow-up care compared to career firefighters. Volunteer firefighters were over five times more likely to consider cost a barrier to accessing behavioral health services compared to career firefighters; however, they were less likely to report lack of support from leadership, fear of breach of confidentiality, and clinicians who are unaware of work culture as barriers. Volunteer and career firefighters were equally likely to report stigma as a barrier. These findings have important implications for understanding how to strengthen departmental resources and to design targeted interventions to increase access to behavioral health services.

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Keywords

firefighters; mental health services; treatment barriers; treatment access; stigma

Firefighters often respond to high-risk situations that pose significant threats to their wellbeing. The fire service vocation by nature involves some of the most arduous occupational stressors, including physically and psychologically taxing conditions (Jahnke, Poston, Haddock, & Murphy, 2016; de Barros et al., 2012). High levels of occupational stress, combined with repeated exposure to traumatic events, likely contribute to firefighters' vulnerability to psychological and physical health problems (Walker, McKune, Ferguson, Pyne, & Rattray, 2016). Firefighters are at an increased risk for the development of many mental health conditions, including substance abuse problems (Carey, Al-Zaiti, Dean, Sessanna, & Finnell, 2011), depression (Kimbrel, Steffen, Meyer, Kruse, Knight, & Zimering, 2011), posttraumatic stress disorder (PTSD; Chen, Chen, Chou, Sun, & Chen, 2007), sleep disturbances (de Barros, Martins, Saitz, Bastos, & Ronzani, 2012), and suicidal thoughts and behaviors (Boffa, Stanley, Hom, Norr, Joiner, & Schmidt, 2016; Henderson, Van Hasselt, LeDuc, & Couwels, 2016; Kimbrel, Pennington, Cammarata, Leto, Ostiguy, & Gulliver, 2016). These thoughts and behaviors include increased global suicide risk, suicidal threats, and suicidal intent (Stanley et al., 2018).

Few studies have examined mental health differences between career and volunteer firefighters. In one study, volunteer firefighters reported higher levels of mental health symptoms compared to career firefighters, including elevated levels of PTSD symptoms, depression symptoms, and suicide risk (Stanley, Boffa, Hom, Kimbrel, & Joiner, 2017). Volunteer firefighters were also more likely to report suicide plans and attempts during their fire service careers compared to career firefighters (Stanley et al., 2015; Stanley et al., 2017). Conversely, career firefighters have reported higher levels of problematic alcohol use compared to volunteer firefighters (Stanley et al., 2017), and a greater percentage of binge drinking within the past 30 days (56%) compared to volunteer firefighters (45%; Haddock et al., 2012).

Although some firefighters serve in both paid and volunteer positions, in general, volunteer and career and volunteer firefighters represent two distinct subgroups. While volunteer firefighters do not receive a salary for their service, they may be reimbursed for food, transportation, or supplies, and may also receive certain benefits including life insurance, health insurance, or other nominal fees that equal approximately 20% of a career firefighter's salary (International Association of Fire Chiefs, 2006). Career firefighters often complete more thorough screening procedures and training compared to volunteer firefighters (Stanley et al., 2017). Career firefighters may also have greater exposure rates to traumatic events due to more frequent scheduling and locations served (Stanley et al., 2017) as well as increased call volumes (Del Ben, Scotti, Chen, & Fortson, 2006). The average number of hours worked per week varies widely by department and community size, but volunteer firefighters often work on a part-time basis while career firefighters work at least full-time. Of the estimated 1,115,000 firefighters in the United States, 67% are volunteer firefighters and 33% are career firefighters (Evarts & Stein, 2020). While most

fire departments are recognized as either career or volunteer, 26% of all fire departments in the United States are mixed (Evarts & Stein, 2020). All volunteer or mostly volunteer departments make up 82% of all fire departments but protect only one-third of the U.S. population, while all career or mostly career departments make up 18% of fire departments and protect over two-thirds of the U.S. population (Evarts & Stein, 2020). Due to these distinctions, it is possible volunteer and career firefighters experience distinct differences in perceived availability of, and barriers to, behavioral health care.

