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The Female Emergency Medical Services Experience: A Mixed Methods Study

Molly McCann-Pineo^{a,b,c,d}, Meghan Keating^a, Tara McEvoy^e, Mikayla Schwartz^f, Rebecca M. Schwartz^{b,d}, Jonathan Washko^g, Elizabeth Wuestman^g, and Jonathan Berkowitz^g

^aDepartment of Emergency Medicine, Northshore University Hospital, Northwell Health, Manhasset, New York; ^bDepartment of Occupational Medicine, Epidemiology and Prevention, Northwell Health, Manhasset, New York; ^cDepartment of Emergency Medicine, Donald and Barbara Zucker School of Medicine at Hofstra/Northwell, Hempstead, New York; ^dDepartment of Occupational Medicine, Epidemiology and Prevention, Donald and Barbara Zucker School of Medicine at Hofstra/Northwell, Hempstead, New York; ^eCancer Institute, Northwell Health, Manhasset, New York; ^fThe Feinstein Institutes for Medical Research, Manhasset, New York; ^gCenter for Emergency Medical Services, Northwell Health, Syosset, New York

ABSTRACT

Background: Emergency Medical Services (EMS) is a challenging profession. Little is known if there are gender differences in the experiences among EMS clinicians. Therefore, our aim was to understand and characterize the occupational experiences of female EMS clinicians.

Methods: A mixed methodological study was conducted among currently licensed female EMS clinicians *via* focus group and self-report survey data. Three focus groups ($n = 5, 4, 13$, respectively) were conducted with participants purposively recruited from primarily Northeastern EMS agencies. Through ongoing collaborations, a recruitment advertisement was provided to EMS leadership at respective agencies for distribution among their female staff. Sessions were recorded and transcribed for thematic analysis. A six-phase inductive analytical approach was utilized to evaluate focus group data. Qualitative findings were utilized to inform a cross-sectional, self-report survey consisting of occupational specific experiences, such as harassment and pregnancy, and validated measures of mental wellbeing. Descriptive statistics were used to describe the study sample and female EMS clinician occupational and personal experiences.

Results: A total of 22 female EMS clinicians participated across the three focus group sessions. Four major themes were identified: 1) the female EMS experience; 2) impact on personal wellbeing; 3) impact on occupational wellbeing; and 4) coping mechanisms. Each theme had multiple subthemes. There were 161 participants that attempted the 72-item survey, 13 partial and 148 completed surveys. Median age was 32 years (IQR: 25-42), and the majority were EMT-Bs (55.1%). Approximately 70.0% met the criteria for probable anxiety, 53.9% probable depression and 40.9% elevated symptoms of burnout. Almost 73.0% reported workplace harassment, with most experiences being perpetrated by patients and coworkers. Over 61.0% reported reconsideration of their career in EMS. Overall, survey data indicated interactions with peers and leadership, and social support were positive.

Conclusions: Findings highlight the need to improve the occupational experiences of female EMS clinicians to preserve and encourage the continuation of their participation in this workforce. Specifically tailored interventions aimed at protecting and improving their overall wellbeing are critical, particularly considering the increased occupational burden resulting from the pandemic. Future research should aim to understand specific predictors of adverse mental health outcomes among this population.

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Introduction

Women, compared to men, are at increased risk for adverse mental health outcomes across their lifespan, including anxiety, depression and Posttraumatic Stress Disorder (PTSD) (1-4). These outcomes may become further exacerbated among those whose occupations require them to be frequently or consistently exposed to stressful and potentially traumatic events, such as healthcare workers and first

responders (5-7). Emergency Medical Services is specifically challenging, with often challenging working conditions, labor shortages, and low wages. Women may also experience unique workplace stressors in comparison to their male counterparts, such as gender-based discrimination and bias, pregnancy, child and familial demands, and even trauma, all of which significantly contribute to their occupational and personal well-being (8, 9).

