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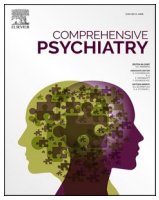

"This is it…this is our normal" - the voices of family members and first responders experiencing duty-related trauma in Ireland

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ABSTRACT

Background: Compared to other occupational groups, first responders (FR) experience worse mental health outcomes due to duty-related trauma and occupational stressors. Despite their best efforts, they bring this stress home to friends and family. Consequently, FR and their supporters suffer from increased psychosocial difficulties and experience stigma and other barriers to help-seeking. Prior work offers little opportunity for open dialogue and shared understanding of the repercussions of this occupation for all members of the first responder community.

In this qualitative study, we aimed to: (i) explore the lived experience of Irish FR and their family members (FM) related to occupational stressors, and (ii) identify opportunities to engage FM with existing organizational supports available for FR.

Methods: Using a community based participatory research (CBPR) approach, we conducted six focus groups involving a total of fourteen participants comprising FR, organizational representatives, and FM. All focus groups were audio recorded, transcribed, and analyzed using reflexive thematic analysis.

Findings: FR and FM shared their experiences of both joining and learning to live as members of the FR community in Ireland. Through our analysis, we identified a main theme of 'crossing thresholds', characterizing their transformative learning experiences. This learning experience includes recognizing the consequences of this new role for them as individuals and for their relationships. Participants also shared how they have learned to cope with the consequences of their roles and what they need to better support each other.

Conclusions: FM are often unheard, hidden members of the first responder community in Ireland, highlighting an unmet need for FR organizations to acknowledge FM role in supporting FR and to provide them with the appropriate training and resources required. Training for new recruits needs to move beyond the tokenistic involvement of FM and encourage knowledge sharing among experienced and novice members. Cultural change is required to support help-seeking among FR and foster a sense of peer support and community among families.

1. Introduction

First responders are emergency service professionals who respond to stressful and traumatic incidents in the community. Emergency FR include personnel from the police, ambulance services, fire and rescue, and armed services. FR are often called to incidents that require rapid processing of information, complex decision making may be stressful or traumatic and involve risk to the personal safety of the first responder or

Abbreviations: First responder(s), (FR); Family member(s), (FM); Community Based Participatory Research, (CBPR).

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impact their mental health [1]. In addition to incident related stress, FR experience occupational stress at a level unseen in most occupations [2]. Given high work demands and repeated exposure to traumatic events, it is unsurprising FR experience worse mental health outcomes compared with the general population [1,3–6] and other occupational groups [7,8].

There is a wealth of literature that highlights mental health, suicide risk and maladaptive health behaviors among FR [4,5,9,10]. Across FR occupational groups, prevalence rates of mental health illness (anxiety and depression) vary between 16.6 and 44.4% with rates of post-traumatic stress reported at between 10% and 23% [11,12]. The repercussions of this work are physiological, psychological, and behavioral including burnout, compassion fatigue, and insomnia. Paramedics are reported to experience PTSD at significantly higher rates compared with fire and police counterparts [13,14]. In a systematic review of mental illness and PTSD in paramedics, Petrie et al., (2018) report PTSD as the most common disorder with prevalence rates of between 11 and 27% for psychological distress. While all FR occupational groups are exposed to stressful or traumatic experiences, the nature of the incident and rate of exposure can vary significantly between FR occupations. For this reason, studies of mental health in FR typically focus on specific FR occupational groups. Although commonalities are recognized, there are professionally bound aspects of psychological coping, resilience and wellbeing that suggest FR occupational groups should be uniquely understood and supported [4,15].

FR coping responses to occupational or traumatic stress are equally diverse. In a systematic review of the psychological impact of disasters on responders, Brooks et al., (2016) found individual response is influenced by unique combinations of pre-incident (e.g., occupational factors, specialized training, health), during incident (e.g., exposure, duration, emotional involvement), and post-incident factors (e.g., individual and group coping strategies, professional and peer support) [8]. Consistent influences on coping and help-seeking behavior among police [10,11,15,16], firefighters [17–21] and paramedics [9,12,22] include perceptions of self and of support services, cultural stigma, stoicism, career concerns and peer or social support [3,8,15,23–25]. Importantly, psychopathology only develops in a minority of those exposed to stressful experiences [26,27] and is moderated by individual resources such as stress resilience [28,29] and social support [30,31]. Therefore, challenges arise in providing the right support according to individual needs or vulnerability [4]. Often, only those closest to the individual in distress may see the more subtle impact of high stress occupations on physiology, psychology, and behavior [32,33].