Career fire departments often have “in house” behavioral health programs for professional firefighters, including employee assistance programs (EAP) and member assistance programs (MAP), which allow firefighters to receive referrals for treatment. Large, urban fire departments, such as New York Fire Department, sometimes have counseling units with licensed mental health professionals within the department. The International Association of Fire Fighters (IAFF) also has a trained peer support network of firefighter peers who understand mental health issues and can connect members (mostly career firefighters) to community resources and mental health professionals if needed (International Association of Fire Fighters, n.d).

Volunteer departments often have fewer resources available to their members compared to career departments. The National Volunteer Fire Council (NVFC) offers a database of licensed mental health professionals through the “Share the Load” program. Share the Load helps to educate firefighters and their families about suicide and other behavioral health issues through courses, newsletters, and videos (National Volunteer Fire Council [NVFC], n.d.). The NVFC also provides numerous ways to access the Suicide Prevention Lifeline, such as by phone, online chat, or text (NVFC, n.d.).

Only one study has examined differences in barriers to accessing behavioral health services between career and volunteer firefighters (Stanley et al., 2017). While there was no significant difference in stigma-specific barriers to behavioral health care between career and volunteer firefighters, volunteer firefighters reported higher levels of structural barriers (cost, availability of resources, inadequate transportation, and getting time off of work) compared to career firefighters (Stanley et al., 2017). Furthermore, volunteer firefighters also reported increased depression, posttraumatic stress, and suicidal symptoms compared to career firefighters. Exploratory mediation analyses indicated these structural barriers to behavioral health care may have accounted for the elevated psychiatric symptoms among volunteer firefighters (Stanley et al., 2017).

To our knowledge, Stanley and colleagues (2017) is the only study to examine perceived barriers to behavioral health care between volunteer and career firefighters. However, no research has examined perceived availability of care by firefighter type. The purpose of the current study was to explore both perceived barriers to and perceived availability of behavioral health care and evaluate differences between volunteer and career firefighters while controlling for department size and duration of time in fire service. We hypothesized that volunteer firefighters would report less availability of behavioral health care and greater structural barriers (cost) to care compared to career firefighters.

Methods

Participants and Procedures

Our team identified potential barriers for firefighters accessing behavioral health programs through theme analysis of 20 firefighter focus groups conducted across the country. These themes were used to generate a survey of firefighters' attitudes and beliefs about behavioral health programs in collaboration with senior firefighters and peer counselors who led focus groups. A description of the full instrument can be found in (Gulliver et al., 2019). Career firefighters were recruited via a SurveyMonkey link that was placed on the website of the IAFF, a labor union representing over 300,000 members in the United States and Canada. The survey was only accessible to those with IAFF logins (60,127 members) and was announced to those members by email. Volunteer firefighters were recruited by letters sent out to a list of 1,400 volunteers obtained from the International Association of Fire Chiefs (IAFC). The IAFC membership is primarily volunteer or combination (career and volunteer) departments. The letters contained one survey for the recipient, two additional surveys to distribute to colleagues, and a pre-paid return envelope (4,200 surveys mailed in total). A total of 2,156 career and 227 volunteer firefighters completed the survey, representing a response rate of 3.6% for career firefighters and 5.4% for volunteer firefighters. Data was collected in 2009. This study was approved by the Institutional Review Boards of Texas A&M University and Baylor Scott & White Health.