CONTACT Molly McCann-Pineo  mmccann1@northwell.edu

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First responding occupations have been historically male dominated, with recent national estimates reporting of over 900,000 licensed EMS clinicians, 72% being male (10). Given this, there is a paucity of research regarding the occupational and personal wellbeing of female first responders, let alone specifically among those serving in EMS. Studies conducted among general first responding populations have found that females experience higher proportions of burnout, and that gender is a significant predictor of burnout (11, 12). It has also been reported that female first responders experience higher levels of stress and adverse mental health outcomes, such as depression, anxiety, PTSD and even suicide, compared to their male counterparts (13–15). Further, instances of sexism, harassment, and bullying have also been reported to be experienced disproportionately more often by female first responders (11, 15–22). Reports of workplace harassment, including sexual harassment, have been reported to be as high as 58% among female responders (17). Moreover, such harassment has been significantly associated with increased negative mental health outcomes (18, 19). Negative attitudes regarding their physical ability to effectively do their job, particularly among those that are physically taxing, have also been reported (23–25). Female first responders also face unique challenges with respect to pregnancy and maternity related issues, with one study indicating the rate of miscarriages among female firefighters is higher than that of the general population (26). These stressors, in addition to others such as lack of opportunities for advancement and mentorship, are applicable to all female first responding populations, but have been minimally described among EMS clinicians (11, 15, 16, 22). Experiencing these stressors in addition to the demanding nature of their occupation, female EMS clinicians may be at even higher risk for adverse mental health outcomes. Therefore, it is of the utmost importance that we not only begin to understand the female EMS occupational experience, but also identify and evaluate mechanisms of ameliorating stress and preserving mental health. To that end, our aim was to understand and characterize occupational experiences/stressors and their impact on well-being among female Emergency Medical Service (EMS) clinicians. We also aimed to contextualize our qualitative findings through a cross-sectional survey evaluation.

Methods

We conducted a mixed methodological study consisting of qualitative focus group and self-report survey data to elucidate and contextualize the occupational and personal experiences among female EMS clinicians.

Qualitative Assessment

Study Sample

Focus group participants were purposively recruited from Northeastern regional EMS agencies. Through ongoing collaborations, a recruitment advertisement was provided to EMS leadership at respective agencies for distribution among their female

staff. Given the nature of recruitment, there was the potential that recruitment was extended to EMS agencies outside of the original catchment area. Those interested in participation were instructed to utilize a secure link to an electronic research database platform (i.e., REDCap) where they were screened for eligibility and provided informed consent. Participants were eligible if they were a licensed or certified, actively practicing female EMS clinician (EMT-B or higher) and were able to attend one of the proposed focus group dates and times. The research team evaluated and determined the number of focus groups necessary in order to produce robust data that satisfactorily responded to the research questions (27).

Three focus groups were conducted between March and May of 2022 ($n=5, 4$ and 13 , respectively). Prior to study recruitment, a semi-structured discussion guide was finalized by EMS experts and members of the research team. Questions regarding female EMS clinician occupational and personal experiences, such as “Can you please describe your experiences as they relate to being a female EMS clinician?” were included. The focus groups sessions were conducted by MMP, assisted by TM, and notes were taken throughout by a member of the research team (MS). MMP has received formal training in qualitative research methods and has experience in conducting focus groups. Study team members and participants may have known one another. Focus groups were held *via* a secure video platform to better facilitate participation. Each one lasted approximately 90 minutes and were audio and video recorded. Sessions were transcribed using Microsoft Teams (i.e., Office 365 E3) for thematic analysis, and reviewed by researchers MMP and MK for accuracy. No major corrections on the transcripts were needed. Participants were provided \$50 in compensation for their participation.

This study was reviewed and approved by the Feinstein Institutes for Medical Research at Northwell Health’s Institutional Review Board.

Qualitative Analysis

We utilized the six-phase inductive thematic analytical approach as outlined by Braun and Clarke (28, 29). Two investigators of the research team (MMP, MK) independently read and reviewed the three separate focus group transcripts for overall familiarity of the data and participant perspectives. Next, initial codes, or interesting features of the data, were manually generated across the focus groups. For example, direct mentions of female physicality (e.g., “*You two little ladies couldn’t possibly carry this patient*”) were coded as ‘sexism’, instead of ‘questioning of occupational abilities’ because of the overt stereotypical nature. The codes were then collated and grouped into potential themes. The identified themes were then reviewed and refined in two phases—firstly to determine if the themes formed coherent patterns (i.e., Can two separate themes can be collapsed into one?), and secondly to consider the validity of the themes in relation to the overall study objectives (i.e., Do the themes accurately represent the data as a whole?). Each investigator then defined and refined the specifics of each of their identified themes and met to discuss their findings. All identified themes and subthemes were discussed and assessed for agreement, with any disagreements being

resolved with revisions to the identified themes until a consensus was reached by the two investigators. A written report was then presented to all members of the research team for discussion to confirm alignment with participant perspectives and overall study aims, as well as any potential investigator biases. For example, MMP and MK took particular care to ensure their analyses were data driven, and not by their personal experiences as women in Emergency Medicine. Findings were then used to inform the quantitative assessment.