FR, and those who support them, experience stress and emotional distress that is cumulative and encompassing [1,5,16,34–36]. Recent studies suggest that FM and friends who support FR are the unheard members of the FR community [17,24,37–39]. As supporters, FM are vicariously exposed to secondary stress due to their first responder's experience of traumatic incidents and their awareness of the potential for trauma, even if not explicitly communicated [34]. To whom FM and friends of FR turn for support is less well known. Our recent narrative review examined and synthesized the literature to understand the supports provided, used, and needed by FM and friends of FR [24]. We found significant inconsistencies in social support for family members, gaps in their knowledge, and poor engagement and acknowledgment of families by FR organizations for their vital supportive role.

A growing body of evidence demonstrates that FR groups express preferences for informal support [40,41]. Moreover, social support provided by peers [20], family, and trusted friends [42] mitigates the impact of occupational and traumatic stress and positively influences FR health and wellbeing [42–44]. FM are optimally placed in terms of proximity and immediacy to provide this early intervention, before duty-related stress responses become exacerbated [23,35,40]. Given FM repeated requests for support, training and engagement with organizations and services [24,29] how might we do better?

National and representative mixed methods studies of FR groups in the USA [1], UK [45], Canada [4,14], and Australia [8,23] demonstrate diverse experiences in relation to the impact of their work, their support needs, organizational structures, cultures and the availability of support services [19]. In comparison with international counterparts, emergency service providers in Ireland share similarities in terms the culture of the profession and organizational structure (command structure, full time and retained firefighters) and resources. One significant difference is the relatively close rural and urban geographic locations in which FR operate, meaning that even at national level this is a small community that know each other.

Only sparse research and intervention efforts are reflected in an evidence base which under-represents all members of the Irish first responder community and the sociocultural context in which FR and FM communicate mental health needs [46–49]. Research to date has neglected the lived experiences of family and friends of FR in Ireland. Understanding social contexts and the rich experiences of members would offer a unique contribution to this literature. Insights from qualitative approaches that explore these lived experiences would contribute to the evidence base and inform future research. This study is part of an overall program of research, focused on firefighters, paramedics, and dual role firefighters/paramedics. While firefighters and paramedics have different roles and work practices, they also work closely together within the community, sharing common challenges and issues. Thus, this work aims to: (i) explore the lived experiences of FM and friends of FR and representatives from emergency service organizations; and (ii) identify opportunities for further engagement with and support of FM in parallel with existing organizational supports for FR.

2. Materials and methods

2.1. Study design

As part of a wider program of research, we took a community based participatory research (CBPR) approach to this study. CBPR recognises all stakeholders in the research process and the strengths that they each bring to both identifying and solving pragmatic research problems [50,51]. CBPR focuses on equity and long-term commitment, with each member of the community sharing their unique perspective in each phase of the iterative research process. This approach particularly suits the often-under-represented community of emergency services personnel, their families, and organizational representatives, because cultural understanding is key to translating co-created knowledge into practice [50]. This approach facilitated a detailed exploration into the lived experiences of both FR and FM in Ireland.

2.2. Recruitment

Active FR (e.g., firefighter, paramedics), FM and close friends of FR from Ireland were eligible to participate. To preserve the aim and research focus of the study the FR could not be related or connected to any FM or close friends participating in the study. Purposive sampling was selected to ensure variation in recruitment efforts according to gender, age, rank, duration of service for FR and relationships for FM. To obtain broad perspectives, FR from differing geographic locations, services, ranks, and with varying years of service were invited to participate. FM and friends with differing relationship types and years of experience in this community were also invited to participate. Recruitment occurred between December 2021 to April 2022 via circulation of study information on national media, social media, organizational newsletters, and word of mouth.

2.3. Procedure

We chose focus groups as a data collection method to facilitate mutual perspective sharing and synergistic dialogue among participants so that they could build on each other's contributions in a way not

possible using individual interviews. We conducted six focus groups between April and May 2022, as part of a co-design workshop process and in parallel with a larger program of research. Participants were invited to a series of focus groups, consisting of two mixed focus groups, two FR groups, and two FM groups (see Table 1).

The interview guide for the focus groups was developed by the research team members experienced in trauma, mental health research and FR culture. Open-ended questions explored (i) positive and negative experiences (ii) daily routines (iii) signs of distress (iv) coping strategies and (v) support needs (see Focus Group Interview Guide, Appendix A.). Focus groups were approximately two hours in duration and facilitated by primary facilitators (MOT, AT, BD) and with co-facilitator support from (WE, AT, CM). All facilitators were trained in group and individual crisis intervention, especially relevant given the highly personal and potentially triggering nature of the interview topic. Focus groups were conducted at the RCSI SIM Centre for Simulation Education and Research, Royal College of Surgeons in Ireland (RCSI). The sufficiency of the data for understanding the phenomenon of interest was defined in terms of richness and complexity and was discussed as a team at the outset and throughout the active phase of data collection with practical consideration of sample size acceptability. All focus groups were audio recorded and transcribed verbatim.