Measures

The career firefighter self-report survey consisted of 67 questions and the volunteer firefighter version consisted of 60 questions; however, the seven additional items administered to career firefighters were not in sections used in the current study (except for one item described below). Demographic and department characteristics were gathered from all respondents. Perceived availability of behavioral health services was assessed using a yes/no item that said "My department/union offers behavioral health services." A sub-item asked respondents to check which specific behavioral health services were included: "individual counseling," "drug and alcohol counseling," "family and couple services," "trained peer support system," "follow-up care." Note that these services were not defined further and were open to respondent interpretation. Barriers to services were assessed via ten questions asking respondents to, "Please indicate the degree to which you think the following are significant barriers to a behavioral health program." Respondents rated each barrier on a 5-point Likert-scale (1 = not a barrier to 5 = insurmountable barrier). These items were dichotomized such that answering "1 = not a barrier" indicated that the item was not a barrier, and answering "2 = minor barrier" to "5 = insurmountable barrier" indicated that the item was a barrier. This dichotomization was necessary to facilitate interpretation of the data. The wording of one potential barrier differed slightly for career ("little or no support from leadership/management") and volunteer firefighters ("leadership does not make an effort to reach out to volunteers"). This item is referred to as "lack of support from leadership" in analyses. One potential barrier ("little or no support from union") was only included in the survey for career firefighters and thus was excluded from these analyses. Copies of the full instruments can be found in Appendix A (career version) and Appendix B (volunteer version).

Data Analysis

Statistical analyses were performed using SAS v.9.4 (English). Demographic and department characteristics, perceived availability of behavioral health services, and barriers to behavioral health services were examined by firefighter status (career vs. volunteer) using chi-square tests. Significant chi-square results ($p < .05$) for perceived availability of behavioral health services and barriers to behavioral health services were further examined using logistic regression, controlling for department size and duration of time in fire service (which differed significantly between career and volunteer firefighters). Due to the correlation of duration of time in fire service and age ($r = 0.75$), only duration of time in service was included in these analyses. Adjusted odd ratios (aOR) are presented.

Results

Of the 2,383 firefighters in the current sample, 2,156 (90.5%) were career firefighters and 227 (9.5%) were volunteer firefighters. The majority of the sample was white (92.6%) and male (94.6%). This is similar to demographics of fire service as a whole (81.8% white, 95.5% male; Evarts & Stein, 2019). The mean age of participants was 42.7 (SD = 10.0). Volunteer firefighters were significantly older than career firefighters and there were differences between groups on duration of time in fire service and department size (see Table 1).

Information on perceived availability of behavioral health services is presented in Table 2. While volunteer firefighters were less likely to report availability of behavioral health services in general compared to career firefighters, this effect disappeared after controlling for department size and time in service (aOR = 0.74; 95% CI = 0.50 – 1.08). The effects were more robust when looking at differences in perceived availability of specific behavioral health services. Volunteer firefighters were less likely to report availability of drug and alcohol counseling (aOR = 0.67; 95% CI = 0.49 – 0.93) or family and couple services (aOR = 0.69; 95% CI = 0.51 – 0.94) compared to career firefighters. However, volunteer firefighters were about twice as likely to report availability of a trained peer support system (aOR = 2.18; 95% CI = 1.60 – 2.99) and follow-up care (aOR = 1.97; 95% CI = 1.44 – 2.70) compared to career firefighters. These specific effects remained significant after controlling for department size and time in service.

Potential barriers to accessing behavioral health services are presented in Table 3. Stigma was a common barrier for both volunteer (88.2%) and career firefighters (92.2%); after controlling for department size and time in service, volunteer and career firefighters were equally likely to report this as a barrier (aOR = 0.65; 95% CI = 0.40 – 1.05). Volunteer firefighters were less likely to report the following barriers compared to career firefighters: lack of support from leadership (aOR = 0.58; 95% CI = 0.42 – 0.82), fear of breach of confidentiality (aOR = 0.58; 95% CI = 0.40 – 0.86), and clinicians who are unaware of work culture (aOR = 0.55; 95% CI = 0.34 – 0.88). However, the odds of volunteer firefighters reporting cost a barrier to accessing behavioral health services was 5.5 times that of career firefighters (aOR = 5.53; 95% CI = 3.55 – 8.63).

Discussion

The present study explored differences between volunteer and career firefighters in perceived availability of behavioral health care and perceived barriers to accessing these services. Our hypothesis that volunteer firefighters would report less availability of behavioral health care services and greater structural barriers (cost) to care compared to career firefighters was partially supported.