Quantitative Assessment

To contextualize focus group findings, a cross-sectional examination of female EMS clinician perceptions and experiences was conducted *via* self-report data. Survey items were reviewed by the study team and EMS clinicians for content and appropriateness. Again, through ongoing collaborations, an advertisement for participation was provided to the same EMS leaderships for distribution among their agencies. The advertisement included a link to a secure, anonymous electronic survey that contained an eligibility screener. Interested participants confirmed eligibility (i.e., a currently licensed or certified female EMS clinician), and upon meeting eligibility, were prompted to complete the survey. A waiver of informed consent was requested and approved by our institution's review board.

The survey included questions regarding female clinician experiences with the themes identified from qualitative analysis, including questions regarding sexism, harassment, pregnancy and social support. Validated measures that assessed work-related stress and elevated symptoms of burnout, in addition to probable anxiety and depression, were also collected. The Sources of Occupational Stress-14 scale (SOOS-14) was used to evaluate occupational stress, with respondents indicating if they have been 'bothered' by particular stressors within the past 10 shifts worked. Items are scored on a 5-point Likert scale and summed to a total score (range 14-70) (30). Burnout was evaluated using a single item from the Mini-Z Burnout Questionnaire (31). The single item (i.e., Question 3) was recategorized as a dichotomous variable to describe those with high symptoms of burnout (responses 3- 5) and those with low symptoms of burnout (responses 1 and 2). The 4-item Patient Health Questionnaire (PHQ-4) was used to evaluate probable anxiety and depression (32). Responses for each of the 4 items (2 for anxiety and 2 for depression) range from '0-Not at all' to '3-Nearly every day', with a possible total score of 6 per MH outcome. A clinical cut off of ≥ 3 on each of the subscales was used to classify those with probable anxiety and depression. Resilience was measured using the state scale of the State-Trait Assessment of Resilience Scale (STARS), with items being scored on a 4-point Likert and summed (33). Basic, non-identifiable demographic (i.e., age, race, ethnicity, marital status) and clinician occupational information (i.e., level of training, years in practice) were also collected. Participants had the opportunity to be entered into a raffle monetary prize for participation.

Quantitative Analysis

Descriptive statistics were conducted to describe the study sample. Frequencies and proportions of survey responses were produced for categorical variables. Means and standard deviations, or medians and Interquartile ranges (IQR), where appropriate, were reported for continuous variables.

Results

Qualitative Findings

Fifty individuals were screened for participation, with 34 unique participants signing consent (1 duplicate). For the first focus group, six clinicians were scheduled, with five participating. For the second, nine were scheduled with only four participating. For the third, 18 were scheduled with thirteen attending. Therefore, a total of 22 female EMS clinicians participated across the three focus groups.

Identified Themes

We identified four major themes: 1) The female EMS experience; 2) Impact on personal wellbeing; 3) Impact on occupational wellbeing and 4) Coping mechanisms. Themes, subthemes and impactful participant quotes are described in Table 1.

Theme #1: The Female EMS Experience

The first theme described the personal workplace experiences of female EMS clinicians. Four subthemes were identified. Participants described scenarios specific to their gender, such as encounters with sexism and harassment, from patients, peers and leadership (i.e., supervisors, managers). Participants also described the challenges of pregnancy and/or being pregnant while on the job, in addition to issues relating to maternity leave and childcare. Lastly, participants provided details regarding their specific interactions with their male partners and peers (Table 1).

Subtheme 1, Sexism: Participants described their experiences with sexism while working as an EMS clinician, including stereotyping, unfair treatment and microaggressive behavior perpetrated by patients, coworkers/peers and hospital staff.

Subtheme 2, Harassment: Participants described encounters in which they experienced varying sources of harassment, including physical, verbal, and sexual. They described scenarios perpetrated by both patients and coworkers. Participants also spoke about their responses to workplace harassment, such as making formal reports, which generated significant feelings of fear and anxiety.

Subtheme 3, Pregnancy and Maternity: Participants discussed the unique experience of pregnancy and family planning while working as an EMS clinician. Specifically, the physical toll that EMS work has on a pregnant body was discussed at length, including complications and having to take leaves of absence earlier than anticipated. Further, the limited accommodations available, such as light duty positions, for women who are pregnant were reported. Postpartum and returning to work difficulties, including

Table 1. Identified themes, subthemes and impactful quotes from female EMS clinician focus groups.