2.4. Reflexivity

The authors' diverse backgrounds and areas of expertise added value to this study: three team members have experience in working directly with FR, (two FR and one emergency medicine physician); one of whom also identifies as a FM of a FR, and multiple team members have considerable experience with qualitative research methodologies. Their lived experiences assisted in probing further into participant experiences during the focus groups and provided crucial insights into data interpretation during the analysis phase. Themes were discussed through the FR and FM lenses, resulting in deeper understanding with the wider research team.

2.5. Data analysis

We used reflexive thematic analysis to analyze the focus group transcripts, field notes and materials [52,53]. In line with the process laid out by Braun and Clarke [53], we proceeded as follows:

(i) Familiarizing yourself with the dataset;
(ii) Coding;
(iii) Generating initial themes;
(iv) Developing and reviewing themes;
(v) Refining, defining, and naming themes;
(vi) Writing up

The authors familiarized themselves with the memos, audio files, and transcripts of the recorded focus groups to obtain an overall understanding of the content. Open coding was conducted in Microsoft Word by three authors independently (AT, BD, AT), before discussing collaboratively with the wider research team. While there wasn't always a clear consensus between the three authors, the wider research team reached agreement through repeated shared discussions, valuing insightful reflection and thoughtful interpretations over uniformity, to further refine subthemes and elevate our findings (see Appendix B Supplementary Data).

Table 1
Characteristics of focus group participants.
*Indicates a participant who identified with more than one role.

Names	Role First responder (FR) Family member (FM)	Relationship	Group
Grace	FM	Spouse	FG 1,2,3,6
Emma	FM	Sibling	FG 1,2,3,6
Philip	FR*	Firefighter	FG 1
Charlie	FR	Firefighter / Paramedic	FG 1,4,5,6
Conor	FR	Paramedic	FG 1,4,5,6
James	FR	Firefighter / Paramedic	FG 1
Jack	FR*	Firefighter / Paramedic	FG 1,4,5,6
Derek	FR*	Paramedic	FG 1,4,5,6
Emily	FM	Spouse	FG 2,3,6
Nicola	FM	Spouse	FG 1,2,3,6
Barry	FR	Firefighter / Paramedic	FG 1,4,5,6
Pat	FR*	Firefighter	FG 1,4,5,6
Lorraine	FM	Spouse	FG 2,3,6
Steven	FM*	Son	FG 1,2,3,6

2.6. Ethical consideration

The study received ethical approval from the RCSI University of Medicine and Health Sciences Research Ethics Committee (HREC Reference Number 202201018). Participants received written information about the study and consented to participate. We report this study according to the Consolidated criteria for reporting qualitative research (COREQ) criteria (see Appendix C) [54].

3. Results

3.1. Demographic characteristics

The final sample includes eight full-time FR and six FM, who participated in multiple focus groups where trusted relationships were built and maintained. (See Table 1). To protect the identity of participants the authors decided not to assign demographic characteristics within Table 1 but to outline a general demographic overview. All FR were established in their careers, having at least 15 to 30 years of service, had attended several significant traumatic incidents, and had experience of a number of operational and supervisory roles. All FM had been in a relationship with a FR for at least 10 years at the time of the study and had lived experience of supporting their FR through trauma-related distress. Five participants identified with more than one role and two participants also had an organizational role representing senior management within a fire service and a governing body for prehospital emergency care in Ireland. The study included eight male and six female participants with an age range of 30 to 65 years, and all were of white Irish ethnicity. Most participants came from the Leinster province in Ireland with a smaller number of participants from Connaught. Participant quotes are described using pseudonyms.

FR and FM shared their experiences of both joining and learning to live as members of the Irish FR community. They described journeys from who they were before entering this community to who they were now. Their stories showed a trajectory of growth as they came to terms with the interrelatedness of the personal and professional aspects of their lives. Through our analysis, we identified one overarching theme, *crossing thresholds*, that captures the trajectory of combined lived experience of FR and their FM. Further, we identified four subthemes that characterize this 'journey of knowing' from what they knew then, to what they know now: (1) knowing our normal; (2) knowing each other; (3) knowing how we cope and (4) knowing what we need.

Our analysis revealed that both FR and FM crossed critical thresholds resulting from the relational nature of their shared experiences, and growing awareness in response to the impact of duty-related trauma. These thresholds were also influenced by shared histories of support and communication between FR and FM.