Volunteer firefighters were less likely to report availability of any behavioral health services; however, this effect disappeared after controlling for department size and time in service. The majority (54.0%) of volunteer firefighters surveyed worked in small departments of 0 to 50 employees, which are also less likely to offer behavioral health services (Gulliver et al., 2019). It is possible that department size is a stronger indicator of availability of behavioral services (compared to volunteer vs. career), and this possibility should be explored in future research. While volunteer firefighters did report they were less likely to have drug and alcohol counseling or family and couple services, they were about twice as likely to report availability of a trained peer support system and follow-up care compared to career firefighters. In fact, the largest effect size was observed for availability of a trained peer support system and follow-up care. These data were collected prior to the development of the International Association of Fire Fighters' (IAFF) Peer Support Training Program in 2016. The IAFF Peer Support Training is a two-day program in which trainees gain the skills necessary to provide peer support, such as an understanding of common mental health issues in fire service and an understanding of how peer support might serve as a bridge to formal behavioral health treatment from clinicians. While training participants routinely include non-union members including chief officers, civilian fire department employees, EAP providers, mental health clinicians, law enforcement, and partners from other community organizations, approximately 92% of participants are IAFF members (S. Bernes, personal communication, March 15, 2021). To date the IAFF has trained over 6,000 career fire service members as peer supporters, thus availability of a trained peer support system has likely increased for career firefighters since the current data was collected (Raney, 2019). The IAFF recommends each peer support team have oversight from a licensed mental health clinician and provides a webinar for clinicians and fire service personnel who want a deeper understanding of peer support in the fire service and the role of a clinician on a peer support team. Previous research has demonstrated that perceptions of social support, a key element in peer support programs, may protect against the development of psychiatric symptoms, such as PTSD (Stanley et al., 2019), and improve quality of life (Yang, 2020) among firefighters. Follow-up research is warranted to examine if and how the IAFF's program has changed the perceived availability of behavioral health services, including peer support, among career firefighters.

As hypothesized, the largest effect size observed relating to barriers was cost. Volunteer firefighters were over five times more likely to consider cost a barrier to accessing behavioral health services compared to career firefighters. This may be because career firefighters have greater access to EAPs, MAPs, and/or other types of behavioral health coverage through their departments. These results are consistent with previous research in which volunteer firefighters reported greater levels of structural barriers (cost, resources,

knowledge), but not stigma-specific barriers (Stanley et al., 2017). In the present study, stigma was the most commonly reported barrier by both volunteer and career firefighters. It is noteworthy that all of the potential barriers included in the survey were considered at least minor barriers by the majority of both volunteer and career firefighters. This suggests that all firefighters – volunteer and career – experience a myriad of barriers to behavioral health care. In terms of differences between volunteer and career firefighters, volunteer firefighters were less likely to report the following barriers compared to career firefighters: lack of support from leadership, fear of breach of confidentiality, and clinicians who are unaware of work culture.

A few limitations should be noted. First, this survey is not a psychometrically validated instrument. The survey was created from themes discovered during firefighter focus groups and specific behavioral health services listed in the survey were open to respondent interpretation. It is also important to read with caution the results related to “lack of support from leadership” as this question was worded slightly different in the volunteer version due to suggestions from volunteer collaborators during survey development. Additionally, the survey did not query psychiatric symptoms or current or past personal need for behavioral health care services, so we cannot differentiate barriers between those who were symptomatic and those who were not. Second, recruitment method differences and low response rates may lead to nonresponse bias; however, given the demographic similarity to fire service as a whole, we are confident our sample is representative of this population. Third, the volunteer firefighter sample size was much smaller than that of career firefighters. Lastly, these data consist of responses from firefighters in both the United States and Canada; however, nationality of respondents was not queried, thus possible disparities by country could not be examined.