Theme	Sub-theme	
The female EMS experience	Sexism <p>"Oh no, no. You're a girl. You shouldn't talk like that, or you shouldn't do that." "Women are still pushing to make a presence in the EMS world like we still have a hard time struggling to prove that we're just as qualified or just as equal as the men that work." "I'll walk in with a male partner ... the people think that he's in charge and also, I'm a critical care medic. So, I have like the patch on and everything and the doctor will just immediately start talking to my male partner."</p>	
	Harassment <p>"And a lot of patients, partners, other clinicians do not respect our personal space. I've had multiple people on jobs, literally walk up to me and just touch me without my consent." "... it took me a week to speak with HR ... I love my job. I love it to death. I pick up over time left and right, and I love my coworkers. And I was like, scared to come into work, and I was so anxious. I was like, worried. I'm gonna get singled out."</p>	
	Pregnancy and Maternity <p>"So, one of two things happen. Either you end up having a miscarriage or you go out on disability 'cause you just can't take it." "So, I'm currently pregnant and within working I have struggled to find reasonable accommodations or, you know, even with a written doctor's note, I was denied a different position or a different job task," and "And when we ask like, why are there no accommodations for women who are pregnant like you either have the choice of putting your life or your child at risk or coming to work very close to the end of your pregnancy to make sure you have insurance." "And when we talk about pregnancy and children, we also will get penalized, especially as women and mothers. I've seen so many mothers like 'I can't find childcare'. Like 'I don't know what to do'. Like, 'you know, my child got sick' and it's like, oh, we are 'calling out too many days'." "I've actually spoken to women who are like, alright, like, 'I kind of wanna have a baby, but I can't afford to right now because I have to go on light duty or I won't be able to work for X amount of months, and you know my family can't sustain that without my income' ... So you have to be like, all right, well, maybe I have to find another job. I have to put off being pregnant."</p>	
	Interactions with male partners/peers <p>"... I've generally had a pretty positive experience being a woman in this field. I don't know if I've gotten lucky with the partners I've gotten to work with that have all been, uh, good friends to me ... respectful partners, I feel like." "I've also had partners like stick up for me, my male partners, when men did get inappropriate, which I always appreciate and you know, I believe I can hold my own at the same time, but it's still nice when somebody steps in." "So far, I've, I've definitely felt like most people are very accepting of having a female partner. I've never felt like I've had to, like, prove myself or anything like that."</p>	
	Impact on personal wellbeing	Job demands <p>"Sorry, but kinda sometimes there's like not a minute to think. You just keep doing and then you just have to push. It sucks. It's, it's not fun. There's things that come home or days that get in my car and I just cry." "... I had a 17 stair carry up the other day, 220 pounds and five steps to the top. I maxed out. I couldn't lift anymore. Thank gosh my partner was able to carry up the last five stairs."</p>
		Impact on family and friends <p>"I know for me I've almost ended up divorced on more than one occasion. I mean, sometimes you just can't leave it. Well, sometimes we just can't leave it at work."</p>
		Disappointment/frustrations <p>"So, I understand the frustration because they [EMS leadership] don't, you know, they see the problem in the moment if they choose to see the problem, and then it never goes anywhere. It gets highlighted and, and they maybe address it for that one person, but systematically the implementation of something or a program that would actually fix some of these things [pregnancy/maternity related issues] or alleviate some of these stresses, there's not a lot of follow through."</p>
		Trust/mistrust <p>"You know, everyone's like, 'Oh, mental health, mental health' and, and then you have somebody with a legitimate issue, and you just drop the ball on that. It really feels like, 'OK, you're just saying this in name'. So, it's very hard for me to have any kind of trust in management to think that you're gonna get anything done. I'd rather take care of it myself for the most part."</p>
	Impact on occupational wellbeing	Questioning of occupational abilities <p>"... you're looked at as if you can't do this, you can't do that. You're only good for this, but you're here." "And it was just really overall, you know challenging I got questioned while that work whether or not my judgment was off because I was pregnant."</p>
		Questioning of career choice <p>"It's kind of sad to look back and remember, you know, that I used to feel like I had all this room for growth and now feel like maybe I'm limited and maybe I need to choose a different career path where I don't need to lay on my stomach to intubate while I'm pregnant or I don't need to carry somebody into their chair. Umm, you know or where I can actually ask for help and not be judged because I'm a female ... I don't think I really had a doubt whether or not I was continuing with EMS for the rest of my life. And now I do." "... initially when I had started here, I really was looking forward to just continuing through the path and you know, leading up to a supervisor and you know, I think that's pretty much where it ends for woman. You know, administrator would always be nice, but we don't see any women administrators for our department. "</p>
Lack of support <p>"But again, from management I really don't get the sense of especially upper management that they really want to fix anything." "And our leadership should back us on that [inappropriate behavior] and our leadership really needs to start backing US better."</p>		
Coping mechanisms	Maladaptive coping mechanisms <p>"You lack sleep. We don't take care of ourselves when it comes to eating. And I mean, they'll go hours without realizing that I haven't eaten because it's so busy. And like, if you don't bring food to work, the chances you stop to get food are so slim to none." "So, like the other day, my one bad habit I do, do to cope is I smoke cigarettes, you know? So in between calls. Like, that's like my 10 min of peace and silence sometimes."</p>	