3.2. Knowing our normal

Upon joining the FR community, both FR and FM came to realize that their newly adopted behaviors and norms did not conform with

outsiders' perceptions of normality. This disconnect had both positive and negative repercussions at both individual and relational levels.

FR described their career choice as a calling that gave them purpose, a place to be valued and an ability to positively impact their community:

"*You're doing something that impacts people's lives, you go out and you make a major difference with people, it is a privilege that you have to respect*" (Philip, FR).

For many, their career choice gained significance because it was a positive life choice that afforded opportunities not available to peers in their formative years.

"I grew up in a tough area. I could have fallen by the wayside, like a lot of people in the eighties where, you could have got yourself involved in drugs and things like that, but I found a purpose [as a first responder] and that's where I went" (Derek, FR).

FM gained social capital that came with being the household to which your neighbors turn to in a crisis, particularly exemplified during the Covid 19 pandemic.

"*Everyone has a huge respect and admiration for them. We saw a lot of that early in the pandemic"* (Emily, FM).

Choosing to build a life around the FR profession brought irrevocable changes to the lives and wellbeing of both individuals and families involved. To survive in their role, FR willingly adopted a stoic persona, outlining how that helpful persona could then prompt conflict at home when it was not removed with the uniform.

"The reactions of going home and the way it was described to me once was: [FM said] 'I'm walking on eggshells around you'. And I could never understand what it meant; I couldn't relate to it….. they had to see what humor I was in… when I came in from work" (Jack, FR).

FM also recognized that FR struggled to separate their home and work persona:

"…*sometimes the hardest thing for him to do is to come home*…" (Emily, FM).

FM assumed norms over time they had never previously imagined, thus coming to view themselves quite differently from other so-called 'normal' families, who had little understanding of these skewed norms.

"[yesterday] *I waited to have dinner with my husband, we ate at 11pm and talked about how he did his best [description of a gruesome incident], how do I tell someone that was how my day went?*" (Emily, FM).

FR and FM stories of change were imbued with a wariness about what to share and not share with those outside the FR family bubble. They sought to avoid the morbid fascination of neighbors seeking gory details or expressing pity about attending an incident. FR community members also needed constant reminders not to trivialize others' problems given their own high benchmarks.

"*I have to remind myself not to dismiss their stress because I'm used to being up here and they are down there"* (Lorraine, FM).

Both groups described a clear distinction between who they were before and who they had become. This transition was driven by the challenges of meeting expectations of their respective roles. FR articulated a dominant expectation of conveying strength and fitness for their role rather than admitting weakness.

"*There's great shame…if I admit I'm not coping well, people are looking at me saying, I actually shouldn't be doing this job"* (Charlie, FR).

For family members, the all-encompassing and pervasive nature of the first responder's role took precedence; many felt inadequately prepared to provide support.

"It doesn't matter what's going with your day. You could be having a difficult day and then all of a sudden, you're expected to just give…to make this whole safe place at home and, you look after them the whole time" (Emily, FM).

Shaped by their journey of knowing over time, both FR and FM gained clarity about the thresholds they crossed as they became gradually and increasingly aware of the many unforeseen individual and family-related consequences they experienced.

3.3. Knowing each other

When asked about their relationships, FR and FM identified physiological, psychological, and behavioral repercussions associated with the FR role, such as changes in mood and behavior that negatively affected family life and were often impossible to ignore.

"*We are the heroes! We are the fabulous ones! But we go home, and we are cranky, and we don't want to be with our family. They are the ones that have to pick up all of that crap"* (Charlie, FR).

Some FR described being worn down by never-ending pressure and accumulated low-level stressors.

"I*t's not always the big dramatic thing… it can be the cumulative effect of many, many incidents*" (Jack, FR).

Feeling worn down was exacerbated by a perceived general lack of agency in the routine of their lives and the unintended consequences of the trauma and occupational stressors.

"*I get super angry and he's super angry, but not [angry] at each other, but there is nothing you can do. So, it's not just one way of dealing with [it], it's not just the accidents…it's the job as* well" (Nicola, FM).

FM viewed their 'role' as relentless and exhausting, painting a picture of how they were often not quite well, but not falling apart either. They were ever mindful of forming a protective shield for their partner, protecting them from intrusive questions, making sure the house was quiet so they could sleep and taking on most household chores to spare their FR partner.

"*You have been put in this role where you become everything; you are supposed to be the one taking the stress away, give him space, worship the hero, and go on tip toes and accept the cranky husband who isn't doing anything. You are the one that picks up the slack*" (Nicola, FM).

The closeness of their relationships and their history of supportive communication enabled FM to "*see the gaps*" (Lorraine, FM) before others.