Findings from this study are particularly important given that volunteer firefighters are at greater risk for depression, PTSD, and suicidality (Stanley et al., 2015; Stanley et al., 2017), and that there is evidence that structural barriers mediate the relationship between firefighter status (career vs. volunteer) and these increased mental health symptoms (Stanley et al., 2017). Results also highlight the importance of reducing barriers and increasing behavioral health service access for both volunteer and career firefighters. Consistent with previous research, stigma was a common barrier for both career and volunteer firefighters highlighting the need to focus on training to change the culture toward acceptance of receiving behavioral health care (Kim et al., 2018). Future research and efforts should seek to examine the impact of training and outreach programs that have occurred since this study (e.g., the IAFF Peer Support Training Program) and to further clarify the factors contributing to the perceived behavioral health barriers and perceived availability discrepancies experienced by volunteer and career firefighters. Clarifying the specific needs and barriers to treatment of subpopulations within fire service allows for the design of targeted interventions to increase access to behavioral health services. For example, applying the results of this study, future interventions targeted at volunteer firefighters should aim to decrease structural barriers or build on the strengths of their existing peer support systems. Future interventions targeted at career firefighters could aim to promote awareness and use of follow-up care and newly-expanded peer support networks. Efforts to further understand career and volunteer firefighters’ perceived barriers to, availability of, and

ultimately utilization of behavioral health services will benefit the individual firefighters as well as public safety in general.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Impact Statement

This study suggests that there are meaningful differences in availability of behavioral health resources between career and volunteer. While cost was a greater barrier to accessing services among volunteer firefighters, stigma was a common barrier for both volunteer and career firefighters. These findings have important implications for understanding how to strengthen departmental resources and to design targeted interventions to increase access to behavioral health services.

Table 1.

Demographic characteristics

| | Total n = 2383 | Career n = 2156 | Volunteer n = 227 | <i>p</i> |
|--------------------------------------|---------------------------|----------------------------|------------------------------|-----------------|
| Age (mean $\bar{y} \pm SD$) | 42.7 \pm 10.0 | 41.9 \pm 9.7 | 49.9 \pm 10.3 | <0.001 |
| Gender | | | | 0.587 |
| Male | 94.6 (2207) | 94.6 (1996) | 93.8 (211) | |
| Female | 5.4 (127) | 5.4 (113) | 6.2 (14) | |
| Ethnicity | | | | 0.403 |
| White | 92.6 (2117) | 92.4 (1911) | 94.5 (206) | |
| Black or African-American | 1.6 (36) | 1.5 (32) | 1.8 (4) | |
| Mexican, Mexican-American or Chicano | 2.1 (49) | 2.3 (48) | 0.5 (1) | |
| American Indian or Alaskan Native | 1.6 (36) | 1.5 (31) | 2.3 (5) | |
| Asian | 0.3 (7) | 0.3 (7) | 0.0 (0) | |
| Native Hawaiian or Pacific Islander | 0.3 (7) | 0.3 (7) | 0.0 (0) | |
| Other | 1.5 (34) | 1.5 (32) | 0.9 (2) | |
| Duration of Time in Fire Service | | | | <0.001 |
| 0–3 years | 4.1 (97) | 4.3 (92) | 2.2 (5) | |
| 4–6 years | 6.7 (157) | 7.0 (149) | 3.6 (8) | |
| 7–15 years | 30.5 (714) | 32.5 (689) | 11.2 (25) | |
| 16–20 years | 16.7 (392) | 17.0 (361) | 13.8 (31) | |
| >20 years | 42.0 (983) | 39.1 (828) | 69.2 (155) | |
| Department Size | | | | <0.001 |
| 0–50 | 30.7 (719) | 28.2 (598) | 54.0 (121) | |
| 51–100 | 23.5 (550) | 22.9 (486) | 28.6 (64) | |
| 101–300 | 23.7 (555) | 24.7 (523) | 14.3 (32) | |
| 301–500 | 6.4 (150) | 6.9 (147) | 1.3 (3) | |
| 501–1000 | 6.1 (143) | 6.7 (142) | 0.4 (1) | |
| 1001–1500 | 4.0 (94) | 4.4 (94) | 0.0 (0) | |
| 1501–5000 | 4.3 (101) | 4.8 (101) | 0.0 (0) | |
| >5000 | 1.3 (31) | 1.3 (28) | 1.3 (3) | |

Note. *SD*, standard deviation. Data presented as % (n), except where otherwise noted.