(continued)

Table 1. Continued.

Theme	Sub-theme
	<p>Adaptive coping mechanisms “So, I have no problem and admitting that I started going to therapy and now I look forward to going to therapy weekly because it has been my outlet and I get to you know, talk about my feelings based around work, judgment free or not, have to be worried about how management or supervisors would, you know, take how I’m feeling.”</p> <p>Peer support “As a group, EMS in general, we always look out for each other even if you don’t know the person. We tend to look out for each other because we have similar shared experiences.” “Like I’m just getting naturally a little bit more comfortable with female partners than I do with males. And I, I just, I don’t know if that’s like just a, you know, a woman-on-woman thing or if it’s just me knowing that I at least have an ally.” “So, I definitely think that’s important, just like, you know, having a partner that you can like vent to and like, you know, not drag them down with you but to just vent to it.”</p>

childcare, were also discussed. Participants also discussed delayed family planning due to the nature of their occupation.

Subtheme 4, Interactions with male partners/peers: Female EMS clinicians gave details on working with male partners, and interactions with male peers. Overall, there were many reports of positive interactions with their male partners.

Theme #2: Impact on Personal Wellbeing

The second theme identified was how the experiences described in Theme 1 impact the personal wellbeing of participants. They discuss how the physical and psychological demands of EMS work has impacted them regarding their physical, emotional and mental health. Participants also discuss how EMS work has created difficulties for familial and personal relationships. Many emotions were expressed, including disappointment and frustration, in addition to mistrust.

Subtheme 1, Job Demands: Participants described the impact of the physical and psychological demands of EMS work on their overall mental and physical health, including heavy lifting of patients, and high workloads. Others described the emotional toll of EMS work.

Subtheme 2, Impact on family and friends: Participants described how being an EMS clinician has impacted their familial and intimate relationships, touching on topics such as divorce. The difficulty with work-life balance was discussed.

Subtheme 3, Disappointment/frustration: Feelings of disappointment and frustration with respect to management by EMS leadership were frequently reported, particularly regarding specific issues faced within the workplace, such as harassment and pregnancy related issues.

Subtheme 4, Trust/Mistrust: Participants described their feelings of mistrust toward coworkers and individuals in leadership positions. They described their reluctance to confide in or disclose any personal feelings, particularly during times of need, for fear of being judged.

Theme #3: Impact on Occupational Wellbeing

The next theme identified was the occupational impact that the discussed experiences have had on participants while working as an EMS clinician. They described how their occupational abilities have come into question by peers and other healthcare workers while on the job. Individuals also detailed how they have questioned their choice of career as a direct result of their experiences. Lack of leadership

support was also discussed as having had a significant impact on their occupational wellbeing.

Subtheme 1, Questioning of occupational abilities: Participants described instances where their occupational abilities, physical or clinical, were called into question by peers, coworkers and or patients, and how that has affected them.

Subtheme 2, Questioning of career choice: Participants described how they have questioned their decision to go into the field of EMS based on their experiences of being a female. They also described how the lack of career advancement has also contributed to their reconsideration of their career path.

Subtheme 3, Lack of support: The lack of support from those in leadership or administrative positions was described frequently by female clinicians, and many expressed a need for improvements. Many participants felt that they are often not supported, with specific regard to inappropriate workplace behavior. Others felt that many issues raised by female clinicians are not taken seriously.