"*Nobody knows that person better than the wife, nobody knows that person better than the person that's lying beside them"*" (Nicola, FM).

FM perceived subtle yet understandable signs of stress others missed. They came to "*know every twitch" (*Grace, FM), changes in mood by "*the way he puts his cup down"* (Grace, FM), "*whether or not he brings his boots into the house*" (Nicola, FM) or "*how he walks up the hall*" (Grace, FM).

FR were sometimes slower to recognize both their own support needs and those of their partner, a quality FM attributed to the primacy of the FR's needs.

"*It's a hard life and because he is dealing with so much, it nearly feels like I've got to take on everything else. When he comes [home] from work he can go to bed, but when I've been up with the kids all night, I still have to go to work and sometimes I want to shout at him you're not the only one with a tough job around here*" (Nicola, FM).

However, FR noticed that they had changed and how this change impacted their relationship.

"*I'm not the man she married*" (Pat, FR).

For many participants, having a shared and established history of support helped them navigate the uncertain space between their 'old' and 'new' relationships with each other. They needed to learn new ways to cope and support their loved ones. FM reflected on their limitations, acknowledging a lack of the knowledge and skills needed to support their loved one despite full awareness of the red flags.

"*… I wish I had better skills as to how to point out when I think there's something … you let it go so far, and then I see a red flag that can spiral…."* (Lorraine, FM).

3.4. Knowing how we cope

To deal with what came home from work, FM and FR developed various coping strategies. FR preferred withdrawal or avoidance, coping by keeping busy, using dark humor, depersonalizing events and by minimizing or denying the problem.

"It's almost like, like a commodity, isn't it? A suicide, we say we had a

suicide… whereas it's a person… a suicide, an act" (Pat, FR).

FR sought to safeguard themselves and their families from the job-related trauma they witnessed, leading them to "*withdraw and withdraw until you can't withdraw any further."* (Pat, FR). This strategy often created communication vacuums.

"*It's quieter, they're still at the incident… he's home physically, but not* mentally" (Nicola, FM).

Dictating the rules of communication was an often-cited coping strategy. FM and FR shared stories of how in doing so, the FR set the tone and controlled the narrative in the home. As a result, FM were unsure what they were allowed to talk about.

"*If you're at the dinner table or over for dinner, are you allowed to ask if they are, ok*?" (Emma, FM).

FM struggled to accept that their FR, at times, preferred to talk with their work families, colleagues who spoke their language.

"It is easier sometimes to talk to colleagues completely because you don't have to explain the minutia…So, talking to somebody who's in the job, a lot of the time it might feel disrespectful [but] that is the person we need at the time" (Charlie, FR).

Efforts to compensate in relationships was a common occurrence identified by FM, describing how FR made up for absences by being the fun parent when they get home or by making up for past absences by being more present with adult children.

"*I remember when I was playing adult football, and Dad would be at matches and I was like, he never came to matches? It's just, he didn't have time to go when I was younger, he does now*" (Steven, FM).

FM also needed to compensate, not only for their FR absence when at work, but also when they were at home.:

"The whole keeping the kids quiet when they've come off nights and [are] going to bed. I get to eight o'clock and [feel] the anxiety of keeping everybody quiet and getting everything done and making sure they get sleep" (Nicola, FM).

Stories relayed by FR and FM described seeking informal help for work related distress from loved ones or peers, and formal support from mental health and trauma-informed professionals. In all cases, the decision to seek formal support was motivated by an ultimatum when attempts to cope independently had made family life worse.

"[FM said] You need to talk to me about what's going on here..[my reaction] I lost the rag. I remembered throwing the power screwdriver at the barbecue… and I remember just when she said it to me, just realizing this is wrong" (Conor, FR).

Both groups acknowledged the maladaptive nature of some coping strategies and how these led to relationship conflict. Participants agreed that sharing their lived experiences helped them better understand the significant support needs for both FM and FR.

3.5. Knowing what we need

Participants repeatedly described navigating uncertain spaces. These spaces separated them from where they once were to where they found themselves at present. Learning what they needed now, came through trial and error and sometimes painful experiences of transformation and growth. They acknowledged the impossibility of unknowing these experiences and accepted these unexpected changes as part of their lives.

"I honestly think that we can't fix this, but [all] we can do is live with it… You're not going to be the same, your attitude to everything is going to be different. …. This is it; this is your life. Now you will never, ever be the same" (Pat, FR).

Despite acknowledging the struggles, their experiences helped FR grow stronger. One participant described how a past relationship breakdown helped them learn the importance of creating shared understanding about their work-related stresses.

"The only reason he knows what to do is because I have learned from a failed relationship that I need to be able to say, 'I need space and time' or 'give me a hug and let me fall apart'" (Charlie, FR).