Table 2.

Perceived availability of behavioral health services

| | Total n = 2383 | Career n = 2156 | Volunteer n = 227 | aOR (95% CI) |
|--------------------------------------|---------------------------|----------------------------|------------------------------|-------------------------------------|
| General behavioral health services * | 86.6 (1902) | 87.5 (1742) | 78.1 (160) | 0.74 (0.50 – 1.08) |
| Specific services | | | | |
| Individual counseling | 74.3 (1756) | 74.6 (1608) | 71.2 (148) | |
| Drug and alcohol counseling * | 72.4 (1711) | 73.4 (1582) | 62.0 (129) | 0.67 (0.49 – 0.93) |
| Family and couple services * | 58.8 (1389) | 60.0 (1293) | 46.6 (96) | 0.69 (0.51 – 0.94) |
| Trained peer support system * | 37.6 (888) | 36.6 (790) | 48.0 (98) | 2.18 (1.60 – 2.99) |
| Follow-up care * | 29.4 (695) | 28.3 (611) | 41.0 (84) | 1.97 (1.44 – 2.70) |

Note. aOR = adjusted odds ratio; CI = confidence interval. aORs measure the association between the firefighter reporting availability of the service and the firefighter being a volunteer. Each aOR used career firefighter as the reference group and controlled for department size and time in service. Bolded aORs indicate the aOR was significant at $p < .05$. Data presented as % (n).

* Chi-square test result for difference between career and volunteer firefighters significant at $p < .05$.

Table 3.

Barriers to accessing behavioral health services

| | Total n = 2383 | Career n = 2156 | Volunteer n = 227 | aOR (95% CI) |
|--|---------------------------|----------------------------|------------------------------|---------------------------|
| Stigma * | 91.8 (2113) | 92.2 (1927) | 88.2 (186) | 0.65 (0.40 – 1.05) |
| Cost * | 59.5 (565) | 51.8 (381) | 86.4 (184) | 5.53 (3.55 – 8.63) |
| Lack of information about behavioral health services | 93.2 (2153) | 93.5 (1958) | 91.1 (195) | |
| Not enough time to utilize services | 85.1 (1966) | 85.1 (1784) | 85.1 (182) | |
| Available treatments/services are ineffective | 79.7 (1817) | 80.1 (1659) | 76.0 (158) | |
| Career: Little or no support from leadership/management | | | | |
| Volunteer: Leadership does not make an effort to reach out to volunteers * | 80.5 (1856) | 81.3 (1701) | 72.1 (155) | 0.58 (0.42 – 0.82) |
| Fear negative social consequences from using services | 87.8 (2023) | 88.2 (1843) | 83.7 (180) | |
| Fear breach of confidentiality * | 87.3 (2012) | 88.0 (1839) | 80.5 (173) | 0.58 (0.40 – 0.86) |
| Providers have low competency in behavioral health issues | 80.5 (1843) | 80.5 (1676) | 79.5 (167) | |
| Clinicians are unaware of work culture * | 91.9 (2108) | 92.4 (1921) | 87.8 (187) | 0.55 (0.34 – 0.88) |

Note. aOR = adjusted odds ratio; CI = confidence interval. aORs measure the association between the firefighter indicating the item is a barrier and the firefighter being a volunteer. Each aOR used career firefighter as the reference group and controlled for department size and time in service. Bolded aORs indicate the aOR was significant at $p < .05$. Data presented as % (n).

* Chi-square test result for difference between career and volunteer firefighters significant at $p < .05$.