Theme #4: Coping mechanisms. The fourth and final theme identified was coping mechanisms— both adaptive and maladaptive— that female EMS clinicians engage in when faced with workplace stress. Maladaptive coping mechanisms included poor eating and sleeping habits, emotional avoidance, and substance use (tobacco). Adaptive coping mechanisms reported were emotional reframing, individual therapy, exercise, and self-advocating. Participants also describe the importance of peer support.

Subtheme 1, Maladaptive coping mechanisms: The maladaptive coping mechanisms described were in direct response to the occupational and emotional demands of EMS work, including insufficient sleep and nutrition. Other participants gave details on how they cope during difficult shifts.

Subtheme 2, Adaptive coping mechanisms: Therapy, cognitive reframing and exercise were some of the adaptive coping mechanisms described among female EMS clinicians.

Subtheme 3, Peer support: Peer support was identified as being a crucial aspect to EMS work, with participants describing the importance of female peer support, as well as having supportive partners and coworkers to help manage workplace stressors.

Quantitative Findings

A total of 224 participants met eligibility, with 63 that did not attempt the survey, 13 partially complete and 148

complete surveys. Median age was 32 (IQR: 25-42), and the majority of the sample was White (88.6%) (Table 2). Over half the sample was comprised of EMT-Bs (55.1%), and the median number of years in the field was 7 (IQR: 3-16.5). Moderate occupational stress levels were reported (mean SOOS-14, 32.7/70). Approximately 70% of participants met the criteria for probable anxiety, 53.9% for probable depression and 41.8% had elevated symptoms of burnout.

More than three-fourths of the sample reported experiencing sexism while working as a female EMS clinician (76.4%), with 44.6% of said experiences being perpetrated by patients and 42.9% by EMS partners or coworkers (Table 3). Similarly, 72.6% experienced harassment while working, with the primary source of harassment being verbal (47.3%), and perpetrated in the highest proportions by patients and EMS partners and coworkers (42.4% and 35.7%, respectively).

Thirty-nine participants reported being pregnant while working as an EMS clinician (24.8%). Almost 40% of participants reported that they had to delay or reconsider family planning due to their occupation. Additional pregnancy and maternity specific questions can be found in Supplemental Material 1.

Many participants reported having their clinical judgment questioned by a partner or colleague (61.5%), and almost half believed it was because they were female (46.9%). Almost 62% reported questioning or reconsidering their career in EMS, with workplace culture and/or environment (29.9%) and lack of career advancement opportunities being the primary reasons (25.5%). Overall, the majority of participants reported their interactions with both male and female EMS peers/partners and leadership to be 'Very good' or 'Good' (59.4%-77.0%). Moderate levels of organizational and peer support were also reported ('Very good' or 'Good': 55.7% and 69.9%, respectively).

Discussion

To our knowledge, this is the first study elucidating and contextualizing the experiences of female EMS clinicians. Given that there is such limited research on the topic, it was vital to obtain firsthand accounts of said experiences to bring awareness to this occupational cohort. While some of the reported themes described challenges universal to EMS clinicians, irrespective of gender, such as job demands, understanding them from the female perspective provides a comprehensive picture of what it means to be a woman in the field. Further, we found that our quantitative findings *via* self-report data largely supported our qualitative findings, particularly regarding sexism, harassment, and EMS as a challenging, yet necessary and important occupation. Despite these reports, we found that overall, interactions and support from peers or organizations were quite positive. This highlights that the capacity for change within EMS exists; however, it is dependent on the willingness to do so.

Our qualitative findings suggest that female EMS clinicians, much like their fire and law enforcement counterparts, have unique experiences that impact their overall occupational and personal wellbeing. The pervasiveness of sexism and harassment is alarming, but not surprising, with

many participants describing problematic and potentially traumatic scenarios. It is well known that women working in male-dominated fields and/or those with hierarchical work environments experience higher rates of sexual harassment (34-39). Quantitative findings support such claims, with 76.4% of participants reporting instances of workplace sexism, and 72.6% reporting harassment, with almost 42% experiencing more than one type (verbal, physical or sexual). Specific reports of sexual harassment among our sample are similar to those reported among other female EMS (27.7% vs. 28.1% (15) and 31.8% (16)) and firefighting populations (21.7%) (18). Perpetrators of such harassment, such as patients and coworkers, were consistent with other findings (16, 18). Proportions of verbal harassment were comparable to female firefighters (47.3% vs. 37.5%) (18). Research suggests that exposure to such harassment is associated with adverse psychological outcomes, which can be debilitating or possibly fatal (18, 40). Despite our findings being in line with other first responding populations, there is a need to not only reduce the frequency of sexism and harassment experienced among female EMS clinicians, but also for the creation of safe spaces for reporting and corrective actions against perpetrators.