Being perceived as the protector and yet feeling vulnerable and needing support was a cause of tension which FR identified. They recognized the need to better include their loved ones by giving them permission to start conversations and being comfortable to share enough information to create shared understanding.

"They see you as being the hero, and this is what you do every day so you must be great. Not, we're normal human beings, dealing with abnormal stuff and have feelings. So, I think you have to tell the family that it's okay to come to you, but then you have to live that and be okay if they come to you" (Charlie, FR).

FM also reflected on a tension which also existed for the FR that represented living in an in-between space. On the one hand, FR felt confident and experienced in the physicality of their work and yet somehow less qualified to cope emotionally with the incidents they experienced. This tension highlighted a need for further training on the emotional demands of the FR role to foster more effective coping.

"They're so well trained in every single other aspect of their job, bar, dealing with the fallout" (Emily, FM).

The need for greater engagement with employers and service providers was expressed by FM to recognize the familial support role, "*we're involved, we're just involved in a different way*" (Nicola, FM). They also highlighted how training FM would bolster first responder wellbeing given the inter-relational nature of social support: *"Teach us - it will roll down"* (Lorraine, FM).

Both groups craved more open and authentic communication. They were grateful for the opportunity to interact through the research process, which fostered greater understanding of others' needs, with one FR reflecting on how they hadn't previously considered things from their family's point of view.

"It's nice to see the different perspectives, lots of introspection; I was a bit quieter in there. I was thinking an awful lot about stuff that was being said, recognizing an awful lot of it" (Barry, FR).

Conversely, FM better understood the diverse types of support their FR needed after listening to other FR experiences and preferences. They came to recognize peer support as a productive coping and protective mechanism, which complemented rather than competed with their support.

"And it's about learning sometimes that, fair enough… they might go and ring the mate, but then they'll come back, and they'll talk to you" (Emily, FM).

4. Discussion

We explored the lived experiences of FM and active FR from emergency service organizations in Ireland. Their collective descriptions and our analysis revealed a journey of knowing that was embodied by *crossing thresholds,* which represented a space of uncertainty, awareness, and collective growth and transformation as members of this community fulfil their roles. Four related areas contribute to our understanding of this learning trajectory for both FM and FR by focusing on evolving perceptions of normality, relationships, coping, and needs to provide more meaningful support. Consistent with previous research, participants' narratives demonstrate that FR and FM oscillate between old and emergent understandings of work-life balance, normative family life, relationships, and wellbeing [55,56]. This uncertainty and polarity in the way FR and FM experience life, sometimes created imbalance and relational conflict. A sense of being stuck in an in-between space predominated; this struggle with liminality is common in FR and trauma literature [57–60].

Our participants experienced ongoing logistical challenges and the job's psychological burden, which caused cumulative stress on individual and relationship levels. These findings align with the broader literature exploring the impact of the role on FR families [17,24,45]. Consistent with participant narratives, the evidence suggests FR family members and trusted friends take on a supportive role, often providing emotional and practical support while neglecting their own needs [24,34,56]. Prior research also found that participants exhibiting the

personal resources to communicate and support each other experienced greater resilience in their respective relationships, compared with those who were less attuned to each other [10,56,61–65].

The potentially negative impact of occupational stressors and the resultant maladaptive coping strategies, such as withdrawal and avoidance, are unsurprising yet important findings. Indeed, previous failures to communicate impede support and learning from adversity [16,17,32,33,66,67]. Some FR organizations in Ireland offer FM support through "recruit family nights" to raise awareness of supports available to FR and FM, and in some cases access to FM mental health supports through various EAP services. There does however appear to be a lack of awareness about these supports or a help seeking stigma preventing FM accessing these supports. Based on our findings, limited social and supervisory support resulted in potentially haphazard coping strategies, through trial and error with negative outcomes, including isolation from sources of desperately needed support. This finding of limited awareness and acknowledgement of the supportive role of FM by organizations is not new [6,37,68].

By crossing thresholds and experiencing the journey of knowing, our participants gained new knowledge and insights. Indeed, FR and FM cross several thresholds in their trajectory of experience and learning. Each threshold and associated enhanced 'knowing' helped FM and FR better understand themselves and their coping and support needs. A similar practice of self-taught acceptance and self-regulation is reported in a number of qualitative studies involving FR and FM ([55,69,70]. Thus, the implications of our findings suggest that early awareness of the challenges, supports and coping strategies they will need, could mitigate the negative repercussions on mental health, job retention and family life for FR and their FM loved ones.