Over 70% of participants met the criteria for probable anxiety, and almost 54% for probable depression, which are in line with some previous findings of pandemic related evaluations of mental health outcomes among both first responders and EMS specific populations (41-44). In a recent

Table 2. Female EMS clinician quantitative survey results ($n = 161$).

Variable	Total	
	N	%
Age (median, IQR)	32	25-42
Race		
White	140	88.6
Other	18	11.4
Marital status		
Single/divorced/ Separated/widowed	59	37.3
Married/partnered/ in a relationship	99	62.7
Ethnicity		
Non-Hispanic	141	89.2
Hispanic	17	10.8
Number of individuals living in house <18		
0	73	46.8
1	38	24.4
>1	45	28.9
Number of individuals living in house >18		
0	124	79.5
1+	32	20.5
EMS Certification		
EMT	86	55.1
AEMT	9	5.8
Paramedic	41	26.3
CC Paramedic	14	9.0
Field supervisor	6	3.9
Location		
Northeast	144	90.6
Other	15	9.4
Years worked (median, IQR)	7	3-16
Workload (pt contacts/day) (median, IQR)	5	3-7
Mental Health Measures		
Occupational Stress (SOOS-14) (mean, std)	32.7	11.7
Probable anxiety	108	70.1
Probable depression	83	53.9
Elevated symptoms of burnout	64	41.8
Resilience (STARS) (median, IQR)	17	15-20

Table 3. Female EMS provider occupational experiences ($n = 161$).

Occupational Experiences	N	%
Have you ever experienced sexism while working as a female EMS provider, yes	120	76.4
<i>*Sexism perpetrated by:</i>		
Patients	100	44.6
Hospital visitors	13	5.8
EMS partners or coworkers	96	42.9
Supervisors	61	27.2
Hospital staff	37	16.5
Other	24	10.7
Have you ever experienced harassment while working as a female EMS provider, yes	114	72.6
<i>*Type of harassment experienced:</i>		
Verbal	106	47.3
Physical	42	18.8
Sexual	62	27.7
<i>*Harassment perpetrated by:</i>		
Patients	95	42.4
Hospital visitors	13	5.8
EMS partners or coworkers	80	35.7
Supervisors	40	17.9
Hospital staff	21	9.4
Other	10	4.5
Have you ever experienced a pregnancy while working as an EMS provider, yes	39	24.8
Do you plan on having children while working as an EMS provider, yes	41	35.3
Have you had to delay or reconsider family planning because of your occupation, yes	45	38.8
Has being an EMS provider negatively impacted your relationships with friends and family, yes	69	44.5
Has your clinical judgment ever been questioned by a partner or colleague, yes	96	61.5
<i>Do you believe it was because you are female, yes</i>	45	46.9
Have you ever questioned or reconsidered your career in EMS, yes	96	61.5
<i>*Reasons behind reconsideration</i>		
Workplace culture and/or environment	67	29.9
Previous negative experience	33	14.7
Lack of career advancement opportunities	57	25.5
Lack of workplace accommodations	33	14.7
Lack of organizational support	44	19.6
Other	18	8.0
Overall, how would you rate your interactions with your male EMS peers/partners, Very good/Good	112	71.3
Overall, how would you rate your interactions with your female EMS peers/partners, Very good/Good	121	77.0
Overall, how would you rate your interactions with your male EMS leadership, Very good/Good	92	59.4
Overall, how would you rate your interactions with your female EMS leadership, Very good/Good	105	66.8
To what extent do you feel supported at work by leadership, Completely supported/Somewhat supported	88	55.7
To what extent do you feel supported at work by your peers/coworkers, Completely supported/Somewhat supported	109	69.9

*Questions were asked in a check all that apply format and may not add up to 100%.

meta-analysis, study specific prevalence of anxiety and depression during the pandemic ranged from low (anxiety, 4.5%; depression, 11.4%) to high (anxiety, 85.2%; depression, 77.8%) (41). While many of these studies did not stratify estimates by gender, Huang et al. (41) reported that female first responders were at increased odds for anxiety and depression, but the relationship was not statistically meaningful. One recent, non-COVID related study found that females had higher proportions of depression (17.0% vs. 11.9%), but not anxiety (15.7% vs. 18.4%) when compared to males (45). These findings disagree with ours, which are suggestive of a much higher mental health burden. Further, the proportion of participants that reported elevated symptoms of burnout was somewhat inconsistent with previous studies conducted among this population. EMS clinicians have some of the highest reports of burnout across all healthcare workers, with rates upwards of 69% (12, 46). Recent reports among female clinicians, specifically, indicate more moderate levels of burnout, ranging from 25-29% (11, 45), which are again lower than our findings (40.9%). Reasons for the discrepancies in our findings could be due to our lower sample size, or the fact that our study was inclusive of only females which may have biased to include those with higher mental health burdens.

The authors would like to conclude by saying that despite study findings, there is strong evidence that women find EMS to be an inherently worthy occupation. Despite experiencing workplace challenges, participants continue to show up to their jobs, engage and provide lifesaving care to their communities. One participant was meaningfully quoted as saying, “I love being a medic. I have gone to school, I’ve gotten degrees. I love this job and I feel like the experiences that I’ve had have molded me into that stronger person, and I feel like I’ve taken that strength and brought it even to other areas of my life.” EMS is undoubtedly one of the most difficult occupations, and yet women continue to enter the workforce in higher proportions (47). This speaks to the importance and desirability of the field, and that women are necessary and contributing members. There is a need to not only continue to attract, but retain female clinicians in the years to come, for our patients, communities and health systems benefit from their inclusion.

Limitations

Our study is not without limitations, with the first being that our sample may not be representative of all female EMS clinicians. Our samples, from both the focus groups and quantitative survey, were largely from the Northeast and predominately

White, Non-Hispanic. Experiences of EMS clinicians may differ upon geographic region and racial category, thereby limiting the generalizability of our results. Further, there is the possibility of selection bias, for we were unable to determine which factors were associated with participation in either the focus group or self-report survey given the nature of recruitment. Further, as mentioned, because this was a female inclusive study only, there is the potential that women with more negative experiences, or higher mental health burdens, participated in higher proportions. Secondly, because some of the participants may have known the investigators during the focus group sessions, there was the potential for social desirability bias. Participants may have under or over reported certain experiences for fears of retaliation or punishment. However, we believe this to be minimal, particularly due to the fact that the quantitative findings were anonymous and supported our qualitative data. Thirdly, we may be limited by our sample sizes. The first two focus groups had fewer than six clinicians, of which may have limited the ability for a variety of perspectives (48). Moreover, having thirteen participants attend the last session may have restricted full participation among all who attended. Despite this, we do believe saturation was met by the third session, indicating that data collection was complete. Our quantitative sample was also relatively small, which again may not be representative of all female EMS clinicians. Fourthly, we did not evaluate paid or volunteer status of the participants. While recruitment largely came from paid agencies, there is the possibility that women from volunteer agencies were included, of which may have influenced our results. Additionally, conducting focus group sessions *via* remote video platform may also have limited the richness of data collected due to the potential loss of interactions that occur organically in person, connectivity issues, and location of attendance (e.g., from the workplace). Lastly, we did not evaluate any of our findings in the specific context of the COVID-19 pandemic. The mental health difficulties experienced at the time of evaluation could have been confounded by the persistent and lasting effects of the pandemic. Future studies should investigate the impact of the pandemic on female EMS clinicians, specifically.

Conclusion

The current study highlights the occupational challenges and difficulties that female EMS clinicians experience. If we wish for women to remain as active, contributing, and long-term members within EMS and other first responding occupations, more supportive and conducive environments are needed. Specifically, education, policy and action are needed to reduce and prevent episodes of workplace harassment, and resources should be allocated to supporting those who have experienced it. In light of the recent passage of the Pregnant Workers Fairness Act (49), there is a dire need for reevaluation of what “reasonable accommodations” are currently being provided for pregnant clinicians. Appropriately sized or maternity specific uniforms, and firm opportunities for light duty positions are two mechanisms in which agencies could enhance not only the physical safety of their female clinicians, but also improve their professional satisfaction and ultimate retention within the field. Further, given

the ongoing mental health burden in the aftermath of the COVID-19 pandemic, it is also imperative that we identify and evaluate mechanisms for improving and preserving EMS clinician mental health. Programs and interventions that are specifically tailored to the female experience should be explored.

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