4.1. Strengths

The elevated level of engagement of the FR and FM in our study represents a significant strength. While this study is not the first to share the voice of FM of FR, our novel approach to data collection facilitates a synergistic dialogue about lived experiences between unrelated FR and FM. To our knowledge this is the first study that used a CBPR approach bringing together FM and FR to give voice to their reality as active and, at times, hidden members of the FR community. The spirit of the CBPR approach was further amplified by two members of our study team, (MOT, BD), having lived experience as members of the Irish FR community with relevant research backgrounds.

Creating conditions for FM to gain insight into the lived experience of other FR and FM is a unique aspect of our study. This approach promoted learning and growth among participants who valued the opportunity to converse with and learn from the "other" group's perception of common experiences. During focus groups with only either FR or FM, participants specifically expressed the need to hear from the 'other' group. Mixed focus groups with both FM and FR enabled participants to co-construct their lived experiences and shared understandings. Importantly, they experienced a normalization in realizing their challenges are not unique to them.

Our study offers novel insight into the extraordinary lives of first responder families in an Irish setting. This study is one of few that have given voice to members of the Irish first responder community [46,47]. Differences between the current study and the evidence base seem to be cultural. Firefighter families in Ireland do not feel strongly connected within the first responder community, when compared to their international counterparts [3,6,34,44,55]. FR and specifically FM in Ireland have limited opportunities to develop a peer support network, therefore cannot benefit from the mediating effect this social support provides [25,42,43].

4.2. Limitations

This research has important limitations. Out of necessity and the sensitivity of the topics explored, our study sample comprised a relatively small group of people who self-selected to participate. Participant diversity was limited in terms of gender, ethnicity, and geographic region. Despite recruitment across rural and urban areas in Ireland, a disproportionate number of urban and highly experienced FR participated; no new recruits participated. Families of on-call/retained firefighters', resident in rural areas were not represented. Importantly, work schedules prevented inclusion of participants restricted to travel within a five-minute radius of the station due to their on-call work. Friends and adult children of FR were also under-represented. Thus, our findings may have been influenced by the rank and status of the FR, years of service, the longevity of the FR-FM relationship, gender, and relationship type. Future studies should include greater diversity in terms of new recruits and those transitioning toward retirement to shed light on these important aspects.

Due to the sensitive nature of the study, and the closeness of this urban FR community, participants may have sought to maintain privacy and thus underreported their negative experiences or their full range of coping strategies. Since participants were known to some researchers (MOT, BD) and some participants knew each other, they may have felt uncomfortable sharing more sensitive information in a focus group setting. We found it reassuring that participants returned repeatedly for participation in longitudinal focus groups as part of our wider co-design process.

4.3. Implications

FR and FM experience negative consequences due to the accumulation of traumatic and organizational stressors over time. They suffer in silence because seeking help can damage careers and lead to stigmatization. Emergency service providers in Ireland must prepare new recruits and their FM for the journey of building lives around their FR profession and support the needs of those already on that journey. Suggested interventions include mental health training and interventions focused on developing emotional literacy, critical communication skills, help-seeking behavior and appropriate response [23]. Considerations are needed to respect confidentiality and these interventions should ideally be provided by professionals familiar with emergency services culture.

Negative experiences for both FR and FM are exacerbated by a lack of resources and formal peer support, with FM identifying a need for greater acknowledgement and engagement by service providers. Specifically, FM seek more opportunities to share and connect with other FM, with the aim of developing peer support groups and ultimately to feel heard and valued within the FR community.

From a positive perspective, learning shared in this study shows clear indications of post-traumatic growth. Participants' exposure to traumatic incidents, or supporting a loved one following that exposure, transformed how they see themselves and the meaning they take from life. Service providers, clinicians and researchers should be aware of these positive consequences to tailor training and supports, engage FM in supporting others in their community and add to the limited literature on post-traumatic growth in FR communities in Ireland.

5. Conclusions

Our study highlights that FM are hidden members of the first responder community, involved in the work of FR in a different, yet essential way. Emergency service providers must acknowledge these unheard voices within the FR community. Cultural change is required to support help-seeking among FR and foster a sense of peer support and community among families. Training for new recruits needs to move beyond the tokenistic involvement of FM and encourage knowledge sharing among experienced and novice members. Despite the preceding limitations, this study provides novel insight into the impact and learning experienced by members of this community. To build on and

increase the validity of this study, future research should investigate whether similar findings would manifest among more diverse FR and family/friend groups. More research is needed to determine whether help-seeking experiences vary according to FR status, gender, and other factors.

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CRediT authorship contribution statement

Angeline Traynor: Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis, Conceptualization. **Brian Doyle:** Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis, Conceptualization. **Walter Eppich:** Writing – review & editing, Writing – original draft, Supervision, Project administration, Methodology, Funding acquisition, Formal analysis, Conceptualization. **Anna Tjin:** Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis, Conceptualization. **Claire Mulhall:** Writing – review & editing, Project administration, Methodology, Investigation, Formal analysis, Conceptualization. **Michelle O'Toole:** Writing – review & editing, Writing – original draft, Supervision, Project administration, Methodology, Funding acquisition, Formal analysis, Conceptualization.

Declaration of competing interest

None declared.

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Appendix A. Focus Groups Interview Guide

Mixed participants (family members and first responders):

1. **What has been your experience of support to date?**

- What works well?
- What could be improved?
- In an ideal world, what would that support look like?

2. **Let's think about some of those incidents…**

- What was the incident?
- Why did it bother you/him/her?
- How did it play out at home?

First responder specific.

- We are going to spend some time talking about the impact of critical incidents on first responders such as yourselves and on those who are part of your social support outside of your organisation.
- These discussions may provoke some reactions and we have support on hand should anyone require it.

Highlight confidentiality, safe space and no rank within the room

- Permission to record (consent collected).

1. What do you love about your job?

2. We use the term "Critical incidents" to describe some of the traumatic incidents first responders have to deal with and may cause them stress. What comes to mind when you hear the term "critical incident"?
3. When dealing with some of these examples of critical incidents you have mentioned, you may have experienced some personal reactions to the incident. What 3 reactions come to mind?

- Which of these reactions do you bring home?

4. What helps you deal with these reactions when you are not in work?

- Coping mechanisms

5. What happens when you go home after a bad day or night?
6. During our first co design workshop, communication was highlighted as an important factor in providing support. How would you start that conversation with the person you rely on for support?

Family member specific

- We are going to spend some time talking about the impact of critical incidents on first responders such as your loved ones and the reactions that you notice they bring home.
- Occasionally these discussions may provoke some reactions in you. Please let us know if you need some support managing these.

Highlight confidentiality and safe space

- Permission to record (consent collected)

1. What is it like being a family member of first responder?

- Positive and less positive parts
- Think write pair share

2. There may be times when that stress comes home with them. How do you know it's been a 'bad one'?

- Signs
- Talking- how much do they tell you and how much do you want to hear?

3. How does your loved one deal with difficult incidents?
4. How does this affect you and the family?
5. If you could wave a magic wand, how would first responders be best supported?
6. How would you prefer to be supported?

Appendix C
Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist.

No. Item	Guide questions/description	Reported on Page #
Domain 1: Research team and reflexivity		
Personal Characteristics		
1. Inter viewer/facilitator	Which author/s conducted the interview or focus group?	**Methods – Pg 6** Four authors (MOT, AT, BD, AT) conducted the focus group discussions.
2. Credentials	What were the researcher's credentials? E.g. PhD, MD	**Title – Pg 1** AT and CM each have a PhD. WE has an MD and PhD. BD, AT and MOT each have an MSc. MOT and AT are PhD candidates.
3. Occupation	What was their occupation at the time of the study?	**Methods – Pg 6–7** The researchers' occupations are as follows: AT: Postdoctoral researcher; Psychologist. BD: Research assistant; Former First Responder WE: Co-Principal Investigator; Educationalist; Emergency Medicine Physician AT: Research assistant; PhD Candidate; CM: Academic; Educationalist. MOT: Co-Principal Investigator; PhD Candidate; Academic; Researcher; Former First Responder
4. Gender	Was the researcher male or female?	AT: F BD: M WE: M AT F CM: F MOT: F
5. Experience and training	What experience or training did the researcher have?	**Methods – Pg 6** All facilitators were trained in group and individual crisis intervention. All researchers have training or experience of qualitative research methods during their research/ academic careers. All researchers have training or experience focus group facilitation as part of their doctoral training and/or previous research experience (AT, BD, AT, CM, MOT). One researcher specialized in qualitative methodology (WE) as part of their doctoral work and previous research experience.
Relationship with participants		
6. Relationship established	Was a relationship established prior to study commencement?	Yes. Participants were aware that two researchers (MOT, BD) were former first responders from within one of the organizations from which participants were recruited.
7. Participant knowledge of the interviewer	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	**Methods – Pg 7** Participants were briefed on the purpose of the study and understood that it was a research project funded by the Movember Veterans and First Responders Scheme under the direction of the co-PI (MOT, WE). Ethical approval had been granted. Participants reviewed the participant information documentation prior to giving their written informed consent to be involved.

(*continued on next page*)

Appendix C (*continued*)

No. Item	Guide questions/description	Reported on Page #
8. Interviewer characteristics	What characteristics were reported about the inter viewer/ facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	No

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